A REVIEW OF THE EARNINGS MANAGEMENT LITERATURE AND ITS IMPLICATIONS FOR STANDARD SETTING

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Preliminary Draft: This paper is a summary of the empirical evidence on earnings management and its implications for standard setters. Although we have tried to refer to all of the relevant recent studies, we recognize that there may be some that we have inadvertently not cited. We apologize in advance to the authors of any such studies and welcome any comments on the paper. We acknowledge helpful comments and suggestions from Greg Miller, Christopher Noe, Kathy Petroni, and Jerry Salamon.

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Abstract

In this paper we review the academic evidence on earnings management and its implications for accounting standard setters and regulators. We structure our review around a rich set of questions likely to be of interest to standard setters. Specifically, we review the empirical evidence on which specific accruals are used to manage earnings, the magnitude and frequency of any earnings management, and whether earnings management affects resource allocation in the economy. Our review also identifies a number of important opportunities for future research on earnings management.

1. Introduction

In this paper we review the academic evidence on earnings management and its implications for standard setters. We view the primary role of standard setters as defining the accounting language that is used by management to communicate with the firm's external stakeholders.[1] By developing a language that can be enforced by independent auditors and the SEC, accounting standards can provide corporate managers with a relatively low-cost and credible means of conveying private information on their firms' performance to external capital providers and other stakeholders.[2] Financial reporting then enables the best-performing firms in the economy to distinguish themselves from poor performers and facilitates efficient resource allocation and stewardship decisions by stakeholders.

The above role of financial reporting and standard setting implies that standards add value if they enable financial statements to effectively portray differences in firms' economic positions and performance in a timely and credible manner. In fulfilling this objective standard setters are expected to consider conflicts between the relevance and reliability of accounting information under alternative standards. Standards that over-emphasize credibility in accounting data are likely to lead to financial statements that provide less relevant and less timely information on a firm's performance. Alternatively, standards that stress relevance and timeliness without appropriate consideration for credibility will generate accounting information that is viewed skeptically by financial

[1] In Financial Accounting Concepts Statement 5 (*Recognition and Measurement in Financial Statements of Business Enterprises*, paragraph 5), the Financial Accounting Standards Board states, "Financial statements are a central feature of financial reporting – a principal means of communicating financial information to those outside an entity."

[2] Stakeholders include current or potential providers of debt and equity capital, providers of labor, financial intermediaries (e.g. auditors, financial analysts, bond rating agencies), regulators, suppliers, and customers.

report users. In either extreme, external investors and management will likely be forced to resort to non-financial statement forms of information, such as that provided by financial analysts, bond rating agencies, and the financial press, to facilitate the efficient allocation of resources.

If financial reports are to convey managers' private information on their firms' performance, standards have to permit managers to exercise judgment in financial reporting. Managers can then use their knowledge about the business and its opportunities to select reporting methods and estimates that match the firms' business economics, potentially increasing the value of accounting as a form of communication. However, because auditing is imperfect, management's use of judgment also creates opportunities for "earnings management," in which managers choose reporting methods and estimates that do not adequately reflect their firms' underlying economics.

The Chairman of the SEC, Arthur Levitt, recently expressed concerns over earnings management and its impact on resource allocation. He noted that management abuses of "big bath" restructuring charges, premature revenue recognition, "cookie jar" reserves, and writeoffs of purchased in-process R&D are threatening the credibility of financial reporting. To address these concerns the SEC is examining new disclosure requirements and has formed an earnings management task force to crack down on firms that manage earnings. Further, more firms are likely to be requested to restate reported earnings and there will be stepped-up enforcement of existing disclosure requirements.

A central question for standard setters (and regulators), therefore, is to decide how much judgment to allow management to exercise in financial reporting.[3] To resolve this general question, standard setters are likely to be interested in evidence on how management uses or misuses judgment permitted under accounting standards. Specifically, standard setters are likely to be interested in a rich set of questions, including which specific accruals are used to manage earnings, the magnitude and frequency of any earnings management, and whether earnings management affects resource allocation in the economy?

The answers to questions about which accruals are used to manage earnings are likely to help standard setters understand which standards are effective in facilitating management communication with investors, and which lead to opportunistic behavior. In addition, evidence on the magnitude and frequency of earnings management and on resource allocation effects should help standard setters to assess whether investors are deceived by earnings management, and whether the effects are widespread enough to warrant modifying existing standards or requiring additional disclosure.

Research on earnings management provides some relevant evidence on these questions. However, the primary focus of earnings management research to date has been on detecting whether and when earnings management takes place. To increase the power of their tests, authors of these studies have typically examined samples of firms where motivations for earnings management are expected to be strong, and focused on overall measures of earnings management, such as total accruals. In general, the evidence is

[3] Elimination of management judgment in financial reporting is not optimal (or even feasible) for investors, and unlimited judgment is not practical given audit limitations and the costly nature of ex post settling up after misleading or fraudulent reporting.

consistent with firms managing earnings to window-dress financial statements prior to public securities' offerings, to increase corporate managers' compensation and job security, to avoid violating lending contracts, and to reduce regulatory costs or to increase regulatory benefits.

