Are Timeliness and Conservatism Due to Debt or Equity Markets? An International Test of "Contracting" and "Value Relevance" Theories of Accounting

by

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Abstract

We provide a simple test of "costly contracting" and "value relevance" theories of accounting, using data on the importance of debt and equity markets in 22 countries. Contracting theory predicts that timely loss recognition (contemporaneous incorporation of economic losses in accounting income) increases in the importance of a country's debt markets, but timely gain recognition does not. The value relevance view, that equity markets provide the sole criterion for financial reporting, predicts a positive relation between equity market size and timeliness in both gain and loss recognition. In these international data, it is debt markets – not equity markets – that explain important financial reporting properties. Conditional conservatism, in the Basu (1997) sense of asymmetrically timelier loss recognition, seems due to debt market demand. Equity markets do not appear to influence any aspect of financial reporting timeliness.

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1. Introduction

An influential body of accounting literature views the primary or exclusive function of public financial reporting as informing share markets. In its strictest form, this view implies that financial reporting rules and practice are (or, for some, should be) determined entirely by the demands of the equity market for new information. Shareholders are interested in information about both gains and losses, so this view implies that the relation between earnings and stock returns is (or should be) symmetric. Shareholders are interested in timely information, so this view also implies that the relation between earnings and stock returns is (or should be) contemporaneous, not lagged. A commonly-espoused metric of financial reporting informativeness to investors therefore is the linear R^2 between earnings and contemporaneous returns (Lev 1989). This body of literature is widely known as the "value relevance" school of thought.[1]

An alternative influential view is that the primary function of public financial reporting is to increase the efficiency with which various parties, notably creditors and managers, contract with the firm. An implication of this view is that financial reporting practice is shaped by the demands originating from the use of financial statement

[1] The notion of earnings timeliness was introduced by Ball and Brown (1968), who concluded (p. 176): "the annual income report does not rate highly as a timely medium." Nevertheless, subsequent literature emphasized the informativeness of earnings. This led to a focus on event-day price responses to earnings announcements, which (while statistically significant in large samples) are a minor component of the variance of annual and longer-horizon stock returns. Lev (1989) reiterated the low timeliness of earnings, expressing in terms of the R^2 between earning and contemporaneous returns, and called for research to improve the quality of financial information (section 8). Holthausen and Watts (2001) provide a recent review of the "value relevance" literature.

information in contracting (Watts and Zimmerman, 1986). This body of literature is widely known as the "costly contracting" school of thought.

Debt and equity markets differ in both the extent and nature of the demands for timely financial reporting they create. We emphasize two fundamental differences. One important difference between debt and equity lies in the distinction between financial reporting and non-financial disclosure. Debt markets are more likely to demand timely financial reporting because debt contracts are written in terms of reported variables such as interest coverage in the income statement and balance sheet leverage. While both debt and equity prices obviously respond to information that is not captured in the financial statements, albeit in different ways, debt differs from equity in that many of the rights of lenders to protect themselves against opportunism by borrowers are couched only in terms of financial statement variables. Consequently, recognition (incorporation of gains and losses in earnings and hence onto balance sheets) is more important for debt than mere disclosure of those gains and losses. Shareholders, on the other hand, are comparatively indifferent between receiving information about economic gains and losses via the financial statements or via non-financial disclosure, so long as they receive it in a timely fashion. Paradoxically, this difference – largely unrecognized in the literature – implies that the correlation between financial statement variables and equity returns is potentially more important to debt markets than to equity markets.

A related difference between debt and equity demands for financial reporting arises from portfolio diversification. For diversified equity investors, the individual-firm R^2 between earnings and returns, as popularized by (Lev 1989), is not necessarily of interest. More relevant is the R^2 at the portfolio level (Ball and Brown 1969, p. 316),

which normally is substantially larger. In contrast, debt contracts are written in terms of individual firms' financial statement variables. This difference only reinforces the above paradox, that the timeliness with which financial statements incorporate the information in equity prices is more important to the debt market than to the equity market.

