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Are special items informative about future profit margins?

Patricia M. Fairfield · Karen A. Kitching · Vicki Wei Tang

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Abstract Most proponents of using profit margins in forecasting models suggest that unusual items be removed from income to create a core profit margin. We investigate the appropriateness of this assumption over short and long horizons. Specifically, we explore the association between profit margins and special items over windows of increasing length, from one to five years. We find that the association between past special items and future profit margins differs markedly between firms with low and high core profitability. For low profitability firms, past special items have no association with future profit margins, even over windows of five years. In sharp contrast, for high profitability firms, negative special items are associated with lower future profit margins. This suggests that some firms maintain high core profitability by becoming serial chargers and special items differ from core earnings only to the extent that the allocation process induces timing errors in reported earnings.

Keywords Special items · Persistence · Core earnings · Earnings aggregation · Profit margins

JEL Classification M41

P. M. Fairfield (✉) · V. W. Tang
Georgetown University, McDonough School of Business, Washington, DC 20057, USA
e-mail: fairfiep@msb.edu

K. A. Kitching
George Mason University, 4400 University Drive, MSN 5F4, Fairfax, VA 22030, USA

1 Introduction

Profit margins are commonly used as an input to forecasts of a firm's future earnings potential. A simple forecast of future operating income can be generated with a sales forecast multiplied by the expected operating margin. If profit margins are reasonably stable, the forecasting problem is then reduced to forecasting sales and multiplying by past profit margins. This apparently straightforward procedure is more challenging, however, when a firm reports special items in its operating income. Many textbooks on financial statement analysis suggest that unusual items be removed from past income to create a core profit margin or allocated to current and prior periods as an adjustment to core profit margins (see, for example, Easton et al. 2008; Lundholm and Sloan 2004; Penman 2004). The trend towards reporting "pro-forma" earnings and the popular lexicon that has evolved to describe special items—"nonrecurring," "noncore," "unusual," "one-time"—suggests that the former approach is widely considered appropriate. Research generally supports this conclusion and documents that special items are generally uninformative about one-year-ahead earnings (Fairfield et al. 1996; Burgstahler et al. 2002; Riedl 2007).

In this paper, we investigate the appropriateness of excluding special items from profit margin forecasts over both short and long forecast horizons. Despite evidence that special items are relatively uninformative about one-year-ahead earnings, there are reasons to believe that special items might be informative about future profit margins, particularly when averaged over longer horizons. Restructuring charges, impairments, and other asset writedowns are typically included in special items, and these charges may be taken in anticipation or recognition of changing economic circumstances. On the one hand, these types of special items may, by accelerating the recognition of expenses, be associated with improving profit margins over both short and long horizons. Alternatively, as implied by intermittent allegations of "big bath accounting," special items may be associated with deteriorating profit margins over longer horizons.[1] Or, as implied by recent research on classificatory earnings management, some firms may rely on the repeated use of special items to maintain core profit margins.

We explore the association between average profit margins and special items over windows of increasing length, from one to five years. Averaging special items over longer periods has the effect of accumulating and smoothing them over time. This is important because special items tend to be large and reported irregularly. If managers exercise discretion over the timing and magnitude of special items, this discretion will induce substantial noise in earnings measured over short intervals. In our research design, we progressively expand the measurement interval from one to five years. When the earnings window is expanded to two years, the special items are implicitly smoothed over two years and so on up to five years. As the period over which special items are averaged increases, the measurement error in earnings

[1] Graham and Dodd, in their classic *Security Analysis*, alluded to this possibility: "The dangers of being misled by big bath accounting make it necessary for the analyst to review financial statements covering a history of at least 5 to 10 years before reaching a conclusion about the profitability of a company…" Graham et al. (1988). "Security Analysis: Principles and Technique." New York: McGraw-Hill Professional.

induced by allocating the costs to a particular period decreases. Specifically, we test for an association between past special charges and future profit margins using information averaged over periods of increasing length ("earnings windows"). If special items are uninformative about future profit margins, we will observe no association between past special items and future profit margins, regardless of the size of the earnings window.

We present results for a pooled sample of firms and for three subsets of firms sorted by pre-special items profitability (subsequently referred to as "core"). The core profitability level analysis is motivated by the following two factors. First, the recognition of certain types of special items is likely to differ across firms with low and high core profitability. For example, current GAAP standards suggest that operating or cash flow losses are one of the circumstances that could trigger impairments.[2] Second, a few prior studies suggest that some firms misclassify normal operating expenses as special items to maintain high core profitability (for example, McVay 2006; Riedl 2004). Thus, the association of special items with future profit margins may be associated with a firm's core profitability.

Our empirical results based on the cross-section of firms pooled across profitability levels confirm the widely held view that, for the average firm, negative special items are uninformative about future profit margins. This result is robust to profit margins averaged over periods of up to five years. These average results, however, are driven primarily by the pooling of firms with low and high core profitability. When firms are sorted by their core profitability, significant differences emerge in the association between past special charges and future profit margins.

Not surprisingly, firms with low core profitability take more and larger special charges than high profitability firms. These low profitability firms are more likely to be undergoing significant restructuring activities and taking large writedowns, and it is in these circumstances that firms are sometimes suspected of taking big bath charges. The future profit margins for this subset of firms, however, do not conform to that view. That is, the charges are neither associated with short term improvements in profit margins nor with their longer term erosion. Low profitability firms taking charges experience a slight improvement in *core* profit margins relative to other low profitability firms, but they are also somewhat more likely to take subsequent charges. The combined effect is that the slight improvements in core profit margins are offset by additional charges, resulting in no association between past special items and future profit margins. Moreover, these results are robust to margins averaged over windows ranging from one to five years. We conclude that special charges for low profitability firms are indeed uninformative about future profit margins and should be excluded from operating income in forecasting future margins.

In contrast, we find that negative special items are associated with lower future profit margins for high profitability firms. Core profit margins erode more rapidly for high profitability firms taking charges than for those not taking charges. In

[2] A limitation of our study is that accounting standards were not constant over our sample period. In sensitivity tests, we provide evidence on the robustness of our findings to different periods (see Sect. 5.2).

addition, high profitability firms that have taken charges are more likely to take subsequent charges. The net effect is that for high profitability firms, special charges are associated with lower future profit margins. As the period over which margins are averaged increases, these effects become more pronounced. These results suggest that, for high core profitability firms, negative special items should *not* be excluded from core earnings when forecasting future profit margins.

2 Related research

Research provides support for the view that special items differ on average from other components of earnings and are relatively uninformative about one-year-ahead earnings. Fairfield et al. (1996) show that, in a cross-sectional regression of one-year-ahead return on equity on the components of prior period return on equity, special items have a significantly smaller coefficient than core earnings. Capital market participants regard special items as less persistent than other components of earnings (Lipe 1986; Bradshaw and Sloan 2002; Burgstahler et al. 2002). For example, management often emphasizes operating profit before special items when communicating with investors and analysts (Bradshaw and Sloan 2002).[3] Investors also react more to normal earnings than to unusual charges (Lipe 1986; Elliott and Hanna 1996; Bradshaw and Sloan 2002; Burgstahler et al. 2002). And analysts treat special items as unpredictable and tend to exclude them from their forecasts of earnings and earnings changes (Philbrick and Ricks 1991).

Elliott and Hanna (1996) propose a different perspective, suggesting that "firms might transfer normal components of operating expenses into the special item and thereby artificially increase both current and future earnings before special items." Echoing this view, some researchers suggest that managers engage in opportunistic reporting, particularly with respect to the timing and classification of special items (Schrand and Walther 2000; Doyle et al. 2003; McVay 2006; Frankel 2007). For example, Francis et al. (1996) find a positive association between managerial incentives to manipulate earnings and discretionary types of special charges. McVay (2006) also finds that firms classify operating costs as negative special items within periods, resulting in unusually high contemporaneous core earnings, which reverse in the year ahead.

Existing research provides no association between past special items and future profit margins. Most prior studies, however, focus on the association between current charges and one-year ahead earnings. Inferring the association between special items and future profit margins using sequential annual earnings may understate their significance. In addition, the pooling of low and high profitability firms in prior studies may account for findings of little or no association between special items and future profitability. Strong and Meyer (1987), Hayn (1995),

[3] HP's quarterly earnings announcements prominently disclose "non-GAAP" operating profit which excludes special items. In addition, these results are discussed in the CEO letter of the annual reports for 2005 through 2007. The CEO explains that management uses the operating profit before special items to evaluate and forecast HP's performance and that the special charges are "considered by HP's management to be outside of HP's core business segment operating results."

Burgstahler and Dichev (1997) suggest that the economic conditions and incentives faced by managers of low profitability firms differ from those faced by managers of high profitability firms, and that managers of these firms may elect to redeploy or liquidate the firm's resources. Dechow and Ge (2006) find that low accrual firms reporting negative special items have higher return on assets and higher market returns in the year ahead. Atiase et al. (2004) report that a small sample of firms reporting restructuring charges between 1991 and 1993 show improved earnings in the subsequent year. Khurana and Lippincott (2000) find that investors react positively to restructuring charges taken by low profitability firms but not to those taken by high profitability firms.

Managers of high profitability firms may have incentives to classify operating costs as noncore items. For example, Gaver and Gaver (1998) find that negative special items do not flow through to cash compensation. Furthermore, cash bonuses and stock-based compensation increase with meeting analysts' forecasts (for example, Matsunaga and Park 2001; Bartov and Mohanram 2004). As analysts usually exclude noncore charges from earnings forecasts (Philbrick and Ricks 1991), managers may have incentives to misclassify operating costs as special items to meet those forecasts.