A number of recent studies, however, narrow the focus of their tests to examine earnings management using specific accruals, such as bank loan loss provisions, claim loss reserves for property-casualty insurers and deferred tax valuation allowances. The results of these studies are mixed. There is some evidence that some firms use loan loss provisions and claim loss reserves to manage earnings, particularly to meet bank and insurance regulatory requirements. However, there is little evidence that firms manage earnings using deferred tax valuation allowances.

There is a large literature on the capital market consequences of earnings management. Much of this evidence indicates that investors are typically not "fooled" by earnings management and that financial statements provide useful information to investors. Current earnings, which reflect management reporting judgment, have been widely found to be value-relevant and are typically better predictors of future cash flow performance than current cash flows. Stock return evidence also suggests that investors discount "abnormal" accruals relative to "normal" accruals, indicating that they view abnormal accruals as more likely to reflect earnings management.

Other recent studies, however, indicate that at least for some firms earnings management does affect resource allocation. For example, some of the overpricing observed for firms that sell new equity may be attributable to earnings management prior to the issue. There is also evidence of significant negative stock market responses to

allegations of earnings management by the financial press or the SEC, suggesting that investors do not perfectly see through extreme cases of earnings management.[4]

It is difficult to infer from recent studies, however, clear answers to questions of interest to standard setters, such as whether earnings management is commonplace or relatively infrequent, which accruals are managed, and effects on resource allocation decisions. Our review of this literature, therefore, suggests that there are a number of important opportunities for future research on earnings management to be informative for standard setters. For instance, most studies have not examined whether the observed effects are attributable to a few firms or are pervasive, both in the sample and in the population. This information is likely to be helpful for standard setters in assessing the pervasiveness of earnings management and the overall integrity of financial reporting. Future research can also contribute additional evidence on which types of accruals are used for earnings management, and which are not. To what extent is judgment in financial reporting used to improve communication and to what extent is it misused for earnings management purposes? As noted above, recent concerns about earnings management by the SEC cite a number of specific abuses of management's reporting judgment. Finally, the mixed findings on the resource allocation effects of earnings management warrants further research. When do stakeholders see through earnings management, and when do they tolerate (or fail to detect) it?

The remainder of the paper proceeds as follows. As a preface to our review of the earnings management literature, in section 2 we define earnings management. Sections 3 and 4 discuss the findings reported by earnings management studies. Section 3 focuses on

[4] Evidence also suggests that investors may misvalue firms with earnings shocks caused by accruals. What is not yet clear is whether these shocks are attributable to earnings management.

tests of earnings management across a variety of earnings management incentives, whereas section 4 focuses on tests of the distribution of reported earnings and accruals. As we review the evidence we also identify unanswered questions that create a number of opportunities for future research. Section 5 offers concluding remarks.

2. What is Earnings Management?

Before summarizing the literature we define what we mean by earnings management.[5] The following definition is shaped by our goal of reviewing the earnings management research relevant to standard setters.

> **Definition:** Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company, or to influence contractual outcomes that depend on reported accounting numbers.

Several aspects of this definition merit discussion. First, there are many ways that managers can exercise judgment to influence their financial reports. For example, judgment is required to estimate numerous future economic events that are reflected in financial statements, such as expected lives and salvage values of long-term assets, obligations for pension benefits and other post-employment benefits, deferred taxes, and losses from bad debts and asset impairments. Managers must also choose among acceptable accounting methods for reporting the same economic transactions, such as the straight-line or accelerated depreciation methods or the LIFO, FIFO or weighted average inventory cost methods. In addition, they must exercise judgment in working capital

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[5] Schipper (1989) also provides an overview of the earnings management literature, although not from the perspective of standard setters. Her review provides a useful analysis of implications and tradeoffs among research design choices in earnings management research.

management (such as inventory levels, the timing of inventory shipments or purchases, and receivable policies) which affect cost allocations and net revenues. Managers must also choose to make or defer discretionary expenditures, such as research and development (R&D), advertising, or maintenance. Finally, they must decide how to structure corporate transactions. For example, business combinations can be structured to qualify for pooling or purchase accounting, lease contracts can be structured so that lease obligations are on- or off-balance sheet, and equity investments can be structured to avoid or require consolidation.

A second point to note is that our definition frames the objective of earnings management as being to mislead stakeholders (or some class of stakeholders) about the underlying economic performance of the firm. This can arise if managers do not believe that stakeholders undo earnings management. It can also occur if managers have access to information that is not available to outside stakeholders so that earnings management is unlikely to be transparent to outsiders. Stakeholders are then likely to anticipate (and tolerate) a certain amount of earnings management (see Stein (1989)).

