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**Taxes, Conservatism in Financial Reporting, and the
Value Relevance of Accounting Data**

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requirements for the degree of**

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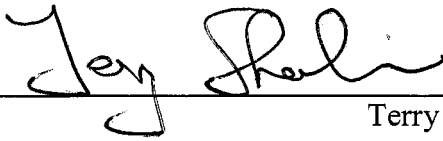
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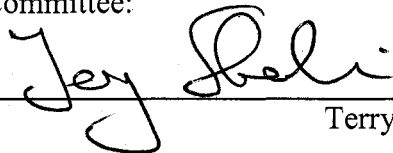
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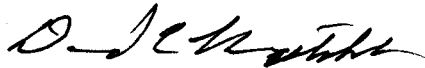


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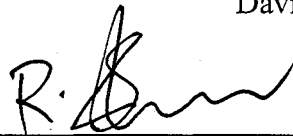
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Abstract

Taxes, Conservatism in Financial Reporting, and the
Value Relevance of Accounting Data

Stacie Olivia Kelley

Chair of the Supervisory Committee:
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This study investigates whether taxes affect conservatism in financial reporting and the relevance of the resulting financial accounting data for valuation purposes. My motivation is to provide evidence on taxation as a determinant of financial reporting conservatism in the United States. I predict and find that firm years with large positive (negative) differences between pre-conservative financial reporting and taxable income are the most (potentially least) conservative and that they are less (more) conservative after taxes change. This evidence is consistent with taxes being a determinant of conservatism. In addition, I examine whether the value relevance of financial accounting information to investors is impaired for firm years that are influenced by taxation. The evidence in my value relevance tests is generally consistent with the value relevance in financial reporting information not necessarily being impaired when tax rules influence financial reporting incentives.

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DEDICATION

To my incredible family, Mom and Dad, Julie, Stephanie...you have provided unwavering support from day one and I cannot believe how fortunate I am to have you in my life. To Mark – wow, you are something! Thank you for helping me make it through all of the hoops, for challenging me and most of all for sharing yourself with me. To Ash, thank you for all the memorable experiences and being brave enough to try everything and never giving up. To my friends, near and far, thank you for being part of my life. To Grandma and Grandpa and Aunt Olive, I miss you and think about you often. I love you all!

This study investigates whether taxes affect conservatism in financial reporting and the relevance of the resulting financial accounting data for valuation purposes.¹ Consistent with prior research, I define conservatism as a characteristic of an accrual accounting system that captures the notion that the system requires stronger verification to recognize gains than losses (Watts 2003a, Basu 1997). Taxes are likely to affect firms' financial reporting incentives because there is an implicit link between book and taxable income, and taxation reduces the resources available to a firm. Firms face increasing costs with larger differences between book and taxable income in the form of audit adjustments from the Internal Revenue Service (IRS), the perception of less persistent earnings, and additional regulation (e.g., Mills 1998, Hanlon 2005 and Manzon 1992). Firms can minimize these costs by using financial reporting conservatism to bring book and taxable income closer together. If the conservatism of a firm's financial reporting is impacted by taxes, this implies that its financial reporting reflects tax rules and not necessarily economic reality. Because the objectives of the financial reporting and tax systems differ, the resulting financial reporting information is potentially less relevant for purposes of valuation (Ali & Hwang 2000, Joos and Lang 1994). If, however, conservatism serves as a mechanism that facilitates the maximization of firm value via a reduction in managerial opportunism, the resulting accounting data is potentially more value relevant (Watts 2003a).

Though prior studies posit taxation as one determinant of conservatism, Watts

¹ Throughout this paper, conservatism means conservatism in financial reporting.

(2003b) acknowledges that no study specifically investigates the relation empirically.²²

This study addresses a gap in the existing literature by explicitly examining taxation as a determinant of financial reporting conservatism in the United States. This issue is an important one from the point of view of investors, whether debt or equity providers, because if taxes affect financial reporting conservatism, this influences the value of their claims by altering the amount of firm resources going to the government for taxes. The effect of taxes on conservatism is also important for other stakeholders because financial statements are utilized for a variety of reasons, such as monitoring firms. Differences in the characteristics (e.g., conservatism) of financial statement data across firms have implications for the usefulness of that data for various users.

In order to examine the empirical relation between financial reporting (book) income, taxable income and conservatism, I sort firms into three groups based on differences between pre-tax book income (PTBI) before conservatism and taxable income (TI). I predict that book income in firm years with large positive (negative) differences between PTBI before conservatism and TI is more (less) conservative than in other firm years. I also test predictions about conservatism when taxes are affected by an exogenous shock. I test these predictions using two measures of conservatism. The first measure is based on the speed with which book income captures bad news relative to good news (Basu 1997) and the second measure is based on the accumulation of accruals (Givoly and Hayn 2000).

My results are consistent with taxes being a determinant of conservatism in that I find firm years with large positive differences between PTBI before

²² See Watts (2003a) for a discussion of the potential determinants of conservatism including contracting, litigation, regulation, and taxation.

conservatism and TI are more timely in recognizing bad news and have significantly ³ more negative accruals than other firm years consistent with these firms being more conservative. For the group of firm years with large negative differences between PTBI before conservatism and TI, I find mixed results. These firm years have the least conservative accruals, consistent with them being the least conservative, but they are also timely in recognizing bad news. One explanation is that these firms are engaging in “big bath” behavior. Finally, I find that the group of firms with large positive (negative) differences between PTBI before conservatism and TI are less (more) conservative after a tax change occurs.

For my second research question, I focus on the relevance of financial statement information to investors for valuation purposes, and define value relevance as a statistical association between accounting information and market values or returns.³ Empirically, I operationalize this definition by using two types of association tests, long-window hedge portfolio returns tests, and the explained variation (R^2) in regressions of financial accounting data on returns and firm value. My results are consistent with the value relevance of financial accounting information not necessarily being impaired for firm years in which the financial accounting information is influenced by tax rules.

My paper contributes to the literature on conservatism and value relevance. Conservatism has been controversial in that some view it as distorting the actual value of a firm thus making it difficult for investors to make informed decisions (FASB

³ For value relevance tests, I follow Francis and Schipper (1999) and focus on the relevance of financial statement information to investors for valuation purposes. I do not attempt to capture other users, such as creditors, unions, managers, and customers, or other uses of financial statement earnings.

1980 ¶ 92, Levitt 1998). Proponents of conservatism view it as beneficial to investors⁴ because it is an efficient reporting mechanism that serves to reduce agency costs by constraining natural managerial optimism (Watts 2003a). This study adds another dimension to the debate by examining taxation as one determinant of conservatism, and by testing whether the value relevance of financial accounting information varies when firms' reporting incentives are differentially affected by taxes.⁴ Because the sample in this study consists of U.S. firms, which are subject to the same macro legal and regulatory environment, this study is not affected by institutional and reporting environment differences that potentially affect tests in studies that examine conservatism and value relevance across different countries.⁵

My study also contributes to the literature on book and tax conformity. It builds on Cloyd et al. (1996), who use an experimental setting to demonstrate the implicit link between PTBI and TI by showing that managers conform financial accounting to tax methods to increase the probability of defending a tax accounting position if audited. I rely on this link between PTBI and TI to empirically examine the characteristics and relevance of actual reported accounting numbers, i.e. the outcome of managers' behavior. My study also builds on Guenther, et al. (1997), who find that 66 firms that are required to switch from the cash to the accrual method for tax purposes defer book income in the years after the switch from 1988 to 1990, which is consistent with taxes affecting financial reporting conservatism. I extend Guenther, et

⁴ This study implements one suggestion of Holthausen and Watts (2001) (HW) to make value relevance studies more useful by examining value relevance of financial accounting information when GAAP is influenced by tax rules.

⁵ For examples of cross-country studies see Alford, et al. (1993), Joos and Lang (1994), Ali and Hwang (2000), and Ball, Kothari and Robin (2000).

al. (1997) by examining a larger sample of 30,189 firm years over a longer period 5
from 1991 to 2004, more comprehensive measures of conservatism, and the impact of
the firms' behavior on the value relevance of their financial accounting data.

In addition to financial statement users, the results provide useful information
for academics interested in financial reporting conservatism, the relation between book
and taxable income, and the value relevance of financial statements. This research
may also be of interest to regulators because if managers alter the conservatism of
their financial reporting because of taxes, my evidence suggests that while book
income is still more relevant to investors than taxable income the usefulness of
financial statement information for valuation purposes is not necessarily worsened.

The remainder of the paper is organized as follows: in section 2, I discuss
reasons why PTBI and TI differ as well as the explicit and implicit links between the
two numbers. I also discuss the measures of conservatism used in this study.
Building on the relation between PTBI and TI, I develop testable hypotheses in section
3. In sections 4, 5 and 6, I explain my research design, sample selection and results,
respectively. In section 7, I include sensitivity analysis, and in section 8, I summarize
and discuss a possible extension of the paper.

2.0 Background

2.1 Link between Pre-tax Book Income and Taxable Income

This study examines whether taxes affect financial reporting conservatism and the relevance of financial statement information. In order for these relations to exist, PTBI and TI must be linked.

Every year managers prepare two sets of books, one for financial reporting purposes in accordance with Generally Accepted Accounting Principles (GAAP) and one for tax purposes in accordance with the Internal Revenue Code (IRC). Section 446 of the IRC requires firms to compute TI in accordance with the method of accounting that is regularly used to compute PTBI (where PTBI is defined by Reg. §1.446-1(a)(2) as income calculated in accordance with GAAP), if that method “clearly reflects income” (IRC §446(a) and (b)) as defined by the IRC.⁶ Despite the seemingly clear statutory language, conformity with GAAP is not sufficient to meet the clear reflection of income standard.⁷ As explained by the Supreme Court, “in light of the vastly different objectives that financial and tax accounting have...any presumptive equivalency between tax and financial accounting would be unacceptable” (Thor Power Tool v. Comr., 439 U.S. 522, 542 (1979)).

The primary objective of financial reporting is to provide useful economic information to external financial statement users (FASB 1978) while the primary goal of tax accounting is the equitable collection of revenue (Thor Power tool Co. v. Commissioner, 439 U.S. 522). Because of the different objectives of financial and tax

⁶ See Guenther et al. (1997) for a discussion of the statutory requirement to clearly reflect income.

⁷ For examples of cases in which courts found that conformity was insufficient to meet the standard, see Thor Power Tool v. Commissioner (439 U.S. 522) and Idaho Power Co (34 AFTR 2d 74-5244).

reporting, the IRC contains more rigorous “bright line” revenue and expense recognition rules than GAAP.⁸ For example, the IRC dictates the number of years and speed with which assets are depreciated for tax purposes, while GAAP provides managers the flexibility to choose asset lives and depreciation rates.⁹ These revenue and expense recognition rules supposedly make it difficult for taxpayers to accelerate income (defer expenses) for book purposes without also accelerating income (deferring expenses) for tax purposes.

However, specific tax rules coupled with more flexible GAAP make it possible for companies to structure transactions to obtain beneficial outcomes for both book income and TI by minimizing TI, thereby increasing cash flows (by decreasing tax payments) and book income (by decreasing tax expense).¹⁰ For example, Enron issued approximately \$800 million in tiered preferred securities [a.k.a. MIPS] between 1993 and 1997 that were legally structured to qualify as debt for tax purposes and equity for book purposes.¹¹ The specific tax rules allowed Enron to characterize the security issue as debt to take advantage of interest deductions thus reducing TI, while simultaneously characterizing the security issue as equity for book purposes, avoiding a reduction in PTBI.¹² The point is that differences in objectives underlying GAAP and tax rules have resulted in more specific tax rules relative to GAAP. Different

⁸ See Appendix A for a discussion of revenue and expense recognition rules under GAAP and the IRC.

⁹ Currently, three separate depreciation systems are in place for tax purposes depending on the date the property was placed into service. See IRC §167 and §168 for details.

¹⁰ Bright line tax rules versus broader financial accounting rules mirrors the debate in financial accounting over rules versus principle-based standards, where a shortcoming with rule-based standards is that they contain specific rules that facilitate technical compliance while allowing firms to evade the intent of the standard (SEC 2003).

¹¹ See Desai (2004) for a discussion of the exploitation of the interaction between GAAP and tax rules at Enron, Tyco and Xerox.

¹² See Joint Committee on Taxation Report (2003) for details of the treatment of tiered preferred securities and the specific transactions entered into by Enron Corporation.

rules mean that PTBI and TI are not identical.

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While GAAP and IRC differences allow firms to report similar transactions differently for book and tax purposes, links between the two measures of income exist. Two explicit links between PTBI and TI are the last-in, first out (LIFO) conformity rule whereby a firm that uses the LIFO inventory valuation method for tax purposes must also use it for financial reporting purposes (IRC §472(c)), and the alternative minimum tax book income adjustment (AMTBIA) effective for tax years 1987 – 1989.¹³

Implicit links between PTBI and TI also exist and are a result of the historical interaction among the IRS, taxpayers and the courts. Examples of implicit links are found in the calculation of taxable income, IRS audit manuals and court cases. The starting point for the calculation of TI is net book income and IRS audit manuals instruct internal revenue agents to reconcile book and taxable income and question any differences when auditing corporations' tax returns.¹⁴ Finally, the courts consider TI's relation to PTBI and how well and how consistently both conform to GAAP when specific tax rules do not exist.¹⁵

Real or perceived differences between book and taxable income invite scrutiny

¹³ AMTBIA equals one-half of the excess of pre-tax net income over pre-AMTBIA alternative minimum taxable income (See, for example, Dhaliwal and Wang 1992 and Manzon 1992 for studies that examine firms' income shifting behavior associated with the AMTBIA).

¹⁴ See Schedule M-1 and the updated Schedule M-3 at www.irs.gov and Mills and Plesko (2003) for a discussion of the reconciliation of book income to taxable income. Also, see IRS Audit Technique Guides for various industries at www.irs.gov.

¹⁵ See Dubroff, et al. (1983) for a discussion and citations of the factors considered by the courts under IRC §446(b) where GAAP is relied upon because it clearly reflects income. These factors include: 1) conformity of the disputed method with GAAP, 2) consistent application of the method, 3) method also required by a regulatory agency, 4) expert testimony by an accountant that the method "clearly reflects income", 5) common use of the method in taxpayer's industry, and 5) the method leads to appropriate matching of revenues and expenses.

not only from the IRS (e.g., Mills 1998, Treasury 1999), but also from investors (e.g.,⁹ Revsine et al. 2001), the government and the public (e.g., Manzon (1992), Citizens for Tax Justice). This scrutiny is also costly. For example, the AMTBIA was enacted by Congress because of the perception that many profitable firms (from a book perspective) were not paying their fair share of taxes (Manzon 1992), and investors perceive large differences between PTBI and estimated TI as an indication of less persistent earnings (Hanlon 2005). Empirical evidence supports the notion that scrutiny is costly. For example, Mills (1998) provides evidence that IRS audit adjustments are increasing in the amount that PTBI exceeds TI and that, on average, these adjustments are 10% (15%) of the book – tax difference for all firms (those firms with $TI > 0$) in her sample. In addition, studies suggest that firms conform PTBI and TI, for example to support aggressive tax positions (Cloyd et al. 1996), and to mitigate the likelihood of discovery of aggressive book positions (Erickson et al. 2004).

In summary, PTBI and TI are summary measures of firm performance. Different reporting objectives between PTBI and TI have led to more rigorous income and expense recognition rules for tax purposes. Because different rules exist, firms can report different income for book versus tax purposes. There are, however, two explicit links between PTBI and TI as well as implicit links. Actions by the IRS and firms, as supported by empirical evidence, suggest that implicit links between PTBI and TI are important because it is costly for firms when the two measures of income diverge. Because PTBI and TI do not constitute a one-to-one mapping, an empirical question of whether a relation between PTBI and TI can be observed in the data

arises.¹⁶ For purposes of this paper, I assume that an implicit link between PTBI and¹⁰ TI exists.

2.2 Conservatism

Conservatism is a characteristic of an accrual accounting system that captures the notion that the system requires stronger verification to recognize gains than losses resulting in the understatement of net assets and accumulated earnings (e.g., Watts 2003a, Basu 1997). Watts (2003a) argues that the existence and persistence of conservatism in accounting is generated by asymmetric loss functions associated with the economic determinants of conservatism, namely contracting, litigation, regulation and taxation. He also summarizes the variety of empirical measures used to test for the existence of conservatism, including earnings and accrual measures, that rely on the effect of conservatism's asymmetric recognition of gains and losses on accounting numbers.

I utilize both a single and multi period measure of conservatism because the relation between book and taxable income is examined annually (e.g., IRS examines annual tax returns) and across time (e.g., Treasury 1999). Conservatism implies that economic losses will be reflected in earnings faster than economic gains because probable losses are reflected immediately in earnings and gains are reflected over time as they are realized. Therefore, I adopt Basu's (1997) methodology and test the differential timeliness with which earnings reflects economic losses (bad news)

¹⁶ The maintained hypothesis or explicit assumption in some studies is that changes in taxable income can be discerned from changes in book income, i.e. the two are linked. For example, there is evidence that firms shift financial reporting income to take advantage of a decrease in taxes (Scholes, Wilson and Wolfson 1992) and to maximize the benefit of net operating losses (Maydew 1997). Other studies assume firms can change book income in ways that do not affect taxable income, for example to minimize the impact of alternative minimum taxes (Boynton, Dobbins and Plesko 1992, Dhaliwal and Wang 1992, Manzon 1992).

relative to economic gains (good news), as my single period measure of conservatism.¹⁷

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Givoly, Hayn and Natarajan (2003) point out, however, that this framework does not effectively capture conservatism related to the choice of accounting methods and estimates over time. In other words, the application of particular accounting methods over multiple periods affects the ability of a firm to react conservatively to a contemporaneous shock to the economic value of the firm's assets during a single period. For example, assume a company adopts the use of an accelerated method of depreciation for a new asset. This choice and subsequent application of accelerated depreciation causes net income and net assets to be lower, *ceteris paribus*, during the earlier portion of the asset's life than if the firm was using straight line depreciation. The decision to use an accelerated method affects the firm's ability to make adjustments due to the subsequent arrival of new information affecting the value of the asset. Should bad news arrive later, the firm will not need, or be able, to write off as much as they would if they originally selected straight-line depreciation, thus their write off will appear less conservative. Givoly and Hayn (2000) develop a multi-period framework that captures the effect of financial reporting conservatism on the accumulation of accruals. With respect to accruals, conservatism implies losses are fully accrued while gains are not such that accumulated accruals are understated. I adopt a modified version of Givoly and Hayn's (2000) multi period measure of

¹⁷ This framework is used in recent literature to assess differences in conservatism across firms (Basu 1997), across time (Givoly and Hayn 2000; Holthausen and Watts 2001) and, across reporting regimes (Pope and Walker 1999; Ball, Kothari and Robin 2000; Giner and Rees 2001; Ball, Robin and Wu 2003). This measure is also used in other ways, for example to assess the impact of conservatism on the cost of equity capital (Francis et al. 2003), and to examine the association between auditor independence in appearance and conservatism (Kelley, Shores and Tong 2004).

conservatism by using all accruals that firms can use to keep PTBI and TI close.¹⁸ 12

In summary, the asymmetric treatment of gains and losses in financial accounting implies that economic losses are reflected in earnings faster than economic gains, and, over time, cumulative accruals are understated. I apply both the Basu (1997) and Givoly and Hayn (2000) frameworks to measure the differential timeliness with which economic news is captured in earnings and the impact on accruals, respectively. The details of the empirical measures are discussed in the research design section.

¹⁸ Basu's (1997) measure has been criticized as being negatively correlated with other measures of conservatism (e.g. Givoly et al. (2004)). Therefore, I do not rely on it as a sole measure of conservatism.

3.0 Hypothesis Development

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In Statement of Financial Accounting Concepts No. 1 (SFAC1), the Financial Accounting Standards Board (FASB) states that the overall objective of financial reporting is to provide information that is useful to present and potential investors, creditors and others to make rational business and economic decisions. The Statement goes on to recognize that financial reporting objectives are influenced by the characteristics and limitations inherent in financial reporting, including the cost of providing the information. Because of the links between book and tax income discussed in section 2, taxes affect the firm's cost of supplying useful financial information, i.e., taxes affect the firm's reporting incentives. My first three hypotheses examine the impact of taxes on one particular financial reporting characteristic, conservatism. I predict conservatism varies across firms with the proximity of a firm's pre conservatism PTBI and TI, which implies that the usefulness of accounting data to investors also varies. In my fourth hypothesis, I examine the value relevance of the resulting financial accounting information across the same firms.