3 Variable definitions and descriptive statistics

In the primary analysis, we run cross-sectional regressions of firm profit margins on lagged disaggregated profit margins, where the components are core profit margins and special items. We run five separate cross-sectional regressions, increasing the window over which earnings are measured from one to five years.[4] The dependent variable in each of the five regressions is total earnings scaled by total sales over the period, and the independent variables are disaggregated total earnings scaled by total sales over a lagged, non-overlapping period of the same size. We compare the differences in the coefficients on core profit margins and negative special items as the window size expands. If special items were not informative about future profit margins, we would expect the coefficients on special items to be insignificant regardless of the period over which special items and profit margins were averaged.

The numerator in the profit margin variables is net operating income before tax, defined as net income before extraordinary items and discontinued operations, plus tax expense and interest expense net of interest income. We exclude extraordinary items and discontinued operations because current GAAP permits little discretion with respect to the classification of these items. Interest expense and interest income are excluded so that changes in the firm's capital structure over the windows examined will not confound the analysis. Beaver et al. (2007), Cready et al. (2007) document that negative special items firms have lower tax rates than the highest

[4] Ohlson and Penman (1992) use a similar methodology to investigate the correlation between changes in market values and the different components of earnings measured over periods longer than a year.

marginal statutory rate. Thus, we use pre-tax income because we do not have information on the tax deductibility of special items.[5]

We rely on Compustat's classification of "special items."[6] We disaggregate our earnings variable (hereafter referred to as profit margin or "PM" to underscore the fact that the variables are divided by sales) into its "core" and "special" components by removing the effect of special items in the numerator of PM to create CORE PM and scaling special items by sales to construct SPECIAL PM.

Negative special items are larger and more prevalent than positive special items. To investigate whether positive and negative special items have differential associations with future profit margins, we separate positive and negative special items in all the reported tests. When the coefficients are constrained to be the same for positive and negative special items, however, the results are similar to those reported for negative special items alone (not reported).

Both the dependent and independent variables are aggregated over windows of increasing size, from one to five years. For windows longer than a year, we construct the earnings variable as the ratio of the sum of the earnings measure (net operating income, core net operating income, or special items) divided by the sum of revenues over the same window. Thus, for all window sizes, the dependent variable is average profit margin or PM^w, where w is the window size. Similarly, the independent variables are lagged average PM^w, lagged average CORE PM^w, and lagged average positive and negative SPECIAL PM^w, where w is the window size. For all window sizes, the variables are constructed so that the dependent and independent variables do not include overlapping data. For example, when w is one, the dependent variable is PM_{t+1}, and the independent variable is CORE PM_t. When w is two, the dependent variable spans the period $t + 1$ to $t + 2$, and the independent variable spans the period t to $t - 1$. Ten years of consecutive data are required to construct the dependent and independent variables for regressions using a five-year window. For the one-year window, the independent variables are drawn from 1988 through 1998, and the corresponding dependent variables are drawn from 1989 through 1999. For the five-year window, the independent variables are drawn from the window 1984 through 1988 through the window 1994 through 1998, and the corresponding dependent variables are drawn from the window 1989 through 1993 through the window 1999 through 2003.

We use the Compustat Industrial Annual tape for the years 1984 through 2003, including both active and inactive firms. We exclude financial firms with SIC codes from 6000 to 6999, because separation of their financial and operating activities is arbitrary. We eliminate small firms with either net operating assets or sales of less

[5] Although we believe the assumption of a 35% effective tax rate for low profitability firms may lead to incorrect inferences about the association between special charges and future profitability, we ran tests using after tax income calculated assuming a 35% tax rate on negative special items. The untabulated results for the pooled sample and the high profitability firms are similar to those reported here. For the low profitability firms, tax-effected negative special items are associated with significantly higher after-tax profitability in future periods.

[6] Givoly and Hayn (1994) discuss the research issues arising from the use of Compustat data to identify special items. (Working paper, University of California at Irvine, "Special Items: Information Content and Earnings Manipulations.") We provide evidence in Sect. 5 on the stability of the results over time and on the specific items reported by a sample of low and high profitability firms.

than $5 million.[7] Many of these firms would have been otherwise eliminated for not having the required number of years of data (see below). We also eliminate firms with absolute value of earnings greater than 100% of net operating assets or sales, and core earnings or special items greater than 200% of net operating assets. Sensitivity tests on the effect of these outlier deletion rules confirm that the signs and patterns (and in general the significance levels) of the coefficients in the tables are generally unaffected by less conservative (or more conservative) cutoffs.

Table 1 summarizes the variable definitions and models used in the analysis. Panel B of Table 1 shows the data years used to construct the dependent and independent variables in the one- and five-year earnings windows. Table 2 reports the sample selection criteria and the impact of each requirement on the final sample size. Included in the tables are all 24,262 firm-year observations with the required data for 10 consecutive years. We recognize that the data requirement introduces significant survivorship bias into the results. We discuss this issue following the main results and provide descriptive evidence suggesting that the results are not dependent on our sample selection criteria. Nonetheless, we caution that our conclusions may not generalize to the universe of firms.

Figure 1 shows the secular trend identified in prior research in the percentage of firms reporting negative special items. In 1984, approximately 12% of firms reported negative special items; by 2003, that percentage increased to 45%. The incidence of firms reporting positive special items, however, was roughly stable over the same period, ranging between 10 and 15 percent in most years. In the bottom panel of Fig. 1, we show means of special items scaled by sales, conditional on the firm reporting a special item. The data show that although more firms reported special items in recent years, the magnitude of the special items reported has not changed markedly.[8]

Table 3 provides descriptive statistics for the dependent and explanatory variables. Panel A reports variable means and medians for the full sample of firms and the medians for low, medium, and high core profitability firms. The means and medians are consistent with prior research. Panel B reports the correlations between the dependent and independent variables by window size.

4 Empirical results

4.1 Association of special items with profit margins for pooled sample of firms

In Table 4, we investigate the association between past special items and future profit margins using earnings windows of increasing size for the full sample of firms, before sorting by core profitability. We include positive and negative special items as separate explanatory variables in the model. As in the previous tables, for all window sizes, positive and negative special items are netted, so that a firm can

[7] We repeated the main tests using a size cutoff of $1 million and $10 million. The results are similar to those reported in the paper.

[8] These patterns were similar for firms with low, medium, and high core profitability. All three groups exhibited increased reporting of negative special items over time and generally stable magnitudes of the special items.

Table 1 Variable definitions and models used in the analyses

Variable name	Description	Computation
Panel A: Variable definitions		
NOI_t	Net operating income	Net income before extraordinary items and discontinued operations + interest expense − interest income
SPECIAL $ITEMS_t$	"Nonrecurring" items in income	Compustat data item #17
NOA_t	Net operating assets	Common stock (#60) + preferred stock (#130) + long term debt (#9) + debt in current liabilities (#34) + minority interest (#38) − cash and ST invest (#1)
PM_t	Profit margin	NOI_t $SALES_t$
CORE PM_t	Core return on sales	NOI_t—SPECIAL $ITEMS_t$ $SALES_t$
SPEC PM_t	"Nonrecurring" return on sales	SPECIAL $ITEMS_t$ $SALES_t$
$RNOA_t$	Return on net operating assets	NOI_t NOA_t
CORE $RNOA_t$	Core return on net operating assets	NOI_t—SPECIAL $ITEMS_t$ NOA_t
SALES $GROWTH_t$	Sales growth	$SALES_t$ $SALES_{t-1}$

Panel B: Data years included in one- and five-year windows

1-year window		5-year window	
Dependent variable	Independent variable	Dependent variable	Independent variable
1989	1988	1989–1993	1984–1988
1990	1989	1990–1994	1985–1989
1991	1990	1991–1995	1986–1990
1992	1991	1992–1996	1987–1991
1993	1992	1993–1997	1988–1992
1994	1993	1994–1998	1989–1993
1995	1994	1995–1999	1990–1994
1996	1995	1996–2000	1991–1995
1997	1996	1997–2001	1992–1996
1998	1997	1998–2002	1993–1997
1999	1998	1999–2003	1994–1998

have a positive or a negative special item in any given window but not both.[9] As noted above, the dependent and independent variables are scaled by revenues. In the first row of the table, we regress PM in year t + 1 on CORE PM and positive and

[9] Compustat nets positive and negative items within a year. We extend this procedure to all aggregation periods. We also conducted tests in which positive and negative SPECIAL items were summed independently over each window, so that a firm could have both a positive SPECIAL item and a negative SPECIAL item in any window (except in the one year window, where the Compustat data precludes this option). The conclusions in this paper are not affected by this alternative treatment.

