An Analysis of Income Smoothing Detection Methods

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Abstract

The purpose of this research is to investigate various income smoothing detection methods. Using a SEC identified sample of firms that were charged with violations of GAAP due to earnings manipulations and a matched sample of firms, we test seven popular models to determine which provide the best identification of income smoothing.

The results indicate that, while there is no significant difference between six of the seven detection methods, the Dechow et al. method provides different results. We found the Dechow, et al. method to be significantly different in detecting smoothing, although this method was different only because it detected 25 out of the total of 28 firms as income smoothing firms. Our results indicate that many more of the matched sample appear to be income smoothing firms and fewer of the SEC sample appear to smooth income.

We think these results indicate that researchers should be cautious in their conclusions. While these methods provide differing results, they also provide insight into the various aspects of income smoothing and the resulting effect on earnings. Therefore this research has provided insight into the different income smoothing detection models, while also indicating that different methods are not equally suited to determine all forms of income smoothing. The appropriate methodology must be chosen to address the specific aspects of income smoothing or earnings management that the researcher is investigating.

1. Introduction

Over the last few years, several academic and business writers have concluded that companies sometimes try to smooth or manage their reported earnings. During the same period, the role of reported earnings in the market place has notably increased. Today, if a company's earnings per share misses its analysts' forecast by only one cent, a company's stock price can fall by several points [Fox 1997, 78]. As DeAngelo et al. [1996, 348] point out the market price drop can be especially severe if a company has had a pattern of consistent earnings increases.

Because of potential adverse market reactions, companies often take unusual actions to avoid reporting losses. Hayn [1995, 132] states that "results suggest that firms whose earnings are expected to fall just below the zero earnings point engage in earnings manipulations to help them cross the `red line' for the year." In a recent study of over 64,000 observations, Burgstahler and Dichev [1997, 124] estimate that 30% to 44% of companies with "slightly negative pre-managed earnings exercise discretion to report positive earnings."

It is not simply the stock market that reacts to reported earnings, for a company's cost of capital often is related to the consistency of its earnings. In fact, recent studies [e.g., Dechow et al. 1996, 1] have shown that "an important motivations for earnings manipulation is the desire to attract external financing at low cost." With increased market reac-

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tions to missed earnings forecasts and the nearly constant need of corporations for external financing, companies, in the future, will have greater incentives to manage earnings. Thus, the development of models that will reliably detect income smoothing or earnings management in individual companies becomes very important. In this paper, we evaluate seven models that have been proposed as methods to detect the management or smoothing of earnings.

However, as Katherine Schipper [1989, 92] points out, what detection's models should identify is actually "disclosure management" which she defines as "a purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain (as opposed to, say, merely facilitating the neutral operation of the process)." This definition recognizes the fact that income smoothing can be real or artificial. Real smoothing is the action management takes in response to changes in economic conditions. For example, increased consumer demand normally results in increased sales, increased costs, and increased receivables. In contrast, artificial smoothing is a "deliberate" action taken by management to alter the revenue or cost streams [Imhoff 1981, 24]. For example, the intentional shifting of sales from one period to another artificially increases the revenues and receivables of one period.

Thus, a successful smoothing model must distinguish between the deliberate actions of management to manipulate earnings and the actions of management in response to changing economic conditions. However, many smoothing models have concentrated on identifying smoothing attempts within a sample of companies and not on identifying individual companies that smooth. Potentially, this may create a problem, for as Schipper [1989, 97] points out, a model may "document statistically a pattern of behavior consistent with earnings management within the sample, without being able to say with confidence whether earnings were managed for any particular firm in the sample." Accordingly, in evaluating the precision of a smoothing model, one must ensure that the model detects earnings management not only within a sample but that it can detect smoothing attempts within a company, especially when significant manipulations have occurred. For the greater success a model has in identifying deliberate manipuation, of course, the greater the strength the model has.

One difficulty in testing smoothing models, for their accuracy in identifying individual companies, is the problem of positively identifying companies that have manipulated earnings, against which to test the models. However, in their 1995 study on earnings detection and their 1996 study on the consequences of earnings manipulation, Dechow et al. propose that companies targeted by the SEC for overstating their reported earnings should provide ("on average") a reliable list of companies that have manipulated their earnings. Using this list of companies, they write [Dechow et al. 1995, 194] one can "evaluate the relative performance of the competing models by comparing the specification and power of commonly used test statistics."