3.1 Conservatism and the Link between Pre-tax Book Income and Taxable Income.

The links between PTBI and TI discussed in section 2.1 create conflicts between financial reporting and tax minimization goals. On the one hand, firms wish to report lower income to the IRS in order to minimize taxes. On the other, firms often prefer reporting higher income to investors because numerous items are connected to their financial reporting results (e.g. compensation, bond covenants, investor and analyst coverage). As discussed in section 2.1, empirical evidence

suggests firms cannot costlessly maximize financial reporting benefits while minimizing taxes (Mills 1998).

In order to investigate the relation between the book and tax reporting link and conservatism, I identify firms that are the most likely to report conservatively by ranking firm-years based on the difference between PTBI before the effects of conservatism and TI. Firm years with the largest positive book-tax difference [(PTBI before conservatism – TI) = book-tax difference] are likely to report most conservatively because, *ceteris paribus*, they face the largest costs in the form of potential audit adjustments and increased regulation, as well as scrutiny over the persistence of their earnings. My first hypothesis, stated in the alternative form, is:

H1: Financial reporting income in firm years with large positive differences between pre-conservative pre-tax book income and taxable income is more conservative than in other firm years, *ceteris paribus*.

Firms with the largest negative book tax differences, on the other hand, are the least likely to report conservatively because conservatism will only increase the gap between PTBI and TI. These firms are the least likely to face IRS audits because the IRS has little incentive to conduct investigations that lead to a reduction in the tax revenue that they collect. Large negative book – tax differences are also less likely to lead to increased regulatory costs. In addition, these firms have an opportunity to increase non-tax benefits of higher earnings (e.g., increase bonuses) by reporting less conservatively. Finally, firms with large negative book-tax differences have been shown to have less persistent earnings (Hanlon 2005). To the extent less persistence means lower quality, firms will try closing the gap between PTBI and TI. My second hypothesis is as follows:

H2: Financial reporting income in firm years with large negative differences between pre-conservative pre-tax book income and taxable income is less conservative than in other firm years, *ceteris paribus*.

An explanation for why some firms will not try to close the gap between PTBI and TI when TI exceeds PTBI is that they are engaging in behavior where they purposely group income-decreasing accruals into the current year, i.e., “big bath” behavior. This can occur because managers are acting opportunistically and trying to maximize their own wealth by, for example, increasing the probability of receiving a bonus in a future period (Healy 1985), or trying to blame current poor performance on prior management and improving the chances of better earnings numbers in the future. Under this scenario, firms will not report less conservatively. Watts (2003b) points out, however, that this type of earnings management behavior is not a “plausible general explanation” for conservatism over long periods because the reasons for earnings management (e.g., increasing managerial wealth) suggest positive accruals in periods when write-offs are not taken. Therefore, my second hypothesis is stated in the alternative.

3.2 Conservatism and the Tax Reform Act of 1986.

In addition to examining the relation between taxes and financial reporting conservatism across firm years, I explore the relation between financial reporting conservatism and taxes when taxes change. If firms with large positive (negative) differences between PTBI before conservatism and TI are reporting more (less) conservatively because of taxes and their taxes change, then it is likely that their financial reporting conservatism changes. The Tax Reform Act of 1986 (TRA86)

provides an ideal setting to test this conjecture.

Although TRA86 is considered revenue neutral from the government's perspective, it shifts the burden of taxation from individuals to corporations and from corporations with higher tax burdens to those with lower tax burdens. TRA86 accomplishes this with a number of provisions specifically aimed at corporations that reduce the corporate tax rate from 46% to 34% yet adjust the base to which the rate is applied (e.g., repeal the investment tax credit). Appendix B outlines the major provisions of TRA86 affecting corporations.

The combination of lower tax rates and an expanded base on which the rates are applied suggests that TRA86 affects firms differently in the cross section. Relying on the efficiency of capital markets to reflect the impact of TRA86 on firms' equity values, Givoly and Hayn (1990) provide support for this conjecture by showing that capital markets expect some firms to benefit (suffer) from TRA86 in that their equity values increase (decrease) during periods of increased likelihood of passage. An increase (decrease) in equity value is consistent with a decrease (increase) in tax costs.

If corporations with large positive (negative) differences between PTBI before conservatism and TI prior to implementation of the TRA86 are more (less) conservative in their financial reporting because of the potential magnitude of their taxes, then these firms are likely receive some relief (increase) in taxes from changes imposed by TRA86. My third hypothesis, stated in the alternative form is:

H3: Financial reporting income in firm years with large positive (negative) differences between pre-conservative pre-tax book income and taxable income prior to implementation of TRA86 is relatively less (more) conservative after implementation of TRA86, *ceteris paribus*.

H3 tests the joint hypothesis that TRA86 shifted firms' tax burden and firms reacted¹⁷ by adjusting their financial reporting conservatism.

3.3 Financial reporting incentives and value relevance.

While the objective of financial reporting is to help users make rational economic and business decisions (SFAC1), taxable income is calculated in accordance with the Internal Revenue Code (IRC) to raise tax revenue, influence social policy (e.g., charitable gift giving), and for political purposes (Manzon and Plesko 2002, Scholes et al. 2005). Because the objectives of tax reporting are not to satisfy the information needs of capital market participants, the value relevance of financial accounting information prepared to reflect tax rules is arguably compromised (Joos and Lang 1994, Ali and Hwang 2000).

Some empirical and anecdotal evidence is consistent with the conjecture that value relevance is impaired when financial reporting is influenced by tax rules. First, Ali and Hwang (2000) provide evidence that the value relevance of accounting information is lower in countries where tax rules have a greater influence on financial accounting measurement relative to those countries where book and tax rules are separate.¹⁹ Second, with respect specifically to the Tax Reform Act of 1986, some speculated that the inclusion of the AMTBIA – one of the explicit links between PTBI and TI – weakened financial accounting because:

(t)he linkage between financial statement income and tax liability creates an incentive for corporations potentially subject to the AMT to

¹⁹ Alford et al. (1993) provide similar evidence for earnings of firms in two countries (Germany and Sweden) with high book-tax conformance. Evidence in Joos and Lang (1994), however, suggests that accounting data in the United Kingdom (low book tax conformity) is not more value relevant than in Germany (high book tax conformity) or France.

apply generally accepted accounting principles (GAAP) in a way that reduces the amount of net book income subject to the book income adjustment. Accordingly, general purpose financial statements may provide distorted financial data to investors, creditors, and other nontax users... (U.S. Congress, House, June 8, 1989).²⁰

Therefore, the value relevance of financial reporting income that is influenced by tax rules is potentially impaired.

This argument assumes that any influence tax rules have on book income is harmful to value relevance, but that is not always the case. Taxes reduce the resources available to firms. To the extent that PTBI and TI are linked, firms can choose financial accounting estimates and methods to minimize taxes and maximize firm value as part of an efficient tax planning process. In this way, conservative financial reporting functions to constrain opportunistic financial reporting, thereby reducing firm resources going to the government, as well as other parties, such as excessive bonuses paid to managers (Watts 2003a). Therefore, conservative book reporting that results from the existence of links between book and taxable income can result in more value relevant financial reporting.

Firms with either large positive or large negative differences between PTBI before conservatism and TI are likely to be influenced by tax reporting because they experience the largest potential differences between PTBI and TI. Their financial accounting information can be distorted (less useful to investors), or the result of manager's actions to maximize firm value (valued by investors), because of the incentives related to tax reporting. Therefore, my fourth hypothesis, stated in the null, is:

²⁰ Acting Assistant Treasury Secretary for Tax Policy, John Wilkens.

H4: The financial earnings and book value information of firm years with large differences between pre-conservative pre-tax book income and taxable income are not less/more value relevant than other firm years, *ceteris paribus*.

In hypothesis four, I compare book income that is influenced by tax rules to a greater versus a lesser degree. This is different and not inconsistent with the findings in Hanlon et al. (2005) who show that book income is more useful to investors (i.e., relatively more value relevant) than taxable income.²¹ In sensitivity tests in section 7, I show that the results in Hanlon et al. (2005) hold for my sample of firm years.

²¹ Using estimates of PTBI and TI from financial statements, Hanlon et al. (2005) compare annual R^2 s of regressions of market-adjusted returns on the change in PTBI and separately on the change in TI and show that PTBI is more highly associated with market-adjusted returns than TI. They use a Young (1989) test to verify that in all but three of their sample years, from 1983 to 2001, PTBI exhibits significantly greater explanatory power than TI.

In order to investigate the relation between the book and tax reporting link and conservatism and value relevance, I first sort firms based on the proximity of PTBI before the effects of conservatism and TI. Because I am unable to precisely measure my theoretical book – tax difference construct, I use proxies for PTBI before conservatism and TI. PTBI consists of actual cash inflows and outflows (primarily operating cash flows) plus accruals. Conservatism, as defined in this paper, exists explicitly in accruals. Therefore, I utilize that portion of PTBI that is not influenced by conservatism, operating cash flows, as my proxy for PTBI before conservatism. In addition, because tax returns are not publicly disclosed, I estimate TI using firms' publicly available financial statements. Using these proxies, I rank firms based on the relative difference (RELDIF) between cash flows from operations (CFO) and taxable income (TI) as follows:

$$\text{RELDIF}_{jt} = (\text{CFO}_{jt} - \text{TI}_{jt}) / \text{MVE}_{jt-1}. \quad (1)$$

In Equation (1), CFO is cash flows from operations from the cash flow statement (COMPUSTAT data308) for firm j for fiscal period t . TI is calculated by summing current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) to derive current tax expense, which is then divided by the top U.S. statutory tax rate applicable to that data year, from which result I subtract the change in net operating loss (NOL) carry forwards (COMPUSTAT data52) to obtain TI for firm j at time t .²² I deflate by the market value of equity

²² If federal income tax expense is missing from Compustat, TI is estimated as total income tax expense (COMPUSTAT data16) less deferred taxes (COMPUSTAT data50) less state taxes (COMPUSTAT

(MVE) at the beginning of the period because the magnitude of the difference between cash flows and taxable income is a function of firm size.

Using Equation (1), I designate the 20% of firm years with the largest positive RELDIF the “large positive” (LPOS) group, and the 20% of firm years with the largest negative RELDIF the “large negative” (LNEG) group for hypotheses 1, 2 and 4.²³

Similarly, in examining H3, the impact of a change in taxes, I average Equation (1) over the years prior to the passage of the Tax Reform Act of 1986 (1983 – 1985) and then designate the 20% of firm years with the largest positive RELDIF the LPOS group and the 20% of firm years with the largest negative RELDIF the LNEG group. I then compare conservatism in financial reporting within the LPOS group and separately within the LNEG group before and after implementation of TRA86. Because the cash flow statement is not available in years prior to TRA86, I estimate operating cash flows for tests of H3 using balance sheet information.

In the main tests reported in the paper, I use CFO instead of pre-tax CFO in Equation (1) because the different ways that firms report the cash flow effects of taxes make it difficult to reconcile the current tax expense on the income statement to actual taxes paid. Hanlon (2003) provides an example of a reconciliation between current tax expense and cash taxes paid that includes six possible differences, most of which are not readily disclosed in the financial statements. I briefly discuss the differences in Appendix C. The most significant of these six for many firm years is the tax benefit of employee stock option deductions. Firms report a benefit on their cash flow statement

data173) less other taxes (COMPUSTAT data211) divided by the top statutory tax rate applicable to that data year less the change in net operating loss carryforward (COMPUSTAT data52).

²³ In sensitivity tests discussed in section 7, I also examine 10% and 30% cutoffs.

equal to the amount of taxes saved in the current year because of the deduction on 22
their tax return for employee stock option exercises.²⁴ Not only does this amount vary
across firms and across time, it can be a significant portion of operating cash flows.
For example, from 2000 through 2003 Microsoft reported a cash flow benefit from
stock options that ranged from 9% to 48% of operating cash flows. In addition, firms
do not always separately identify the benefit. In robustness tests, I adjust CFO to
approximate pre-tax operating cash flows two ways: 1) by adding back current federal
and foreign tax expense and subtracting the change in taxes payable (COMPUSTAT
data305), and 2) by adding back actual taxes paid (COMPUSTAT data317). The
correlation between CFO and these approximations of pretax operating cash flows are
0.993 and 0.992 respectively.

Using financial statement data to measure TI also introduces measurement
error into RELDIF because corporations' TI is not publicly disclosed and thus has to
be estimated from publicly available information, i.e., from financial statement
disclosures. Hanlon (2003) identifies seven major problems in estimating a firm's tax
liability and hence TI from financial statement disclosures. The problems relate to
employee stock options (ESOs), reserves for IRS audit challenges, intraperiod tax
allocation, tax credits, foreign operations, negative TI and consolidation rules. Each
of these issues and the potential impact on this study is discussed in detail in Appendix
C. While these issues in estimating TI from financial statements imply measurement

²⁴ The deduction for a firm is equal to the difference between the market price and exercise price of the
option on the exercise date times the number of shares exercised. This is the same amount that
employees recognize as taxable income on their personal returns.

4.1 Hypotheses 1, 2 and 3: Earnings Conservatism and Taxes

4.1.1 Asymmetric Timeliness

Conservatism implies that earnings reflect losses in a timelier fashion than gains because more stringent verification is required to recognize gains. Basu (1997) predicts that periodic earnings more completely reflect bad economic news, as proxied by negative stock returns, than good news as proxied by positive stock returns. He regresses reported annual earnings on stock returns as follows:

$$ENGS_{jt} = \alpha_1 + \alpha_2 NEG_{jt} + \beta_1 RET_{jt} + \beta_2 NEG_{jt} * RET_{jt} + \varepsilon_{jt}. \quad (2)$$

$ENGS_{jt}$ is earnings before extraordinary items and discontinued operations (COMPUSTAT data18) deflated by beginning of the period market value of equity (COMPUSTAT data199 * COMPUSTAT data25) for firm j in period t . Consistent with Basu (1997), RET_{jt} is equal to 12-month buy-and-hold returns beginning the fourth month of the fiscal year t for firm j , and NEG_{jt} is an indicator variable equal to one if RET is negative and zero otherwise for firm j in period t .²⁶

The coefficient β_1 captures the extent to which good news is reflected in reported earnings, while β_2 captures the incremental extent to which bad news is reflected in reported earnings. Basu (1997) shows that reported earnings are more timely in reflecting bad news than good news (i.e., β_2 is significantly positive).

²⁵ Plesko (2000 and 2003) examines financial statement and confidential tax return data for 1992 and reports a regression coefficient of 0.986 when actual tax liability before credits is regressed on reported current federal tax expense. Because I use current federal tax expense to calculate TI, this appears to be a reasonable proxy for actual TI.

²⁶ Dietrich, Muller, and Riedl (2003) argue that results from Basu's method are econometric artifacts resulting from the use of 'reverse regressions' in the estimation process. Consistent with Ball, Kothari, and Robin (2000), I do not view my analysis as a reverse regression. Returns are being used as a proxy for news, and I am interested in when that news is incorporated into reported earnings. Thus, earnings is the dependent variable of interest.

My first measure of conservatism builds on Equation (2) to examine the relation between financial reporting conservatism and taxes as follows:

$$\begin{aligned}
 PTBI_{jt} = & \alpha_1 + \alpha_2 NEG_{jt} + \alpha_3 DX_{jt} + \sum_{k=1}^6 \alpha_{k+3} CTRL_{kjt} + \beta_1 RET_{jt} + \beta_2 NEG_{jt} * RET_{jt} + \\
 & \beta_3 DX_{jt} * NEG_{jt} + \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \\
 & \sum_{k=1}^6 \beta_{k+5} NEG_{jt} * CTRL_{kjt} + \sum_{k=1}^6 \beta_{k+11} CTRL_{kjt} * RET_{jt} + \\
 (3) \quad & \sum_{k=1}^6 \beta_{k+17} NEG_{jt} * CTRL_{kjt} * RET_{jt} + \sum_{k=1}^6 \beta_{k+23} DX_{jt} * CTRL_{kjt} + \varepsilon_{jt}.
 \end{aligned}$$

Because I argue that firms have incentives to keep PTBI and TI close, I use PTBI instead of ENGS as my dependent variable in Equation (3). $PTBI_{jt}$ is pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) deflated by the market value of equity at the beginning of the period for firm j in period t . The other variables are as defined above and CTRL represents the control variables discussed below. The cross-sectional regression represented by Equation (3) is estimated twice, once with DX equal to one for LPOS firms and again with DX equal to one for LNEG firms to isolate the relative speed with which PTBI incorporates bad news to test H1 and H2 respectively. To test H3, Equation (3) is estimated separately for LPOS and LNEG firm years, with DX equal to one for years after TRA86, to isolate the change in conservatism around TRA86.

The coefficient β_1 in Equation (3) captures the extent to which PTBI captures good news for firm years in which DX is equal to zero, and the coefficient β_4 captures the incremental extent to which PTBI captures good news for firm years in which DX is equal to one. Analogously, the coefficient β_2 in Equation (3) captures the incremental extent to which bad news is reflected in PTBI relative to good news for

firm years in which DX is equal to zero, while β_5 captures the incremental extent to which bad news is reflected in PTBI relative to good news for DX firms years equal to one, ceteris paribus. β_5 is predicted to be positive for LPOS firms in H1 and negative for LNEG firms in H2. For H3, β_5 is predicted to be negative (positive) for LPOS (LNEG) firms. 25

4.1.2 Accumulated Accruals

My second measure of financial reporting conservatism is based on Givoly and Hayn's (2000) accrual accumulation measure, as they argue that the accumulation of negative accruals is consistent with conservatism. Unlike Givoly and Hayn (2000) who examine non-operating accruals, however, I capture all accruals in PTBI because it is through these accruals that firms keep PTBI close to TI.²⁷ I call these accruals pre-tax book accruals, PTBAC. PTBAC is estimated as follows:

$$PTBAC_{jt} = \left[\sum_{k=t-4}^t \left((PTBI_{jk} - CFO_{jk}) / ATA_{jk} \right) \right] * (-1) \quad (4)$$

where PBTI and CFO are as previously defined. ATA is average total assets equal to total assets (COMPUSTAT data6) at the end of year t plus total assets at the end of year t-1 divided by two. I deflate the annual accruals measures by average total assets (ATA) to allow for cross-sectional comparability. Finally, I multiply Equation (4) by -1 for ease of interpretation, i.e. conservatism is increasing in PTBAC.

To test H1, H2 and H3, I estimate the following equation:

$$PTBAC_{jt} = \delta_0 + \delta_1 DX_{jt} + \sum_{k=1}^6 \delta_{k+1} CTRL_{kjt} + \varepsilon_{jt} \quad (5)$$

²⁷ Givoly and Hayn (2000) define non-operating accruals as total accruals less depreciation and operating accruals, where operating accruals consist of the sum of the changes in accounts receivable, inventories, and prepaid expenses less changes in accounts payable and taxes payable.

where all variables are as previously defined. The cross-sectional regression represented by Equation (5) is estimated twice, once with DX equal to one for LPOS firms and again with DX equal to one for LNEG firms to test H1 and H2, respectively. In terms of H1, I hypothesize that LPOS firms are more conservative than other sample firms, so I predict δ_1 to be positive when DX equals one for LPOS firms. Similarly for H2, LNEG firms are less conservative than other sample firms, so I predict δ_1 to be negative when DX equals one for LNEG firms.

For H3, the post implementation period for TRA86 begins in 1988 so PTBAC is accumulated for three years from the beginning of year $t-2$ through year t (e.g., 1986 – 1988 for $t = 1988$) to avoid having pre-TRA86 accruals picked up in the post implementation period. I estimate Equation (5) twice, once for LPOS firm years and once for LNEG firm years, with DX equal to one for years after TRA86. I predict δ_1 to be negative (positive) for LPOS (LNEG) firm years, which is consistent with LPOS (LNEG) firms being less (more) conservative after the implementation of TRA86.