Table 2 Sample selection criteria and sample size

Sample selection criteria	Total observations	Total firms
1984–2003 Annual Industrial COMPUSTAT, excluding firms in financial services (SIC 6000s) and including both active and inactive and without missing data	129,144	15,919
Firms without 10 consecutive years of data	(93,646)	(10,178)
$NOA^w < \$5M$ or $SALES^w < \$5M$	(5,721)	(727)
Absolute value of $RNOA^w$ or $PM^w > 1$; or CORE PM or SPECIAL PM >2	(5,515)	(1,127)
Final sample	24,262	3,887

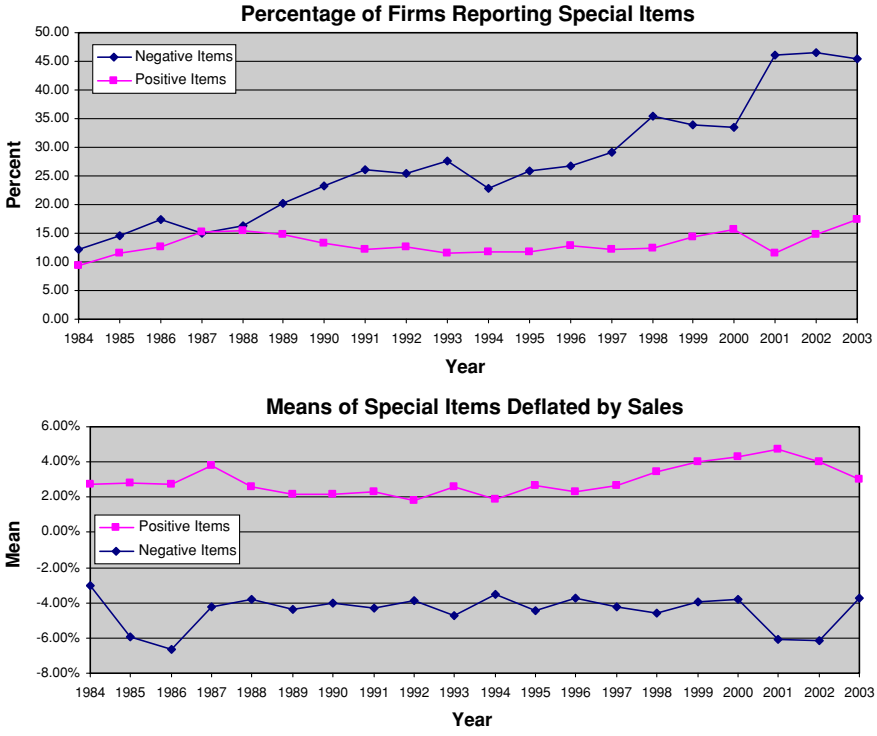

Fig. 1 Annual trend of special items 1984–2003

negative SPECIAL PM in year t. The coefficient on CORE PM is 0.785, confirming the relatively high persistence of core profit margins over sequential years. In contrast to CORE PM, we find relatively small coefficients on special items in the one year windows. The coefficients on both positive and negative special items are not significantly different from zero, indicating that these items are not informative about profit margins over consecutive fiscal years.

In the next four rows of Table 4, we report regression results over earnings windows of increasing size. In each row, the earnings windows for the dependent and the independent variables are expanded by one year, so that the dependent

Table 3 Descriptive statistics 1984–2003 ($N = 24{,}262$)

		Mean	Median	Median for LOW CORE	Median for MEDIUM CORE	Median for HIGH CORE
Panel A: Univariate statistics						
Raw data	NOI_{t+1}	283.558	34.216	7.613	58.560	58.417
	CORE NOI_{t+1}	299.887	38.114	9.466	64.898	62.296
	$SPEC_{t+1}$	−16.329	0.000	0.000	0.000	0.000
	$SALES_{t+1}$	2869.000	459.626	245.105	628.218	568.143
	CORE NOI_{t+1}	283.278	35.072	6.535	64.095	59.968
	NEG $SPEC_t$	−21.022	0.000	0.000	0.000	0.000
	POS $SPEC_t$	4.840	0.000	0.000	0.000	0.000
	$SALES_t$	2702.000	423.956	227.391	583.413	517.958
	NOA_t	1871.000	254.056	166.399	448.317	218.047
1-year window	PM_{t+1}	0.096	0.086	0.046	0.097	0.108
	CORE PM_{t+1}	0.105	0.090	0.049	0.101	0.112
	SPEC PM_{t+1}	−0.008	0.000	0.000	0.000	0.000
	SALES $GROWTH_{t+1}$	1.104	1.066	1.056	1.059	1.082
	CORE PM_t	0.107	0.091	0.037	0.103	0.119
	NEG SPEC PM_t	−0.011	0.000	0.000	0.000	0.000
	POS $SPECPM_t$	0.003	0.000	0.000	0.000	0.000
	CORE $RNOA_t$	0.158	0.139	0.062	0.139	0.254
2-year window	PM_{t+1}	0.096	0.083	0.049	0.094	0.103
	CORE PM_{t+1}	0.104	0.088	0.053	0.100	0.109
	SPEC PM_{t+1}	−0.008	0.000	0.000	0.000	0.000
	SALES $GROWTH_{t+1}$	1.227	1.138	1.111	1.118	1.176
	CORE PM_t	0.109	0.090	0.039	0.103	0.118
	NEG SPEC PM_t	−0.010	0.000	0.000	0.000	0.000
	POS SPEC PM_t	0.003	0.000	0.000	0.000	0.000
3-year window	CORE $RNOA_t$	0.158	0.139	0.065	0.139	0.251
	PM_{t+1}	0.095	0.081	0.050	0.091	0.100
	CORE PM_{t+1}	0.104	0.087	0.055	0.099	0.106
	SPEC PM_{t+1}	−0.009	0.000	0.000	0.000	−0.001
	SALES $GROWTH_{t+1}$	1.371	1.215	1.174	1.188	1.278
	CORE PM_t	0.109	0.090	0.041	0.102	0.118
	NEG SPEC PM_t	−0.009	0.000	0.000	0.000	0.000
	POS SPEC PM_t	0.002	0.000	0.000	0.000	0.000
4-year window	CORE $RNOA_t$	0.158	0.139	0.068	0.139	0.246
	PM_{t+1}	0.094	0.080	0.051	0.090	0.096
	CORE PM_{t+1}	0.103	0.086	0.057	0.097	0.104
	SPEC PM_{t+1}	−0.009	−0.001	−0.002	−0.001	−0.002
	SALES $GROWTH_{t+1}$	1.534	1.292	1.233	1.257	1.387
	CORE PM_t	0.110	0.090	0.043	0.100	0.116
	NEG SPEC PM_t	−0.009	0.000	−0.001	0.000	0.000

Table 3 continued

		Mean	Median	Median for LOW CORE	Median for MEDIUM CORE	Median for HIGH CORE
	POS SPEC PM_t	0.002	0.000	0.000	0.000	0.000
5-year window	CORE $RNOA_t$	0.159	0.139	0.070	0.139	0.245
	PM_{t+1}	0.092	0.079	0.051	0.089	0.094
	CORE PM_{t+1}	0.102	0.085	0.059	0.096	0.101
	SPEC PM_{t+1}	−0.010	−0.002	−0.002	−0.001	−0.003
	SALES $GROWTH_{t+1}$	1.719	1.381	1.299	1.329	1.503
	CORE PM_t	0.111	0.090	0.044	0.100	0.116
	NEG SPEC PM_t	−0.009	0.000	−0.002	0.000	0.000
	POS SPEC PM_t	0.002	0.000	0.000	0.000	0.000
	CORE $RNOA_t$	0.160	0.140	0.073	0.140	0.243

Panel B: Correlations

		PM_{t+1}	CORE PM_{t+1}	SPEC PM_{t+1}	SALES $GROWTH_{t+1}$	CORE PM_t	NEG SPEC PM_t	POS SPEC PM_t
1-year window	PM_{t+1}		0.882	0.471	0.093	0.624	0.050	−0.011
	CORE PM_{t+1}	0.944		0.000	0.099	0.720	0.018	−0.045
	SPEC PM_{t+1}	0.281	0.084		0.012	−0.023	0.071	0.062
	SALES $GROWTH_{t+1}$	0.171	0.171	0.050		0.024	−0.010	0.016
	CORE PM_t	0.782	0.837	0.036	0.057		0.053	−0.052
	NEG SPEC PM_t	0.099	0.077	0.124	0.070	0.117		0.035
	POS SPEC PM_t	−0.007	−0.015	0.060	−0.023	−0.016	0.219	
2-year window	PM_{t+1}		0.918	0.398	0.075	0.660	0.046	0.021
	CORE PM_{t+1}	0.947		0.001	0.080	0.729	0.002	−0.016
	SPEC PM_{t+1}	0.294	0.100		0.004	−0.024	0.111	0.091
	SALES $GROWTH_{t+1}$	0.183	0.182	0.049		0.028	−0.019	0.021
	CORE PM_t	0.734	0.787	0.026	0.078		0.045	−0.046
	NEG SPEC PM_t	0.108	0.072	0.161	0.078	0.119		0.051
	POS SPEC PM_t	0.008	−0.006	0.058	−0.013	−0.007	0.332	
3-year window	PM_{t+1}		0.932	0.389	0.050	0.647	0.039	0.015
	CORE PM_{t+1}	0.949		0.028	0.059	0.713	−0.005	−0.018
	SPEC PM_{t+1}	0.297	0.102		−0.012	−0.028	0.122	0.088
	SALES $GROWTH_{t+1}$	0.164	0.166	0.024		0.027	−0.032	0.014
	CORE PM_t	0.704	0.757	0.017	0.088		0.031	−0.030
	NEG SPEC PM_t	0.103	0.062	0.182	0.074	0.118		0.061
	POS SPEC PM_t	0.013	−0.003	0.056	−0.011	−0.003	0.403	
4-year window	PM_{t+1}		0.937	0.372	0.032	0.647	0.031	0.010
	CORE PM_{t+1}	0.950		0.023	0.046	0.710	−0.014	−0.015
	SPEC PM_{t+1}	0.295	0.098		−0.031	−0.033	0.126	0.069
	SALES $GROWTH_{t+1}$	0.147	0.154	0.003		0.024	−0.041	0.011

Table 3 continued

		PM_{t+1}	CORE PM_{t+1}	SPEC PM_{t+1}	SALES $GROWTH_{t+1}$	CORE PM_t	NEG SPEC PM_t	POS SPEC PM_t
	CORE PM_t	0.684	0.734	0.012	0.093		0.024	−0.022
	NEG SPEC PM_t	0.096	0.053	0.205	0.075	0.115		0.060
	POS SPEC PM_t	0.017	0.002	0.068	−0.004	0.001	0.453	
5-year window	PM_{t+1}		0.936	0.370	0.014	0.633	0.025	0.008
	CORE PM_{t+1}	0.951		0.020	0.038	0.689	−0.019	−0.008
	SPEC PM_{t+1}	0.294	0.096		−0.060	−0.020	0.122	0.044
	SALES $GROWTH_{t+1}$	0.134	0.145	−0.011		0.020	−0.045	0.005
	CORE PM_t	0.665	0.713	0.007	0.091		0.019	−0.007
	NEG SPEC PM_t	0.090	0.046	0.220	0.068	0.109		0.063
	POS SPEC PM_t	0.018	0.003	0.081	0.001	0.003	0.493	

Pearson correlations are above the diagonal, Spearman correlations below

variable in the two-year window is the average profit margin (PM) for years t + 2 and t + 1, and the independent variables are the average core profit margins (CORE PM) and average positive and negative special items, scaled by average sales (SPECIAL PM), for years t and t − 1.

