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COMMENTARY

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A Review of the Earnings Management Literature and Its Implications for Standard Setting

SYNOPSIS: 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 questions likely to be of interest to standard setters. In particular, 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 opportunities for future research on earnings management.

INTRODUCTION

In this paper we review the academic evidence on earnings management. The primary purpose of this review is to summarize the implications of scholarly evidence on earnings management to help accounting standard setters and regulators assess the pervasiveness of earnings management and the overall integrity of financial reporting. This review is also aimed at identifying fruitful areas for future academic research on earnings management.

This paper is a summary of the empirical evidence on earnings management and its implications for accounting standard setters. It was written for presentation and discussion at the 1998 AAA/FASB Financial Reporting Issues Conference. We thank the conference participants for comments and suggestions. We also acknowledge helpful comments and suggestions from Daniel Beneish, Greg Miller, Christopher Noe, Kathy Petroni, Jerry Salamon, Nathan Stuart, and two anonymous reviewers on early drafts of this paper. Although we have tried to refer to all 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. Professor Wahlen gratefully acknowledges the financial support of the Indiana CPA Educational Foundation.

Standard setters define the accounting language that management uses to communicate with the firm's external stakeholders.[1] By creating a framework that independent auditors and the SEC can enforce, accounting standards can provide a relatively low-cost and credible means for corporate managers to report information on their firms' performance to external capital providers and other stakeholders.[2] Ideally, financial reporting therefore helps 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 report users. In either extreme, external investors and management will likely resort to nonfinancial statement forms of information, such as that provided by investment bankers and financial analysts, bond-rating agencies, and the financial press, to facilitate the efficient allocation of resources.

If financial reports are to convey managers' information on their firms' performance, standards must permit managers to exercise judgment in financial reporting. Managers can then use their knowledge about the business and its opportunities to select reporting methods, estimates, and disclosures 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 accurately reflect their firms' underlying economics.

The Chairman of the SEC, Arthur Levitt, recently expressed concerns over earnings management and its effect on resource allocation.[3] He noted that management abuses of "big bath" restructuring charges, premature revenue recognition, "cookie jar" reserves, and write-offs 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. The SEC also expects to require more firms to restate reported earnings and will step up enforcement of disclosure requirements.

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[1] In Financial Accounting Concepts Statement No. 5, *Recognition and Measurement in Financial Statements of Business Enterprises*, 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" (FASB 1984, para. 5).

[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.

[3] See Chairman Levitt's remarks in speech entitled, "The Numbers Game," delivered at New York University on September 28, 1998.

A central question for standard setters and regulators, therefore, is to decide how much judgment to allow management to exercise in financial reporting.[4] To help resolve this general question, standard setters are likely to be interested in evidence on (1) the magnitude and frequency of any earnings management, (2) specific accruals and accounting methods used to manage earnings, (3) motives for earnings management, and (4) any resource allocation effects in the economy. We therefore use these four questions to structure our review.

Evidence on the magnitude and frequency of earnings management and on resource allocation effects should help standard setters assess the extent of earnings management and whether investors are deceived by it. Does this evidence show that earnings management effects are widespread enough to warrant new standards or additional disclosures? Alternatively, does the evidence indicate that earnings management is infrequent? If so, can standard setters infer that existing standards facilitate communication between managers and investors? Evidence on which accruals and methods are used to manage earnings should help standard setters identify which standards are potential candidates for review. Finally, evidence on management's motives for earnings management helps regulators such as the SEC better allocate scarce resources for enforcement of standards.

Research on earnings management (described in more detail in the following sections) provides some evidence on these questions. The primary focus of earnings management research to date, however, has been on detecting whether and when earnings management takes place. Researchers have typically examined broad measures of earnings management (i.e., measures based on total accruals) and samples of firms in which motivations to manage earnings are expected to be strong. In general, the evidence is 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, or to reduce regulatory costs or to increase regulatory benefits.

A number of recent studies, however, sharpen 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. There is evidence that banks use loan loss provisions and insurers use claim loss reserves to manage earnings, particularly to meet regulatory requirements. There is little evidence that firms manage earnings using deferred tax valuation allowances.

Much of the evidence on the capital market consequences of earnings management shows that investors are 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 are 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.

Several recent studies, however, indicate that earnings management does affect resource allocation for at least some firms. For example, the overpricing observed for new equity issues may be partly attributable to earnings management prior to the issue.

[4] 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.