Of course, managers can also use accounting judgment to make financial reports more informative for users. This can arise if, for example, certain accounting choices or estimates are perceived to be costly and therefore credible signals of a firm's financial performance. For example, some argue that firms that use accounting judgment to "understate" earnings do so to signal that they have strong future prospects. In addition, managers may use reporting judgment to make financial reports more informative by overcoming limitations to current accounting standards. For example, until recently some successful R&D firms created R&D limited partnerships, which permitted them to

effectively capitalize R&D outlays that otherwise would have been expensed. Such decisions do not fall within our definition of earnings management.

Finally, to emphasize a point made earlier, management's use of judgment in financial reporting has both costs and benefits. The costs are the potential misallocation of resources that arise from earnings management. Benefits include potential improvements in management's credible communication of private information to external stakeholders. Thus, it is critical for standard setters to understand when standards that permit managers to exercise judgment in reporting increase the value of accounting information to users and when they reduce it.

As noted above, we structure our discussion of the evidence on earnings management around four questions. First, what motives drive earnings management? Second, which types of accruals appear to be managed, and which do not? Third, what is the magnitude and frequency of earnings management? And fourth, what are the economic consequences, if any, of earnings management? Answers to these questions can help standard setters assess the impact of management judgment in accounting standards. If there are identifiable areas where earnings management is common and has a significant effect on earnings and resource allocation, standard setters can consider ways to refine existing accounting standards and expand disclosure requirements to enhance financial reporting. Alternatively, if earnings management exists but is not commonplace and has only a modest effect on resource allocation, there is less need for financial reporting standards to be revised.

3. Tests of Earnings Management Incentives

Despite the popular wisdom that earnings management exists, it has been remarkably difficult for researchers to document it with convincing evidence. This problem arises primarily because, to identify whether earnings have been managed, researchers first have to estimate earnings before the effects of earnings management, which is not an easy task. One common approach is to identify managers' incentives to manage earnings and to estimate whether patterns of unexpected accruals (or accounting choices) are consistent with these incentives. Two research design issues, therefore, arise for these studies. First, they have to measure unexpected accruals or accounting method choice. Second, they have to identify managers' reporting incentives.

Most studies estimate unexpected accruals with a degree of error. To measure unexpected accruals, many studies begin with total accruals, measured as the difference between reported net income and cash flows from operations. Total accruals are then regressed on variables that are proxies for normal accruals, such as revenues (or cash collections from customers) and gross fixed assets. By controlling for revenues (or cash collections) researchers hope to allow for typical working capital needs (such as receivables, inventory and trade credit). Fixed asset controls are designed to allow for normal depreciation. Unexpected accruals are thus the unexplained (i.e., the residual) components of total accruals.[6] Some studies have used simpler models for unexpected accruals, relying on total accruals or changes in accruals as the estimate for unexpected

[6] Several recent studies have questioned the reliability and power of the most commonly applied models of accruals (see Guay, Kothari and Watts, 1996). These studies point to the value of further research to explain how business factors drive accruals. It remains to be seen whether business factors that are omitted from the current models are correlated with any of the earnings management incentives discussed in the earnings management literature

accruals. Finally, a number of recent studies have focussed on specific accruals, such as loan loss provisions for banks, claim loss reserves for property casualty insurers, and deferred tax valuation allowances.[7]

Many motivations for earnings management have been examined in the literature. They include motivations arising from: (i) capital market expectations and valuation; (ii) contracts that are written in terms of accounting numbers; and (iii) anti-trust or other government regulation. Below we outline the findings from the studies that have examined these motivations.

3.1 Capital Market Motivations

The widespread use of accounting information by investors and financial analysts to help value stocks can create an incentive for managers to manipulate earnings in an attempt to influence short-term stock price performance.[8] We review this evidence in four parts. First, we discuss general evidence on whether earnings management appears to occur for stock market reasons. We then examine which specific accruals appear to be used for earnings management? The earnings effect and frequency of stock market motivated earnings management is reported. Finally, we review whether earnings management for stock market purposes affects resource allocation.

[7] McNichols and Wilson (1988) were one of the first studies to model specific accrual. However, they did not directly examine specific earnings management incentives.

[8] Dye (1988) and Trueman and Titman (1988) develop analytical models that demonstrate examples of contracting frictions that can lead to earnings management intended to influence the decisions of external capital providers.

Do firms manage earnings for stock market purposes?

Recent studies on stock market incentives to manage earnings have focused on unexpected accrual behavior during periods when capital market incentives to manage earnings are likely to be high. These include studies of earnings management in periods surrounding capital market transactions and when there is a gap between firm performance and analysts' or investors' expectations. We discuss each of these earnings management contexts in turn.

Several studies examine earnings management prior to management buyouts. DeAngelo (1988) reports that earnings information is important for valuations in management buyouts and hypothesizes that managers of buyout firms have an incentive to "understate" earnings. She finds little evidence of earnings management by buyout firms from an examination of changes in accruals. However, a more recent study by Perry and Williams (1994), which examines unexpected accruals controlling for changes in revenues and depreciable capital, finds that unexpected accruals are negative (income-decreasing) prior to a management buyout.