The parameter estimates for the independent variables reveal the extent to which the association between future profit margins and past core profit margins and special items is impacted by the period over which margins are averaged. The coefficient on core profit margins decreases monotonically as the window size increases, from 0.785 to 0.688. Not surprisingly, sequential annual profit margins exhibit more stability than sequential average five-year profit margins. This deterioration in the persistence of core profit margins is expected, as the five-year windows likely aggregate data from different economic periods.

For special items, there is no clear pattern to the estimated coefficients as the window size increases. The coefficients on positive special items are positive and significantly different from zero for the two- and three-year windows, and insignificant in the one-, four-, and five-year windows. From the second through the fifth year, the coefficient decreases from 0.399 to 0.111. The coefficients on negative special items are not significant in any window. The results in Table 4 demonstrate that, for this pooled sample of firms, averaging special items over longer periods does not improve their explanatory power for future profit margins.

4.2 Association between future profit margins and special items for subsets of firms sorted by core profitability

As discussed above, the economic conditions faced by managers of low profitability firms differ from those faced by managers of high profitability firms. Consequently,

Table 4 Regressions for full sample
PM^{w}_{t+1} on CORE PM^{w}_{t} and positive and negative SPECIAL PM^{w}_{t}
($N = 24{,}262$)
Model 1: $PM^{w}_{t+1} = \alpha_{10} + \beta^{w}_{11}$CORE $PM^{w}_{t} + \beta^{w}_{12}$Positive SPEC $PM^{w}_{t} + \beta^{w}_{13}$Negative SPEC $PM^{w}_{t} + \sum_{i=1}^{10} \beta^{i}_{14} YEAR_i + e_{t+1}$

Number of years in earnings window	α	CORE PM^{w}_{t}	Positive SPEC PM^{w}_{t}	Negative SPEC PM^{w}_{t}	R^2
1	0.016	0.785	0.136	0.051	0.393
	6.079	42.597	1.183	1.612	
2	0.009	0.771	0.399	0.059	0.442
	4.178	48.948	2.390	1.417	
3	0.008	0.739	0.317	0.081	0.426
	3.499	44.028	2.250	1.647	
4	0.009	0.714	0.216	0.068	0.427
	3.704	41.027	1.664	1.162	
5	0.009	0.688	0.111	0.054	0.407
	3.432	36.278	0.893	0.848	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, PM^{w}_{t+1} is $NOI_{t+1}/SALES_{t+1}$, and CORE PM^{w}_{t} is CORE $NOI_t/SALES_t$. When w is 2, PM^{w}_{t+1} is $(NOI_{t+1} + NOI_{t+2})/(SALES_{t+1} + SALES_{t+2})$, and CORE PM^{w}_{t} is (CORE NOI_t + CORE NOI_{t-1})/($SALES_t + SALES_{t-1}$). Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors, which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

distributions of special items for low profitability firms differ from those for high profitability firms. In particular, prior research documents that less profitable firms take more and larger charges compared with more profitable firms. Because the special items reported by low and high profitability firms are likely to be triggered by different economic circumstances and incentives, they may also have different implications for future profit margins.

In Table 5, we report descriptive data on the incidence and magnitude of special items in the sample of firms sorted into three groups by pre-special, or core, return on net operating assets. To control for economy-wide and industry influences on core profitability, the firms are first sorted by year and two-digit SIC code, then ranked into three RNOA groups within each year and industry group. In the one-year window, 6,565 (about 27%) of total firm-year observations have negative special items, with the median charge equal to 1.6% of sales. Thirty-one percent of low profitability firms take negative charges in a one-year window, compared with 26% of the high profitability firms. The median size of the charge for the poorly performing firms is 2.4% of sales—about twice that of the median charge for the high profitability firms.

Table 5 Incidence and magnitude of special items in sample

Window		Full sample			Lowest rank of CORE $RNOA_t^w$			Middle rank of CORE $RNOA_t^w$			Highest rank of CORE $RNOA_t^w$		
		Positive special items	Zero special items	Negative special items	Positive special items	Zero special items	Negative special items	Positive special items	Zero special items	Negative special items	Positive special items	Zero special items	Negative special items
1	*N*	3,152	14,545	6,565	1,227	4,348	2,510	1,005	5,099	1,982	920	5,098	2,073
	Median	0.007	0	−0.016	0.011	0	−0.024	0.006	0	−0.012	0.005	0	−0.012
2	N	4,106	10,253	9,903	1,593	2,995	3,497	1,296	3,741	3,049	1,217	3,517	3,357
	Median	0.005	0	−0.011	0.007	0	−0.016	0.004	0	−0.009	0.003	0	−0.008
3	N	4,488	7,612	12,162	1,757	2,186	4,142	1,415	2,873	3,798	1,316	2,553	4,222
	Median	0.004	0	−0.009	0.006	0	−0.013	0.003	0	−0.008	0.003	0	−0.006
4	N	4,693	5,810	13,759	1,809	1,655	4,621	1,531	2,247	4,308	1,353	1,908	4,830
	Median	0.003	0	−0.008	0.005	0	−0.012	0.003	0	−0.007	0.002	0	−0.005
5	N	4,837	4,501	14,924	1,843	1,253	4,989	1,594	1,800	4,692	1,400	1,448	5,243
	Median	0.003	0	−0.007	0.005	0	−0.011	0.002	0	−0.006	0.002	0	−0.005

N refers to the number of observations with a positive, negative, or zero sum of the special items over the window. For example, a firm having five positive special items over a five-year window would be reported as having one positive special item in the five-year window, as would a firm having only one positive special item in the five-year window. Positive and negative special items are netted against each other within each window. Median refers to the median SPECIAL PM^w for firms reporting special items in the earnings window

For earnings windows of three or more years, high core firms report slightly more negative special items than do low core firms. In the five-year window, about 65% of high core firms report negative special items compared to about 62% of low core firms. For all aggregation periods, the magnitude of the charges (in relation to sales) taken by low core firms is about twice that of the high core firms.

In Tables 6 and 7, we investigate whether the association between future profit margins and past special items differs systematically based on the core profitability of the firm. The measurement of the dependent and independent variables is the same as in Table 4. To investigate whether the influence of special items differs among the profitability ranks, we specify different slopes and intercepts for each of the three ranks.

For the low profitability firms, the coefficient on CORE PM decreases slightly as the earnings window increases, from 0.685 to 0.606. Averaging core profit margins over longer windows reduces their stability over time, although not markedly. Positive special items have a positive and significant coefficient over two- and three-year earnings windows, but there is no pattern to the coefficients as the earnings window expands. As with the pooled sample, negative special items are insignificant in all earnings windows. For low profitability firms, core profit margins and negative special items clearly exhibit different explanatory power for future margins, even when they are averaged over longer periods of time. We conclude that for low profitability firms, negative special items are not informative about future profit margins, even when averaged over five-year windows.

For the high profitability firms, Tables 6 and 7 tells a different story about the relation between negative special items and future profit margins. The coefficient on core profit margins is 0.861 in the one-year window, indicating higher persistence for the core profit margins of high profitability firms compared with low profitability firms. Although the coefficient decreases as the window expands, from 0.830 in the two-year window to 0.754 in the five-year window, it is always higher than its counterpart for the low profitability firms. The coefficient on positive special items is insignificant in all windows and exhibits no particular pattern as the window expands. In contrast, for these high profitability firms, the coefficient on negative special items increases almost monotonically as the earnings window expands. As the earnings window expands, the parameter estimates on core profit margins and negative special items converge. For the one-year window, the coefficient on CORE PM is 0.861, and the coefficient on negative special items is 0.222, suggesting significant differences in the association of these earnings components with one-year-ahead profit margins. However, as the earnings window increases and profit margins and special items are averaged over longer periods, the coefficients converge with the coefficient on core profit margins decreasing and the coefficient on negative special items increasing. Between the one-year window and the five-year window the *difference* in the two coefficients decreases from .639 to .159.[10] We emphasize that we do not observe a similar pattern for positive special items, which exhibit no trend as the earnings window increases and are insignificant over all windows. For these high profitability firms, when negative special items are

[10] The F-statistic is 1.19 for the difference (p-value = 0.277).