Feroz et al. [1991] in their study of the financial and market effects of SEC's Enforcement Releases provide detailed descriptions of the types of accounting manipulations that attract the SEC's attention and the actions the SEC may take in reaction to such problems. In examining 224 Enforcement Releases, Feroz et al. [1991, 126] found that the agency is most likely to "pursue alleged disclosure violations dealing with premature revenue recognition or overstatements of current assets." Feroz et al. [1991, 108] also found that most of the SEC's financial cited violations involve major manipulations of earnings with the income effect on reported earnings averaging more than 50%. After their examination of firms subject to SEC Enforcement Actions, Dechow et al. [1996, 7] write: "it is reasonable to assume that firms facing enforcement actions by the SEC knowingly and intentionally engaged in earnings manipulation."

Thus, if as Dechow et al. [1996, 2] assume, the SEC has correctly identified strong instances of earnings management, the cited companies provide a known core group or test group against which to evaluate smoothing identification models. However, this core differs from the samples used in many past smoothing studies in two ways. The core consists of specific companies not groupings and the companies are labeled as known smoothers. Past smoothing studies often attempted to statistically identify a pattern of income smoothing or earnings management within classifications such as Compustat Tapes [Beidleman 1973, Imhoff 1981, Albrecht 1990], import relief beneficiaries [Jones 1991], management buyouts [Perry and Williams 1994], initial public offerings [Aharony et al. 1993], chemical companies [Dascher and Malcom 1970], or firms reporting accounting changes [Moses 1987]. Companies identified by the model were deemed smoothers. Thus identified, these smoothers often were utilized as a basis for examinations of other aspects of smoothing such as (a) reasons for smoothing (e.g., higher market valuations, lower borrowing costs, management compensation), (b) objects of smoothing (operating income, net income), or (c) smoothing variables (research and develop-

ment, tax credits, accruals). However, with the use of SEC listed companies, the sample consists of known smoothers, and the question becomes whether or not a smoothing model will reliably identify the companies as smoothers.

As this core group may be said to consist of earnings "manipulators," the consistent identification of the manipulators by a smoothing model becomes important. If a model cannot consistently detect "manipulation" when it has occurred, is it probable that the model will detect the "income smoothing " that many companies employ? On the use of the more typical "income smoothing," Justin Fox in Fortune [1997, 77] writes: "even at the most respected of companies, accounting and business decisions are regularly made with smoothing or temporarily boosting earnings in mind."

Thus, with even the "most respected of companies" utilizing income smoothing, there is a need for procedures or models to detect smoothing and if possible the magnitude of the smoothing. Although studies have been conducted on whether or not companies smooth earnings, Dechow et al. [1995, 194] point out: "There is no systematic evidence bearing on the relative performance of these alternative models at detecting earnings management." To rectify this deficiency, Dechow et al. compared five competing models on their ability to detect earnings management in an assumed "known" sample of earnings "manipulators." As discussed, "manipulators" were defined as companies targeted by the SEC for allegedly overstating earnings. The five models selected were considered to be "generally" representative of the models utilized in previous earnings management studies.

In their comparison of the five models, Dechow et al. [1995, 223] found "all the models considered appear to produce reasonably well specified tests for a random sample of event-years." However, none of the models were completely successful in detecting earnings management "in firm-years experiencing extreme financial performance." Thus, after examining these representative models, Dechow et al. concluded: "Further research to develop models that generate better specified and more powerful tests will enhance our ability to detect earnings management."

The purpose of this research is to investigate the relative predictive ability of various smoothing models or detection methods. After reviewing the relevant literature, we have selected seven of the methods that have previously found evidence of income smoothing or earnings management. Obviously the classification of firms that do and do not smooth income will vary from model to model, based upon differing classificatory variables and methodologies. Our objective is to test these seven models to determine which provide the best identification of income smoothers and compare the results to a matched sample of firms.