Recent studies have also examined whether managers "overstate" earnings in periods surrounding equity offers. The findings indicate that firms report positive (income-increasing) unexpected accruals prior to seasoned equity offers (see Teoh, Welch and Wong (1998b)), initial public offers (see Teoh, Welch and Wong (1998a) and Teoh, Wong and Rao (1998)), and stock-financed acquisitions (see Erickson and Wang (1998)). There is also evidence of a reversal of unexpected accruals following initial public offers (see Teoh, Wong and Rao) and stock-financed acquisitions (see Erickson

and Wang). Finally, Dechow, Sloan, and Sweeney (1996) report that firms that are subject to SEC enforcement actions for financial reporting violations frequently make seasoned equity offerings subsequent to the infraction, but before its detection.

Other studies of earnings management for capital market reasons have examined whether earnings are managed to meet the expectations of financial analysts, specific types of investors, or management (represented by public forecasts of earnings). Payne, Robb, and Payne (1997) and Burgstahler and Eames (1998) find that firms manage earnings to meet analysts' forecasts. Bushee (1998) reports that firms appear to manage earnings through R&D cuts if they have a high percentage of ownership by institutions with high portfolio turnover. However, in general, institutional ownership does not induce managers to manage earnings in this way. Finally, Kasznik (1999) finds evidence that is consistent with firms using unexpected accruals to manage earnings upward if it is in danger of failing to meet a management earnings forecast.

Which specific accruals are managed?

As noted above, many of the studies to date use unexpected accruals as a proxy for earnings management. However, standard setters are more likely to be interested in understanding which specific accruals are used for earnings management.

Teoh, Wong and Rao (1998) examine depreciation estimates and bad debt provisions surrounding initial public offers. They find that, relative to a matched sample of non-IPO firms, the sample firms are more likely to have income-increasing depreciation policies and bad debt allowances in the IPO year and for several subsequent years.

Banking and insurance companies have also provided a fertile ground for research on specific accruals used to manage earnings. Loan loss reserves for banks and property casualty claim loss reserves are highly dependent on management's judgment, are directly related to their most critical assets and liabilities, and are typically very large relative to net income and equity book values. Studies of loan loss provisions include Beaver, Eger, Ryan and Wolfson (1989), Moyer (1990), Scholes, Wilson and Wolfson (1990), Wahlen (1994), Beatty, Chamberlain, and Magliolo (1995), and Collins, Shackelford and Wahlen (1995), Beaver and Engel (1996), and Liu, Ryan and Wahlen (1998). Overall these studies do not find compelling evidence of earnings management for stock market purposes. Studies of casualty insurance loss reserves, including Petroni (1992), Anthony and Petroni (1992), Beaver and McNichols (1998), Penalva (1998), and Petroni, Ryan and Wahlen (1998), find evidence of earnings management. However, it is unclear whether this is motivated by stock market incentives or by regulatory concerns.

Other recent earnings management tests that use specific accruals have examined deferred tax valuation allowances. Under FAS No. 109 managers with deferred tax assets are required to forecast tax benefits that are not expected to be used. One criticism of this standard was that it permitted management too much judgment in reporting. Visvanathan (1998), Miller and Skinner (1998), and Ayers (1998) test this hypothesis, and all conclude that there is little evidence that managers misuse reporting judgment relating to the valuation reserve to manage earnings.

One limitation of the above studies is that have not directly examined settings in which managers have strong stock market incentives to manage earnings (e.g. to meet analysts earnings expectations or to window-dress results prior to an equity issue). As a

result, their tests may lack power for this question. This limitation suggests that there is an opportunity for research.

What is the magnitude and frequency of stock-based earnings management?

There is relatively little evidence on the magnitude or frequency of earnings management for capital market purposes. Teoh, Wong, and Rao (1998) find that for firms making initial public offerings median unexpected accruals in the offer year are surprisingly large, 4-5% of assets. Erickson and Wang (1998) report that unexpected accruals are 2% of assets in the quarter of a stock acquisition.

Teoh, Wong, and Rao also report that approximately 62% of firms making initial public offers have higher unexpected accruals than a matched sample of control firms. If the expected frequency is 50%, this implies that roughly 12% of the equity issue firms manage earnings. However, one difficulty in interpreting this evidence is that the authors have selected a sample that maximizes the likelihood of detecting earnings management. The frequency of earnings management for this sample, therefore, gives little indication of the overall frequency of earnings management for capital market reasons.

Does stock-based earnings management affect resource allocation?

Much of the evidence on the stock market impact of earnings management indicates that it probably does not have a significant effect on resource allocation. Despite concerns about earnings management, investors appear to view earnings as more informative than cash flow data. This finding has been replicated over long periods of time and in many different countries, and suggests that investors do not view earnings

management as so pervasive as to make earnings data unreliable. This interpretation is confirmed by Dechow's (1994) findings that current earnings are better predictors of future cash flows than current cash flows.