4.1.3 Controls for other determinants of conservatism.

In order to isolate the impact of taxes on my measures of conservatism, I include controls for other determinants of conservatism, including regulation, litigation and contracting, that are discussed in Watts (2003a,b). I also include controls for size and research and development and advertising in my research design as discussed below. Consistent with my sorting measure, RELDIF, I measure all control variables over the fiscal year t for my primary tests.

For my first control, I limit my sample of firms to those incorporated in the United States and not operating in regulated industries. This controls for regulation by

limiting differences in the regulatory environment of my sample firms. Second, I 27
control for litigation because Basu (1997) finds that conservatism increases in
litigation risk. At the firm level, I expect firms operating in industries predisposed to
litigation are more likely to report conservatively to mitigate the expected cost of
litigation. I include an indicator variable, LIT, equal to one for firms in high litigation
exposure industries and predict the coefficient on it to be positive.²⁸ Third, I control
for contracting as it relates to bondholder/shareholder conflicts over dividend policy.
Ahmed et al. (2002) find that firms facing more severe conflicts over dividend policy
tend to use more conservative accounting. Consistent with their findings, I use three
proxies for bondholder / shareholder conflicts including the standard deviation of
firms' return on assets, where return on assets is calculated as pre-tax income
(COMPUSTAT data170) less minority interest (COMPUSTAT data49) divided by
total assets (COMPUSTAT data6), STDROA, as a proxy for operating uncertainty, the
amount of common dividends (COMPUSTAT data21) divided by total assets
(COMPUSTAT data6), DIV, as a proxy for dividend policy, and leverage or long-term
debt (COMPUSTAT data9) divided by total assets (COMPUSTAT data6), LEV. All
three variables are predicted to be positively related to conservative accounting.

I also control for firm size, because it is a potential explanation for
conservatism, by including the natural log of total assets (COMPUSTAT data6), SIZE.
Size is a proxy for political visibility and based on prior evidence I expect larger firms
to face higher political costs and to use more conservative accounting (Watts and

²⁸ LIT is equal to one for firms in the following industries: Biotechnology (SIC codes 2833-2836),
Computers (3570-3577 and 7370-7379), Electronics (3600-3674), and Retailing (5200-5961), and zero
otherwise (Francis, Philbrick, and Schipper 1994, Matsumoto 2002).

Zimmerman 1978, Zmijewski and Hagerman 1981). Givoly et al. (2004), however, ²⁸ conclude that the Basu measure is affected by the number and direction of economic shocks and will classify firms as more conservative if they have a few large unidirectional shocks, relative to numerous offsetting shocks. Because prior studies suggest that the flow of information is smoother for larger companies (e.g., Shores 1990), this implies that earnings conservatism as assessed by the Basu method is likely to be negatively related to firm size. Therefore, I do not make a prediction for SIZE.

Finally, I control for research and development (R&D) and advertising expenses. To the extent that these expenditures are not deducted for tax purposes in the same period that cash is expended, firms with high R&D and advertising costs are more likely to be classified as less conservative firms (i.e., LNEG) in the period cash is expended and more conservative firms (i.e., LPOS) in subsequent years. In addition, current expenditures on these activities can lead to future benefits that are picked up currently in market value, thus affecting the results of the asymmetric timeliness measure (e.g. lower PTBI and higher good news). For these reasons, R&D and advertising is likely to have an indeterminate effect on conservatism so I do not predict a sign on this variable. Similar to Ahmed et al. 2002, I measure this variable as the sum of research and development (COMPUSTAT data45) and advertising expense (COMPUSTAT data46) divided by sales (COMPUSTAT data12).

4.2 Hypothesis 4: Value relevance.

For the value relevance tests, I focus on the relevance of financial accounting information to investors for valuation purposes, and define value relevance as a statistical association between financial accounting information and market values or

returns (Francis and Schipper 1999). I test H4 by examining whether the value relevance of financial accounting information for LNEG and LPOS firms is different than the value relevance of financial accounting information for MED firms.

Consistent with prior research, I use two types of association tests to assess differences in the relevance of financial accounting information across firms, long-window hedge portfolio return tests, and the explained variation (R^2) in regressions of returns on financial accounting measures.²⁹ For each type of test (hedge portfolio and explained variation), I examine the ability of both financial statement earnings and book values to explain returns and market values because both types of financial accounting information is available to investors, and prior evidence suggests that when the balance sheet is the focal point of reporting the adjusted R^2 from regressions of market values on earnings and book values are higher than when the income statement is the focal point (Joos and Lang 1994).

4.2.1 Hedge portfolio tests

My first association test utilizes three different long-window hedge portfolio tests, with portfolios formed as follows:

- 1: RET^{SX} = consistent with Ball and Brown (1968), this is the hedge portfolio return based on the sign of the change earnings. I use the change in pre-tax book earnings of firm j for fiscal year t ($\Delta PTBI_{jt}$) for this portfolio, and I take a long (short) position in stocks when $\Delta PTBI_{jt}$ is positive (negative).
- 2: RET^{SMX} = the hedge portfolio based on both the sign and magnitude of $\Delta PTBI_{jt}$. I first rank firms based on $\Delta PTBI_{jt}$, then I take long (short) positions in the top (bottom) 40% of the firms.
- 3: RET^{PRED} = the hedge portfolio formed on predicted values of returns using the yearly coefficient estimates from the following regression:

²⁹ See Alford et al. (1993), Joos and Lang (1994), Francis and Schipper (1999), and Ali and Hwang (2000) for examples of research that use similar tests.

$$(R_{jt} - R_{mt}) = \alpha_{0t} + \alpha_{1t} * \Delta PTBI_{jt} + \alpha_{2t} * PTBI_{jt} + \alpha_{3t} BV_{jt} + \varepsilon_{jt} \quad (5)$$

where $(R_{jt} - R_{mt})$ is the buy and hold return on security j over the 12 months ending three months following the fiscal year end less the buy and hold value-weighted market return from CRSP over the same period. $PTBI_{jt}$ and $\Delta PTBI_{jt}$ are as previously defined and BV_{jt} is the per share book value of firm j 's equity (COMPUSTAT data 216 / COMPUSTAT data25) at the end of fiscal year t . I rank firms based on the predicted values of market adjusted security returns and take long (short) positions in the top (bottom) 40% of the firms.

To test the significance of differences in the relevance of accounting earnings for LPOS, MED and LNEG firm years due to differences in reporting incentives, I employ randomization tests (Noreen 1989). Specifically, I calculate the ratio of RET^X for MED and each of the other two groups of firm years separately for each hedge portfolio, as follows:

$$RET_{MED}^X / RET_{LPOS}^X \quad (6a)$$

$$RET_{MED}^X / RET_{LNEG}^X \quad (6b)$$

where the superscript X represents each of the three hedge portfolios. Next I randomly shuffle the firm years among the groups, LPOS, MED and LNEG, and repeat the calculations represented by Equation (6a) and (6b) to obtain shuffled values of

$RET_{MED}^X / RET_{LPOS}^X$ and $RET_{MED}^X / RET_{LNEG}^X$ for each portfolio. I repeat this step a

thousand times for each hedge portfolio to construct separate distributions of each

ratio for each hedge portfolio. Finally, I compare the values of $RET_{MED}^X / RET_{LPOS}^X$

and $RET_{MED}^X / RET_{LNEG}^X$ obtained from my sample against the constructed

distributions to determine the level of significance of the observed value. For H4, the

ratio will equal one for all hedge portfolio tests if there is no difference in value

relevance of financial reporting information between MED and LPOS and between MED and LNEG firm years. 31

4.2.2 Explanatory power of accounting information for market measures

My second approach to measuring the value relevance of accounting information examines two contemporaneous relations between market value measures and financial accounting information. In the first relation, I examine the association between financial accounting earnings and returns, by regressing market-adjusted returns on earnings separately for LPOS, MED, and LNEG firm years, using the following specification:³⁰

$$(R_{jt} - R_{mt}) = \delta_{0t} + \delta_{1t} * \Delta PTBI_{jt} + \delta_{2t} * PTBI_{jt} + v_{jt}. \quad (7)$$

The variables in Equation (7) are as previously defined.

The second relation I examine is the association between the market value of a firm and PTBI and book value as follows:

$$MVE_{jt} = \rho_{0t} + \rho_{1t} * BV_{jt} + \rho_{2t} * PTBI_{jt} + u_{jt}. \quad (8)$$

MVE_{jt} represents the per share market value of equity (COMPUSTAT data199) for firm j at the end of period t , BV_{jt} and $PTBI_{jt}$ are as previously defined. Value relevance is measured by the ability of PTBI, $\Delta PTBI$ (BV, PTBI) to explain returns (market value) as reflected in the adjusted R^2 from estimating Equations (7) and (8).

To test H4, I calculate the adjusted R^2 from pooled cross sectional regressions of Equation (7) and separately for Equation (8) for LPOS, MED and LNEG firm years

³⁰ Easton and Harris (1991) provide evidence that suggests both earnings levels (PTBI) and earnings changes ($\Delta PTBI$) are relevant for explaining returns and that the two variables are not just substitutes. Because I am interested in the total amount of information that financial statements are able to capture or summarize, I include both PTBI and $\Delta PTBI$ in the equation.

during the sample period and employ randomization tests (Noreen 1989).

Specifically, I calculate the difference in adjusted R^2 between MED and each of the other two groups of firm years separately for each regression, as follows:

$$AdjR_{MED}^{2-X} - AdjR_{LPOS}^{2-X} \quad (9a)$$

$$AdjR_{MED}^{2-X} - AdjR_{LNEG}^{2-X} \quad (9b)$$

where the superscript X represents each of the two regressions. Similar to the hedge portfolio return tests, I randomly shuffle the firm years among the groups, LPOS, MED and LNEG, re-estimate Equations (7) and (8) and then repeat the calculations represented by Equation (9a) and (9b) to obtain shuffled values of $AdjR_{MED}^2 - AdjR_{LPOS}^2$ and $AdjR_{MED}^2 - AdjR_{LNEG}^2$ for each regression. I repeat this step a thousand times to construct a distribution of $AdjR_{MED}^2 - AdjR_{LPOS}^2$ and $AdjR_{MED}^2 - AdjR_{LNEG}^2$, respectively. Finally, I compare the values of $AdjR_{MED}^2 - AdjR_{LPOS}^2$ and $AdjR_{MED}^2 - AdjR_{LNEG}^2$ obtained from my sample against these distributions to determine if they are significant. For H4, the difference in adjusted R^2 will equal zero if there is no difference in value relevance of financial reporting information between MED and LPOS firm years and between MED and LNEG firm years.

5.0 Sample Selection and Descriptive Statistics

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My sample consists of firms with available data on the most recent Compustat Annual Industrial and Research files that have returns available on the Center for Research in Security Prices (CRSP) tapes. I exclude financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999) because these firms operate in regulated industries and also face a different set of tax and/or book constraints than other firms. Similarly I exclude observations with a foreign incorporation code due to different tax reporting in foreign countries. I eliminate firm-year observations in which the fiscal year end changes in order to insure that observations are comparable across years. I require firm-year observations to have data to estimate RELDIF, earnings and return variables, accruals, and the market and book values of equity as discussed above. For every firm-year in my final sample, I also require the availability of pre-tax book income and cash flows from the cash flow statement from time $t-4$ to time t (five years) to calculate accumulated accruals (PTBAC). Because 1987 is the first year that cash flows are available from the cash flow statement, my final sample spans the period 1991 – 2004 for tests of H1, H2 and H4. Tests of H3 encompass years before the cash-flow statement is available, so I require firms to have information to estimate cash flows using the balance sheet, in addition to the data previously mentioned, for six years (1983 – 1985 and 1988 – 1990). Finally, in order to reduce the effects of outliers, observations in the top or bottom 1% of the conservatism and value relevance variables used in my regressions are truncated resulting in a final sample of 30,189 firm-years for tests of H1, H2 and H4 and a sample of 7,272 firm-years to test H3.

Table 1 presents the distribution of firm years across industries for each group and for the Compustat sample as a whole. High litigation industries are spread out across the three groups suggesting that the control for litigation, LIT, may not be significant.

Table 2 presents descriptive statistics and variable definitions for my sample firms by group (i.e. LPOS, MED and LNEG), including the variables that I use in the conservatism and value relevance tests as well as my control variables. LPOS firms have higher pre-tax book income (PTBI), accumulated accruals (PTBAC) and returns (RET) than LNEG firms, as well as a slightly lower occurrence of bad news (NEG). Both the mean and median PTBAC decrease across groups consistent with the prediction of conservatism decreasing from LPOS to MED to LNEG.

Table 3 presents the correlation coefficients for my sample. Somewhat surprisingly, dividends (DIV) and SIZE are negatively correlated with accumulated accruals (PTBAC), suggesting that conservative firms are less likely to pay dividends and are likely to be smaller. The other control variables are positively correlated with accumulated accruals, implying that conservative firms are more highly leveraged (LEV), have higher operating uncertainty (STDROA), research and development and advertising expenditures (RDADV), and are more likely to operate in a high litigation exposure industry (LIT).

Table 1: Sample Description

	LPOS n	LPOS %	MED n	MED %	LNEG n	LNEG %	Compustat %
Mining and Construction	170	2.82%	170	2.82%	255	4.22%	3.58%
Food	145	2.40%	707	3.90%	105	1.74%	2.52%
Textiles and Printing/Publishing	459	7.60%	459	7.60%	374	6.20%	5.47%
Chemicals	146	2.42%	2,42%	179	179	2.97%	2.31%
Biotech*	45	0.75%	619	5.65%	619	10.25%	4.59%
Extractive	654	10.83%	10,83%	4.13%	654	2.30%	5.75%
Durable Manufacturing	1,620	26.83%	1,620	26.83%	1,620	33.44%	23.26%
Transportation	531	8.80%	8,80%	5.23%	531	2.43%	8.00%
Retail*	612	10.14%	1,468	8.10%	351	5.81%	7.37%
Retail - other	347	5.75%	5,75%	3.59%	347	8.00%	5.26%
Services	666	11.03%	1,604	8.85%	515	8.53%	12.78%
Electronics*	111	1.84%	1,84%	3.12%	111	2.04%	1.96%
Electronics - other	199	3.30%	3,30%	4.36%	199	4.52%	3.96%
Computers*	276	4.57%	4,57%	7.24%	276	6.49%	11.18%
Other	56	0.93%	147	0.81%	63	1.04%	2.00%
Total	6,037	100.00%	18,115	100.00%	6,037	100.00%	100.00%

Industry membership is determined by SIC codes as follows: Mining and Construction (SIC codes 1000-1999, excluding 1300-1399), Food (Sic codes 2000-2111), Textiles and Printing/Publishing (SIC codes 2200-2799), Chemicals (SIC codes 2800-2824, 2840-2899), Biotech* (2833-2836), Extractive (1300-1399, 2900-2999), Durable Manufacturing (SIC codes 3000-3999, excluding 3570-3579 and 3670-3679), Transportation (SIC codes 4000-4899), Retail* (SIC codes 5200-5961), Retail - other (SIC codes 5000 - 5199 and 5962 - 5999), Services (SIC codes 7000-8999, excluding 7370-7379), Electronics* (SIC codes 3600 - 3674), Electronics - other (SIC codes 3570 - 3579 and 3675 - 3679), Computers* (SIC codes 7370-7379), Other includes Agriculture and Non-classifiable Establishments (SIC codes 0100 -0999, 9900-9999). There are 219,570 firm years available on Compustat for the period from 1991 to 2004.

* High litigation risk industries.

Table 2: Descriptive Statistics and Variable Definitions

<u>Variable</u>	<u>Partition*</u>	<u>N</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Median</u>	<u>Maximum</u>
<i>Sort variables</i>							
CFO	LPOS	6,037	239.793	1,351.10	-627.00	20.145	33,764.00
	MED	18,115	299.291	1,237.65	-3,657.00	25.213	32,195.00
	LNEG	6,037	15.288	289.67	-4,446.84	-1.617	11,015.40
TI	LPOS	6,037	29.581	330.538	-6,827.57	0.503	9,357.14
	MED	18,115	212.324	931.958	-3,996.06	14.503	30,488.57
	LNEG	6,037	63.227	454.089	-87.14	2.371	18,456.00
RELDIF	LPOS	6,037	0.337	0.448	0.132	0.237	20.734
	MED	18,115	0.030	0.046	-0.045	0.023	0.133
	LNEG	6,037	-0.169	0.188	-4.330	-0.109	-0.045
<i>Conservatism variables*</i>							
PTBI	LPOS	6,037	0.017	0.239	-1.865	0.070	0.596
	MED	18,115	0.047	0.116	-1.793	0.062	0.622
	LNEG	6,037	-0.007	0.235	-2.105	0.051	0.692
RET	LNEG	6,037	0.201	0.797	-0.927	0.037	7.987
	MED	18,115	0.128	0.582	-0.919	0.045	8.395
	LPOS	6,037	0.271	0.713	-0.871	0.127	8.417
PTBAC	LPOS	6,037	-0.326	0.310	-1.859	-0.295	0.822
	MED	18,115	-0.096	0.315	-1.894	-0.084	0.971
	LNEG	6,037	-0.042	0.431	-1.890	-0.011	0.952
NEG				<u>NEG=1</u>	<u>NEG=0</u>		
	LPOS	6,037		2,340	3,697		
	MED	18,115		8,246	9,869		
	LNEG	6,037		2,818	3,219		
<i>Value relevance variables*</i>							
ΔPTBI	LPOS	6,037	0.006	0.200	-1.322	0.052	0.471
	MED	18,115	0.027	0.099	-1.207	0.046	0.436
	LNEG	6,037	-0.040	0.223	-1.656	0.038	0.465
$(R_{jt} - R_{mt})$	LPOS	6,037	0.164	0.681	-0.990	0.036	8.154
	MED	18,115	0.004	0.555	-1.121	-0.072	8.151
	LNEG	6,037	0.071	0.755	-1.132	-0.088	7.725

See Notes after Panel B.

Table 2 (Continued)

			<u>Mean</u>	<u>Standard Deviation</u>	<u>Minimum</u>	<u>Median</u>	<u>Maximum</u>
<i>Value Relevance Variables (Continued)</i>							
MVE_PS	LPOS	6,037	12.457	13.013	0.250	8.000	96.063
	MED	18,115	21.642	17.947	0.219	17.000	114.750
	LNEG	6,037	12.574	13.508	0.187	7.875	101.000
BVE_PS	LPOS	6,037	9.285	8.014	0.118	6.990	58.031
	MED	18,115	9.106	7.260	0.070	7.477	53.775
	LNEG	6,037	6.641	6.868	0.043	4.578	59.216
<i>Control Variables</i>							
DIV	LPOS	6,037	0.004	0.021	0.000	0.000	0.882
	MED	18,115	0.011	0.046	0.000	0.000	4.713
	LNEG	6,037	0.004	0.035	0.000	0.000	2.280
LEV	LPOS	6,037	0.241	0.185	0.000	0.230	0.922
	MED	18,115	0.152	0.152	0.000	0.119	0.875
	LNEG	6,037	0.141	0.163	0.000	0.080	0.904
STDROA	LPOS	6,037	0.109	0.077	0.004	0.091	1.102
	MED	18,115	0.118	0.147	0.003	0.089	12.202
	LNEG	6,037	0.168	0.214	0.011	0.125	12.202
SIZE	LPOS	6,037	5.392	1.979	0.536	5.182	12.823
	MED	18,115	5.793	2.095	0.027	5.737	13.381
	LNEG	6,037	4.497	1.804	-0.416	4.332	11.148
RDADV	LPOS	6,037	0.030	0.358	0.000	0.000	24.87
	MED	18,115	0.504	40.180	0.000	0.019	5,327.00
	LNEG	6,037	1.698	25.561	-0.003	0.021	1,322.00
LIT				<u>LIT = 1</u>	<u>LIT = 0</u>		
	LPOS	6,037		1,044	4,993		
	MED	18,115		4,367	13,748		
	LNEG	6,037		1,485	4,552		

Notes:

CFO = cash flow from operations (COMPUSTAT data308).

TI = taxable income is the sum of current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) divided by the top U.S. statutory tax rate applicable to that data year less the change in net operating loss (NOL) carry forwards (COMPUSTAT data52).

RELDIF = difference between CFO and TI deflated beginning of the period market value of equity.

PTBI = pre tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) divided by market value of equity (COMPUSTAT data199*COMPUSTAT data25).

Δ PTBI = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period t-1 to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25).