2. Data

We use a sample of firms subject to accounting enforcement actions by the Securities and Exchange Commission (SEC) for alleged violations of Generally Accepted Accounting Principles due to earnings manipulations provided by Dechow, Sloan, and Sweeney [1996].[1] The Dechow, et al. [1996] final sample contained 92 firms from April 1982 to December 1992. We require that complete Compustat data be available for all firms for all testing methodologies described in the next section. This stipulation reduces our final sample to 14 firms. For comparison of testing methods, we match this sample of 14 firms with a qualified random sample of 14 firms. Our criteria require that the SEC sample be matched by total assets and SIC. To match the firms, we reviewed Compustat for those firms that minimize the difference in total assets, while maintaining, at a minimum, the two-digit SIC. The data used in the analysis are obtained from Compustat for the SEC sample and the matched sample firms for the nineteen-year time period 1978 through 1996. This time period was the longest time period that provided adequate data on the relevant variables and was also selected to allow a sufficient number of years to calculate the variables necessary to detect income smoothing or earnings management. The full sample of 28 firms are presented in Exhibit 1.

[1] The authors would like to thank Dechow, Sloan, and Sweeney for providing the SEC dataset used in this research.

3. Methodology

This section details the seven methodologies that have been used currently to test for income smoothing. Using the SEC identified sample of income smoothers and a matched sample of firms; we test each of the following models for accuracy of identification of income smoothing. The methodologies are described below.

Bitner and Dolan [1996] investigate the relationship between income smoothing and firm value, using Tobin's q as a measure of market valuation. Their measure of income smoothing uses the reciprocal of the sum of the squared residuals (SSQR) from the five-year income trend from Compustat. The income trend is estimated using both net income and operating income to investigate both possible variables. The smallest values of SSQR represent the firms that are exhibiting higher levels of income smoothing.

A popular methodology [used by Eckel (1981), Albrecht and Richardson (1990), Michelson, Jordan-Wagner, and Wootton (1995), and Booth, Kallunki, and Martikainen (1996)] classifies a firm as income smoother if:

$$CV(\Delta I) < CV(\Delta S),$$

where $CV(\Delta I)$ is the coefficient of variation of the annual change in income and $CV(\Delta S)$ is the coefficient of variation of the annual change in sales. To allow for variations in the methods used to estimate income, they evaluate income using several alternative variables: operating income after depreciation, pretax income, income before extraordinary items, and net income. Values of $CV(\Delta I)/CV(\Delta S)$ that are between -1 and +1 are an indication of firms that smooth income.

Dechow, Sloan, and Sweeney [1995, 1996] review five different models of earnings management. All of the models revolve around alternative methods for estimating nondiscretionary accruals. The Modified Jones Model [1991], which performs the best, is as follows:

$$NDA = \alpha_1(1/A_{t-1}) + \alpha_2(\Delta REV_t - REC_t) + \alpha_3(PPE_t)$$

where NDA is the estimated nondiscretionary accruals, A is the total assets in t-1, REV is revenue in t less revenue in t-1, scaled by total assets in t-1, REC is net receivables in t less net receivables in t-1, scaled by total assets in t-1, and PPE is the gross property, plant, and equipment in t, scaled by total assets in t-1. The coefficients (α) are estimated from the coefficients (a) from the estimate of total accruals (TA), as follows:

$$TA_1 = a_1(1/A_{t-1}) + a_2(\Delta REV_t) + a_3(PPE_t)$$

The estimate of total accruals (TA) are obtained from the following:

$$TA = (\Delta CA_t - \Delta CL_t - \Delta CASH_t + \Delta STD_t - DEP_t) / A_{t-1}$$

where CA are total current assets, CL are total current liabilities, CASH is cash and equivalents, STD is the change in debt included in current liabilities, and DEP is depreciation and amortization expense. Discretionary accruals are calculated from the following:

$$DAP_{it} = TA_{it} - NDAP_{it}$$

where NDAP are the predicted level of nondiscretionary accruals. Then using DAP from above, the coefficients (a) and (b) are estimated from:

$$DAP_{it} = a_1 + b_1 PART_{jt} + e_{jt}$$

where PART is a partitioning variable that breaks earnings management into two periods, one if from the event pe-

riod and zero if from the estimation period. Finally, the coefficient on PART determines the extent of earnings management. If $b_1 \neq O$, then the firm practices earnings management (is an income smoother).