A number of studies examine stock price responses to accounting method changes and abnormal accruals to test explicitly whether investors fixate on earnings, or are more sophisticated in processing accounting information. For example, Hand (1992) indicates that investors appear to recognize that firms have tax incentives to adopt LIFO during periods of rising input prices and do not react naively to the accompanying decline in reported earnings.

Studies of abnormal loan loss accruals in the banking industry show that stock returns are negatively related to normal changes in loan loss provisions. However, they are positively related to abnormal loan loss provisions (see Beaver, Eger, Ryan and Wolfson (1989), Wahlen (1994), Beaver and Engel (1996), and Liu, Ryan and Wahlen (1998)). Further, firms with abnormally low loan loss provisions tend to have relatively poor future earnings and cash flow performance (see Wahlen (1994)). One interpretation of these findings is that investors view normal loan loss provisions as reflecting underlying loan portfolio performance, but suspect that firms with abnormally low loan loss provisions are managing earnings and discount their reported performance accordingly.[9] Similar results emerge from market returns associated with unexpected claim loss reserve revisions for property-casualty insurers (e.g., Petroni (1992), Anthony

[9] This interpretation is consistent with the results of these studies, however, this is not the interpretation that these authors provide for their results. These studies emphasize that market returns and future earnings are positively associated with abnormally high loan loss provisions, suggesting that such increases in provisions signal managers' expectations that future earnings will increase.

and Petroni (1992), Penalva (1998), Beaver and McNichols (1998), and Petroni, Ryan and Wahlen (1998)).

A number of recent studies, however, are beginning to challenge the view that investors see through earnings management. For example, the studies of earnings management surrounding equity issues show that firms with income-increasing abnormal accruals in the year of a seasoned equity offer have significant subsequent stock underperformance (see Teoh, Welch and Wong (1998b)). Teoh, Welch and Wong (1998a) and Teoh, Wong and Rao (1998) find a similar pattern for initial public offers. The implication of these findings is that prior to public equity offers some managers inflate reported earnings in an attempt to increase investors' expectations of future performance and increase the offer price. Subsequent reversals of the earnings management are disappointing to investors, leading to some of the negative stock performance that had been widely-documented in finance studies. These findings, therefore, suggest that earnings management prior to equity issues does impact share prices.

Several other studies have investigated market reactions when earnings management is alleged or detected. For example, Foster (1979) finds that firms criticized in the financial press by Abraham Briloff for misleading financial reporting practices suffered an average drop in stock price of 8% on publication date. Dechow, Sloan and Sweeney (1996) report that firms subject to a SEC investigation for earnings management show an average stock price decline of 9% when the earnings management is first announced. Although these studies analyzed firms where the reporting practices in question were flagrant violations of accepted accounting principles or were fraudulent,

they nonetheless suggest that investors may not completely see through earnings management.

Finally, Sloan (1995) reports that future stock returns are negative for firms whose current earnings include large accrual components, and positive for firms with low accrual components. Xie (1998) shows that these results are largely attributable to shocks to abnormal accruals, rather than normal accruals. Xie also provides evidence that the shocks to abnormal accruals are consistent with earnings management incentives One interpretation of these findings is that investors do not fully see through earnings management, reflected in abnormal accruals. Consequently, firms that managed earnings upward show subsequent stock price declines whereas firms with downward-managed earnings have positive returns.

In summary, the evidence suggests that at least some firms appear to manage earnings for stock market reasons. Whether the frequency of this behavior is widespread or infrequent is still an open question. Further, there is conflicting evidence on whether it actually has an effect on stock prices. Several recent studies indicate that there are situations when investors do not see through earnings management. In contrast, in other cases, notably in the banking and property-casualty industries, it appears that investors do see through earnings management. One explanation for these apparently conflicting findings is that, as a result of regulation, investors in banking and insurance firms have access to extensive disclosures that are closely related to the key accruals. These include disclosures of non-performing loans and loan write-offs for bank loan portfolios and loss reserve development for insurance claims of property-casualty firms. These disclosures

appear to help investors make more informed estimates of the likelihood of any earnings management.

The studies that examine whether markets see through earnings management raise a number of unanswered questions. First, as noted above, how pervasive is earnings management for capital market reasons, both among the firms sampled and for the population of firms? Second, what is the magnitude of any earnings management? Third, what specific accruals do firms (other than banks and insurers) use to manage earnings? Fourth, why do some firms appear to manage earnings whereas others with similar incentives do not? Finally, under what conditions do market participants detect and, therefore, react to earnings management, and under what conditions do they fail to detect earnings management?

3.2 Contracting Motivations

Accounting data is used to help monitor and regulate the contractual relations between many of the firm's stakeholders. Explicit and implicit management compensation contracts are used to align the incentives of management and external stakeholders. Lending contracts are written to ensure that managers do not take actions that benefit the firm's stockholders at the expense of its creditors.[10] Watts and Zimmerman (1978) suggested that these contracts create incentives for earnings management because it is likely to be costly for compensation committees and creditors to "see through" earnings management.

[10] See Watts and Zimmerman (1986), Smith and Warner (1979), and Leftwich (1983) for analyses of how lending contracts use accounting data.