RET = Buy-and-hold returns compounded monthly from three months after prior fiscal year end to three months after current fiscal year end.

PTBAC = Pre-tax book accruals equal to pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) less CFO (COMPUSTAT data308) all divided by average total assets (COMPUSTAT data6) summed over the five-year period from t-4 through t.

NEG = indicator variable set equal to 1 if RET is negative, zero otherwise.

$(R_{jt} - R_{mt})$ = Value-weighted market adjusted buy-and-hold returns compounded monthly from three months after prior fiscal year end to three months after current fiscal year end.

MVE_PS = market value of equity per share at the end of the period (COMPUSTAT data199).

BVE_PS = book value of equity per share at the end of the period equal to book value of equity (COMPUSTAT data216) divided by the outstanding number of common shares (COMPUSTAT data25).

DIV = relative dividends equal to common dividends declared (COMPUSTAT data21) deflated by average total assets (COMPUSTAT data6) for the period.

LEV = Leverage equal to long-term debt (COMPUSTAT data9) divided by average total assets (COMPUSTAT data6).

STDROA = standard deviation of a firm's return on assets ((COMPUSTAT data170 - COMPUSTAT data49) / COMPUSTAT data6).

SIZE = log of total assets (COMPUSTAT data6).

RDADV = sum of research and development (COMPUSTAT data45) and advertising expenses (COMPUSTAT data46) divided by sales (COMPUSTAT data12).

LIT = and indicator variable equal to one for firms in the following industries: Biotechnology (SIC codes 2833-2836), Computers (3570-3577 and 7370-7379), Electronics (3600-3674), and Retailing (5200-5961), and zero otherwise.

LPOS = large positive cash - tax spread group.

MED = medium cash - tax spread group.

LNEG = large negative cash - tax spread group.

* Primary regression variables are truncated at the 1 and 99 percentile.

Table 3: Correlation Statistics

This table presents the correlation coefficients among the sort, conservatism and value relevance variables for the sample of 30,189 firm years from 1991 - 2004.

Variable*	RELDIF	PTBI	RET	PTBAC	NEG	Δ PTBI	$(R_{jt} - R_{mt})$	MVE_PS	BVE_PS	DIV	LEV	STDROA	SIZE	RDADV	LIT
RELDIF	1														
PTBI	<u>-0.016</u>	1													
RET	<u>0.028</u>	<u>0.136</u>	1												
PTBAC	<u>0.215</u>	<u>-0.284</u>	0.030	1											
NEG	<u>-0.039</u>	<u>-0.214</u>	<u>-0.628</u>	<u>0.014</u>	1										
Δ PTBI	<u>0.094</u>	<u>0.296</u>	<u>0.197</u>	<u>0.076</u>	<u>-0.153</u>	1									
$(R_{jt} - R_{mt})$	<u>0.043</u>	<u>0.127</u>	<u>0.951</u>	<u>0.038</u>	<u>-0.568</u>	<u>0.213</u>	1								
MVE_PS	<u>-0.052</u>	<u>0.256</u>	<u>0.149</u>	<u>-0.182</u>	<u>-0.246</u>	<u>0.031</u>	<u>0.129</u>	1							
BVE_PS	<u>0.049</u>	<u>0.266</u>	<u>-0.011</u>	<u>-0.145</u>	<u>-0.117</u>	<u>-0.031</u>	<u>-0.018</u>	<u>0.606</u>	1						
DIV	<u>-0.035</u>	<u>0.153</u>	<u>-0.025</u>	<u>-0.173</u>	<u>-0.075</u>	<u>-0.032</u>	<u>-0.041</u>	<u>0.336</u>	<u>0.167</u>	1					
LEV	<u>0.155</u>	0.004	<u>-0.042</u>	<u>0.106</u>	0.009	<u>-0.012</u>	<u>-0.047</u>	<u>0.033</u>	<u>0.099</u>	<u>-0.059</u>	1				
STDROA	<u>-0.075</u>	<u>-0.190</u>	-0.004	<u>0.157</u>	<u>0.076</u>	0.007	-0.002	<u>-0.210</u>	<u>-0.269</u>	<u>-0.144</u>	<u>-0.160</u>	1			
SIZE	<u>0.059</u>	<u>0.171</u>	<u>-0.014</u>	<u>-0.100</u>	<u>-0.094</u>	<u>-0.035</u>	-0.008	<u>0.662</u>	<u>0.568</u>	<u>0.272</u>	<u>0.311</u>	<u>-0.298</u>	1		
RDADV	<u>-0.104</u>	<u>-0.160</u>	0.003	<u>0.107</u>	<u>0.042</u>	<u>-0.018</u>	<u>0.015</u>	<u>-0.058</u>	<u>-0.125</u>	<u>-0.072</u>	<u>-0.088</u>	<u>0.163</u>	<u>-0.107</u>	1	
LIT	<u>-0.042</u>	<u>-0.081</u>	<u>0.037</u>	<u>0.088</u>	<u>0.023</u>	0.007	<u>0.045</u>	<u>-0.019</u>	<u>-0.156</u>	<u>-0.102</u>	<u>-0.143</u>	<u>0.109</u>	<u>-0.046</u>	<u>0.207</u>	1

* See Table 2 for variable definitions.
Underlined and bold correlation coefficients are significant at the 5% level.

6.1 Hypotheses 1 and 2: Earnings Conservatism and Taxes

This section includes the results for H1 and H2. Because cross-sectional correlation in the error terms of pooled cross-sectional regressions of Equation (3) and (4) is a concern, I estimate separate annual cross-sectional regressions of these equations and report the time series mean coefficients. I calculate the significance of the coefficients using time-series t-tests (Fama and MacBeth 1973) to account for correlation in the error terms.³¹

6.1.1 Asymmetric Timeliness

Panel A of Table 4 presents the results of estimating the basic Basu regression from Equation (2) with PTBI as the dependent variable for the full sample of firms to gauge how consistent my sample is with other research.³² The asymmetric timeliness coefficient, (β_2), is positive and significant consistent with prior research, and the magnitude is also similar (e.g. Basu (1997) reports a coefficient of 0.214 during the high litigation period of 1983 – 1990). Likewise, the coefficient representing earnings response to good news (β_1) is much smaller in magnitude and positive but only marginally significant (p-value = 0.06). This is consistent with prior research that generally shows that the coefficient for good news is much smaller than for bad news (e.g Basu's (1997) reports a coefficient of 0.001 during the high litigation period of 1983 – 1990 on good news).

In Panel B of Table 4, I present the results of estimating Equation (3) prior to

³¹ The t-statistic is the ratio of the sample mean to the standard deviation of the time-series distribution of the estimated coefficients, divided by the square root of the number of annual cross-section regressions.

³² Results using ENGS as my dependent variable are consistent with those reported.

including the control variables with DX alternatively set equal to one for the LPOS, 41
MED and the LNEG groups. The coefficient on β_5 is positive and significant when
 DX is equal to one for the LPOS firm years consistent with H1, which predicts that the
LPOS firm years are more conservative than the other firm years. When DX is equal
to one for LNEG firms, the coefficient on β_5 is positive and significant and the
coefficient on β_4 is negative and significant, indicating that the LNEG group not only
recognizes bad news in a more timely fashion than the combined MED and LPOS firm
years, but that they also are less timely in recognizing good news. This is not
consistent with H2 which predicts that the LNEG firm-years will be the least
conservative. Interestingly, the MED group appears to be the least timely in
recognizing bad news as β_5 is negative and significant, but I do not make a prediction
for this group.

Panel C of Table 4 reports the results of Equation (3) including control
variables. My results with respect to H1 remain, namely that the coefficient on the
asymmetric timeliness variable for LPOS firms, β_5 , is positive and significant,
indicating that these firms are more timely in recognizing bad news. For the LNEG
group, the asymmetric timeliness coefficient loses significance once the control
variables are included. The LNEG firm years tend to be smaller, with less leverage
and dividends (relative to MED firm years specifically) and have a higher
concentration of Biotech firms (see Table 1) than the other groups. The interaction
terms between DX and size (SIZE), dividends (DIV) and litigation (LIT) for the
LNEG group are all significant, suggesting that these factors influence the asymmetric
timeliness of this group. In summary, Table 4 provides evidence consistent with

LPOS firms being more conservative than other firms (H1), but the evidence is not consistent with LNEG firms being less conservative (H2) as reflected in the asymmetric timeliness with which earnings captures bad economic news.

As discussed in sections 2 and 3, the asymmetric timeliness measure is potentially affected by firms accounting choices over time and/or their behavior in a particular period. One explanation for the evidence for LNEG firms is that they made less conservative accounting choices prior to time t such that they are not able to react less conservatively than other firms during time t . Alternatively, firms might be engaging in big bath behavior and grouping expenses in one period. Evidence consistent with both of these explanations is provided in the next section.

6.1.2 Accumulated accruals

Table 5 contains results from univariate tests of differences in accumulated accruals. Conservatism is increasing in PTBAC as accumulated accruals are progressively bigger from the LNEG to the MED to the LPOS groups as measured by the mean and median of PTBAC. Tests of differences in the means and the medians reported in Table 5 provide evidence that LPOS firms are more conservative and LNEG firms are less conservative than other firms. This evidence supports both the conjecture that LNEG firms made less conservative accounting choices prior to time t , affecting their ability to react to contemporaneous news (i.e., they had to react somewhat conservatively as they had been aggressive in the past), and the conjecture that LNEG firms engaged in big bath behavior (i.e., their one-time large negative “big bath” accruals are tempered by more positive accruals in other years) as discussed in the previous section.

Panel B of Table 5 presents results from estimating Equation (5). When DX is⁴³ set equal to one for the LPOS group, the coefficient on DX is positive and significant indicating that this group is more conservative than the other groups which is consistent with H1. In contrast, the coefficient on DX is negative and significant when it is equal to one for LNEG firms indicating that this group is less conservative than the other groups.

In summary, the evidence presented in Tables 4 and 5 is consistent with the hypotheses that LPOS firms display more financial reporting conservatism than other firms as measured by the differential timeliness with which earnings captures bad news relative to good news and the accumulation of negative accruals. For LNEG firms, the accumulation of accruals measure of conservatism suggests that these firm years are less conservative than other firm years, but the asymmetric timeliness measure offers weak support for this conclusion. Overall, the evidence is consistent with taxes being a determinant of financial reporting conservatism.

6.2 Hypothesis 3: Earnings Conservatism and Tax Changes

This section contains the results for H3. In these tests, I sort firms into LPOS and LNEG groups based on the average value of RELDIF over the years prior to implementation of TRA86 (1983 – 1985) because I need to have the same firms in each group before and after the passage of TRA86 to compare the impact of the tax change on their financial reporting conservatism. For H3, I compare both the asymmetric timeliness and accumulated accruals measures of conservatism before and

after passage of TRA86 within each group.³³

Panel A of Table 6 reports the results from estimating the asymmetric timeliness regression, Equation (3), separately on the LPOS and LNEG groups of firm years. In Table 6, DX is set equal to one for firm years after implementation of TRA86 and zero otherwise.³⁴ The coefficient β_2 is positive and significant while the coefficient β_5 is positive and insignificant for the LPOS firms, which implies that the LPOS are not any more conservative after implementation of TRA86 relative to before implementation. For the LNEG firms, the coefficient β_2 is positive and insignificant while the coefficient β_5 is positive and significant. This is consistent with the LNEG firms being timelier in recognizing bad news (i.e., more conservative) after implementation of TRA86 than before implementation.

Panel B of Table 6 reports the results from estimating Equation (5), the accumulated accruals measure of conservatism. When DX is set equal to one for the years after implementation of TRA86, the coefficient on DX is negative and significant for the LPOS group and positive and significant for the LNEG group. This evidence suggests that the LPOS (LNEG) group is less (more) conservative after implementation of TRA86 consistent with H3.

Overall, the evidence from the asymmetric timeliness and accumulation of accruals tests when a tax change occurs is generally consistent with taxes being a determinant of conservatism. The accumulation of accruals measure of conservatism

³³ Because cross-sectional correlation in the error terms of pooled cross-sectional regressions of Equation (3) and (4) is a concern and I do not have enough years to estimate separate annual cross-sectional regressions, as a sensitivity test I calculate the significance of the coefficients using Roger's standard errors (Petersen 2005). Results in Table 6 are from ordinary least squares estimation because they are qualitatively similar to those obtained using Roger's standard errors.

³⁴ Control variables are included in the estimation of Equation (3) in Panel A, but they have been suppressed for presentation purposes.

suggests that LPOS (LNEG) firms are less (more) conservative after implementation of TRA86. The asymmetric timeliness measure is also consistent with LNEG firms being more conservative after TRA86, though not with LPOS firms being less conservative after TRA86.

6.3 Hypothesis 4: Value relevance

6.3.1 Hedge portfolio tests

The results of the three different hedge portfolio return tests are presented in Table 7. The market-adjusted return available if the sign of $\Delta PTBI$ is known 12 months in advance, (RET^{SX}) , is approximately 18%, 12% and 15% for LPOS, MED and LNEG firm years during the sample period, respectively.³⁵ If the magnitude is also known (RET^{SMX}), the market adjusted returns available increase to around 21%, 15% and 19% across the groups. For LPOS and LNEG firm years, the percentage of adjusted returns available based on the knowledge of the sign (RET^{SX}) or sign and magnitude (RET^{SMX}) of $\Delta PTBI$ is greater than the adjusted returns available for MED firm years. This difference is significant as the ratio of hedge portfolio returns ($RET_{MED}^X / RET_{LPOS}^X$ and $RET_{MED}^X / RET_{LNEG}^X$ for X equal to RET^{SX} and RET^{SMX}), is less than one at the 0.01 level. These results are consistent with LPOS and LNEG firm years being more value relevant than MED firm years.

The third hedge portfolio return presented in Table 7, RET^{PRED} , incorporates information from the book value of equity as well as PTBI and $\Delta PTBI$. The results from this test are consistent with the first two hedge portfolio return tests as the

³⁵ As a sensitivity test, all hedge portfolio tests were performed using market-adjusted returns plus one to avoid any issues associated with negative returns. None of my inferences changed. I thank Rex Thompson for pointing out this potential issue.

financial accounting information of LPOS and LNEG firm years provides higher market adjusted returns than the MED firm years. RET^{PRED} equals approximately 29% for both LPOS and LNEG firm years, while it is significantly less for MED firm years (approximately 19%). As with the other hedge portfolio return tests, this evidence suggests that the value relevance of financial accounting information that is influenced by tax rules is not necessarily impaired. Given the strength of the results for the LPOS group across all three portfolios coupled with the results from the conservatism tests (the LPOS group exhibits the highest level of conservatism as captured by my measures), these results also suggest that more conservative accounting information is more value relevant than less conservative accounting information.

6.2.2 Explanatory power of accounting information for market measures

The results of estimating Equations (7) and (8), the earnings relation and the earnings and book value relation, provide additional evidence on the value relevance of financial accounting information across the three groups. Table 8 reports that the adjusted R^2 for both Equations (7) and (8) for the LPOS group is greater than the adjusted R^2 for the MED group (i.e. $DIFF_AdjR^2$ is negative) but that it is only significant for the book value and earnings relation. Table 8 also reports that the adjusted R^2 from the earnings (book value and earnings) relation for the MED group relative to the LNEG group is positive (negative) and significant. In other words, MED firm years have more value relevant earnings information for returns than LNEG firm years, but the opposite conclusion is reached when book value information is included. This is consistent with the idea that the balance sheet becomes more

important when accounting reflects tax rules.

In summary, the evidence from the value relevance tests is generally consistent with the value relevance of financial accounting information not being impaired when tax rules influence financial reporting incentives.

Table 4: Asymmetric Timeliness Measure of Accruals: 1991 – 2004

This table reports the intercept and interaction terms from Equation (2) in Panel A, Equation (3) in Panel B (without control variables) and Panel C (with control variables). While β_2 and β_3 reflect the asymmetric timeliness measure of accruals, β_3 is used to test H1 and H2.

Panel A: Asymmetric Timeliness – Basu Model

$$PTBI_{it} = \alpha_1 + \alpha_2 NEG_{it} + \beta_1 RET_{it} + \beta_4 NEG_{it} * RET_{it} + \varepsilon_{it} \quad (2)$$

Coefficient (Variable)	Full Sample N = 30,189		
	Coefficient	t-stat	p-value*
α_1	0.06	10.80	0.00
α_2 (NEG)	0.00	-0.69	0.49
β_1 (RET)	0.01	1.59	0.06
β_2 (NEG*RET)	0.26	20.66	0.00
Avg Adj R ²			0.11
t-statistic			8.80

ps

Table 4 (Continued)

Panel B: Asymmetric Timeliness – Test of H1 and H2

$$PTBI_{jt} = \alpha_1 + \alpha_2 NEG_{jt} + \alpha_3 DX_{jt} + \beta_1 RET_{jt} + \beta_2 NEG_{jt} * RET_{jt} + \beta_3 DX_{jt} * NEG_{jt} + \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \varepsilon_{jt} \quad (3)$$

Coefficient (Variable)	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.07	12.20	0.00	0.055	5.37	0.00	0.06	13.21	0.00
α_2 (NEG)	-0.00	-0.011	0.91	-0.013	-1.99	0.05	0.00	-0.86	0.39
α_3 (DX)	-0.01	-1.65	0.10	0.013	1.82	0.07	-0.02	-1.34	0.18
β_1 (RET)	?	0.58	0.56	?	1.41	0.16	?	3.71	0.00
β_2 (NEG*RET)	+	0.247	0.00	?	0.338	15.17	+	16.51	0.00
β_3 (DX*NEG)	?	-0.01	0.16	0.011	2.30	0.02	0.00	-0.44	0.66
β_4 (DX*RET)	?	0.03	0.00	-0.002	-0.22	0.82	-0.02	-2.18	0.03
β_5 (DX*NEG*RET)	+	0.13	0.00	-0.149	-5.03	0.00	0.10	3.25	1.00
Avg Adj R ²			0.12			0.13			0.13
t-statistic			9.80			12.15			8.95

See notes after Panel C.