Table 6 Regressions by rank of CORE $RNOA_t^w$
PM_{t+1}^w on CORE PM_t^w and positive and negative SPECIAL PM_t^w
($N = 24{,}262$)

Model 2: $PM_{t+1}^w = \sum_{j=1}^{3} \alpha_{20} + \sum_{j=1}^{3} \beta_{21}^w \text{CORE } PM_t^w + \sum_{j=1}^{3} \beta_{22}^w \text{Positive SPEC } PM_t^w + \sum_{j=1}^{3} \beta_{23}^w \text{Negative SPEC } PM_t^w + \sum_{i=1}^{10} \beta_{24}^i \text{YEAR}_i + e_{t+1}$

Number of years in earnings window	Lowest rank of CORE $RNOA_t^w$				Middle rank of CORE $RNOA_t^w$				Highest rank of CORE $RNOA_t^w$				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	0.017	0.685	0.235	0.021	0.003	0.875	0.053	0.065	0.012	0.861	−0.333	0.222	0.595
	3.344	17.318	1.319	0.477	0.840	43.551	0.853	1.380	3.194	43.160	−1.061	2.263	
2	0.012	0.693	0.577	0.030	−0.002	0.866	−0.127	0.180	0.003	0.830	0.136	0.180	0.658
	2.823	21.313	2.440	0.566	−0.662	45.446	−1.360	2.791	0.911	40.230	1.627	2.212	
3	0.021	0.650	0.461	0.051	−0.010	0.843	−0.164	0.188	−0.001	0.813	0.099	0.295	0.654
	4.805	18.920	2.179	0.880	−2.861	36.324	−1.063	1.923	−0.364	38.614	0.667	3.082	
4	0.022	0.634	0.264	−0.006	−0.009	0.821	−0.153	0.238	−0.001	0.787	−0.033	0.461	0.663
	4.991	18.151	1.393	−0.085	−2.390	33.459	−0.745	2.045	−0.321	35.364	−0.223	3.785	
5	0.019	0.606	0.255	−0.058	−0.009	0.801	−0.357	0.257	0.002	0.754	−0.187	0.595	0.653
	4.281	16.178	1.160	−0.793	−2.337	30.047	−2.415	1.807	0.360	29.795	−1.012	4.076	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, PM_{+1} is $NOI_{t+1}/SALES_{t+1}$, and CORE PM_t^w is CORE $NOI_t/SALES_t$. When w is 2, PM_{t+1}^w is $(NOI_{t+1} + NOI_{t+2})/(SALES_{t+1} + SALES_{t+2})$, and CORE PM_t^w is $(\text{CORE } NOI_t + \text{CORE}_{t-1})/(SALES_t + SALES_{t-1})$. Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

averaged over longer periods, their association with future average profit margins increases.[11]

In Table 7A, we provide additional descriptive evidence on the relation between past special items and future profit margins. Core RNOA is the product of core profit margin and asset turnover, and within each RNOA rank, there may be significant variation in core profit margins and asset turnovers. All other things equal, lower asset turnovers may be associated with "bloated balance sheets" and may signal more margin deterioration to come. To determine whether the margin/turnover mix is informative about the association between special items and future profit margins, we create three additional ranks based on the firm's core profit margin within each of the three RNOA ranks. Because there may also be differences across years or among industries in the margin/turnover mix, the firms are ranked by CORE PM within years and two-digit SIC codes, as well as within RNOA ranks. This second sort creates three groups within each RNOA rank: lower margin/higher turnover, average margin/average turnover, and higher margin/lower turnover.

The results are reported in Table 7A–C. These results suggest that there is an important additional dimension to the relation between negative special items and future profit margins. Within each of the three RNOA ranks, the higher margin/lower turnover group exhibits the strongest association between negative special items and future profit margins, and the lower margin/higher turnover group the weakest. In fact, within each RNOA group, the low core PM firms exhibit no association between negative special items and future profit margins, and the high core PM firms exhibit a positive association.[12] The state of the balance sheet appears to influence the association between past special items and future profit margins—a firm that records negative special items and yet has a relatively low asset turnover is more likely to experience lower profit margins in future years compared with a firm with similar profitability and high asset turnover. The evidence suggests that investors wishing to forecast future profit margins for a firm reporting special items should consider the firm's core profitability as well as its margin/turnover mix. When the asset turnover is relatively low, the negative special items are more likely to signal deterioration in future profit margins.

In Tables 8 and 9, we investigate the relation between negative special items and future special items and future *core* profit margins. In Table 8, we regress future special items on past special items. For the dependent variable, we net positive and negative special items against each other.[13] For positive special items, we observe no consistent pattern in the coefficients for any of the three profitability groups. The coefficients on positive special items for the low profitability group are significant only for the one-year windows; for the high core profitability firms they are significant for the two-, three-, and five-year windows, although they do not increase

[11] Simple nonparametric tests pooled over years suggest that low RNOA firms taking charges benefit in future years while high RNOA firms do not. These nonparametric tests did not control for the magnitude of the special items nor for the level of CORE PM.

[12] In unreported results, we found that sorting by core PM alone obtained weaker results than those obtained by sorting by core RNOA alone.

[13] The results are similar to those reported if we use only negative special items as the dependent variable.

Table 7 Regressions by rank of CORE PM within ranks of CORE $RNOA_t^w$
PM_{t+1}^w on CORE PM_t^w and positive and negative SPECIAL PM_t^w

Model 2: $PM_{t+1}^w = \sum_{j=1}^{3} \alpha_{20} + \sum_{j=1}^{3} \beta_{21}^w \text{CORE } PM_t^w + \sum_{j=1}^{3} \beta_{22}^w \text{Positive SPEC } PM_t^w + \sum_{j=1}^{3} \beta_{23}^w \text{Negative SPEC } PM_t^w + \sum_{i=1}^{10} \beta_{24}^i \text{YEAR}_i + e_{t+1}$

Panel A: Lowest rank of CORE RNOA—sorted by core profit margins within profitability ranks

Number of years in earnings window	Lowest rank of CORE PM_t^w				Middle rank of CORE PM_t^w				Highest rank of CORE PM_t^w				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	0.002	0.421	0.160	0.005	0.014	0.664	−0.044	0.168	−0.013	0.906	0.191	0.049	0.665
	0.157	4.463	0.577	0.066	2.147	5.376	−0.555	1.614	−1.335	24.977	1.240	0.951	
2	0.011	0.457	0.590	−0.026	0.014	0.549	0.358	0.029	−0.020	0.870	0.158	0.212	0.430
	1.268	6.052	1.904	−0.288	2.353	5.298	1.339	0.359	−2.177	22.909	1.503	2.301	
3	0.024	0.368	0.485	−0.002	0.015	0.508	0.249	−0.074	−0.016	0.856	−0.018	0.329	0.414
	3.263	4.618	1.402	−0.020	2.372	4.272	1.515	−1.163	−1.748	22.112	−0.090	3.802	
4	0.028	0.369	0.217	−0.087	0.009	0.540	0.395	−0.116	−0.008	0.794	−0.015	0.262	0.470
	4.153	4.238	0.684	−0.575	1.380	4.183	1.304	−1.189	−0.783	18.032	−0.124	3.095	
5	0.025	0.347	0.154	−0.186	0.008	0.487	0.779	−0.142	−0.001	0.732	−0.041	0.247	0.468
	3.891	3.349	0.467	−1.197	1.134	3.464	2.805	−1.644	−0.146	16.016	−0.286	2.748	

Table 7 continued

Panel B: Middle rank of CORE RNOA—sorted by core profit margins within profitability ranks

Number of years in earnings window	Lowest rank of CORE PM_t^w				Middle rank of CORE PM_t^w				Highest rank of CORE PM_t^w				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	0.013	0.629	−0.118	−0.033	0.013	0.736	0.245	0.025	0.008	0.871	0.040	0.136	0.634
	2.268	7.744	−0.620	−0.392	1.481	8.797	1.725	0.372	0.950	22.859	0.551	1.687	
2	0.007	0.691	−0.048	−0.066	−0.012	0.960	−0.277	0.134	−0.012	0.918	−0.104	0.300	0.678
	1.753	9.407	−0.163	−1.016	−1.268	9.608	−0.938	1.850	−1.369	26.606	−1.031	2.696	
3	0.010	0.611	0.412	−0.216	−0.016	0.884	−0.804	0.058	−0.032	0.912	−0.083	0.339	0.715
	1.989	8.287	2.481	−2.276	−1.604	8.955	−1.571	0.461	−3.012	22.438	−0.523	2.276	
4	0.003	0.681	0.426	0.085	−0.002	0.738	−0.441	0.158	−0.023	0.865	−0.121	0.287	0.689
	0.683	8.791	0.992	0.451	−0.266	7.349	−0.684	1.367	−2.108	18.940	−0.625	1.734	
5	0.001	0.751	−0.022	0.103	−0.005	0.772	−0.578	0.141	−0.024	0.827	−0.327	0.327	0.676
	0.138	11.296	−0.051	0.580	−0.482	7.614	−1.287	0.896	−1.920	16.260	−2.233	1.594	

Table 7 continued

Panel C: Highest rank of CORE RNOA—sorted by core profit margins within profitability ranks

Number of years in earnings window	Lowest rank of CORE PM_t^w				Middle rank of CORE PM_t^w				Highest rank of CORE PM_t^w				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	−0.001	0.930	0.092	−0.004	0.006	0.863	0.043	0.126	0.036	0.817	−0.594	0.257	0.820
	−0.289	35.349	0.657	−0.090	0.804	16.637	0.630	1.412	2.505	15.596	−1.131	1.943	
2	0.002	0.834	−0.024	0.060	−0.005	0.836	−0.015	−0.096	0.026	0.783	0.197	0.270	0.831
	0.601	24.586	−0.077	0.602	−0.545	13.373	−0.062	−0.454	1.984	15.991	2.885	2.835	
3	0.003	0.763	0.178	−0.060	−0.004	0.781	0.102	0.066	0.004	0.815	0.090	0.407	0.819
	0.861	20.026	0.494	−0.503	−0.457	11.497	0.339	0.449	0.277	17.030	0.491	2.952	
4	0.000	0.751	0.427	−0.050	0.000	0.794	−0.283	0.583	−0.002	0.786	0.026	0.484	0.805
	0.023	17.136	1.127	−0.442	−0.004	10.784	−0.918	3.733	−0.172	15.484	0.143	2.915	
5	0.002	0.740	0.237	−0.039	0.004	0.757	−0.244	0.681	0.005	0.729	−0.205	0.661	0.791
	0.545	15.766	0.562	−0.240	0.400	9.492	−0.679	3.759	0.288	12.257	−0.913	3.173	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, PM_{+1} is $NOI_{t+1}/SALES_{t+1}$, and CORE PM_t^w is CORE $NOI_t/SALES_t$. When w is 2, PM_{t+1}^w is $(NOI_{t+1} + NOI_{t+2})/(SALES_{t+1} + SALES_{t+2})$, and CORE PM_t^w is $(CORE\ NOI_t + CORE_{t-1})/(SALES_t + SALES_{t-1})$. Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