Earnings management for contracting reasons is likely to be of interest to standard setters for two reasons. First, earnings management for any reason can potentially lead to misleading financial statements and affect resource allocation. Second, financial reporting is used for communicating management information not only to stock investors, but also to debt investors and to investors' representatives on boards of directors.

A large literature has emerged to test whether earnings management can be explained by lending and compensation contracts.[11] We review the evidence on the association between contracting incentives and voluntary changes in accounting methods, estimates or accruals.[12]

Lending Contracts

A number of recent studies have examined whether firms that are close to lending covenants manage earnings. For example, Healy and Palepu (1990) and DeAngelo, DeAngelo and Skinner (1992) examined whether firms close to their dividend covenant changed accounting methods, accounting estimates, or accruals to avoid cutting dividends or making costly restructuring decisions. Holthausen (1981) examined whether firms close to their dividend constraint switched to straight-line depreciation. All three studies concluded that there was little evidence of earnings management among firms close to their dividend covenant. Instead, firms in financial difficulty tended to place more

[11] Many of these studies focused on the contracting effects of changes in accounting methods mandated by accounting standard setters and on managers' choices of accounting methods at a point in time. However, mandatory changes in accounting methods provide little insight into earnings management. Also, firms' accounting decisions at a point in time are difficult to interpret from an earnings management perspective because, as Watts and Zimmerman (1990) note, these decisions reflect ex-ante efficient reporting choices as well as ex-post opportunism.

[12] For a review of the effects of mandatory accounting changes and accounting method decisions, see Watts and Zimmerman (1986, 1990) and Leftwich and Holthausen (1983).

emphasis on managing cash flows by reducing dividend payments and restructuring their operations and contractual relations.

Of course, dividend-paying firms can meet the dividend constraint by cutting dividends, whereas it may be more difficult to meet other covenants, such as restrictions on interest coverage or debt-equity ratios. DeFond and Jiambalvo (1994) and Sweeney (1994) therefore examine a sample of firms that actually violated a lending covenant. The evidence from these studies is mixed. DeFond and Jiambalvo find that sample firms accelerate earnings one year prior to the covenant violation. They interpret this as evidence of earnings management by firms that are close to their lending covenants. Sweeney also finds that covenant violators make income-increasing accounting changes, but these typically take place *after* the violation. This finding indicates that the sample firms did not make accounting changes specifically to avoid violating the lending covenant. However, it is certainly possible that the changes were made to reduce the likelihood of future covenant violations.[13]

Sweeney also reported evidence on the frequency and resource allocation effects of earnings management for lending contract purposes. From a detailed analysis of 22 firms that violated debt covenants, she concluded that only five succeeded in delaying technical default by one or more quarters through an accounting change. This evidence suggests that the frequency of earnings management for avoiding technical default on loan covenants is likely to be quite low among a random sample of firms. However, Sweeney only sampled firms that actually violated loan covenants. By excluding firms

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[13] An alternative explanation is that the sample firms restructured their operations (and made corresponding changes in accounting policies and estimates) in response to their financial difficulties.

that used accounting judgment to avoid a violation or ex-ante selected accounting methods to reduce the likelihood of a violation, her findings may understate the frequency of earnings management.

Management Compensation Contracts

A number of studies have examined actual compensation contracts to identify managers' earnings management incentives. On balance the evidence reported in these studies is consistent with managers using accounting judgement to increase earnings-based bonus awards. For example, Guidry, Leone and Rock (1998) find that divisional managers for a large multinational firm are likely to defer income when the earnings target in their bonus plan will not be met, and when they are entitled to the maximum bonuses permitted under the plan.[14] Healy (1985) and Holthausen, Larcker, and Sloan (1995) show that firms with caps on bonus awards are more likely to report accruals that defer income when that cap is reached than firms that have comparable performance but which have no bonus cap.

Several other studies have examined whether implicit compensation contracts have any effect on earnings management incentives. These studies have tested whether there is an increase in the frequency of earnings management in periods when top managers' job security is threatened or their expected tenure with the firm is short. DeAngelo (1988) reports that during a proxy contest incumbent managers appear to

[14] Healy (1985) finds evidence of a similar pattern using company-wide data and total accruals. However, Gaver, Gaver and Austin (1995) and Holthausen, Larcker and Sloan (1995) show that some of this effect is driven by research design issues.

exercise accounting discretion to improve reported earnings. Dechow and Sloan (1991) show that in their final years in office CEOs reduce research and development spending, presumably to increase reported earnings.[15] They argue that this behavior is consistent with the short-term nature of many CEOs' compensation combined with their short horizons.

The evidence provided by the above studies suggests that at least some managers manage earnings to increase bonus awards or to increase their job security. However, to the best of our knowledge, there is no evidence on whether this behavior is widespread, or relatively infrequent, and no evidence on which accruals are most likely to be used to manage earnings for compensation purposes. Further, to our knowledge, no research has examined whether compensation-based earnings management has an impact on stock prices.[16]

In summary, the earnings management studies suggest that compensation and lending contracts induce at least some firms to manage earnings. However, there is very little evidence on whether this behavior is widespread. In addition, it is difficult to infer the magnitude of any earnings management. Finally, there is little evidence that earnings management for contracting reasons leads to material resource misallocation.