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 cases of earnings management.[5]

We conclude that much of the academic research on earnings management is of only limited value to standard setters and regulators. The literature provides little evidence on 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. As a result, there are many opportunities for future research on earnings management. For example, few studies have examined whether observed earnings management is attributable to a few firms or is widespread, 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 to further identify and explain which types of accruals are used for earnings management and which are not. Future research is also needed to determine the conditions in which discretion in financial reporting is primarily used to improve communication vs. manage earnings. 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 warrant 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 two we define earnings management. Sections three and four discuss the findings reported by earnings management studies. Section three focuses on tests of earnings management across a variety of earnings management incentives, whereas section four 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 five offers concluding remarks.

WHAT IS EARNINGS MANAGEMENT?

Our goal of reviewing the earnings management research relevant to standard setters shapes the following definition of earnings management:[6]

> **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 in financial reporting. For example, judgment is

[5] 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.

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

required to estimate numerous future economic events 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 valuation methods. In addition, managers must exercise judgment in working capital management (such as inventory levels, the timing of inventory shipments or purchases, and receivable policies), which affects cost allocations and net revenues. Managers must also choose to make or defer 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 believe that (at least some) stakeholders do not 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 certain accounting choices or estimates are perceived to be credible signals of a firm's financial performance. For example, if auditing is effective, managers' estimates of net receivables will be viewed as a credible forecast of cash collections. In addition, managers can 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. Decisions to use accounting judgment to make financial reports more informative for users 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, improving in resource allocation decisions. It is therefore 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 the standards 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 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 effects of accounting standards that require management judgment. If there are identifiable areas in which 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.

TESTS OF EARNINGS MANAGEMENT INCENTIVES

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

With regard to the first research design issue, researchers have examined many different incentives for earnings management, including: (1) capital market expectations and valuation; (2) contracts written in terms of accounting numbers; and (3) antitrust or other government regulation. In the following sections we outline the findings from the studies that have examined these motivations.

With regard to the second design issue, estimates of unexpected accruals measure the effects of managers' use of accounting discretion with some (inevitable) degree of error. To estimate 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) to allow for typical working capital needs (such as receivables, inventory, and trade credit), and gross fixed assets to allow for normal depreciation. Unexpected accruals are thus the unexplained (i.e., the residual) components of total accruals.[7] A number of recent studies have developed estimates of the unexpected components of specific accruals, such as loan loss provisions for banks, claim loss reserves for property-casualty insurers, and deferred tax valuation allowances.[8]

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

[7] Jones (1991) (the Jones approach) introduced this approach. A number of recent studies examine the properties of unexpected accruals using the Jones approach and their association with share returns (e.g., Warfield et al. 1995; Subramanyam 1996). Several other recent studies have questioned the reliability and power of this approach (see Guay et al. 1996; Beneish 1998). Kang and Sivaramakrishnan (1995) and Kang (1999) introduce another model of unexpected accruals and show that their approach is more powerful than the Jones approach. 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.

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

attempt to influence short-term stock price performance.[9] We review this evidence in four parts. First, we discuss evidence on whether earnings management appears to occur for stock market reasons. Second, we examine which specific accruals appear to be used for earnings management. Third, we review evidence on the magnitude and frequency of stock-market-motivated earnings management. Finally, we review whether earnings management for stock market purposes affects resource allocation.

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. A more recent study by Perry and Williams (1994), however, examines unexpected accruals controlling for changes in revenues and depreciable capital. The results indicate that unexpected accruals are negative (income-decreasing) prior to a management buyout.

Recent studies have also examined whether managers "overstate" earnings in periods prior to equity offers. The findings indicate that firms report positive (income-increasing) unexpected accruals prior to seasoned equity offers (Teoh, Welch, and Wong 1998b), initial public offers (Teoh, Welch, and Wong 1998a; Teoh, Wong, and Rao 1998), and stock-financed acquisitions (Erickson and Wang 1998). There is also evidence of a reversal of unexpected accruals following initial public offers (Teoh, Wong, and Rao 1998) and stock-financed acquisitions (Erickson and Wang 1998). Finally, Dechow et al. (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 shown that earnings are managed to meet the expectations of financial analysts or management (represented by public forecasts of earnings). For example, Burgstahler and Eames (1998) find that firms manage earnings to meet analysts' forecasts. In particular, Burgstahler and Eames (1998) find that managers take actions to manage earnings upward to avoid reporting earnings lower than analysts' expectations. Abarbanell and Lehavy (1998) use financial analysts' stock recommendations (e.g., buy, hold, or sell) to predict the direction of earnings management. They argue and find that firms that receive "buy" recommendations are more likely to manage earnings to meet analysts' earnings expectations, whereas firms that receive "sell" recommendations are more likely to show negative unexpected accruals. Kasznik (1999) finds evidence that is consistent with firms in danger of falling short of a management earnings forecast using unexpected accruals to manage earnings upward.