Chaney and Lewis [1994b] and Bowen, Burgstahler and Daley [1987] detect income smoothing using the variance ratio (VR_i), calculated as:

$$VR_i = Var\ (CF_{it}) / Var\ (NI_{it})$$

where

$$Var\ (CF_{it}) = \Sigma(CF_{it} - E(CF_{it}))^2 / (n-1)$$
$$Var\ (Ni_{it}) = \Sigma(NI_{it} - E(NI_{it}))^2 / (n-1)$$

and using the random walk approach

$E(CF_{it})$ = the sample mean of cash from operations from CF_{it-1}
$E(NI_{it})$ = the sample mean of net income before extraordinary items from $NI_{it-1.}$

Cash from operations is calculated by subtracting the changes in accounts receivable, inventory, and other current assets and adding the changes in accounts payable, taxes payable, and other current liabilities from working capital from operations. The greater the firm's variance ratio, the more likely the firm smooth's income.

Moses [1987] investigates income smoothing using the following model:

$$SB = (|\ PE - EE\ |\ -\ |RE\ -EE|)/\ Sales$$

where PE is prechange earnings, RE is reported earnings, and EE is expected earnings using the random walk model, where EE equals the previous year's PE. SB is the smoothing behavior and positive values of SB indicate firms that smooth income.

Wang and Williams [1994] use a model of stockholder wealth that investigates the absolute value of the change in reported income divided by the market value of equity to calculate the smoothing dummy. If the smoothing dummy is in the smaller 50^{th} percentile of firms, the firm is more likely to be an income smoother.

Lev and Kunitzky [1974] examine the extent of smoothness using the earnings trend:

$$G = (1 / (n-1)) \sum x_{t-1} / x_t$$
$$S = (1/ (n-1)) \sum |\ (x_{t+1}/ x_t\ - G) / G\ |$$

where x is earnings, G is the earnings trend, and S is the extent of smoothness. When S is close to zero, the firm does not smooth income.

All seven of these methodologies previously found evidence of income smoothing or earnings management. Obviously the classification of firms that do and do not smooth income will vary from model to model, based upon differing classificatory variables and methodologies. Our objective is to test these seven models to determine which provide the best identification of income smoothing or earnings management and compare the results to the matched sample of firms.

4. Results

Exhibit 2 provides descriptive data on the SEC sample, the matched sample, and the full sample of twenty-eight firms. Note that these variables are means, medians, and standard deviations over each sample over the nineteen-year sample period. Of course total assets are similar across both samples, since total assets were used as one of the matching

criteria for the samples. It is interesting to note that although most of the variables are similar in magnitude, several key variables are larger for the SEC sample, as compared to the matched sample. These variables include the "income related" variables, such as: income before extraordinary items, operating income after depreciation, pretax income, net income, and sales.

Exhibit 3 presents summary data on the results of the seven smoothing methodologies.[2] The firms are listed in alphabetical order, with the first set of firms encompassing the SEC sample and the second set of firms are the matched sample. The testing methodologies are indicated by the name of the first author listed for the research article. If the test indicated that the firm was an income smoother, a one is noted for that author and firm. A zero is noted if the test did not detect income smoothing. The bottom row provides a total count of the number of smoothing firms detected by the particular methodology. The "Number" column indicates the number of testing methodologies that detected smoothing for a particular firm. The first obvious observation is that there was no consistency between the detection methods. If one requires four out of the seven methods to detect smoothing, as a true indication of income smoothing, then 17 firms should be considered income smoothers. This would include six in the SEC sample and 11 in the matched sample. If the cut-off is five methods in agreement, then nine firms are smoothers, with three in the SEC sample and six in the matched sample. If six out of the seven methods must agree, only four firms would be considered income smoothers. It is interesting that more firms were considered income smoothers in the matched sample than the SEC sample, since the SEC sample encompasses firms that were charged with violations of GAAP due to earnings manipulations. This difference is true, even for the Dechow et al. methodology, which provided the SEC sample for this study. Also notable is the result that both the Michelson and Dechow methodologies indicate more smoothing firms that the other methodologies.[3]

From all appearances, there is no discernable difference between the samples and the methodologies. To investigate if there is a difference between the testing methodologies, we use Cochran's Q Test and the Chi-Square Test. Both tests provide the same results, we can reject the hypothesis that the probability of detecting income smoothing or earnings management is the same among testing methods at the five- percent level. As a comparison, we eliminate the Dechow, et al. methodology from sample and again utilize the Cochran's Q and Chi-Square tests. We now find that we can not reject the hypothesis that the probability of detecting income smoothing or earnings management is the same among the six testing methods at the ten- percent level. Therefore we have evidence that six of the seven testing methods have similar probabilities of detecting income smoothing, while one method is different than the other six. The Dechow, et al. method provides an indication of many more smoothing firms.