[15] Some may argue that changes in actual research expenditures do not qualify as earnings management, since they involve changes in investment decisions rather than accounting decisions. In addition, these changes in research plans may be optimal for the firm's owners if they provide new management with flexibility to set new directions for future research.

[16] A number of studies have examined whether earnings management for compensation purposes increases executive compensation. Healy, Kang and Palepu (1987) find that changes in accounting methods from accelerated to straight-line depreciation or from FIFO to LIFO have little effect on bonus compensation for top management. Defeo, Lambert and Larcker (1989) analyze the compensation effects of gains reported on equity-for-debt swaps and report similar findings.

3.3 Regulatory Motivations

Three forms of regulatory motivation for earnings management have been discussed in the literature: earnings management to circumvent industry regulations, earnings management to reduce the risk of investigation and intervention by anti-trust regulators, and earnings management for tax planning purposes. We presume that concerns about earnings management for tax planning purposes are the domain of the tax authority, which has its own reporting standards. Consequently, we do not discuss the tax planning evidence.

Accounting standard setters have demonstrated an interest in earnings management to circumvent industry regulation. Indeed, the shifts toward fair value accounting and increased risk-related disclosures (as well as specific changes in regulatory accounting standards for banks and other financial institutions) were instigated in the aftermath of the financial turmoil in the savings and loan industry in the 1980s. These accounting changes were intended, at least in part, to mitigate earnings management and improve information for stakeholders.[17] Standard setters may also be interested in earnings management for anti-trust purposes. We, therefore, review evidence on both these earnings management motives.

Industry Regulations

In the U.S., virtually all industries are regulated to some degree, but some (such as the banking, insurance, and utility industries) face regulatory monitoring that is explicitly tied to accounting data. Banking regulations require that banks satisfy certain capital

[17] One can also argue that these changes were initiated to improve decision-making by bank regulators.

adequacy requirements that are written in terms of accounting numbers. Insurance regulations require that insurers meet conditions for minimum financial health. Utilities have historically been rate-regulated and permitted to earn only a normal return on their invested assets. It is frequently asserted that such regulations create incentives to manage the income statement and balance sheet variables of interest to regulators. A number of studies provide evidence consistent with this hypothesis.

There is considerable evidence that banks that are close to minimum capital requirements overstate loan loss provisions, understate loan write-offs, and recognize abnormal realized gains on securities portfolios (see Moyer (1990), Scholes, Wilson and Wolfson (1990), Beatty, Chamberlain, and Magliolo (1995), and Collins, Shackelford and Wahlen (1995)). There is also evidence that financially weak property-casualty insurers that risk regulatory attention understate claim loss reserves (Petroni 1992) and engage in reinsurance transactions (Adiel (1996)).

Several of these studies provide evidence on the frequency with which firms engage in earnings management for regulatory purposes. For example, based on tests of seven possible capital management options, Collins, Shackelford and Wahlen (1995) develop regulatory capital management scores for sixty sample banks. They observe that no banks have a maximum score of seven but 10 banks have a score of 6 and 19 banks have a score of 5. Thus, nearly half of their sample banks appear to use five out of seven possible options to manage regulatory capital.[18] Adiel also provides evidence on the frequency of regulatory management behavior. He examines data for 1,294 insurer-years

[18] Collins, Shackelford and Wahlen (1995) also develop similar scores for two earnings management options and five tax management options. Across the sample of sixty banks, eleven banks had maximum earnings management scores of two, but only three banks had maximum tax management scores of five.

in the period 1980 to 1990 and reports that for 1.5% of the sample insurer-years financial reinsurance appeared to be used to avoid failing regulatory tests.

Although the evidence provides strong support that firms use accounting discretion to manage regulatory constraints and that this behavior is not uncommon, little is known about whether regulators "see through" earnings management for regulatory purposes. However, as noted above, the stock market evidence indicates that investors see through regulatory earnings management.

Anti-Trust and Other Regulations

Other forms of regulation can also provide firms with incentives to manage earnings. For example, it is often alleged that managers of firms vulnerable to an anti-trust investigation or other adverse political consequences have incentives to manage earnings to appear less profitable (see Watts and Zimmerman, 1978). Managers of firms seeking government subsidy or protection may have similar incentives.[19]

A number of papers have examined whether regulatory scrutiny increases the likelihood of earnings management. Cahan (1992) showed that firms under investigation for anti-trust violations reported income-decreasing abnormal accruals in investigation years. Jones (1991) found that firms in industries seeking import relief tend to defer income in the year of application. Key (1997) examined unexpected accruals for firms in the cable television industry at the time of Congressional hearings on whether to deregulate the industry. Her evidence is consistent with firms in the industry deferring earnings during the period of Congressional scrutiny.