Table 8 Regressions by rank of CORE $RNOA_t^w$
SPECIAL PM_{t+1}^w on CORE PM_t^w and positive and negative SPECIAL PM_t^w
($N = 24{,}262$)

Model 3: $\text{SPECIAL } PM_{t+1}^w = \sum_{j=1}^{3} \alpha_{30} + \sum_{j=1}^{3} \beta_{31}^w \text{CORE } PM_t^w + \sum_{j=1}^{3} \beta_{32}^w \text{Positive SPEC } PM_t^w + \sum_{j=1}^{3} \beta_{33}^w \text{Negative SPEC } PM_t^w + \sum_{i=1}^{10} \beta_{34}^i \text{YEAR}_i + e_{t+1}$

Number of years in earnings window	Lowest rank of CORE $RNOA_t^w$				Middle rank of CORE $RNOA_t^w$				Highest rank of CORE $RNOA_t^w$				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	−0.010	−0.016	0.364	0.094	−0.001	−0.021	0.039	0.080	0.002	−0.029	−0.293	0.131	0.034
	−3.786	−0.596	1.796	3.542	−0.572	−2.341	1.104	2.765	1.071	−2.553	−1.033	2.707	
2	−0.012	−0.012	0.405	0.141	−0.002	−0.013	−0.026	0.205	0.000	−0.021	0.117	0.165	0.054
	−6.082	−0.641	1.627	4.746	−1.742	−1.846	−0.397	5.394	−0.094	−2.482	1.703	5.023	
3	−0.011	−0.012	0.421	0.149	−0.005	−0.014	−0.040	0.225	−0.002	−0.016	0.168	0.236	0.068
	−5.445	−0.979	1.502	5.088	−3.524	−1.584	−0.317	5.146	−1.265	−2.222	2.220	5.060	
4	−0.010	−0.012	0.249	0.157	−0.004	−0.019	0.042	0.229	−0.002	−0.013	0.092	0.288	0.075
	−5.577	−1.101	1.425	5.212	−2.829	−1.940	0.243	5.147	−1.783	−1.828	1.371	4.919	
5	−0.012	0.003	0.189	0.136	−0.005	−0.021	−0.029	0.246	−0.004	−0.007	0.102	0.398	0.080
	−6.895	0.229	1.299	5.105	−3.219	−2.114	−0.298	4.050	−2.988	−0.957	1.731	3.969	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, SPECIAL PM_{t+1} is $SPECIAL_{t+1}/SALES_{t+1}$, and CORE PM_t^w is CORE $NOI_t/SALES_t$. When w is 2, SPECIAL PM_{t+1}^w is $(SPECIAL_{t+1} + SPECIAL_{t+2})/(SALES_{t+1} + SALES_{t+2})$, and CORE PM_t^w is $(\text{CORE } NOI_t + \text{CORE } NOI_{t-1})/(SALES_t + SALES_{t-1})$. Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

Table 9 Regressions by rank of CORE $RNOA_t^w$
CORE PM_{t+1}^w on CORE PM_t^w and positive and negative SPECIAL PM_t^w
($N = 24{,}262$)

Model 4: $\text{CORE } PM_{t+1}^w = \sum_{j=1}^{3} \alpha_{40} + \sum_{j=1}^{3} \beta_{41}^w \text{CORE } PM_t^w + \sum_{j=1}^{3} \beta_{42}^w \text{Positive SPEC } PM_t^w + \sum_{j=1}^{3} \beta_{43}^w \text{Negative SPEC } PM_t^w + \sum_{i=1}^{10} \beta_{44}^i \text{YEAR}_i + e_{t+1}$

Number of years in earnings window	Lowest rank of CORE $RNOA_t^w$				Middle rank of CORE $RNOA_t^w$				Highest rank of CORE $RNOA_t^w$				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	0.026	0.702	−0.129	−0.072	0.003	0.896	0.013	−0.015	0.010	0.890	−0.041	0.090	0.728
	6.567	22.350	−1.393	−2.001	1.317	54.346	0.302	−0.490	3.226	56.067	−0.812	1.252	
2	0.024	0.705	0.173	−0.111	0.000	0.879	−0.101	−0.026	0.003	0.851	0.019	0.015	0.754
	6.640	24.443	0.826	−2.628	0.049	55.136	−1.704	−0.536	1.043	48.009	0.308	0.221	
3	0.032	0.662	0.040	−0.097	−0.006	0.856	−0.124	−0.037	0.001	0.829	−0.068	0.059	0.748
	8.372	20.636	0.233	−1.875	−1.974	46.536	−1.169	−0.482	0.179	43.285	−0.569	0.776	
4	0.031	0.645	0.016	−0.163	−0.005	0.840	−0.195	0.009	0.001	0.801	−0.125	0.173	0.753
	8.505	19.691	0.138	−2.526	−1.684	44.013	−1.331	0.099	0.356	38.357	−0.945	1.881	
5	0.031	0.603	0.066	−0.194	−0.004	0.822	−0.328	0.011	0.006	0.761	−0.288	0.196	0.740
	8.070	17.076	0.404	−2.893	−1.432	39.972	−2.515	0.096	1.455	31.712	−1.507	1.784	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, CORE PM_{t+1} is CORE $NOI_{t+1}/SALES_{t+1}$, and CORE PM_t^w is CORE $NOI_t/SALES_t$.When w is 2, CORE PM_{t+1}^w is (CORE NOI_{t+1} + CORE NOI_{t+2})/($SALES_{t+1}$ + $SALES_{t+2}$), and CORE PM_t^w is (CORE NOI_t + CORE NOI_{t-1})/($SALES_t$ + $SALES_{t-1}$). Parameter estimates on YEAR dummies are not reported
The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

as the window expands. We conclude there is weak evidence that positive special items are informative about future special items, although the evidence does not suggest that they are more informative as they are aggregated over longer periods.

In contrast, past negative special items are associated with future special items for all three profitability groups. For the low profitability group, the coefficient on negative special items is relatively stable over the earnings windows, with an estimate of 0.094 in the one-year window and 0.136 in the five-year window. For low profitability firms, past negative special items are associated with future negative special items, but there is no apparent increase in the strength of the association as they are aggregated over longer periods. In contrast, the coefficient on negative special items increases as the earnings window expands for the medium core profitability and high core profitability firms. The pattern is especially pronounced for high profitability firms, with the coefficient on negative special items increasing threefold, from 0.131 in the one-year window to 0.398 in the five-year window.[14] The pattern is clearly consistent with the interpretation that negative special items in high profitability firms include some recurring costs. As these costs are averaged over longer periods, this pattern becomes more apparent.[15]

In Table 9, we investigate the impact of past special items on future core profit margins. For the low profitability group, future core profit margins are benefited by past special charges, and the benefit increases as the earnings window increases. The coefficient on negative special items is −0.072 in the one-year earnings window and decreases to −0.194 in the five-year earnings window. This evidence is consistent with the interpretation that managers of low profitability firms take actions that improve future core profitability (although not bottom line profitability). For the medium and high core profitability firms, there is no consistent association between positive special items and future core profit margins. For the high profitability group, past negative special items, when aggregated over four- and five- year windows, signal lower average core profitability in subsequent periods.

4.3 Association between sales growth and past special items

The results in Tables 4, 5, 6, 7, 8 and 9 reveal that past special charges are associated with lower profit margins for firms with high core profitability and especially for firms whose profitability is generated with a mix of lower asset turnover and higher profit margins. The implication is that analysts should lower their forecasts of profit margins for high RNOA/high core PM firms with past negative special items but not for low RNOA/low core PM firms.

[14] We also observe that the coefficient on core profitability is negative and significant for all window sizes indicating that, within this high profitability rank, firms with the highest profitability are more likely to take charges in future periods.

[15] In untabulated results, we investigated whether the distribution of types of special charges (e.g. restructuring charges, asset impairments, and goodwill write-offs) differed between low core and high core firms. For the subset of firm/years for which Compustat provided this information, we found no systematic differences in the types of special items reported by low and high profitability firms. We did not have sufficient data to investigate whether the persistence differed by type of special item.

Table 10 Regressions by rank of CORE $RNOA_t^w$
$SALES\ GROWTH_{t+1}^w$ on CORE PM_t^w and positive and negative SPECIAL PM_t^w
($N = 24{,}262$)

Model 5: $SALES\ GROWTH_{t+1}^w = \sum_{j=1}^{3} \alpha_{50} + \sum_{j=1}^{3} \beta_{s1}^w CORE\ PM_t^w + \sum_{j=1}^{3} \beta_{s2}^w Positive\ SPEC\ PM_t^w + \sum_{j=1}^{3} \beta_{s3}^w Negative\ SPEC\ PM_t^w + \sum_{i=1}^{10} \beta_{s4}^i YEAR_i + e_{t+1}$

Number of years in earnings window	Lowest rank of CORE $RNOA_t^w$				Middle rank of CORE $RNOA_t^w$				Highest rank of CORE $RNOA_t^w$				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	1.087	0.093	0.233	−0.141	1.086	0.057	0.137	0.114	1.093	0.038	0.277	0.058	0.939
	86.883	1.742	1.631	−1.600	137.294	1.684	0.731	1.000	105.645	0.913	0.435	0.642	
2	1.168	0.255	1.450	−0.532	1.202	0.071	0.823	0.257	1.219	0.071	−1.149	−0.325	0.832
	54.656	1.793	3.023	−1.880	83.616	0.991	1.008	0.926	61.550	0.749	−3.461	−0.726	
3	1.245	0.348	2.236	−1.082	1.296	0.093	1.199	−1.144	1.330	0.157	−1.470	−0.686	0.692
	39.619	1.356	2.990	−1.920	51.453	0.690	0.966	−0.854	41.979	0.945	−1.268	−0.787	
4	1.313	0.351	2.471	−2.094	1.384	0.170	1.343	−2.835	1.447	0.293	−1.600	−1.428	0.561
	28.726	0.919	3.019	−2.130	38.505	0.786	0.978	−0.988	29.450	1.114	−0.823	−0.690	
5	1.416	0.226	3.261	−3.331	1.471	0.335	−0.228	−5.198	1.565	0.492	−3.109	−2.122	0.455
	21.013	0.418	2.192	−2.280	28.761	1.033	−0.188	−0.983	21.950	1.220	−1.518	−0.871	