5. Conclusions

The purpose of this research is to investigate various income smoothing or earnings management detection methodologies. Using a SEC identified sample of firms that were charged with violations of GAAP due to earnings manipulations and a matched sample of firms, we test seven popular models to determine which provide the best identification of income smoothing. Our final sample includes 28 firms, 14 from the SEC sample and 14 from the matched sample.

The results indicate that, while there is not a significant difference between six of the seven detection methods, the Dechow et al. method provides different results. Several interesting features result from these tests. First, even though there are no discernable differences between six of the tests, the six methods provide different indications of smoothing for the same firms, using different methods (i.e. firm A was indicated to be a smoother by test one and a non-smoother by test two). We found the Dechow et al. method to be significantly different in detecting earnings management or income smoothing, although this method was different only because it detected 25 out of the total of 28 firms as

[2] This table is provided as a summary of the seven methodologies used to detect earnings management. This research requires us to calculate each of the seven methods for each firm individually. The methodology encompasses a large amount of data for each firm and testing method. We felt this table best summarizes the results without dwelling on the computations. The authors will provide the computational information upon request.

[3] Since four of the methodologies depend on a rank comparison between firms, the resulting number of smoothing firms is fourteen. The methods are Cheney, Wang, Lev, and Bitner. All four of these methods require the relevant variable for a firm to be in the largest or smallest percentile of the total sample. We therefore use 50 percent as the cut-off to rank the firms and determine if they practice earnings management. We use 50 percent since the original hypothesis was to determine if the different smoothing detection methods would provide an indication of income smoothing or earnings management between the two samples.

earnings managing/income smoothing firms. Therefore this method indicated that almost 90 percent of the firms were managing earnings. Finally, the tests were performed on two samples; firms with SEC violations and a matched sample of unknown firms. A priori, we would expect the entire SEC sample to test as smoothing firms and only a few of the matched sample to be smoothing firms. Our results indicate otherwise, many more of the matched sample appear to be income smoothing firms and fewer of the SEC sample appear to smooth income.

What does all of this mean? We think these results indicate a researcher should be cautious in their conclusions. All of these "previously tested" income smoothing or earnings management detection methods provided differing results. These results should not be considered wrong, but actually an indication that income smoothing or earnings management has many different facets. While one method reviews sales and income, another method investigates discretionary accruals, and another utilizes expected earnings. While these methods provide differing results, they also provide insight into the various aspects of income smoothing and the resulting effect on earnings. Therefore this research has provided insight into the different income smoothing and earnings management detection models, while also indicating that different methods are not equally suited to determine all forms of income smoothing. The appropriate methodology must be chosen to address the specific aspects of income smoothing or earnings management that the researcher is investigating and not be considered the one correct method.

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Exhibit 1	
Total Sample of Firms	
SEC Firms	Matched Firms
DATAPOINT CORP	AMDAHL CORP
DSC COMMUNICATIONS CORP	ADC TELECOMMUNICATIONS INC
ELECTRO CATHETER CORP	BIOSEARCH MEDICAL PRODS INC
FLORAFAX INTERNATIONAL INC	MEDICAL STERILIZATION INC
LEXINGTON PRECISION CORP	VULCAN INTL CORP
MARSH & MCLENNAN COS	ALEXANDER & ALEXANDER
NATIONAL COMPUTER SYS INC	GENICOM CORP
OAK INDUSTRIES INC	METHODE ELECTRONICS -CL A
PEPSICO INC	SEAGRAM CO LTD
RISK(GEORGE) INDS INC	FIRECOM INC
ROCKY MOUNT UNDERGARMENT CO	ALBA-WALDENSIAN INC
STORAGE TECHNOLOGY CP -CL A	EMC CORP/MA
TANDEM COMPUTERS INC	CONCURRENT COMPUTER CP
UNISYS CORP	DIGITAL EQUIPMENT