[9] 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.

Finally, there is evidence on earnings management to influence expectations of specific types of investors. Bushee (1998) reports that firms with a high percentage of institutional ownership typically do not cut R&D spending to avoid a decline in reported earnings. Firms do appear to manage earnings upward through R&D cuts, however, if they have a high percentage of ownership by institutions with momentum trading strategies and high portfolio turnover.

Which specific accruals are managed?

As noted above, many of the studies to date use unexpected accruals as a proxy for earnings management. Standard setters are very likely to be interested in evidence on which specific accruals or accounting methods 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, 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 of banks and claim loss reserves of insurers are directly related to their most critical assets and liabilities, are typically very large relative to net income and equity book values, and are highly dependent on management's judgment. Studies of bank loan loss provisions include Beaver et al. (1989), Moyer (1990), Scholes et al. (1990), Wahlen (1994), Beatty et al. (1995), Collins et al. (1995), Beaver and Engel (1996), Liu and Ryan (1995) and Liu et al. (1997).[10] Overall these studies find compelling evidence of earnings management among banks, presumably (in part) for stock market purposes. Many of these studies, however, suggest that the market "sees through" such earnings management (discussed in more detail below.) Studies of property-casualty insurance claim loss reserves, including Petroni (1992), Anthony and Petroni (1992), Beaver and McNichols (1998), Penalva (1998), and Petroni et al. (1999), also find evidence of earnings management among insurers. It is not clear, however, 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 is that it permits 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. However, since these studies 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), their tests may lack power.

Overall, there is remarkably little evidence on earnings management using specific accruals, suggesting that this is likely to be a fruitful area for future research. By examining specific accruals, researchers can provide direct evidence for standard setters of areas where standards work well and where there may be room for improvement. As a secondary benefit, such studies may be able to develop more powerful accrual models.

[10] Some of these studies also find evidence that banks engage in earnings management by strategically timing the realization of gains/losses on investment securities, e.g., Moyer (1990), Scholes et al. (1990), Beatty et al. (1995), and Collins et al. (1995).

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

There is also 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 4–5 percent of assets. Erickson and Wang (1998) report that unexpected accruals are 2 percent of assets in the quarter of a stock acquisition. These values are surprisingly large, representing 25–50 percent of typical asset returns. One potential explanation is that the model of unexpected accrual used in these studies is misspecified for these types of unusual events.

Teoh, Wong, and Rao (1998) also report that approximately 62 percent of firms making initial public offers have higher unexpected accruals than have a matched sample of control firms. If the unconditional frequency is 50 percent, this implies that roughly 12 percent of the issuing firms manage earnings. One difficulty in generalizing from this evidence, however, is that the authors selected a sample of firms engaging in similar transactions (initial public offerings) to maximize the power of their tests to detect earnings management. The frequency of earnings management for this sample, therefore, does not necessarily indicate the overall frequency of earnings management for other capital market reasons.

Does stock-based earnings management affect resource allocation?

Overall, the wealth of evidence on the stock-market effect of earnings numbers clearly indicates that, despite concerns about earnings management, investors view earnings as value-relevant data that is more informative than cash flow data. This finding has been replicated over long periods of time and in many different countries. It 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 are 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 naïvely to the accompanying decline in reported earnings.

Studies of loan loss accruals in the banking industry show that stock returns are negatively related to normal changes in loan loss provisions, and are positively related to abnormal loan loss provisions (Beaver et al. 1989; Wahlen 1994; Beaver and Engel 1996; Liu and Ryan 1995; Liu et al. 1997). Further, banks with abnormally low loan loss provisions tend to have relatively poor future earnings and cash flow performance (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 upward and discount their reported performance accordingly.[11] Similar results emerge from stock returns associated with unexpected claim loss reserve revisions for property-casualty insurers (Petroni 1992; Anthony and Petroni 1992; Penalva 1998; Beaver and McNichols 1998; Petroni et al. 1999).

[11] This interpretation is consistent with the results of these studies, but this is not the interpretation that these authors provide for their results. These studies emphasize that stock 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.

Several recent studies have challenged 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 (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 has been widely documented in finance studies. These findings, therefore, suggest that earnings management prior to equity issues does affect share prices.