Table 4 (Continued)

This table reports the intercept and interaction terms from Equation (3) that are used to test H1 and H2 respectively. The intercept and the interaction terms for the control variables from Equation (3) are presented on the next two pages. Equation (3) is as follows:

Panel C: *Asymmetric Timeliness with Control Variables – Test of H1 and H2*

$$\begin{aligned}
 PTBI_{jt} = & \alpha_1 + \alpha_2 NEG_{jt} + \alpha_3 DX_{jt} + \sum_{k=1}^6 \alpha_{k+3} CTRL_{kjt} + \beta_1 RET_{jt} + \beta_2 NEG_{jt} * RET_{jt} + \beta_3 DX_{jt} * NEG_{jt} + \\
 & \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \beta_3 DX_{jt} * NEG_{jt} * RET_{jt} + \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \\
 & \sum_{k=1}^6 \beta_{k+5} NEG_{jt} * CTRL_{kjt} + \sum_{k=1}^6 \beta_{k+11} RET_{jt} * CTRL_{kjt} + \sum_{k=1}^6 \beta_{k+17} NEG_{jt} * CTRL_{kjt} * RET_{jt} + \sum_{k=1}^6 \beta_{k+23} DX_{jt} * CTRL_{kjt} + \varepsilon_{jt}.
 \end{aligned}
 \tag{3}$$

Variable	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.08	4.82	0.00	0.069	3.34	0.00	0.09	5.88	0.00
α_2 (NEG)	-0.01	-0.54	0.59	-0.019	-1.24	0.21	-0.02	-0.97	0.33
α_3 (DX)	0.01	0.65	0.51	0.027	2.06	0.04	-0.07	-2.80	0.01
β_1 (RET)	0.05	1.87	0.03	0.059	2.54	0.01	0.06	3.26	0.00
β_2 (NEG*RET)	0.34	5.66	0.00	0.387	7.06	0.00	0.30	5.23	0.00
β_3 (DX*NEG)	-0.01	-1.29	0.20	0.008	1.27	0.20	0.00	0.18	0.86
β_4 (DX*RET)	0.02	2.44	0.01	-0.006	-0.92	0.18	-0.01	-0.79	0.21
β_5 (DX*NEG*RET)	0.17	3.69	0.00	-0.110	-3.08	0.00	0.03	0.87	0.81
Avg Adj R ²			0.19			0.20			0.20
t-statistic			18.4			18.8			19.6

ps

Table 4 (Continued)

Variable	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNNEG = 1 N = 30,189		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_4 (LIT)	-0.01	-2.99	0.00	-0.020	-3.11	0.00	0.00	-0.76	0.45
α_5 (LEV)	-0.05	-2.04	0.04	-0.067	-3.39	0.00	-0.04	-2.61	0.01
α_6 (DIV)	-0.02	-0.04	0.69	0.502	3.31	0.00	0.06	0.92	0.36
α_7 (STDROA)	-0.30	-9.01	0.00	-0.360	-14.90	0.00	-0.24	-7.47	0.00
α_8 (SIZE)	-0.00	1.54	0.12	0.008	3.25	0.00	0.00	0.32	0.75
α_9 (RDADV)	-0.03	-2.18	0.03	-0.029	-2.21	0.03	-0.03	-2.38	0.02
β_7 (NEG*LIT)	-0.01	-0.55	0.59	-0.005	-0.58	0.56	0.00	-0.51	0.61
β_{12} (RET*LIT)	-0.01	-2.75	0.01	-0.012	-2.22	0.03	-0.02	-3.21	0.00
β_{18} (NEG*LIT*RET)	-0.03	-1.22	0.22	-0.023	-1.16	0.25	-0.03	-1.45	0.15
β_{24} (LIT*DX)	0.00	0.47	0.64	0.018	3.44	0.00	-0.03	-3.92	0.00
β_8 (NEG*LEV)	0.00	0.12	0.90	0.001	0.04	0.97	-0.01	-0.64	0.52
β_{13} (RET*LEV)	-0.01	-0.69	0.49	-0.001	-0.06	0.96	0.00	0.03	0.98
β_{19} (NEG*LEV*RET)	0.16	2.62	0.01	0.159	2.27	0.02	0.20	3.25	0.00
β_{25} (LEV*DX)	-0.00	-0.01	1.00	0.035	2.43	0.02	-0.02	-0.89	0.38
β_9 (NEG*DIV)	0.13	0.99	0.32	0.159	1.26	0.21	0.12	0.96	0.34
β_{14} (RET*DIV)	0.59	2.75	0.01	0.485	2.27	0.02	0.57	2.00	0.05
β_{20} (NEG*DIV*RET)	-2.38	-3.30	0.00	-1.668	-2.22	0.03	-2.28	-2.98	0.00
β_{26} (DIV*DX)	0.30	1.40	0.16	-0.488	-3.03	0.00	0.98	1.94	0.05
β_{10} (NEG*SIZE)	0.00	0.44	0.66	0.002	0.64	0.52	0.00	1.10	0.27
β_{15} (RET*SIZE)	0.00	-0.10	0.92	-0.002	-0.79	0.43	0.00	-1.30	0.19
β_{21} (NEG*SIZE*RET)	-0.03	-3.08	0.00	-0.022	-2.05	0.04	-0.02	-1.95	0.05
β_{27} (SIZE*DX)	-0.00	-1.37	0.17	-0.008	-5.12	0.00	0.02	5.67	0.00
β_{11} (NEG*RDADV)	0.01	0.81	0.42	0.022	1.51	0.13	0.02	1.38	0.17
β_{16} (RET*RDADV)	-0.02	-0.99	0.32	-0.014	-0.87	0.38	-0.01	-0.87	0.39

Table 4 (Continued)

$\beta_{22}(\text{NEG}*\text{RDADV}*\text{RET})$?	-0.00	-0.15	0.88	?	-0.001	-0.05	0.96	?	0.00	-0.27	0.79
$\beta_{28}(\text{RDADV}*\text{DX})$		-0.18	-2.65	0.01		-0.005	-1.24	0.22		0.00	0.88	0.38
$\beta_{12}(\text{NEG}*\text{STDROA})$		0.02	0.53	0.59		0.002	0.06	0.95		0.15	0.13	0.89
$\beta_{17}(\text{RET}*\text{STDROA})$		-0.12	-2.28	0.02		-0.117	-2.43	0.01		-0.11	-2.39	0.02
$\beta_{23}(\text{NEG}*\text{STDROA}*\text{RET})$	+	-0.14	-1.21	0.23	+	-0.212	-1.97	0.05	+	-0.24	-2.28	0.02
$\beta_{29}(\text{STDROA}*\text{DX})$		0.07	1.32	0.19		0.113	3.05	0.00		-0.13	-3.31	0.00

Notes:

NEG = indicator variable equal to one if RET is negative, zero otherwise.

RET = the buy-and-hold return on security j cumulated over a 12-month window ending three months after the end of fiscal year t.

DX = indicator variable alternatively set equal to one if LPOS = large positive cash - tax spread, MED = medium cash - tax spread, or LNEG = large negative cash - tax spread groups, respectively.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Coefficients and t-statistics reported are the results of Fama-Macbeth regressions over a period of 14 years from 1991 to 2004. The number of firms in the sample varies from 245 in 1991 to 2,747 in 2002.

See variable definitions in Table 2.

Table 5: Accumulated Accruals Tests: 1991 - 2004

Panel A: Univariate Tests

<u>Group</u>	<u>N</u>	<u>Mean</u>	<u>Median</u>
LPOS	6,037	0.326	0.295
MED	18,115	0.096	0.084
LNEG	6,037	0.042	0.011
	<u>30,189</u>		
<u>Group Tests</u>		<u>Mean**</u>	<u>Median***</u>
MED - LPOS		-49.40	-50.57
LNEG-MED		-8.88	-14.67
LNEG - LPOS		-41.26	-43.64

See notes after Panel B.

Table 5 (Continued)

Panel B: Accumulated Accruals – Test of H1 and H2

$$PTBAC_{jt} = \delta_0 + \delta_1 DX_{jt} + \sum_{k=1}^6 \delta_{k+1} CTRL_{kjt} + \varepsilon_{jt}$$

Variable	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	0.01	0.38	0.70	0.08	4.26	0.00	0.12	6.91	0.00
DX	0.23	21.48	0.00	-0.04	-3.37	0.00	-0.15	-8.87	0.00
LIT	0.07	8.14	0.00	0.06	8.27	0.00	0.06	7.56	0.00
LEV	0.26	17.99	0.00	0.37	18.99	0.00	0.39	26.29	0.00
CDIV	-0.70	-4.49	1.00	-0.84	-4.54	1.00	-1.02	-4.71	1.00
STDROA	0.56	6.51	0.00	0.51	6.43	0.00	0.56	6.60	0.00
SIZE	-0.01	-8.57	0.00	-0.01	-10.47	0.00	-0.02	-17.89	0.00
RDADV	0.00	1.37	0.17	0.00	1.13	0.26	0.00	1.43	0.15
Avg Adj R ²			0.14			0.09			0.11
t-statistic			12.72			10.86			11.33

Notes:

DX = indicator variable alternatively set equal to one if LPOS, MED or LNEG, where, LPOS = large positive cash - tax spread, MED = medium cash - tax spread, and LNEG = large negative cash - tax spread groups.

See Table 2 for other variable definitions.

ps = predicted sign.

Coefficients and t-statistics reported are the results of Fama-Macbeth regressions over a period of 14 years from 1991 to 2004. The number of firms in the sample varies from 245 in 1991 to 2,747 in 2002.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

** Difference of means t-statistic. *** Wilcoxon - Mann - Whitney test statistic.

Table 6: The Effect of a Change in Taxes on Conservatism

This table reports the intercept and interaction terms from Equation (3), the asymmetric timeliness measure of conservatism, in Panel A, as well as the coefficients from Equation (5), the accumulation of accruals measure of conservatism, in Panel B. Each equation is estimated separately on the LPOS, MED and LNEG groups of firm years. In these equations, DX is an indicator variable set equal to one for the years after the Tax Reform Act of 1986 (1988 – 1990), otherwise it is equal to zero for years before the passage of the Tax Reform Act of 1986 (1983 – 1985). The intercept and the interaction terms for the control variables from Equation (3) are suppressed for presentation purposes.

Panel A: Asymmetric Timeliness with Control Variables – Test of H3

$$\begin{aligned}
 PTBI_{jt} = & \alpha_1 + \alpha_2 NEG_{jt} + \alpha_3 DX_{jt} + \sum_{k=1}^6 \alpha_{k+3} CTRL_{kjt} + \beta_1 RET_{jt} + \beta_2 NEG_{jt} * RET_{jt} + \beta_3 DX_{jt} * NEG_{jt} + \\
 & \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \beta_3 DX_{jt} * NEG_{jt} * RET_{jt} + \beta_4 DX_{jt} * RET_{jt} + \beta_5 DX_{jt} * NEG_{jt} * RET_{jt} + \\
 & \sum_{k=1}^6 \beta_{k+5} NEG_{jt} * CTRL_{kjt} + \sum_{k=1}^6 \beta_{k+11} RET_{jt} * CTRL_{kjt} + \sum_{k=1}^6 \beta_{k+17} NEG_{jt} * CTRL_{kjt} * RET_{jt} + \sum_{k=1}^6 \beta_{k+23} DX_{jt} * CTRL_{kjt} + \varepsilon_{jt}.
 \end{aligned}
 \tag{3}$$

Variable	LPOS N = 1,452			MED N = 4,368			LNEG N = 1,452		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.15	2.16	0.03	0.11	4.40	0.00	0.15	1.53	0.13
α_2 (NEG)	0.23	2.00	0.05	-0.07	-1.70	0.09	-0.06	-0.41	0.68
α_3 (DX)	-0.15	-1.85	0.07	-0.05	-1.56	0.12	-0.13	-1.26	0.21
β_1 (RET)	?	3.51	0.00	0.02	0.67	0.50	0.04	0.31	0.76
β_2 (NEG*RET)	+	3.61	0.00	0.37	3.42	0.00	-0.16	-0.40	0.35
β_3 (DX*NEG)	?	0.25	0.20	0.06	2.20	0.03	0.12	1.58	0.11
β_4 (DX*RET)	?	0.75	0.46	0.04	1.76	0.08	0.06	0.71	0.48
β_5 (DX*NEG*RET)	-	1.07	0.86	0.30	3.64	0.00	0.54	2.48	0.01
Adjusted R ²			0.19			0.20			0.15
F-stat p-value			0.00			0.00			0.00

Table 6 (Continued)

Panel B: Accumulated Accruals – Test of H1 and H2

$$PTBAC_{jt} = \delta_0 + \delta_1 DX_{jt} + \sum_{k=1}^6 \delta_{k+1} CTRL_{kjt} + \varepsilon_{jt} \quad (5)$$

Variable	LPOS N = 1,452			MED N = 4,368			LNEG N = 1,452					
	ps	Coefficient	t-statistic	p-value*	ps	Coefficient	t-statistic	p-value*	ps	Coefficient	t-statistic	p-value*
Intercept	+	0.24	8.38	0.00	?	0.03	3.13	0.00	-	-0.27	-9.59	0.00
DX	-	-0.11	-7.96	0.00	?	0.04	6.09	0.00	+	0.16	11.08	0.00
LIT	+	-0.02	-0.60	0.72	+	0.02	1.54	0.06	+	-0.03	-1.46	0.93
LEV	+	0.04	1.09	0.14	+	0.23	8.86	0.00	+	0.23	4.92	0.00
CDIV	+	0.02	0.08	0.47	+	-0.44	-5.21	1.00	+	-2.01	-8.54	1.00
STDROA	+	0.49	4.36	0.00	+	0.01	8.19	0.00	+	0.56	5.67	0.00
SIZE	?	-0.01	-2.97	0.00	?	-0.02	-9.18	0.00	?	-0.00	-1.06	0.29
RDADV	?	-0.48	-2.71	0.01	?	0.00	1.72	0.09	?	0.13	0.97	0.33
Adjusted R ²				0.07				0.06				0.17
F-stat p-value				0.01				0.01				0.01

Notes:

NEG = indicator variable equal to one if RET is negative, zero otherwise.

RET = the buy-and-hold return on security j cumulated over a 12-month window ending three months after the end of fiscal year t.

PTBAC = Pre-tax book accruals equal to pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) less CFO (COMPUSTAT data308) all divided by average total assets (COMPUSTAT data6) summed over the three-year period from t-2 through t.

DX = indicator variable set equal to one for years after the Tax Reform Act of 1986 (1988 – 1990), otherwise equal to zero for years 1983 – 1985 respectively. See Table 2 for other variable definitions. ps = predicted sign.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 7: Market-Adjusted Returns to Hedge Portfolios Based on Foresight of Accounting Information

This table reports the market-adjusted return available from portfolios formed based on perfect knowledge of accounting information. Each of the three different hedge portfolios is calculated separately over LPOS, MED and LNEG groups. Results of tests of the ratio of $RATIO_RET^X > 1$ using randomization are also presented (p-values in parentheses below values of $RATIO_RET^X$).

Panel A: Market-adjusted returns.

Portfolio	RET^X			ps	$RATIO_RET^X$	
	LPOS	MED	LNEG		$RET^X_{MED} / RET^X_{LPOS}$	$RET^X_{MED} / RET^X_{LNEG}$
	A	B	c		b/a	b/c
RET^{SX}	18.3%	12.1%	15.3%	= 1	0.659 (0.01)	0.783 (0.01)
RET^{SMX}	20.9%	15.4%	18.6%	= 1	0.738 (0.01)	0.830 (0.01)
RET^{PRED}	28.7%	19.4%	29.2%	= 1	0.676 (0.01)	0.664 (0.01)

Notes:

RET^{SX} = hedge portfolio returns based on positions long in firm-year observations with $\Delta PTBI_{jt} \geq 0$ and short in firm year observations $\Delta PTBI_{jt} < 0$.

RET^{SMX} = hedge portfolio returns formed by ranking firms based on $\Delta PTBI_{jt}$ and forming an equally weighted hedge portfolio that is long in stocks with the highest 40% of $\Delta PTBI_{jt}$ and short in stocks with the lowest 40% of $\Delta PTBI_{jt}$.

RET^{PRED} = hedge portfolio returns formed by ranking firms based on the predicted value of returns using the yearly coefficient estimates from the regression below and forming an equally weighted hedge portfolio that is long in stocks with the highest 40% of predicted return and short in stocks with the lowest 40% of predicted return:

$$(R_{jt} - R_{mt}) = \alpha_{0t} + \alpha_{1t} * \Delta PTBI_{jt} + \alpha_{2t} * PTBI_{jt} + \alpha_{3t} * BV_{jt} + \epsilon_{jt}$$

$(R_{jt} - R_{mt})$ = value-weighted market adjusted buy-and-hold returns compounded monthly from three months after prior fiscal year end to three months after current fiscal year end.

PTBI = pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) divided by market value of equity (COMPUSTAT data199*COMPUSTAT data25).

$\Delta PTBI$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period t-1 to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25).

BV = book value of equity per share (COMPUSTAT data216) divided by the outstanding number of common shares (COMPUSTAT data25) at the end of period t.

X = superscript representing alternatively each of the hedge portfolios, RET^{SX} , RET^{SMX} , and RET^{PRED} .

LPOS = large positive cash - tax spread group. MED = medium cash - tax spread group.

LNEG = large negative cash - tax spread group.

*ps = prediction for tests of H3 are that $RATIO_RET^X$ is greater than one.

** Probabilities are two-tailed and derived using randomization tests (Noreen 1989).

Table 8: Contemporaneous Relations between Market and Accounting Measures 58

This table reports the adjusted R^2 from pooled cross sectional regressions of Equations (7) and (8) estimated separately over LPOS, MED and LNEG groups, as well as the results of tests of differences in adjusted R^2 using randomization (p-values** are reported in parentheses below values of $DIFF_AdjR^2$).

Regression	Adjusted R^2			ps*	DIFF - $AdjR^2_x$	
	$AdjR^2_{LPOS}$	$AdjR^2_{MED}$	$AdjR^2_{LNEG}$		MED - LPOS	MED - LNEG
	a	b	c		b - a	b - c
Earnings Relation	0.075	0.054	0.035	?	-0.021 (0.40)	0.020 (0.04)
Book Value and Earnings Relation	0.526	0.353	0.455	?	-0.167 (0.01)	-0.102 (0.01)

Notes:

Earnings relation = the adjusted R^2 from the relation between market adjusted returns and PTBI and $\Delta PTBI$ estimated separately for LNEG, MED and LPOS firm years using pooled cross sectional regressions, as follows:

$$(R_{jt} - R_{mt}) = \delta_{0t} + \delta_{1t} * \Delta PTBI_{jt} + \delta_{2t} * PTBI_{jt} + v_{jt}$$

Book value and earnings relation = adjusted R^2 from the relation between the market value of equity and the book value of equity and PTBI estimated separately for LNEG, MED and LPOS firm years using pooled cross sectional regressions, as follows:

$$MVE_{jt} = \rho_{0t} + \rho_{1t} * BV_{jt} + \rho_{2t} * PTBI_{jt} + u_{jt}$$

$(R_{jt} - R_{mt})$ = value-weighted market adjusted buy-and-hold returns compounded monthly from three months after prior fiscal year end to three months after current fiscal year end.

$PTBI_{jt}$ = pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) divided by market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j at time t.

$\Delta PTBI_{jt}$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period t-1 to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j.

MVE_{jt} = market value of equity per share for firm j at the end of period t (COMPUSTAT data199).

BV_{jt} = book value of equity per share (COMPUSTAT data216) for firm j divided by the outstanding number of common shares (COMPUSTAT data25) at the end of period t.

$AdjR^2$ = adjusted R^2 from pooled cross sectional regressions estimated separately for each group, LNEG, MED, and LPOS for the earnings relation and the book value and earnings relation.

$DIFF_AdjR^2$ = difference in $AdjR^2$ between MED and LNEG and between MED and LPOS firm years.

^x = superscript representing alternatively the earnings relation and the book value and earnings relation.

LPOS = large positive cash - tax spread group.

MED = medium cash - tax spread group.

LNEG = large negative cash - tax spread group.

*ps = prediction for tests of H3 are that $DIFF_AdjR^2$ is positive for all tests.

** Probabilities are two-tailed and derived using randomization tests (Noreen 1989).

7.0 Sensitivity Analysis

I assess the sensitivity of my tests to alternative specifications, the results of which are presented in Tables 9 – 20, and address other potential issues with the analysis in this section.

7.1 Alternative Cutoffs

In the main tests in the paper (H1 – H4), firm years are split into LPOS, MED, and LNEG, groups based on 20% cutoffs. I also examine 10% and 30% cutoffs. The results, in Tables 9, 10, 13 and 14, are consistent with the findings thus far for H1, H2 and H4 reported in Tables 4, 5, 7 and 8. Sensitivity analysis in Tables 11 and 12 of the effect of a change in taxation on conservatism shows that the results are somewhat dependent on the 20% cutoff. Results for the LNEG firm years are similar to those reported in Tables 6 and 7, but the results for the LPOS firm years disappear (i.e., their conservatism does not change after TRA86).

7.2 Using Balance Sheet to Estimate Cash Flows

Because of potential measurement error using the balance sheet to estimate cash flows (Hribar and Collins 2002), I test H1, H2 and H4 using data starting in 1987 when cash flow statements are first available. For the test of a change in taxes on conservatism (H3), however, my tests cover years prior to the availability of the cash flow statement. In order to assess the sensitivity my tests of conservatism to the use of the cash flow statement, I recalculate my sort variable (RELDIF) and my accumulated accruals measure (PTBAC) using balance sheet information for the period 1983 - 2004 and re-estimate Equations (3) and (5). The results are shown in Table 15 and my inferences are unchanged.

7.3 Different Sort Period for H3

In order to test H3, the effect of a change in taxes on conservatism, I sort firms into LPOS, MED and LNEG groups based on the average value of RELDIF over the three years prior to implementation of TRA86 (1983 – 1985) instead of on an annual basis. In order to examine the validity of my assumption in H3 (namely that the LPOS (LNEG) group is more (less) conservative prior to TRA86), I re-estimate Equations (3) and (5) on the sample of firm years for the period prior to the tax change (1983 – 1985). While results from the asymmetric timeliness measure in Panel A of Table 16 suggest that neither LPOS or LNEG firms were any more or less conservative prior to the tax change, results from the accumulated accruals tests displayed in Panel B of Table 16 suggest that prior to the tax change LPOS (LNEG) firm years are the most (least) conservative, consistent with my findings from tests of H1 and H2.