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, $SALES\ GROWTH_{t+1}^w$ is $SALES_{t+1}/SALES_t$, and CORE PM_t^w is CORE $NOI_t/SALES_t$. When w is 2, $SALES\ GROWTH_{t+1}^w$ is $(SALES_{t+2} + SALES_{t+1})/(SALES_t + SALES_{t-1})$, and CORE PM_t^w is (CORE NOI_t + CORE NOI_{t+1})/($SALES_t + SALES_{t-1}$). Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

The motivation for this study is to determine if negative special items are likely to be informative in a simple forecasting context, using forecasted sales and forecasted profit margins. To investigate whether past special items are informative about future sales growth, in Table 10 we report the results of a regression of average sales growth over windows of increasing size on core profit margins and special items. Similar to previous tables, the dependent variable is aggregated sales over the window divided by lagged aggregated sales over a window of the same size.

For low profitability firms, the coefficient on negative special items increases dramatically as the window increases, from −0.141 in the one-year window to −3.31 in the five-year window. Somewhat surprisingly, we also observe an association between positive special items and future sales growth. Low profitability firms that have reported special items have higher sales growth in future years compared with low profitability firms that have not reported special items, suggesting that the special items signal real improvements in the firm's economic performance. For medium and high profitability firms, there is no association between past special charges and sales growth, regardless of the size of the earnings window.

5 Robustness tests

5.1 Survivorship bias

The requirement that a firm have 10 years of data to be included in the tests introduces significant survivorship bias into our results. Our conclusions about the associations between past special items and future profit margins are clearly conditional on those firms' survival. In particular, we are concerned that negative special items are associated with a lower survivorship rate for low core RNOA firms compared with high core firms. If that is the case, our claim that negative special items are uninformative about future profit margins for low core firms while they signal lower future profit margins for high core firms may be invalid due to a difference in survival rates.

We present three types of evidence to assess the extent to which the survivorship bias compromises our conclusions. In Table 11, we report the survivorship rates and reasons for delisting for firms with and without negative special items in the low, medium and high core profitability ranks. We include all firm-year observations for which data is available to measure PM in year t and, using CRSP data, follow each firm-year observation to identify whether the firm survives the next five years. For firms that do not survive, we note whether the failure is due to merger or acquisition or due to performance-related liquidation.

The table reveals, not surprisingly, that the overall survivorship rate is lower for low core firms (67.20%) compared with high core firms (70.16%). However, conditional on this difference, low core firms with negative special items do not experience a lower survivorship rate than low core firms with no charges. For low core firms, 67.6% of firms taking negative charges survive, compared with 66.97%

Table 11 Unrestricted sample* by rank of CORE $RNOA_t^w$. Survivorship rates and delisting reasons ($n = 34{,}370$)

	Reason for delisting in any year t + 1 through t + 5	Low profitability		Medium profitability		High profitability	
		N	PERCENT	N	PERCENT	N	PERCENT
All firms	Not delisted	7505	67.20	8349	68.69	7751	70.16
	Merger or acquisition target	2382	21.33	2522	20.75	2191	19.83
	Liquidation	1281	11.47	1283	10.56	1106	10.01
Positive or zero special charges in year t	Not delisted	4,732	66.97	6,515	68.55	6,135	70.11
	Merger or acquisition target	1,497	21.19	1,981	20.84	1,749	19.99
	Liquidation	837	11.85	1,008	10.61	866	9.90
Negative special charges in year t	Not delisted	2,773	67.60	1,834	69.21	1,616	70.32
	Merger or acquisition target	885	21.57	541	20.42	442	19.23
	Liquidation	444	10.82	275	10.38	240	10.44

* The table reports whether a firm delists in any year from year t + 1 to year t + 5 and, if so, the reason for delisting. This table includes all firm-year observations for which COMPUSTAT data is available to measure PM for year t and price information is available at CRSP monthly tape at the end of fiscal year t. The beginning date on CRSP spans the period December 1988 through December 2001

of firms not taking charges. For the high core group, 70.32% of firms taking charges survive compared with 70.11% of firms not taking charges. In summary, low core firms taking charges survive at rates comparable to other low core firms, and high core firms taking charges survive at rates comparable to other high core firms.

Table 12 provides additional descriptive evidence on the impact on survivorship bias. The table reports the results of the regression of PM_{t+1}^w on CORE PM_t^w and positive and negative SPECIAL PM_t^w for all firms on the Compustat tape without imposing the 10-year data requirement on the sample. These regressions are identical to those in Tables 6 and 7, except for the data requirement. For the one-year earnings window, firms are required to have data in year t and t + 1 only; for the two-year window, firms are required to have data from year t − 1 through year t + 2, etc. Although the regressions for each window are still affected by survivorship bias, the bias is less for the one-, two-, three- and four-year earnings windows relative to the bias underlying the regressions in Tables 6 and 7. The data and survivorship bias are identical for the five-year windows in Tables 6, 7 and 11.

The major difference between these results and those in Tables 6 and 7 is that in the one- and two-year windows, negative special items signal lower profit margins for the low core as well as the high core firms. However, as in Tables 6 and 7, the coefficients on negative special items are significantly smaller for the low core RNOA firms compared with the high core RNOA firms for all earnings windows, suggesting a weaker association. We also note that the pattern in the coefficients on negative special items in Table 12 resembles the pattern in Tables 6 and 7, with the coefficients decreasing as the earnings window expands for the low core firms and

Table 12 Unrestricted sample* by rank of CORE $RNOA_t^w$
Regression of PM_{t+1}^w on CORE $RNOA_t^w$ and positive and negative SPECIAL $RNOA_t^w$

Model 6: $PM_{t+1}^w = \sum_{j=1}^{3} \alpha_{60} + \sum_{j=1}^{3} \beta_{61}^w \text{CORE } PM_t^w + \sum_{j=1}^{3} \beta_{62}^w \text{Positive SPEC } PM_t^w + \sum_{j=1}^{3} \beta_{63}^w \text{Negative SPEC } PM_t^w + \sum_{i=1}^{10} \beta_{64}^i \text{YEAR}_i + e_{t+1}$

Number of years in earnings window	Lowest rank of CORE $RNOA_t^w$				Middle rank of CORE $RNOA_t^w$				Highest rank of CORE $RNOA_t^w$				R^2
	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	
1	0.005	0.716	0.106	0.105	−0.002	0.825	0.199	0.114	0.009	0.834	−0.139	0.256	0.388
$n = 50{,}936$	0.932	25.769	1.262	2.319	−0.632	31.449	1.685	3.428	2.519	43.666	−0.639	4.762	
2	0.008	0.687	−0.067	0.125	0.000	0.798	0.081	0.207	−0.001	0.803	0.037	0.240	0.467
$n = 41{,}663$	1.582	23.320	−0.415	2.501	0.069	32.436	0.896	4.047	−0.369	38.246	0.178	2.930	
3	0.010	0.696	0.138	0.111	−0.010	0.813	0.002	0.170	−0.004	0.793	0.184	0.482	0.485
$n = 34{,}494$	1.853	21.166	0.655	1.641	−3.176	36.278	0.013	2.602	−1.022	34.797	1.086	5.550	
4	0.017	0.644	0.282	−0.015	−0.009	0.793	−0.101	0.289	−0.003	0.785	−0.076	0.530	0.563
$n = 28{,}895$	4.069	19.434	1.609	−0.214	−2.479	30.966	−0.632	2.757	−0.713	34.657	−0.372	4.701	
5	0.019	0.606	0.255	−0.058	−0.009	0.801	−0.357	0.257	0.002	0.754	−0.187	0.595	0.653
$n = 24{,}262$	4.281	16.178	1.160	−0.793	−2.337	30.047	−2.415	1.807	0.360	29.795	−1.012	4.076	

* Table includes all observations for which data was available to measure the dependent and independent variables in the relevant window

t-statistics are reported below the estimated coefficients. Models and variables are as defined in Table 1. The subscript w indicates the window size in years, over which the dependent and independent variables are measured. For all window sizes, the periods over which the dependent and independent variables are measured do not overlap. For example, when w is 1, PM_{t+1} is $NOI_{t+1}/SALES_{t+1}$, and CORE PM_t^w is CORE $NOI_t/SALES_t$. When w is 2, PM_{t+1}^w is $(NOI_{t+1} + NOI_{t+2})/(SALES_{t+1} + SALES_{t+2})$, and CORE PM_t^w is $(\text{CORE } NOI_t + \text{CORE}_{t-1})/(SALES_t + SALES_{t-1})$. Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

increasing as the window expands for the high core firms. While these results are not conclusive, they increase our confidence that the differences in the association between special charges and future profitability for low core and high core firms are not driven solely by our sample selection criteria.

Finally, we investigate the impact of survivorship bias in the context of using past years' special items to forecast profit margins in year t + 1. This forecasting context does not require firms to have data beyond year t + 1. Thus, the evidence is not compromised by the extreme survivorship bias exhibited in our main tables. In Table 13, we provide evidence on this issue by testing explicitly whether special items in years t − 1 through t − 4 are informative about profit margins in year t + 1, after controlling for core profit margins and special items in year t. The dependent variable is PM in year t + 1 (that is, one-year-ahead profit margin), and the independent variables include CORE PM and positive and negative SPECIAL PM in year t, and average CORE PM and SPECIAL PM for years t − 1 through t − 4.