Exhibit 2
Summary Statistics

	Full Sample			SEC Sample			Matched Sample		
	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev
Assets-Total	2,941.3	248.6	6,160.7	3,031.4	324.1	6,515.8	2,851.2	204.7	6,029.6
Beta	0.5	0.7	0.7	0.6	0.7	0.5	0.3	0.4	0.9
Current Assets-Total	1,220.5	131.2	2,055.8	981.9	142.7	1,509.2	1,459.2	131.2	2,525.3
Current Liabilities-Total	844.5	79.6	1,504.5	782.9	79.6	1,445.3	906.1	72.9	1,613.7
Income Bef Extra Items	72.0	1.8	251.5	135.3	7.9	317.4	8.7	0.9	148.2
Receivables-Total	499.8	57.8	818.7	446.8	59.6	702.9	552.7	57.8	944.4
Accounts Payable	253.0	22.2	477.6	234.2	20.6	453.8	271.7	33.5	516.8
Debt - Total	662.1	65.7	1,785.8	897.3	108.1	2,262.4	426.9	15.1	1,177.3
Op Income Aft Depreciation	212.7	8.0	650.2	354.0	45.2	892.9	71.5	2.4	194.1
Pretax Income	128.8	2.3	415.4	225.7	23.1	554.0	31.9	0.3	176.7
Net Income	73.0	1.6	251.6	137.3	10.8	317.1	8.6	0.9	148.2
Sales-Net	2,493.4	303.4	6,432.6	3,458.4	317.3	8,327.0	1,528.4	199.5	3,820.3
Com Shares Outstanding	121.4	26.8	292.8	159.6	16.8	403.2	83.1	38.2	111.0

Exhibit 3

Summary Data on Seven Earnings Management Models

SEC Firms	Michelson	Dechow	Cheney	Moses	Wang	Lev	Bitner	Number
DATAPOINT CORP	0	1	1	0	0	0	0	2
DSC COMMUNICATIONS CORP	0	1	0	0	0	0	0	1
ELECTRO CATHETER CORP	1	1	1	1	1	1	1	7
FLORAFAX INTERNATIONAL INC	1	1	1	0	0	1	1	5
LEXINGTON PRECISION CORP	1	1	0	0	0	0	1	3
MARSH & MCLENNAN COS	0	0	0	1	1	1	0	3
NATIONAL COMPUTER SYS INC	1	1	0	1	1	0	0	4
OAK INDUSTRIES INC	1	0	1	0	0	1	0	3
PEPSICO INC	0	0	1	0	1	1	0	3
RISK(GEORGE) INDS INC	1	1	1	0	0	0	1	4
ROCKY MOUNT UNDERGARMENT CO	0	1	0	1	0	0	1	3
STORAGE TECHNOLOGY CP -CL A	0	1	1	0	0	0	0	2
TANDEM COMPUTERS INC	1	1	1	1	1	1	0	6
UNISYS CORP	0	1	1	1	0	1	0	4
Matched Firms								
SEAGRAM CO LTD	1	1	0	1	0	0	0	3
VULCAN INTL CORP	1	1	0	1	1	1	1	6
ADC TELECOMMUNICATIONS INC	0	1	0	1	1	1	1	5
ALBA-WALDENSIAN INC	0	1	0	1	1	0	1	4
ALEXANDER & ALEXANDER	0	1	0	0	1	1	0	3
AMDAHL CORP	1	1	0	0	1	0	0	3
BIOSEARCH MEDICAL PRODS INC	1	1	1	0	0	0	1	4
CONCURRENT COMPUTER CP	1	1	1	0	0	0	1	4
DIGITAL EQUIPMENT	1	1	1	1	1	0	0	5
EMC CORP/MA	1	1	0	1	1	1	0	5
FIRECOM INC	1	1	1	0	0	0	1	4
GENICOM CORP	1	1	0	0	0	1	1	4
MEDICAL STERILIZATION INC	0	1	1	1	1	1	1	6
METHODE ELECTRONICS -CL A	1	1	0	1	1	1	1	6
Total Smoothers	17	25	14	14	14	14	14	

The seven income smoothing or earnings management models are presented in the order of discussion of the paper and are specified by the first author's name.
NUMBER is the total number of models that detected income smoothing for a specific firm. Total Smoothers is the total number of firms that the specific income smoothing or earnings management model determined to be income smoothers or practicing earnings management.
A one indicates the firm was detected to be an income smoother and a zero indicates that the firm was not determined to be an income smoother.

Notes