7.4 Mechanical Relation between RELDIF and Accumulated Accruals

Another concern is that my sort variable, RELDIF, is simply capturing book accruals inducing a mechanical relation between my sort variable and the results for my accumulated accruals tests. There are four reasons why this should not be a problem. First of all, I expect some negative correlation between my sort variable, RELDIF, and book accruals because it is in book accruals that conservatism is reflected. In other words, if there is no correlation between RELDIF and book accruals, there would be no relation between conservatism and RELDIF. The correlation between RELDIF for period t and book accruals for the same period is -0.342, which is negative as expected.

Second, I sort firms in period t and accumulate accruals over a different period

(from t-4 to t). If firms are relatively stable with respect to cash flows and taxable income then I would expect little movement between the three groups into which they are sorted annually (LPOS, MED and LNEG), increasing concern for a mechanical relation. An examination of arguably the most stable firms in my sample, those with data available for at least 13 of 15 years from 1991 to 2004, shows that on average firms move between groups five times in 13 periods (mean = 4.8, median = 5) with a maximum of 10 moves and a minimum of one move.

Third, if cash flows less taxable income is capturing book accruals, then this implies that book income equals taxable income. In the aggregate over my sample period (1991 – 2004) the spread between book income and taxable income varies from negative \$147,931 to \$133,420 (millions) with book income exceeding taxable income in nine of fifteen years. Because cash flows are the same for book and taxable income, this implies that accruals for book purposes are not identical to those for tax purposes and that they vary substantially across the sample period.

Finally, as I discuss in the paper, though there are links between book income and taxable income, book and tax reporting differs due to different reporting objectives between GAAP and the IRC, the timing of the development of the two systems and different management incentives related to book and tax reporting. These differences suggest that the products of the two systems, book and taxable income, are not the same.

In summary, I expect and find a negative correlation between my sort variable, RELDIF, and book accruals because it is in book accruals that conservatism is reflected. Given the divergence of book and taxable income over the period of my

tests, differences between the sort and accumulation periods, the movement of firms between groups annually, and the different rules underlying book and taxable income, there is little reason to believe that RELDIF is simply capturing book accruals.

7.5 Reconciliation of Value Relevance Results with Prior Literature

Hanlon et al. 2005 (HKS) examine the information content in two different measures of firm performance, book and taxable income, to determine if any information might be lost if the two measures are conformed. They perform three association tests to address the following two questions: 1) is one measure of firm performance more useful to investors than the other measure with respect to returns?; and 2) does each measure of firm performance contain information about returns that is incremental to the other measure? Results from both hedge portfolio (perfect foresight portfolio returns) and relative information tests (R^2) are consistent with book income containing more information, or being more useful for investors with respect to returns, than taxable income. Incremental information content tests, however, suggest that both book and taxable income contain useful information for investors beyond that contained in the other measure (as determined by the significance of the coefficient in a regression of market-adjusted returns on the change in book income and the change in taxable income). HKS conclude that both book and taxable income add to the information set reflected in returns.

Unlike the tests in HKS, the information content tests in this paper focus only on one measure of firm performance, book income. In hypothesis four, I address the question: does book income that is more likely affected by tax rules (LPOS and LNEG firm years) contain more/less information for investors than book income that

is less likely affected by tax rules (MED firm years)? The results in this paper are not inconsistent with the results in HKS as I am comparing the information in book income across groups instead of the information in book versus taxable income within a given firm. As a sensitivity test, I perform the association tests from HKS on book and taxable income for my entire sample and within each group of my sample, LPOS, MED, and LNEG firms, and the results from HKS hold. Namely, book income appears to be more useful for investors in each group of firm years in that it contains relatively more information than taxable income. Also, perfect foreknowledge of book income yields higher portfolio returns than perfect foreknowledge of taxable income. In addition, each measure contains information that is incremental to the other measure. See Tables 17 - 20 for complete results.

Table 9 (Continued)

Panel B: 30% Cutoff

Coefficient (Variable)	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.05	3.45	0.00	0.04	3.71	0.00	0.07	7.99	0.00
α_2 (NEG)	0.01	0.33	0.74	-0.00	-0.15	0.88	-0.01	-0.66	0.51
α_4 (DX)	0.02	2.21	0.03	0.06	3.83	0.00	-0.04	-2.56	0.01
β_1 (RET)	?	3.36	0.00	-0.02	-1.11	0.27	0.08	6.42	0.00
β_2 (NEG*RET)	+	2.60	0.00	0.27	5.53	0.00	0.23	4.38	0.00
β_3 (DX*NEG)	?	-0.39	0.70	-0.01	-1.05	0.29	0.01	1.50	0.13
β_4 (DX*RET)	?	0.78	0.44	0.09	23.70	0.00	0.02	1.99	0.05
β_5 (DX*NEG*RET)	+	0.16	0.00	-0.13	-4.87	0.00	-0.01	-0.96	0.66
Avg Adj R ²			0.20			0.19			0.20
t-statistic			21.75			19.83			18.61

Notes:

NEG = indicator variable equal to one if RET is negative, zero otherwise.

RET = the buy-and-hold return on security j cumulated over a 12-month window ending three months after the end of fiscal year t.

DX = indicator variable alternatively set equal to one if LPOS = large positive cash - tax spread groups, MED = medium cash - tax spread, or LNEG = large negative cash - tax spread groups, respectively.

Coefficients and t-statistics reported are the results of Fama-Macbeth regressions over a period of 14 years from 1991 to 2004. See Table 2 for other variable definitions and Table 4 for Equation (3). ps = predicted sign.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 10: Sensitivity Results: Accumulated Accruals Tests - 10%, 30% Cutoffs

This table reports the intercept and interaction terms from Equation (5) the accumulated accruals measure of conservatism with control variables.

Panel A: 10% Cutoff

<i>Variable</i>	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value*</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value*</i>	<i>Coefficient</i>	<i>t-statistic</i>	<i>p-value*</i>
Intercept	0.03	1.60	0.11	0.09	4.35	0.00	0.09	8.46	0.00
DX	0.23	20.51	0.00	-0.04	-2.90	0.00	-0.14	-11.20	0.00
LIT	0.05	2.98	0.00	0.05	2.80	0.00	0.04	4.12	0.00
LEV	0.32	17.42	0.00	0.38	20.39	0.00	0.42	35.38	0.00
CDIV	-0.78	-5.20	1.00	-0.87	-5.26	1.00	-0.99	-8.31	1.00
STDROA	0.54	7.26	0.00	0.51	7.24	0.00	0.54	11.37	0.00
SIZE	-0.01	-8.46	0.00	-0.01	-11.23	0.00	-0.02	-22.99	0.00
RDADV	0.01	1.15	0.25	0.01	1.15	0.25	0.02	1.83	0.07
Adjusted R ²			0.12			0.09			0.10
t-statistic			23.76			13.08			29.22

See Notes below Panel B.

Table 10 (Continued)

Panel B: 30% Cutoff

Variable	LPOS = 1 N = 30,189			MED = 1 N = 30,189			LNEG = 1 N = 30,189		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	-0.01	-0.81	0.42	0.07	4.12	0.00	0.15	13.35	0.00
DX	+	0.23	24.69	?	-0.04	0.00	-0.18	-18.41	0.00
LIT	+	0.05	4.17	+	0.05	0.00	0.04	3.67	0.00
LEV	+	0.25	17.01	+	0.39	0.00	0.37	32.03	0.00
CDIV	+	-0.72	-5.01	+	-0.89	1.00	-0.96	-8.17	1.00
STDROA	+	0.58	7.36	+	0.51	0.00	0.59	11.90	0.00
SIZE	?	-0.01	-9.54	?	-0.01	0.00	-0.02	-25.90	0.00
RDADV	?	0.01	1.18	?	0.01	0.25	0.02	1.84	0.07
Adjusted R ²			0.17			0.09			0.14
t-statistic			27.93			12.34			22.85

Notes:

DX = indicator variable alternatively set equal to one if LPOS, MED or LNEG, where, LPOS = large positive cash - tax spread, MED = medium cash - tax spread, and LNEG = large negative cash - tax spread groups.

See Table 2 for other variable definitions.

ps = predicted sign.

Coefficients and t-statistics reported are the results of Fama-Macbeth regressions over a period of 14 years from 1991 to 2004.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 11: Sensitivity Results: Effect of a Change in Taxes on Conservatism – Asymmetric Timeliness - 10%, 30% Cutoffs

This table reports the intercept and interaction terms from Equation (3), the asymmetric timeliness measure of conservatism. Each equation is estimated separately on the LPOS, MED and LNEG groups of firm years. In these equations, DX is an indicator variable set equal to one for the years after the Tax Reform Act of 1986 (1988 – 1990), otherwise it is equal to zero for years before the passage of the Tax Reform Act of 1986 (1983 – 1985). The intercept and the interaction terms for the control variables from Equation (3) are suppressed for presentation purposes.

Panel A: Asymmetric Timeliness with Control Variables – 10% Cutoff

Variable	LPOS N = 727			MED N = 5,818			LNEG N = 727		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.20	1.19	0.23	0.12	9.50	0.01	0.25	1.10	0.27
α_2 (NEG)	0.14	0.47	0.64	-0.10	-4.64	0.01	-0.15	-0.55	0.58
α_3 (DX)	-0.23	-1.05	0.29	-0.05	-3.23	0.01	-0.05	-0.27	0.78
β_1 (RET)	0.10	0.59	0.55	0.02	1.29	0.20	-0.09	-0.31	0.75
β_2 (NEG*RET)	0.85	1.12	0.26	0.08	1.29	0.20	1.34	1.95	0.05
β_3 (DX*NEG)	-0.10	-0.57	0.57	0.03	2.11	0.03	0.27	1.77	0.08
β_4 (DX*RET)	-0.00	-0.03	0.98	0.01	0.82	0.41	-0.01	-0.06	0.96
β_5 (DX*NEG*RET)	0.42	0.83	0.60	0.05	1.01	0.31	1.32	3.43	0.01
Avg Adj R ²			0.12			0.24			0.19
F-stat p-value			0.01			0.01			0.01

See Notes below Panel B.

Table 11 (Continued)

Panel B: Asymmetric Timeliness with Control Variables – 30% Cutoff

Variable	LPOS N = 2,182			MED N = 2,908			LNEG N = 2,182		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.13	1.93	0.05	0.11	6.25	0.01	0.14	1.98	0.05
α_2 (NEG)	0.10	0.81	0.42	-0.11	-4.50	0.01	0.10	1.07	0.28
α_3 (DX)	-0.12	-1.52	0.13	-0.02	-0.78	0.44	-0.04	-0.60	0.55
β_1 (RET)	0.11	1.56	0.12	-0.02	-1.20	0.23	0.09	1.14	0.26
β_2 (NEG*RET)	0.66	2.39	0.02	-0.06	-0.86	0.39	1.23	5.48	0.01
β_3 (DX*NEG)	0.04	0.70	0.49	0.06	3.43	0.01	0.07	1.45	0.15
β_4 (DX*RET)	0.05	1.11	0.13	-0.01	-0.23	0.82	0.01	0.25	0.80
β_5 (DX*NEG*RET)	0.15	0.84	0.20	0.28	5.24	0.01	0.49	3.13	0.01
Avg Adj R ²			0.16			0.31			0.15
F-stat p-value			0.01			0.01			0.01

See Tables 2 and 5 for variable definitions and Equation (3).

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 12: Sensitivity Results: Effect of a Change in Taxes on Conservatism
Accumulated Accruals- 10%, 30% Cutoffs

This table reports the intercept and interaction terms from Equation (5) the accumulated accruals measure of conservatism with control variables. Each equation is estimated separately on the LPOS, MED and LNEG groups of firm years. In these equations, DX is an indicator variable set equal to one for the years after the Tax Reform Act of 1986 (1988 - 1990), otherwise it is equal to zero for years before the passage of the Tax Reform Act of 1986 (1983 - 1985).

Panel A: 10% Cutoff

Variable	LPOS = 1 N = 727			MED = 1 N = 5,818			LNEG = 1 N = 727		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	0.28	7.38	0.01	-0.05	-5.11	0.01	-0.07	-1.83	0.07
DX	0.02	0.89	0.81	0.05	7.88	0.01	0.05	1.87	0.03
LIT	0.05	1.47	0.07	-0.01	-1.32	0.91	-0.03	-0.82	-0.41
LEV	-0.04	-0.72	0.76	0.32	14.74	0.01	0.06	0.85	0.40
CDIV	0.21	0.56	0.57	-0.78	-9.96	1.00	-0.21	-0.71	0.52
STDROA	0.35	2.72	0.01	0.01	8.93	0.01	0.39	3.46	0.01
SIZE	-0.01	-2.70	0.01	-0.00	-2.33	0.02	-0.03	-4.54	0.01
RDADV	0.39	1.44	0.15	-0.02	-0.56	0.57	-0.00	-0.12	0.90
Adjusted R ²			0.04			0.08			0.07
F-stat p-value			0.01			0.01			0.01

See Notes below Panel B.

Table 12 (Continued)

Panel B: 30% Cutoff

Variable	LPOS = 1 N = 2,182			MED = 1 N = 2,908			LNEG = 1 N = 2,182		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	0.19	11.83	0.01	-0.02	-1.75	0.08	-0.11	-6.25	0.01
DX	0.04	3.93	0.01	0.07	8.64	0.01	0.09	7.03	0.01
LIT	0.02	1.42	0.08	0.00	0.35	0.72	-0.04	-2.28	0.99
LEV	0.06	1.94	0.03	0.21	7.12	0.01	0.23	5.96	0.01
CDIV	-0.31	-1.57	0.94	-0.40	-4.65	1.00	-0.78	-5.34	1.00
STDROA	0.02	4.89	0.01	0.01	9.62	0.01	-0.00	-0.26	0.60
SIZE	-0.01	-3.12	0.01	-0.01	-4.51	0.01	-0.02	-6.87	0.01
RDADV	-0.04	-0.35	0.72	-0.07	-1.34	0.18	0.01	2.05	0.04
Adjusted R ²			0.03			0.08			0.07
F-stat p-value			0.01			0.01			0.01

Notes:

DX = indicator variable alternatively set equal to one if year = 1988 - 1990, 0 otherwise.

LPOS = large positive cash - tax spread, MED = medium cash - tax spread, and

LNEG = large negative cash - tax spread groups.

See Table 2 for other variable definitions and Table 6 for Equation (5). ps = predicted sign.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 13: Sensitivity Results: Market-Adjusted Returns to Hedge Portfolios Based on Foresight of Accounting Information – 10%, 30% Cutoffs

This table reports the market-adjusted return available from portfolios formed based on perfect knowledge of accounting information. Each of the three different hedge portfolios is calculated separately over LPOS, MED and LNEG groups. Results of tests of the ratio of $RATIO_RET^X > 1$ using randomization are also presented (p-values in parentheses below values of $RATIO_RET^X$).

Panel A: 10% Cutoff

Portfolio	RET^X			ps	$RATIO_RET^X$	
	LPOS	MED	LNEG		$RET^X_{MED} / RET^X_{LPOS}$	$RET^X_{MED} / RET^X_{LNEG}$
	A	B	C		b/a	b/c
RET^{SX}	19.9%	12.8%	17.3%	= 1	0.646 (0.01)	0.743 (0.01)
RET^{SMX}	20.7%	16.1%	19.8%	= 1	0.777 (0.01)	0.813 (0.01)
RET^{PRED}	23.8%	14.2%	10.4%	= 1	0.596 (0.01)	1.363 (0.01)

Panel B: 30% Cutoff

Portfolio	RET^X			ps	$RATIO_RET^X$	
	LPOS	MED	LNEG		$RET^X_{MED} / RET^X_{LPOS}$	$RET^X_{MED} / RET^X_{LNEG}$
	A	B	C		b/a	b/c
RET^{SX}	17.6%	11.0%	14.3%	= 1	0.627 (0.01)	0.774 (0.01)
RET^{SMX}	20.4%	14.0%	18.3%	= 1	0.685 (0.01)	0.764 (0.01)
RET^{PRED}	20.9%	12.3%	12.4%	= 1	0.588 (0.01)	0.993 (0.48)

See Table 7 for notes.

Table 14: Sensitivity Results: Contemporaneous Relations between Market and Accounting Measures – 10%, 30% Cutoffs

This table reports the adjusted R^2 from pooled cross sectional regressions of Equations (7) and (8) estimated separately over LPOS, MED and LNEG groups, as well as the results of tests of differences in adjusted R^2 using randomization (p-values** are reported in parentheses below values of $DIFF_AdjR^2$).

Panel A: 10% Cutoff

<i>Regression</i>	<i>Adjusted R²</i>			<i>ps*</i>	<i>DIFF - AdjR²_x</i>	
	<i>AdjR²_{LPOS}</i>	<i>AdjR²_{MED}</i>	<i>AdjR²_{LNEG}</i>		<i>MED - LPOS</i>	<i>MED - LNEG</i>
	<i>a</i>	<i>b</i>	<i>c</i>		<i>b - a</i>	<i>b - c</i>
Earnings Relation	0.072	0.060	0.030	?	-0.012 (0.33)	0.030 (0.01)
Book Value and Earnings Relation	0.499	0.371	0.492	?	-0.128 (0.01)	0.122 (0.01)

Panel B: 30% Cutoff

<i>Regression</i>	<i>Adjusted R²</i>			<i>ps*</i>	<i>DIFF - AdjR²_x</i>	
	<i>AdjR²_{LPOS}</i>	<i>AdjR²_{MED}</i>	<i>AdjR²_{LNEG}</i>		<i>MED - LPOS</i>	<i>MED - LNEG</i>
	<i>a</i>	<i>b</i>	<i>c</i>		<i>b - a</i>	<i>b - c</i>
Earnings Relation	0.074	0.046	0.036	?	-0.028 (0.01)	0.010 (0.24)
Book Value and Earnings Relation	0.513	0.328	0.417	?	-0.186 (0.01)	-0.090 (0.01)

See Table 8 for notes.

Table 15: Sensitivity Results: Tests of Conservatism Using Statement of Cash Flows - 1983 - 2004

This table reports the intercept and interaction terms from Equation (3) the asymmetric timeliness measure of conservatism with control variables (Panel A) and Equation (5) the accumulated accruals measure of conservatism (Panel B). The intercept and the interaction terms for the control variables from Equation (3) are suppressed for presentation purposes. In this table, cash flows (part of the variable used to sort firms into LPOS, MED and LNEG groups) are calculated using the balance sheet for all years.

Panel A: *Asymmetric Timeliness Measure of Conservatism*

Coefficient (Variable)	LPOS = 1 N = 65,790			MED = 1 N = 65,790			LNEG = 1 N = 65,790		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.01	1.14	0.25	-0.03	-2.92	0.00	0.02	4.15	0.00
α_2 (NEG)	0.05	3.55	0.00	0.05	5.19	0.00	0.04	4.58	0.00
α_3 (DX)	0.02	2.23	0.03	0.08	9.18	0.00	-0.04	-2.08	0.04
β_1 (RET)	?	4.93	0.00	0.16	8.29	0.00	0.13	7.66	0.00
β_2 (NEG*RET)	+	4.34	0.00	0.35	7.83	0.00	0.25	6.53	0.00
β_3 (DX*NEG)	?	0.77	0.44	-0.01	-3.03	0.00	0.01	1.16	0.25
β_4 (DX*RET)	+	1.08	0.28	-0.02	-6.48	0.00	0.03	2.77	0.01
β_5 (DX*NEG*RET)	+	3.81	0.00	-0.20	-7.47	0.00	0.04	1.84	0.93
Avg Adj R ²			0.24			0.24			0.24
t-statistic			13.81			15.02			14.92

See Notes below Panel B.