[19] Of course, regulators do not have to rely solely on reported accounting information; they can also examine pricing decisions and anti-competitive behavior.

Evidence from these studies on the frequency of earnings management for regulatory purposes is difficult to interpret. The number of firms sampled in the above studies is relatively small: Cahan's sample is 48 firms subject to anti-trust investigation during the period 1970 to 1983, Jones' sample comprises 23 firms in industries seeking import relief between 1980 and 1985, and Key examines 22 firms in the cable industry. However, the frequency of negative unexpected accruals for these firms is relatively high, 70% for the cable firms and 90% for firms seeking import relief. If the expected frequency of negative unexpected accruals is 50%, these findings suggest that as many as 20% of cable firms and 40% of import relief firms managed earnings. A question that is unanswered by these studies is whether regulatory motives for earnings management affect only the limited number of firms sampled, or a wider segment of the economy?

Finally, to our knowledge there is no direct evidence on how regulators respond to earnings management. There is also no direct evidence on how investors respond to earnings management for anti-trust purposes.

In summary, the earnings management studies suggest that regulatory considerations induce firms to manage earnings. However, there is limited evidence on whether this behavior is widespread or rare, and very little evidence on the impact on regulators.

4. Tests of Distribution of Reported Earnings and Accruals

Several recent studies have adopted a new approach to test for earnings management. These studies examine the distribution of reported earnings to assess whether there is any evidence of earnings management (see Burgstahler and Dichev

(1997, 1998) and Degeorge, Patel, and Zeckhauser (1997)). These studies hypothesize that corporate managers have incentives to avoid reporting losses or reporting declines in earnings, and examine the distribution of reported earnings around these points. The findings indicate that there is a higher than expected frequency of firms with slightly positive earnings (or earnings changes) and a lower than expected frequency of firms with slightly negative earnings (or earnings changes). These patterns also appear in studies using quarterly data (Burgstahler and Eames (1997)) and using analysts' earnings forecasts as the threshold (Degeorge, Patel, and Zeckhauser (1997)). The authors interpret these findings as evidence that some firms use earnings management to avoid reporting negative earnings, earnings declines, or failing to meet market expectations.

These studies have several appealing features. First, the authors do not have to estimate abnormal accruals; instead, they inspect the distribution of reported earnings for abnormal discontinuities at certain thresholds. Second, the authors are able to estimate the extent of earnings management at these thresholds. For example, Burgstahler and Dichev find that "8-12% of the firms with small pre-managed earnings decreases exercise discretion to report earnings increases" and "30-40% of the firms with slightly negative pre-managed earnings exercise discretion to report positive earnings." This evidence suggests that the frequency of earnings management is relatively high among the subset of firms confronted with reporting losses.[20] Of course, this interpretation has to be tempered, since many firms do not fall into this state on a regular basis.

In summary, these tests provide convincing evidence that some firms do manage earnings when they anticipate reporting a loss, reporting an earnings decline, or falling

[20] Although many firms report losses, many do so because they take large write-offs, and so would not qualify as firms "with slightly negative pre-managed earnings."

short of investors' expectations. As it stands, this evidence does not provide direct implications for standard setters. What is currently lacking from these studies is a clear understanding of the steps that these firms take to increase reported earnings, the effect of this type of earnings management on resource allocation, and whether such earnings management can be mitigated by additional standards.

5. Summary and Concluding Remarks

Overall, we conclude that the earnings management literature currently provides only modest insights for standard setters. Prior research has focused almost exclusively on understanding whether earnings management exists and why. The findings indicate that earnings management occurs for a variety of reasons, including to influence stock market perceptions, to increase management's compensation, to reduce the likelihood of violating lending agreements, and to avoid regulatory intervention.

For standard setters these findings are likely to confirm their intuition that firms do manage earnings. However, if there is to be a more informed debate about the implications of earnings management for standard setting, we need additional evidence on which accounting standards are used to manage earnings, the frequency of earnings management, as well as its effect on earnings and resource allocation. Answers to these questions are difficult to infer from current studies for a number of reasons. First, most academic studies do not attempt to provide evidence on whether earnings management is widespread or infrequent. Second, even if they do address this question, they typically do so in a research setting where earnings management is most likely to be observed, making it difficult to generalize from these settings to the population. It is also difficult to

aggregate across different settings to infer the overall frequency of earnings management in the economy. There is also little evidence on the earnings impact of earnings management. Finally, findings on resource allocation effects of earnings management are conflicting, suggesting the need for future empirical and theoretical research on this issue.

One implication of these findings is that the earnings management area remains a fertile ground for academic research. However, future research in the area is only likely to provide new insights if it broadens the questions that have been addressed. Future contributions are less likely to come from more powerful tests of whether earnings management exists. Instead, we believe that they will come from studying how frequently accounting judgment is used to manage earnings and how large the effect of this behavior is for earnings. Finally, we clearly need to better reconcile conflicting findings on the effect of earnings management on stock prices and resource allocation in the economy.

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