The data are generally consistent with the patterns reported in the previous section. For low profitability firms, negative special items reported in year t have no association with profit margins in year t + 1. Although negative special items reported in years t − 1 through t − 4 do signal lower profit margins in year t + 1, the coefficient is quite small, at 0.112. In contrast, for high profitability firms, special items in year t have a significant coefficient of 0.361, and special items in year t − 1 through t − 4 have a significant coefficient of 0.376, both implying that firms reporting past special items tend to have lower profit margins in year t + 1. These results confirm that investors and analysts should pay more attention to a firm's pattern of reporting negative special items in forecasting future profit margins.

5.2 Impact of changes in GAAP

Significant changes in GAAP took place over the sample period, and these may have had a systematic effect on the timing and type of special items reported and the distribution of special items among low, medium, and high core firms. In particular, the FASB's EITF 94-3 clarified the rules for financial reporting of corporate restructurings, and SFAS 121, which became effective in 1995, addressed the criteria for recognizing asset impairments. To investigate the impact of these changes on our results, we repeated the main analysis (in Tables 6 and 7) on two subsets of data, the first corresponding to years preceding the issuance of EITF 94-3 (10,812 observations covering the period 1988–1993) and the second corresponding to the post-EITF period of our sample (13,450 observations).[16]

The untabulated results indicate that negative special items are informative about future profit margins for high profitability firms in both subperiods, but the effect is much more pronounced in the post EITF 94-3 period. For high profitability firms, the coefficient on negative special items increases from 0.243 in the one-year

[16] Note that our study period is mainly pre-FAS 146, which requires companies to recognize exit or disposal activity costs at the time they are incurred rather than at the commitment date.

Table 13 PM_{t+1} on CORE PM_t and positive and negative SPECIAL PM_t and CORE $PM_{t-1\text{ to }t-4}$ and positive and negative SPECIAL $PM_{t-1\text{ to }t-4}$ ($N = 45{,}691$)

$$\text{Model 6: } PM_{t+1} = \sum_{j=1}^{3} \alpha^j + \sum_{j=1}^{3} \beta_1^j \text{CORE } PM_t + \sum_{j=1}^{3} \beta_2^j \text{Positive SPEC } PM_t + \sum_{j=1}^{3} \beta_3^j \text{Negative SPEC } PM_t + \sum_{j=1}^{3} \beta_4^j \text{CORE } PM_{t-1,t-4} + \sum_{j=1}^{3} \beta_5^j \text{Positive SPEC } PM_{t-1,t-4} + \sum_{j=1}^{3} \beta_6^j \text{Negative SPEC } PM_{t-1,t-4} + \sum_{i=1}^{15} \beta_7^i \text{YEAR}_i + e_{t+1}$$

	α	CORE PM_t^w	Positive SPEC PM_t^w	Negative SPEC PM_t^w	CORE $PM_{t-1,t-4}^w$	Positive SPEC $PM_{t-1,t-4}^w$	Negative SPEC $PM_{t-1,t-4}^w$	R^2 (%)
Lowest rank of CORE $RNOA_t^w$	−0.003	0.632	0.284	0.039	0.161	−0.174	0.112	22.52
	−0.76	15.98	1.23	1.14	5.32	−0.97	2.23	
Middle rank of CORE $RNOA_t^w$	−0.012	0.802	−0.010	0.159	0.092	0.094	0.201	28.83
	−3.70	11.02	−0.09	3.57	1.45	0.78	2.61	
Highest rank of CORE $RNOA_t^w$	−0.006	0.704	0.006	0.361	0.184	−0.070	0.376	45.08
	−2.46	18.46	0.09	3.11	4.64	−0.77	4.29	

t-statistics are reported below the estimated coefficients. PM_{t+1} is $NOI_{t+1}/SALES_{t+1}$, CORE PM_t is CORE $NOI_t/SALES_t$, CORE $PM_{t-1,t-4}^w$ is the sum of CORE NOI for years t − 1 through t − 4 divided by the sum of sales SALES for years t − 1 through t − 4. The SPEC PM variables are constructed in the same way as CORE PM. $YEAR_i$ is a dummy variable equal to 1 in year i, zero otherwise. Parameter estimates on YEAR dummies are not reported

The table reports *t*-statistics based on Huber–White clustered standard errors,which are robust to both serial correlation and heteroscedasticity (Froot 1989; Williams 2000)

window to 0.785 in the five-year window for the post-EITF 94-3 period. In addition, the convergence of the coefficients on core profit margins and negative special items for the high profitability firms is more pronounced. In the five-year window, the coefficient on CORE PM (0.765) is statistically no different from the coefficient on negative special items for high profitability firms (f-value = 0.02). Similar to our main results, for low profitability firms, negative special items are insignificant in all earnings windows in both the pre- and post-EITF 94-3 periods.

5.3 Impact of specific types of special items

As noted previously, the use of Compustat's "special items" data imposes significant limitations on the interpretation of our results. Two possible problems arise. First, Compustat's identification of particular items as "special" may not be consistent with the firm's reporting nor with the preferences of analysts or other researchers. Second, Compustat combines different types of special items (for example, restructuring charges and goodwill impairments), and we are unable to determine whether different special items have different implications for future profit margins. For a limited sample of firms, we determined that the distribution of types of special items reported by Compustat did not differ dramatically among low, medium, and high core profitability firms.[17] Nonetheless we cannot speculate on the generalizability of our findings to alternative data sources.

6 Conclusion and implications for financial statement analysis

The evidence demonstrates that, conditional on current core profitability, negative special items have explanatory power for future profit margins. Surprisingly, for firms with low core profitability, special charges have no association with future profit margins. These are the type of firms typically associated with "big bath accounting," and, although there is some evidence that future core profit margins for these firms benefit slightly from the special charges, the firms also take additional charges with the result that there is no improvement in bottom line profit margins. Importantly, these conclusions are robust to the averaging of profit margins and special items over periods as long as five years. The net effect is that, for low profitability firms, past special items may reasonably be excluded when forecasting future profit margins.

In contrast, negative special items signal lower future profit margins for firms with high core profitability. High profitability firms are more likely to persist in a pattern of taking charges, and these charges are not offset by improvements in core profitability. As profit margins and special items are averaged over longer periods, the core profit margins diminish slightly and negative special items increase significantly in their association with future profit margins. For these high profitability firms, the results provide analysts with a strong empirical rationale for accumulating and smoothing special items over time to predict future profit margins.

[17] Compustat provides detailed information about the types of special items reported beginning in 2001. There was insufficient data available for us to use it in our analyses.

Other partitioning variables may increase the information content of the specific charges. Supplemental tests reveal that a firm that records negative special items and yet has a relatively low asset turnover is more likely to experience lower profit margins in the future compared with a firm with similar profitability and high asset turnover. An area for future research would be to identify other variables from the firm's financial statements that would help analysts determine the likely impact of past special items on future profit margins.

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Appendix

Table 14 Heinz company special items, 2001–2005

	Fiscal year ended (52 weeks)				
	April 27 (2005)	April 28 (2004)	April 30 (2003)	May 1 (2002)	May 2 (2001)
Income from continuing operations before cumulative effect of change in accounting principle…	735,822	778,933	555,359	675,181	563,931

All amounts are in thousands

H. J. Heinz Company, 2005 Annual Report. Jersey City, NJ, pp 9–10

Fiscal 2005 results from continuing operations include a $64.5 million non-cash impairment charge for the Company's equity investment in The Hain Celestial Group, Inc. ("Hain") and a $9.3 million non-cash charge to recognize the impairment of a cost-basis investment in a grocery industry sponsored e-commerce business venture. There was no tax benefit associated with these impairment charges. Fiscal 2005 also includes a $27.0 million pre-tax ($18.0 million after-tax) non-cash asset impairment charge related to the anticipated disposition of the HAK vegetable product line in Northern Europe early in Fiscal 2006.

Fiscal 2004 results from continuing operations include a gain of $26.3 million ($13.3 million after-tax) related to the disposal of the bakery business in Northern Europe, costs of $17.1 million pretax ($11.0 million after-tax), primarily due to employee termination and severance costs related to on-going efforts to reduce overhead costs, and $4.0 million pretax ($2.8 million after-tax) due to the write down of pizza crust assets in the United Kingdom.

Fiscal 2003 results from continuing operations include costs related to the Del Monte transaction and costs to reduce overhead of the remaining businesses totaling

$164.6 million pretax ($113.1 million after-tax). These include employee termination and severance costs, legal and other professional service costs and costs related to the early extinguishment of debt. In addition, Fiscal 2003 includes losses on the exit of non-strategic businesses of $62.4 million pretax ($49.3 million after-tax).

Fiscal 2002 results from continuing operations include net restructuring and implementation costs of $12.4 million pretax ($8.9 million after-tax) for the Streamline initiative.

Fiscal 2001 results from continuing operations include restructuring and implementation costs of $101.4 million pretax ($69.0 million after-tax) for the Streamline initiative, net restructuring and implementation costs of $146.5 million pretax ($91.2 million after-tax) for Operation Excel, a benefit of $93.2 million from tax planning and new tax legislation in Italy, a loss of $94.6 million pretax ($66.2 million after-tax) on the sale of The All American Gourmet business, company acquisition costs of $18.5 million pretax ($11.7 million after-tax), the after-tax impact of adopting Staff Accounting Bulletin ("SAB") No. 101 and Statement of Financial Accounting Standards ("SFAS") No. 133 of $15.3 million and a loss of $5.6 million pretax ($3.5 million after-tax) which represents the Company's equity loss associated with The Hain Celestial Group's fourth quarter results which included charges for its merger with Celestial Seasonings.

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