Table 15 (Continued)

Panel B: Accumulated Accruals Measure of Conservatism

Variable	LPOS = 1 N = 65,790			MED = 1 N = 65,790			LNEG = 1 N = 65,790		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	0.10	3.45	0.00	0.17	5.51	0.00	0.21	10.49	0.00
DX	+	0.25	20.65	?	-0.05	-3.44	0.00	-18.72	0.00
LIT	+	0.05	3.34	+	0.05	3.08	0.00	3.67	0.00
LEV	+	0.25	11.66	+	0.31	12.21	0.00	18.61	0.00
CDIV	+	-0.03	-0.92	+	-0.03	-0.97	0.83	-2.97	1.00
STDROA	+	0.16	2.33	+	0.15	2.36	0.01	3.70	0.00
SIZE	?	-0.02	-9.91	?	-0.02	-6.85	0.00	-13.62	0.00
RDADV	?	-0.01	-0.38	?	-0.03	-0.88	0.38	-1.26	0.21
Avg Adj R ²			0.13			0.07			0.10
t-statistic			14.83			7.55			17.05

Notes:

DX = indicator variable alternatively set equal to one if LPOS = large positive cash - tax spread groups, MED = medium cash - tax spread, or LNEG = large negative cash - tax spread groups, respectively.

Coefficients and t-statistics reported are the results of Fama-Macbeth regressions over a period of 21 years from 1983 to 2004. See Tables 2, 4, and 5 for other variable definitions and equations.

ps = predicted sign.

* Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Table 16: Sensitivity Results: Alternative Sort Period: 1983 – 1985

This table reports the intercept and interaction terms from Equation (3) the asymmetric timeliness measure of conservatism (Panel A), and Equation (5) the accumulated accruals measure of conservatism (Panel B). The intercept and the interaction terms for the control variables from Equation (3) are suppressed for presentation purposes. In this table, firms are sorted into LPOS, MED and LNEG groups based on the average value of RELDIF over the period of (1983 – 1985).

Panel A: Asymmetric Timeliness Measure of Conservatism

Coefficient (Variable)	LPOS = 1 N = 3,636			MED = 1 N = 3,636			LNEG = 1 N = 3,636		
	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*	Coefficient	t-stat	p-value*
α_1	0.12	5.72	0.01	0.22	7.53	0.01	0.11	5.17	0.01
α_2 (NEG)	-0.08	-2.13	0.03	-0.04	-0.89	0.37	-0.09	-2.25	0.02
α_3 (DX)	0.11	2.41	0.02	-0.13	-3.98	0.01	0.07	1.80	0.07
β_1 (RET)	?	1.95	0.05	?	4.99	0.01	?	1.68	0.05
β_2 (NEG*RET)	+	2.43	0.02	+	1.70	0.05	+	1.67	0.05
β_3 (DX*NEG)	?	-0.86	0.39	-0.03	-1.05	0.29	0.07	2.22	0.03
β_4 (DX*RET)	?	1.97	0.05	-0.09	-5.16	0.01	0.08	3.91	0.01
β_5 (DX*NEG*RET)	+	-1.48	0.93	?	0.33	0.74	?	1.11	0.87
Adjusted R ²			0.18			0.18			0.18
F-stat p-value			0.01			0.01			0.01

See Notes below Panel B.

Table 16 (Continued)

Panel B: Accumulated Accruals Measure of Conservatism

Variable	LPOS = 1 N = 3,636			MED = 1 N = 3,636			LNEG = 1 N = 3,636		
	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*	Coefficient	t-statistic	p-value*
Intercept	-0.11	-8.40	0.01	-0.11	-7.63	0.01	-0.01	-0.39	0.70
DX	0.26	23.96	0.01	0.01	1.28	0.20	-0.26	-24.66	0.01
LIT	-0.01	-1.00	0.68	-0.04	-2.83	1.00	-0.04	-3.46	1.00
LEV	0.22	7.14	0.01	0.37	11.13	0.01	0.37	11.99	0.01
CDIV	-1.16	6.05	1.00	-1.72	-8.31	1.00	-1.64	-8.61	1.00
STDROA	0.01	5.39	0.01	0.08	4.70	0.01	0.01	4.33	0.01
SIZE	0.00	2.15	0.03	0.01	5.88	0.01	0.00	2.10	0.04
RDADV	-0.04	-0.73	0.47	-0.18	-2.81	0.01	-0.21	-3.64	0.01
Adjusted R ²			0.21			0.09			0.22
F-stat p-value			0.01			0.01			0.01

Notes:
 DX = indicator variable alternatively set equal to one if LPOS, MED or LNEG, where,
 LPOS = large positive cash - tax spread, MED = medium cash - tax spread, and
 LNEG = large negative cash - tax spread groups.
 See Tables 2, 4, and 5 for other variable definitions and equations. ps = predicted sign. * Probabilities are one-tailed for coefficients with a predicted sign, two-tailed otherwise.

Notes:

This table contains results from hedge portfolio returns based on positions long in firm-year observations with $X = \Delta PTBI$ and $\Delta TI > 0$, and short $\Delta PTBI$ and $\Delta TI < 0$.

RET^{SX} = the hedge portfolio return to long (short) position in stocks with ΔX positive (negative).

RET^{SR} = the hedge portfolio return to long (short) position in stocks with stock returns positive

(negative). $\%mkt^{SX} = RET^{SX}/RET^{SR}$. Ratio of $RET^{SX} = RET_{\Delta TI}^{SX} / RET_{\Delta PTBI}^{SX}$.

$\Delta PTBI_{jt}$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period t-1 to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j.

ΔTI_{jt} = the change in taxable income from period t-1 to t where taxable income is the sum of current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) divided by the top U.S. statutory tax rate applicable to that data year less the change in net operating loss (NOL) carry forwards (COMPUSTAT data52) deflated by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j.

T-statistics are based on the annual deviations of the ratio around the grand mean (e.g. 1.034 in Panel A) and tests the ratio of 1.034 (Panel A), 0.778 (Panel B), 0.463 (Panel C) and 0.730 (Panel D) against the null of 1.

Table 18 (Continued)

Panel C: MED Firm Years

Year	N	X = Δ PTBI		X = Δ TI		Ret ^{SMR}	Ratio of Ret ^{SMX}
		Ret ^{SMX}	%mkt	Ret ^{SMX}	%mkt		
		A	b = a/e	C	d = c/e	e	f = c/a
1991	107	0.18	46.1%	0.08	21.6%	0.39	0.470
1992	845	0.15	42.9%	0.10	28.6%	0.35	0.668
1993	1,084	0.20	55.3%	0.16	43.3%	0.36	0.784
1994	1,145	0.13	42.2%	0.11	35.6%	0.32	0.845
1995	1,097	0.16	41.1%	0.12	28.7%	0.40	0.698
1996	1,173	0.14	40.0%	0.10	30.3%	0.35	0.758
1997	1,273	0.17	41.7%	0.13	30.7%	0.41	0.735
1998	1,372	0.13	36.0%	0.11	31.3%	0.37	0.868
1999	1,263	0.20	29.0%	0.13	18.7%	0.67	0.646
2000	1,191	0.18	34.3%	0.12	23.5%	0.51	0.686
2001	1,245	0.13	29.2%	0.09	19.7%	0.45	0.674
2002	1,296	0.11	32.4%	0.11	32.4%	0.33	1.001
2003	1,275	0.22	42.0%	0.08	15.8%	0.52	0.375
2004	125	0.13	30.9%	0.11	26.3%	0.42	0.850
Average		15.9%	38.8%	11.0%	27.6%	41.7%	0.718
t-statistic							-6.580

Panel D: All Firm Years

Year	N	X = Δ PTBI		X = Δ TI		Ret ^{SMR}	Ratio of Ret ^{SMX}
		Ret ^{SMX}	%mkt	Ret ^{SMX}	%mkt		
		A	b = a/e	C	d = c/e	e	f = c/a
1991	37	0.04	6.4%	0.20	35.4%	0.57	5.519
1992	241	0.24	52.1%	0.20	43.1%	0.45	0.828
1993	380	0.22	41.2%	0.19	35.5%	0.53	0.861
1994	417	0.15	38.9%	0.13	33.6%	0.39	0.865
1995	485	0.17	33.3%	0.15	29.3%	0.52	0.882
1996	420	0.15	32.8%	0.12	26.4%	0.45	0.806
1997	411	0.21	40.8%	0.19	37.0%	0.51	0.907
1998	437	0.13	28.8%	0.12	27.2%	0.44	0.945
1999	439	0.28	28.0%	0.02	2.2%	0.99	0.080
2000	519	0.14	25.8%	0.18	32.5%	0.55	1.259
2001	393	0.20	35.6%	0.14	24.6%	0.56	0.690
2002	295	0.13	31.8%	0.12	28.4%	0.41	0.894
2003	332	0.33	33.2%	0.06	6.3%	0.99	0.189
2004	24	0.39	56.3%	0.23	33.7%	0.69	0.599
Average		19.7%	34.6%	14.6%	28.2%	57.4%	1.095
t-statistic							0.270*

* t-statistic excluding 1991 = -2.93

Notes:

This table reports results of hedge portfolio returns formed by ranking firms each year by ΔX (deflated by beginning of year market value of equity) and forming an equally weighted hedge portfolio that is long in stocks with the highest 40% of ΔX and short in the lowest 40% of ΔX , where $\Delta X = \Delta PTBI$ or ΔTI .

RET^{SMX} = the hedge portfolio return to long (short) position in stocks with largest (smallest) 40% ΔX .

RET^{SMR} = the hedge portfolio return to long (short) position in stocks with largest (smallest) 40% stock returns.

$\%mkt^{SMX} = RET^{SMX}/RET^{SMR}$. Ratio of $RET^{SX} = RET_{\Delta TI}^{SMX} / RET_{\Delta PTBI}^{SMX}$.

$\Delta PTBI_{jt}$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period t-1 to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j.

ΔTI_{jt} = the change in taxable income from period t-1 to t where taxable income is estimated as the sum of current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) divided by the top U.S. statutory tax rate applicable to that data year less the change in net operating loss (NOL) carryforwards (COMPUSTAT data52) deflated by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j. If this information is not available, taxable income is estimated by dividing the difference of total tax expense (COMPUSTAT data16) and deferred taxes (COMPUSTAT data50) by the maximum statutory tax rate, and then subtracting the change in net operating loss carryforward (COMPUSTAT data52) and deflating by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j.

N is the number of observations used in estimating each annual regression.

T-statistics are based on the annual deviations of the ratio around the grand mean (e.g. 1.095 in Panel A) and tests the ratio of 1.095 (Panel A), 0.718 (Panel B), 0.654 (Panel C) and 0.718 (Panel D) against the null of 1.

Table 19: Sensitivity Results - Relative Information Content

<i>Panel A: ALL Firm Years</i>								
Year	N	Equation (a)		Equation (b)		Adjusted R ² ratio	Vuong's Z-statistic	Probability
		Δ PTBI	R ²	Δ TI	R ²			
1991	245	0.18	0.02	0.41	0.04	1.873	-0.389	0.735
1992	1,745	0.55	0.08	0.34	0.02	0.302	4.389	0.000
1993	2,292	0.74	0.09	0.54	0.05	0.573	-0.740	0.460
1994	2,338	0.69	0.07	0.27	0.01	0.221	7.948	0.000
1995	2,385	0.93	0.07	0.48	0.03	0.355	3.599	0.000
1996	2,451	0.69	0.06	0.37	0.02	0.325	7.289	0.000
1997	2,499	0.94	0.08	0.55	0.03	0.402	7.808	0.000
1998	2,598	0.58	0.04	0.27	0.01	0.285	10.818	0.000
1999	2,606	0.95	0.03	0.34	0.00	0.112	-0.980	0.329
2000	2,620	0.73	0.06	0.55	0.03	0.584	-1.200	0.231
2001	2,738	0.43	0.04	0.41	0.02	0.569	-0.559	0.575
2002	2,747	0.27	0.03	0.25	0.02	0.521	3.979	0.000
2003	2,676	0.93	0.08	0.35	0.01	0.093	0.470	0.641
2004	249	1.17	0.13	0.68	0.05	0.405	-1.010	0.316
Average		0.70	0.06	0.41	0.02	0.47		
t-statistic			7.70		6.23	-4.55		

<i>Panel B: LPOS Firm Years</i>								
Year	N	Equation (a)		Equation (b)		Adjusted R ² ratio	Vuong's Z-statistic	Probability
		Δ PTBI	R ²	Δ TI	R ²			
1991	65	0.08	0.00	0.42	0.04	18.245	-0.913	0.364
1992	387	0.41	0.07	0.23	0.01	0.158	0.829	0.408
1993	462	0.61	0.11	0.64	0.09	0.794	-3.227	0.001
1994	385	0.56	0.08	0.33	0.02	0.266	1.568	0.118
1995	408	0.96	0.12	0.45	0.03	0.242	0.869	0.388
1996	459	0.70	0.10	0.39	0.03	0.326	0.709	0.479
1997	394	0.75	0.12	0.55	0.06	0.468	2.267	0.024
1998	336	0.37	0.04	0.01	0.00	-0.080	6.880	0.000
1999	479	0.92	0.06	0.55	0.01	0.189	0.460	0.648
2000	484	0.64	0.09	0.53	0.05	0.522	-2.368	0.018
2001	690	0.37	0.05	0.43	0.03	0.641	-3.108	0.002
2002	759	0.28	0.06	0.21	0.02	0.317	0.380	0.704
2003	667	0.73	0.09	0.74	0.05	0.495	-3.178	0.002
2004	62	1.10	0.21	0.50	0.01	0.058	-0.913	0.362
Average		0.61	0.09	0.43	0.03	1.62*		
t-statistic			6.64		5.21	0.48*		

* Excluding 1991, the average = 0.34 and the t-statistic = -10.27.

Table 19 (Continued)

Panel C: MED Firm Years

Year	N	Equation (a)		Equation (b)		Adjusted R ² ratio	Vuong's Z-statistic	Probability
		Δ PTBI	R ²	Δ TI	R ²			
1991	133	0.99	0.12	0.48	0.04	0.297	1.564	0.118
1992	1,355	0.63	0.06	0.36	0.02	0.385	-0.250	0.802
1993	1,056	1.00	0.10	0.53	0.04	0.414	3.608	0.000
1994	1,432	0.79	0.06	0.31	0.02	0.273	1.340	0.180
1995	1,371	1.02	0.06	0.41	0.01	0.255	1.469	0.143
1996	1,467	0.83	0.05	0.44	0.02	0.361	0.570	0.571
1997	1,592	1.23	0.09	0.60	0.03	0.319	1.789	0.074
1998	1,715	0.76	0.05	0.34	0.01	0.273	-2.139	0.033
1999	1,488	1.29	0.02	0.63	0.01	0.334	0.340	0.735
2000	1,556	1.14	0.06	0.70	0.03	0.438	4.369	0.000
2001	1,579	0.53	0.04	0.48	0.02	0.584	0.000	1.000
2002	1,620	0.24	0.01	0.37	0.02	1.947	-2.059	0.040
2003	1,594	1.41	0.08	0.25	0.00	0.033	4.419	0.000
2004	157	0.84	0.02	0.83	0.09	4.366	-0.389	0.700
Average		0.91	0.06	0.48	0.03	0.73*		
t-statistic			7.24		4.67	-0.87*		

* Excluding 2004, the average = 0.45 and the t-statistic = -4.38.

Panel D: LNEG Firm Years

Year	N	Equation (a)		Equation (b)		Adjusted R ² ratio	Vuong's Z-statistic	Probability
		Δ PTBI	R ²	Δ TINOL	R ²			
1991	47	0.25	-0.01	0.47	0.03	-6.281	0.148	0.885
1992	302	0.64	0.10	0.46	0.04	0.440	3.804	0.000
1993	475	0.60	0.04	0.37	0.02	0.552	1.738	0.082
1994	521	0.67	0.05	0.16	0.01	0.105	8.332	0.000
1995	606	0.80	0.06	0.58	0.04	0.681	4.326	0.000
1996	525	0.44	0.02	0.30	0.01	0.413	8.712	0.000
1997	513	0.82	0.06	0.51	0.03	0.505	6.873	0.000
1998	547	0.55	0.03	0.37	0.02	0.740	6.914	0.000
1999	548	0.72	0.01	-0.10	0.00	-0.100	-0.929	0.352
2000	648	0.51	0.02	0.48	0.03	1.161	2.208	0.027
2001	492	0.55	0.06	0.39	0.03	0.453	1.758	0.079
2002	368	0.21	0.02	0.26	0.02	1.016	3.615	0.000
2003	415	0.73	0.04	-0.01	0.00	-0.060	-0.070	0.942
2004	30	1.36	0.22	0.70	0.04	0.168	0.128	0.895
Average		0.63	0.05	0.35	0.02	-0.01*	3.40	
t-statistic			3.54		5.61	-2.06*		

* Excluding 1991, the average = 0.47 and the t-statistic = -5.24.

Notes:

The coefficients and R^2 are from annual, cross-sectional regressions of Equation (a) and Equation (b), as follows:

$$\text{Equation (a): } R_{jt} = a_0 + a_1 \Delta PTBI_{jt} + e_{jt}.$$

$$\text{Equation (b): } R_{jt} = b_0 + b_1 \Delta TI_{jt} + e_{jt}.$$

R_{jt} = the market-adjusted buy and hold return on security j cumulated over a 12-month window ending three months after the end of fiscal year t .

$\Delta PTBI_{jt}$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period $t-1$ to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j .

ΔTI_{jt} = the change in taxable income from period $t-1$ to t where taxable income is estimated as the sum of current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) divided by the top U.S. statutory tax rate applicable to that data year less the change in net operating loss (NOL) carryforwards (COMPUSTAT data52) deflated by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j . If this information is not available, taxable income is estimated by dividing the difference of total tax expense (COMPUSTAT data16) and deferred taxes (COMPUSTAT data50) by the maximum statutory tax rate, and then subtracting the change in net operating loss carryforward (COMPUSTAT data52) and deflating by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j .

N is the number of observations used in estimating each annual regression.

The adjusted R^2 ratio = $R_{\Delta TI}^2 / R_{\Delta PTBI}^2$ and the associated t-statistic tests the average of the adjusted R^2 ratio (e.g., -0.01 in Panel A) against the null of 1. The row labeled "Average" reports the mean of the yearly coefficients, t-statistics and the adjusted R^2 s. Each t-statistic is based on the annual deviation of the R^2 or adjusted R^2 ratio around its grand mean.