Several other studies have investigated market reactions when earnings management is alleged or detected. For example, Foster (1979) finds that firms criticized by Abraham Briloff in the financial press for misleading financial reporting practices suffered an average drop in stock price of 8 percent on publication date. Dechow et al. (1996) report that firms subject to SEC investigation for earnings management showed an average stock price decline of 9 percent when the earnings management was first announced. Using a sample of firms that actually violated GAAP (i.e., firms that either were charged by the SEC or publicly admitted GAAP violations), Beneish (1997) shows that GAAP violators earn significant negative abnormal returns for two years following the violation. Although these studies analyzed firms for which the reporting practices in question were flagrant violations of accepted accounting principles or were fraudulent, they nonetheless suggest that investors do not completely see through earnings management.

Sloan (1996) reports that future abnormal stock returns are negative for firms whose earnings include large current accrual components and positive for firms with low current accrual components. Xie (1998) shows that these results are largely attributable to shocks to abnormal accruals, rather than to normal accruals. Xie (1998) 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 subsequent returns. This raises a question for future research as to whether earnings management, as reflected in abnormal accruals, can explain the success of earnings momentum-based trading strategies.

Finally, experimental evidence suggests that, although sophisticated analysts may not fully detect earnings management when pricing the common shares of a firm, analysts are more likely to "see through" earnings management when financial statements clearly display the balances and activity of the managed item. For example, Hirst and Hopkins (1998) conduct a behavioral experiment with experienced financial analysts to test conditions in which they are more likely to detect and undo the strategic timing of realized gains on investment securities. They find that clear display of the components of comprehensive income enhances analysts' detection of earnings management and improves their valuation relative to footnote disclosure. Thus, the results suggest that earnings management may be less likely to affect resource allocation when financial reports make it more transparent.

In summary, the evidence shows 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 in which investors do not see through earnings management. 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.[12] These disclosures may help investors make more informed estimates of the likelihood of any earnings management.

The studies that examine the effects of earnings management on the capital markets leave a number of unanswered questions for future research. 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?[13] 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? For example, do required disclosures that make the use of accounting judgment more transparent help to mitigate the impact of earnings management on resource allocation?

Contracting Motivations

Accounting data are used to help monitor and regulate the contracts between the firm and its many stakeholders. Explicit and implicit management compensation contracts are used to align the incentives of management and external stakeholders. Lending contracts are written to limit managers' actions that benefit the firm's stockholders at the expense of its creditors.[14] 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 "undo" earnings management.

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 the incentives created by lending and compensation contracts can explain earnings management.[15] We review the evidence on the association between contracting incentives and voluntary changes in accounting methods, estimates, or accruals.[16]

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[12] These include disclosures of nonperforming loans and loan write-offs for bank loan portfolios and loss reserve development for insurance claims of property-casualty firms.

[13] Peasnell et al. (1999) examine whether board composition affects earnings management. They conclude that outside directors limit earnings management for firms where the separation of ownership and control is acute.

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

[15] 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. Mandatory changes in accounting methods provide little insight into earnings management, however. 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.

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

Lending Contracts

A number of studies have examined whether firms that are close to lending covenants manage earnings. For example, Healy and Palepu (1990) and DeAngelo et al. (1994) examine whether firms close to their dividend constraint changed accounting methods, accounting estimates, or accruals to avoid cutting dividends or making costly restructuring decisions. Holthausen (1981) examines whether firms close to their dividend constraint switched to straight-line depreciation. All three studies conclude that there is little evidence of earnings management among firms close to their dividend covenant. Instead, firms in financial difficulty tended to place more emphasis on managing cash flows by reducing dividend payments and restructuring their operations and contractual relations.

Of course, dividend-paying firms can avoid violating their dividend constraint by cutting dividends when necessary, whereas firms may have fewer options available to meet other covenants, such as restrictions on interest coverage or debt-equity ratios. DeFond and Jiambalvo (1994) and Sweeney (1994) examine a sample of firms that actually violated a lending covenant. The evidence from these studies is mixed. DeFond and Jiambalvo (1994) 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 (1994) 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. It is certainly possible, however, that the changes were made to reduce the likelihood of future covenant violations.[17]

Sweeney (1994) also reports 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 concludes that only five succeeded in delaying technical default by one or more quarters through an accounting change. Given the study's focus on firms that have a strong incentive to manage earnings, this frequency is quite low. However, because Sweeney (1994) only sampled firms that actually violated loan covenants, the sample does not include firms that successfully managed earnings to avoid a technical default. As a result, her findings may understate the frequency of earnings management for debt covenant purposes.

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 judgment to increase earnings-based bonus awards. For example, Guidry et al. (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.[18] Healy (1985) and Holthausen et al. (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

[17] 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.

[18] Healy (1985) finds evidence of a similar pattern using company-wide data and total accruals, but Gaver et al. (1995) and Holthausen et al. (1995) show that some of this effect is attributable to the research design.