Table 20: Sensitivity Results - Incremental Information Content

Panel A: ALL Firm Years

Year	N	Intercept	t-stat	Δ PTBI	t-stat	Δ TI	t-stat	R ²
1991	245	0.11	3.46	0.14	1.94	0.36	2.85	0.05
1992	1,745	-0.02	-1.94	0.51	10.55	0.16	3.07	0.08
1993	2,292	0.10	10.04	0.63	11.99	0.36	7.15	0.10
1994	2,338	-0.03	-3.43	0.65	11.74	0.14	3.13	0.07
1995	2,385	-0.04	-3.49	0.84	11.77	0.25	4.13	0.08
1996	2,451	-0.07	-7.89	0.62	10.54	0.21	3.78	0.06
1997	2,499	-0.14	-15.27	0.85	13.19	0.37	6.26	0.10
1998	2,598	-0.26	-31.38	0.54	9.28	0.17	3.30	0.04
1999	2,606	0.12	5.42	0.93	8.10	0.05	0.46	0.03
2000	2,620	0.12	10.36	0.62	10.31	0.39	6.46	0.07
2001	2,738	0.23	21.65	0.36	8.79	0.27	5.13	0.05
2002	2,747	0.05	6.58	0.24	8.38	0.19	5.16	0.04
2003	2,676	0.34	20.14	0.91	14.64	0.22	2.90	0.08
2004	249	0.23	6.18	1.03	5.35	0.41	2.34	0.15
Average		0.05	1.46	0.63	9.76	0.25	4.01	0.07
t-statistic*				9.57		9.15		

Panel B: LPOS Firm Years

Year	N	Intercept	t-stat	Δ PTBI	t-stat	Δ TI	t-stat	R ²
1991	65	0.17	2.68	0.06	0.77	0.39	1.83	0.04
1992	387	0.10	3.70	0.40	4.98	0.07	0.66	0.07
1993	462	0.17	6.68	0.47	5.35	0.42	4.10	0.14
1994	385	0.02	1.10	0.52	5.20	0.17	1.58	0.08
1995	408	-0.02	-0.81	0.89	6.87	0.23	1.87	0.13
1996	459	0.02	0.83	0.63	6.41	0.21	2.27	0.11
1997	394	-0.11	-4.54	0.65	6.06	0.31	2.75	0.14
1998	336	-0.25	-10.48	0.39	3.82	-0.09	-0.83	0.04
1999	479	0.10	1.92	0.87	4.92	0.23	1.02	0.06
2000	484	0.20	7.38	0.55	5.91	0.34	3.25	0.11
2001	690	0.36	15.53	0.30	4.70	0.25	2.78	0.06
2002	759	0.14	8.48	0.25	5.95	0.12	2.13	0.06
2003	667	0.50	14.05	0.67	7.67	0.60	4.80	0.12
2004	62	0.41	4.98	1.07	3.83	0.13	0.37	0.20
Average		0.13	3.68	0.55	5.17	0.24	2.04	0.10
t-statistic				8.65		5.26		

Panel C: MED Firm Years

Year	N	Intercept	t-stat	Δ PTBI	t-stat	Δ TI	t-stat	R ²
1991	133	0.06	1.61	0.99	3.50	0.00	0.01	0.11
1992	1,355	-0.06	-5.46	0.56	7.06	0.22	3.03	0.07
1993	1,056	0.04	3.91	0.90	10.74	0.36	5.26	0.12
1994	1,432			0.73	8.78	0.17	2.79	0.07
1995	1,371	-0.06	-4.98	0.95	8.23	0.18	1.94	0.06
1996	1,467	-0.09	-8.72	0.76	8.19	0.31	3.81	0.06
1997	1,592	-0.14	-13.11	1.12	10.94	0.37	4.21	0.09
1998	1,715	-0.26	-27.33	0.70	8.46	0.20	2.80	0.05
1999	1,488	0.07	2.59	1.17	5.53	0.34	1.95	0.03
2000	1,556	0.12	8.82	1.00	8.36	0.38	3.49	0.07
2001	1,579	0.19	14.53	0.45	6.42	0.35	4.16	0.05
2002	1,620	0.04	4.42	0.19	3.40	0.33	5.39	0.03
2003	1,594	0.19	10.83	1.41	11.58	0.05	0.45	0.08
2004	157	0.16	3.89	0.37	0.88	0.77	3.51	0.09
Average		0.02	-0.93	0.81	7.29	0.29	3.06	0.07
t-statistic				8.98		5.84		

Panel D: LNEG Firm Years

Year	N	Intercept	t-stat	Δ PTBI	t-stat	Δ TI	t-stat	R ²
1991	47	0.23	2.33	0.21	0.74	0.45	1.53	0.02
1992	302	-0.01	-0.34	0.56	4.65	0.24	1.85	0.10
1993	475	0.20	7.66	0.53	3.93	0.27	2.55	0.05
1994	521	-0.04	-1.87	0.65	5.02	0.08	0.96	0.05
1995	606	0.01	0.44	0.64	4.63	0.38	3.09	0.07
1996	525	-0.08	-3.87	0.38	2.71	0.16	1.18	0.02
1997	513	-0.16	-6.74	0.77	5.47	0.44	3.64	0.08
1998	547	-0.27	-12.45	0.47	3.45	0.29	2.78	0.04
1999	548	0.30	5.10	0.85	3.39	-0.38	-1.54	0.02
2000	648	0.04	1.67	0.42	3.62	0.41	4.03	0.05
2001	492	0.21	7.41	0.50	4.88	0.29	2.78	0.07
2002	368	-0.07	-2.92	0.20	2.73	0.24	2.76	0.04
2003	415	0.65	11.23	0.73	4.28	-0.05	-0.30	0.04
2004	30	0.24	1.81	1.28	2.57	0.18	0.37	0.20
Average		0.09	0.68	0.58	3.72	0.21	1.83	0.06
t-statistic				11.00		3.49		

Notes:

The coefficients, t-statistics and R^2 are from annual, cross-sectional regressions of the following equation:

$$R_{jt} = c_0 + c_1 \Delta PTBI_{jt} + c_2 \Delta TI_{jt} + e_{jt}.$$

R_{jt} = the market-adjusted buy and hold return on security j cumulated over a 12-month window ending three months after the end of fiscal year t .

$\Delta PTBI_{jt}$ = the change in pre-tax book income (COMPUSTAT data170) less minority interest (COMPUSTAT data49) from period $t-1$ to t deflated by beginning of period t market value of equity (COMPUSTAT data199*COMPUSTAT data25) for firm j .

ΔTI_{jt} = the change in taxable income from period $t-1$ to t where taxable income is estimated as the sum of current federal income tax expense (COMPUSTAT data63) and current foreign tax expense (COMPUSTAT data64) divided by the top U.S. statutory tax rate applicable to that data year less the change in net operating loss (NOL) carryforwards (COMPUSTAT data52) deflated by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j . If this information is not available, taxable income is estimated by dividing the difference of total tax expense (COMPUSTAT data16) and deferred taxes (COMPUSTAT data50) by the maximum statutory tax rate, and then subtracting the change in net operating loss carryforward (COMPUSTAT data52) and deflating by beginning of period t market value of equity (COMPUSTAT data199* COMPUSTAT data25) for firm j .

N = the number of observations used in estimating each annual regression.

t-stat = t-statistic.

The row labeled "Average" reports the mean of the yearly coefficients, t-statistics and the adjusted R^2 s.

* t-statistic based on the annual deviation of the coefficient around its grand mean.

8.0 Summary and Conclusions

In this study I examine and compare conservatism and value relevance across firm years that are grouped based on the potential proximity of pre-tax book income before the effects of conservatism and taxable income. My motivation is to provide evidence on taxation as a determinant of conservatism and to contribute to the debate surrounding conservatism by testing whether the value relevance of accounting information is impaired when reporting incentives are affected by tax rules. My results suggest that firm years with large positive differences between PTBI before conservatism and TI (LPOS) are more conservative than other firm years as measured by both the asymmetric timeliness with which accounting earnings capture bad news relative to good news and the accumulation of accruals. The results are mixed for LNEG firm years as they only display the lowest level of conservatism as measured by the accumulation of accruals. In addition, the evidence is consistent with LPOS (LNEG) firms being less (more) conservative after an exogenous change in taxes occurs. While these results are subject to the limitations discussed in this study, they provide initial support for the conjecture that taxation is a determinant of conservatism in financial accounting in US firms.

Interestingly, the value relevance tests are generally consistent with the value relevance of accounting information increasing in conservatism. In other words, the LPOS firm years, which are the most conservative as reflected in both the asymmetric timeliness of news incorporation and accumulated accruals tests, are the most value relevant as reflected in the hedge portfolio and book value and earnings regression tests. These findings are consistent with separate evidence on value relevance and

conservatism. Francis and Schipper (1999) find that the relevance of balance sheet and book value information increases over their sample period, while Givoly and Hayn (2000) provide evidence that conservatism in accounting information is increasing over a similar period. One possible extension of this paper is to further explore the relation between conservatism and value relevance and examine whether changes in conservatism over time explain changes in value relevance.

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Appendix A

Financial Reporting and Tax Costs

In this appendix, I discuss reasons that book and taxable income differ which has led to different recognition rules for book and tax income. Despite different rules, the implicit links between book and taxable income mean that the operating, investing, financing, accounting method and accounting estimate decisions firms make affect both pre-tax book income (PTBI) and taxable income (TI) such that the difference between PTBI and TI vary across firms and across time.

Reasons for differences between book and taxable income. Despite the implicit links between PTBI and TI, three principal reasons exist for disparities between the two numbers. The first is different goals of financial and tax reporting. The primary objective of external financial reporting is to provide useful economic information to external financial statement users such as shareholders and customers (FASB 1978) while the primary goal of tax accounting is the equitable collection of tax revenue (Thor Power Tool Co v. Commissioner, 439 U.S. 522).³⁶ The second reason is the timing of the development of tax and generally accepted accounting principles (GAAP). For example, the “all events test” which is still used to help determine the timing of inclusion of revenue and deductions for tax purposes was first articulated by the courts in 1926 (U.S. v. Anderson, 269 U.S. 422 (1926)), which is before GAAP was well developed (Dubroff, et al. 1983). The third reason for disparities between PTBI and TI are management’s reporting incentives. For PTBI, there are contractual and earnings target incentives to report higher PTBI as well as evidence of political cost and bonus threshold incentives to report lower PTBI (e.g. Healy 1985; Watts and Zimmerman 1986; Jones 1991; Key 1997; Burgstahler and Dichev 1997). For TI, however, firms prefer to pay fewer taxes, ceteris paribus, and thus report lower TI.

Recognition rules for PTBI and TI. Different objectives for PTBI and TI mean that different recognition rules for GAAP and tax purposes exist. For PTBI, revenues are recognized when they are earned and there is reasonable certainty as to the

³⁶ See Mills and Plesko 2003 for a discussion.

collectibility of the asset to be received, while expenses incurred to generate revenues are recognized in the same period as the related revenues in conformance with the matching principle. For TI, the wherewithal-to-pay concept means that TI generally includes prepaid income because the taxpayer is in the best position to pay the tax when the income is received (Prentice Hall 2004). Deductions, however, are not recognized until a transaction meets both an all-events test (existence of the liability is established and amount is determined with reasonable accuracy) and an economic performance test (varies by event, but generally when property or services are actually provided) (Reg. § 1.461-4(d)),³⁷ so firms might recognize income earlier for TI than PTBI or need to take additional action in order to recognize deductions for tax purposes that are recognized for book purposes. For example, in their 2001 financial statements Cisco wrote down approximately \$2.78 billion in inventory due to “a sudden and significant decrease in demand for the Company’s products” (2001 Cisco 10K). In order to deduct the amount for tax purposes, however, the company must also reduce the selling price (Thor Power Tool Co. v. Commissioner, 439 U.S. 522 (1979)). Therefore, if a firm attempts to minimize taxes in one period by, for example, postponing revenue they also likely incur financial reporting costs in the form of lower PTBI that period.

In summary, PTBI and TI are two non-mutually exclusive measures of a firms’ economic income. The links between the two income measures mean that firms likely incur financial reporting costs if they attempt to minimize taxes. Similarly, firms likely incur tax costs if they maximize financial reporting income.

³⁷ Exceptions to these tax rules exist. For prepaid income, a taxpayer may defer advance payment for inventory if their method of accounting for the sale is the same for book and tax purposes (Reg. §1.451-5) and for services if the services are performed before the end of the year following receipt. For expenses, exceptions to the economic performance test are allowed if the following five conditions are met: 1) the all-events test is satisfied; 2) economic performance occurs within eight and one-half months after the close of the tax year; 3) the taxpayer treats items of the same type consistently; 4) the taxpayer is not a tax shelter; and 5) earlier accrual of the item results in better matching of income and expenses (See Prentice Hall 2004 and IRC §461(h)).

Appendix B

Summary of Pertinent Provisions of the Tax Reform Act of 1986³⁸

The goal of the Tax Reform Act of 1986 (TRA86) is to remove the impact of tax considerations on personal and business decisions. To do this, Congress substantially reduced the tax rates for individuals and corporations and expanded the base on which taxes for corporations are calculated. The outcome is a shift in the tax burden from individuals to corporations and from corporations with high tax rates to those with lower tax rates. Important provisions for corporations are enumerated as follows:

1. **Rate reduction.** Top corporate tax rates are reduced from 46% to 34%, effective July 1, 1987. Some progressivity in the rates remains, but is eliminated for corporations with taxable income in excess of \$335,000 (previously lower rates were not phased out until taxable income reached \$1,405,000).
2. **Investment Tax Credit (ITC).** TRA86 repeals the ITC for any assets placed into service after December 31, 1985, subject to certain transition rules on assets for which a binding contract existed on that date. In addition, any ITC carryovers to 1986 are reduced by 35%.
3. **Depreciation.** Effective for assets placed into service after December 31, 1985 the Accelerated Cost Recovery System (ACRS) is revised to more clearly align asset lives with economic lives. The new system accomplishes this by reclassifying the lives of some assets (e.g. cars and light trucks move from 3-yr to 5-yr property) and providing additional (longer) asset class lives. The effect is to generally lengthen the lives over which assets are depreciated, yet provide for accelerated depreciation for shorter-lived assets (double declining balance versus 150% declining balance).
4. **Credit offset limit.** For tax years beginning after December 31, 1985 business credits allowed to offset income are reduced from 85% to 75% of tax in excess of \$25,000.
5. **Alternative Minimum Tax (AMT).** TRA86 replaces the pre-1987 add-on minimum tax with the AMT. The AMT provides for a parallel calculation of tax liability in which income and deductions for regular tax are modified (e.g. interest exempt from regular tax is added back) to arrive at Alternative Minimum Taxable Income (AMTI). The AMT tax rate is set at 20%, which is 59% of the new top tax rate of 34% (prior minimum tax rate was 15% versus a top tax rate of 46%). The outcome of this provision is that more corporations will be subject to some minimal level of tax. For tax years 1987 – 1989 the

³⁸ Source: Arthur Andersen & Co. 1986.

book income adjustment means that one-half of the excess of PTBI over AMTI is added to AMTI.

6. Limitations on Net Operating Loss (NOL) and other Carryforwards. When a more than 50% ownership change, by value, of a loss corporation occurs, new limits are placed on the amount of NOL that can be utilized subsequent to the change. The effect of this provision is to limit the ability to offset TI arising after the ownership change with NOLs (and other carryforwards) from years before the change.
7. Measurement and timing of taxable income. A handful of provisions seek to correct prior practices that resulted in the mistiming of income recognition, including:
 - a. Uniform Cost Capitalization Rules – Overall this provision affects corporations with inventories, as certain costs are capitalized instead of deducted currently.
 - b. Construction-period Interest Capitalization – applies to certain types of property, whether constructed for sale or for the corporation's own use.
 - c. Long-term Contracts – Defined as a contract for building, installation, construction or manufacture that is not completed within the taxable year in which it is entered into. Under the new rules, all income must be accounted for under either the percentage of completion method (PCM) or the 40% PCM. Costs exclude R&D and selling expenses.
 - d. Cash Method – except for corporations with gross receipts of \$5 million or less and personal-service corporations, corporations may no longer use the cash basis of accounting for income tax purposes.
 - e. Installment Sales – TRA86 limits the amount of income that can be deferred on an installment sale by treating a portion (related to the average amount of debt) as constructively received regardless of when actual receipt occurs.
 - f. Allowance for Bad Debts – Effective for tax years beginning after December 31, 1986 taxpayers can no longer use the reserve method for accounting for bad debts. Instead, they must use the specific write-off method. An exception exists for certain financial institutions. The balance of the reserve account must be taken into income ratably over four years.
8. U.S. Multinational Companies. Various provisions in TRA86 act to complicate the tax calculation and increase the U.S. tax bill of U.S.-based multinational companies, including:
 - a. New separate foreign tax credit baskets for various types of income.
 - b. New rules for allocating expenses to foreign sources.
 - c. Requirement to pool earnings and profits and foreign taxes in calculating the deemed-paid foreign tax credit.
 - d. Revision to the Subpart F (possession tax credit) rules, including an expansion of these rules to include banking and reinvested shipping income.
 - e. Creation of a super royalty concept to reduce deferral.

Appendix C
*Issues with Approximating Pre-tax Cash Flows and Using
Financial Statements to Estimate Taxable Income*

Using financial statement data to approximate pre-tax operating cash flows (CFO) and to measure taxable income (TI) introduces measurement error because disclosure varies across firms for taxes paid and corporations' taxable income is not publicly disclosed and has to be estimated from publicly available financial statement disclosures. This appendix includes discussion of the six potential issues related to reconciling current tax expense and cash taxes paid as well as the seven major problems identified by Hanlon (2003) in estimating a firm's tax liability and hence TI from financial statement disclosures. The discussion on TI mirrors that in Hanlon et al. (2005).

Approximating pre-tax CFO. Hanlon (2003) provides a suggested reconciliation between current tax expense and cash taxes paid and shows that even when firms provide detailed financial statements it is difficult, if not impossible, to reconcile the two numbers (see Table 1 in Hanlon 2003). The items necessary for reconciliation include: 1) tax allocated to items below the tax expense in the income statement, 2) tax benefits of employee stock options, 3) current year tax cushion, 4) payments related to this year not made (or planned to be made) until next year, 5) payments related to prior years' taxes but paid in this year, and 6) reduction in cash taxes due to consolidation with loss entities. While these items likely vary across firms and time in their magnitude, for purposes of this paper, the benefits from employee stock options (discussed in section 4) and the tax cushion (discussed below) are likely to have the greatest impact on the calculation of pre-tax CFO. Because many firms do not disclose any of these items, electronically or otherwise, it is difficult to address these issues. Therefore, I use operating cash flows as reported on the cash flow statement, or as determined using the balance sheet, in my tests.³⁹

³⁹ In robustness tests, I adjust CFO to approximate pre-tax operating cash flows two ways: 1) by adding back current federal and foreign tax expense and subtracting the change in taxes payable (COMPUSTAT data305), and 2) by adding back actual taxes paid (COMPUSTAT data317). The correlation between CFO and these approximations of pretax operating cash flows are 0.993 and 0.992 respectively.

Estimating TI. The first problem is that a major difference between PTBI and TI is that firms take a tax deduction equal to the taxable gain recognized by employees when the employees exercise employee stock options. This tax deduction reduces TI. Because I use current tax expense from the financial statements, which under GAAP is not reduced by the tax benefits the firm receives from the employee stock option tax deduction, the estimate of TI excludes the effects of employee stock options. In addition, very few U.S. firms during my sample period recognized compensation expense for PTBI for employee stock options. Thus my estimate of earnings also excludes the effects of employee stock options. In other words, my sort variable based on TI, and the accruals and earnings measures used in my tests are not affected by the employee stock option tax deduction.⁴⁰

The second issue Hanlon identifies is that firms often make a reserve (create a tax cushion) for tax positions that may be challenged by the IRS in the future. The tax cushion increases the financial accounting expense for tax relative to the actual tax on the firm's tax return. To the extent that this cushion is recorded in current tax expense my estimate of TI is likely overstated. This biases against my results as creating a tax cushion increases conservatism while higher TI increases the chance of being classified as a LNEG firm (i.e. as a firm that is predicted to be less conservative). Lack of disclosure does not allow me to address this problem.

The third issue is that firms report items below operating income net of the associated tax expense (referred to as intraperiod tax allocation). To address this issue, my measures of PTBI, TI and conservatism (e.g. my accruals measure is calculated using PTBI) reflect the same transactions, i.e. those transactions that make up pretax book income. I believe it is reasonable to exclude the below the line items (extraordinary items, discontinued items, etc.) because these items are often transitory in nature and not a component of conservative financial reporting that I am capturing.

The fourth issue is that tax expense is reported after credits – investment tax credit (ITC), research and development credits (R&D) and foreign tax credits (FTC). The credits reduce firms' tax liability and current tax expense so my calculation of TI

⁴⁰ Hanlon and Shevlin (2002) provide a more detailed discussion of the accounting for the tax benefits of employee stock options and the data necessary to estimate the tax benefits.

is understated because I gross up current tax expense to obtain TI. I attempt to minimize any effect from this issue by reporting primary results from 1991 to 2004 after the ITC was discontinued and including R&D as part of my control variables.⁴¹

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The fifth issue is that for firms with foreign operations the question arises as to what tax rate to use to gross up foreign current tax expense. I think it is reasonable to use the U.S. statutory rate. To the extent foreign earnings are a large component of worldwide income, however, and average foreign rates differ from the U.S. rate this introduces some measurement error in my estimate of worldwide TI.

For firms with negative taxable income, the sixth issue is that the current tax expense is truncated at zero or negative if a refund is available. I address this problem by subtracting the change in the NOL carryforward.

The seventh issue Hanlon identifies is that the consolidation rules differ between book and tax rules. For tax purposes, firms can elect to consolidate U.S. subsidiaries in which they have greater than 80% ownership, while foreign subsidiaries are not consolidated (generally foreign earnings are taxed in the U.S. when repatriated as dividends to the parent corporation). In contrast, for financial reporting purposes, all U.S. and foreign subsidiaries are consolidated if the firm has, approximately, 50% or more ownership. I require an estimate of the TI for the financial reporting entity, but not the tax return entity. Thus the critique and problems reconciling book income to taxable income arising because of different entities is not a problem here. The current tax expense number reflects the aggregate of the entities consolidated for financial reporting purposes and thus provides an estimate of TI for these entities.

⁴¹ R&D expenses are not necessarily treated the same for book and tax purposes, though most firms elect to expense these costs (as defined in IRC § 174) to obtain immediate tax benefits (Prentice Hall 2004).

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