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 exercised accounting discretion to improve reported earnings. Dechow and Sloan (1991) show that CEOs in their final years in office reduced R&D spending, presumably to increase reported earnings.[19] They argue that this behavior is consistent with the short-term nature of their compensation contracts and their short employment horizons.

In summary, these studies suggest that compensation and lending contracts induce at least some firms to manage earnings to increase bonus awards, improve job security, and mitigate potential violation of debt covenants. However, there is very little evidence on whether this behavior is widespread or infrequent, and no evidence on which accruals are most likely being used to manage earnings for contracting purposes. In addition the existing studies do not provide evidence on the magnitude of earnings management. Finally, there is little evidence that earnings management for contracting reasons has any effect on stock prices or resource misallocation.[20] These open questions suggest many avenues for future research.

Regulatory Motivations

The earnings management literature has explored the effects of two forms of regulation: industry-specific regulation and anti-trust regulation.[21] 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, provide information for stakeholders, and improve decision making by bank regulators. Standard setters may also be interested in earnings management for anti-trust purposes. We, therefore, review evidence on both of 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 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

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[19] 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.

[20] A number of studies have examined whether earnings management for compensation purposes increases executive compensation. Healy et al. (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 et al. (1989) analyze the compensation effects of gains reported on equity-for-debt swaps and report similar findings.

[21] We presume that concerns about earnings management for tax-planning purposes are the domain of the tax authority, which has its own reporting standards. We therefore do not discuss the tax-planning evidence.

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 (Moyer 1990; Scholes et al. 1990; Beatty et al. 1995; Collins et al. 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, Collins et al. (1995) find that nearly half of their sample banks use five or more of seven options for managing regulatory capital.[22] Adiel (1996) also provides evidence on the frequency of regulatory management behavior. He examines data for 1,294 insurer-years in the period 1980 to 1990 and reports that for 1.5 percent of the sample insurer-years financial reinsurance appeared to be used to avoid failing regulatory tests.

The evidence offers strong support that accounting discretion is used to manage industry-specific regulatory constraints. However, the frequency of the accounting management varies considerably across studies. Further, little is known about whether regulators "see through" earnings management for regulatory purposes.

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 (Watts and Zimmerman 1978). Managers of firms seeking government subsidy or protection may have similar incentives.[23]

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.

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 (1992) sample is 48 firms subject to anti-trust investigation during the period 1970 to 1983, Jones' (1991) sample comprises 23 firms in industries seeking import relief between 1980 and 1985, and Key (1997) examines 22 firms in the cable industry. The frequency of negative unexpected accruals for these firms is relatively high, however: 70 percent for the cable firms and 90 percent for firms seeking import relief. If the expected frequency of negative unexpected accruals is 50 percent, these findings suggest that as many as 20 percent of cable firms and 40 percent of

[22] Collins et al. (1995) also examine the use of two options to manage reported earnings. Across the sample of 60 banks, over 75 percent used at least one option, and almost 20 percent used both options to manage reported earnings.

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

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, 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 strongly suggest that regulatory considerations induce firms to manage earnings. There is limited evidence on whether

TESTS OF DISTRIBUTION OF REPORTED EARNINGS AND ACCRUALS

Several recent studies adopt a new approach to test for earnings management. These

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 the following questions. Which accounting standards are used to manage earnings? What is the frequency of managers' use of reporting judgment to manage earnings rather than to communicate firm performance to investors? What is the effect of any earnings management on resource allocation? What factors limit earnings management? For example, are firms with effective corporate governance or disclosure policies less likely to engage in earnings management?

Answers to the above questions are difficult to infer from current studies for a number of reasons. First, most academic studies attempt to document earnings management, but do not provide evidence on its extent and scope. Consequently, existing evidence does not help standard setters to assess whether current standards are largely effective in facilitating communication with investors, or whether they encourage widespread earnings management. Second, most studies have examined unexpected accruals for evidence of earnings management. While this research provides a useful summary index of earnings management, it does not show which standards are effective in facilitating communication between managers and investors and which are ineffective. Third, most studies examine research settings where earnings management is most likely to be observed. This increases the likelihood of detecting earnings management, but makes it difficult to aggregate across different settings to infer the overall frequency of earnings management in the economy. Finally, findings on resource allocation effects of earnings management are conflicting, suggesting the need for future empirical and theoretical research.

One implication of this review is that the earnings management area remains a fertile ground for academic research. However, future research in the area is more 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 contributions will come from documenting its extent and magnitude for specific accruals, from reconciling conflicting findings on the effect of earnings management on stock prices and resource allocation in the economy, and from identifying factors that limit earnings management.

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