A second difference between debt and equity is that the value of debt claims on average is less sensitive to increases in firm value than to decreases. The contractual rights of lenders to restrict dividends, borrowing and new investment are limited to adverse situations: that is, to firms that have incurred economic losses. Gains are less likely to trigger lenders' contractual rights. An implication of this asymmetry is that debt markets are more likely to demand timely recognition of losses than gains. This in turn implies that the correlation between financial statement variables and equity returns is more important to debt markets when returns are negative than when they are positive. Asymmetric correlation was first observed by Basu (1997). We refer to the asymmetry as "conditional conservatism" (Ball and Shivakumar, 2005; Beaver and Ryan, 2005).

At least as early as Gilman (1939, page 232), there is recognition in the literature that the demand for accounting conservatism originates at least in part in debt markets. More recently, Jensen and Meckling (1976, page 338) and Watts (1977) propose that financial reporting exists to reduce agency costs of both debt and equity. Working in this tradition, Watts and Zimmerman (1986) and Watts (1993, 2003a, 2003b) have renewed interest in the role of debt contracting in explaining conservatism, and the comprehensive survey by Holthausen and Watts (2001) concludes that debt indeed is the most likely explanation. This literature predates Basu (1997), and has not clearly distinguished conservatism in its conditional and unconditional senses. We formulate the contracting

role of debt as the hypothesis that conditional conservatism, defined as timelier financial statement recognition of economic losses than gains, exists in large part to facilitate efficient contracting in debt markets.

Despite the centrality of timeliness and conservatism to financial reporting, to the best of our knowledge there has been no direct investigation of what economic factors determine them. We offer a simple test that utilizes international data. At the individual country level, using Basu (1997) piecewise linear regressions of earnings on returns, we estimate several fundamental financial reporting properties: gain recognition timeliness, loss recognition timeliness, the asymmetry between them (conditional conservatism), and overall financial recognition timeliness (gains and losses included). We also estimate unconditional conservatism from the regression intercepts (an earnings-based measure of unconditional conservatism that controls for conditional conservatism) and from book-to-market ratios (a balance-sheet-based measure of unconditional conservatism). We then regress these financial reporting properties on measures of the depths of countries' debt markets and equity markets, using data from La Porta et al. (1997, 1998). [2] We interpret market depth as a measure of the strength of the demand for a particular financial reporting property that arises from debt and equity investors respectively.

The motivation for this simple test is as follows. Timely financial reporting is not in unlimited supply: it is a costly economic activity. Timeliness requires accounting accruals based on revisions of expected future cash flows (Ball and Shivakumar 2006), and accruals incur incremental accounting and auditing costs relative to simply recording

[2] We use the term "debt" broadly, to include both short and long term obligations. Specifically, we intend it to include trade credit, which we would expect to induce a demand for timely loss recognition in relation to working capital accounts in particular (such as inventory and receivables write-downs, and loss accruals). Regretfully, the debt data available to us do not include trade credit. The market size variables are scaled by countries' Gross National Products.

realized cash outcomes. For example, implementation of an asset impairment standard such as *SFAS No. 144* involves costly verification of downward revisions in expectations of future cash flows. Verification of upward revisions likewise is a costly activity. Reviewing inventory on a regular basis to check for wastage, obsolescence, theft, damage and other losses consumes accounting and audit verification resources. Regular review of receivables, provisions and accruals generally involves costly accounting and auditing. Thus, like all economic activities, timely financial reporting has a supply schedule. On the demand side of the financial reporting market, other things equal the countries with smaller debt and equity markets generate less demand for timely gain and loss recognition than those with larger markets. Because timely recognition is a costly economic activity, other things equal we would expect the smaller markets to exhibit less of it and the larger markets to exhibit more of it. This simple logic underlies our tests, in which countries' financial reporting properties are regressed on their debt and equity markets sizes, to estimate where the ultimate demand for financial reporting resides.

The regressions control for countries' legal system origins (English, French, German or Scandinavian). Ball, Kothari and Robin (2000) report that legal origin is related to financial reporting timeliness and conditional conservatism, and view it as a proxy for the degree of political influence on financial reporting (versus debt and equity market influences). The regressions also control for three legal-system variables reported in La Porta et al. (1997, 1998): Rule of Law, Corruption and Creditors' Rights. Bushman and Piotroski (2006) report that legal-system variables also are related to financial reporting timeliness and conditional conservatism.

In our sample of 22 countries, we find an economically and statistically significant positive relation between timely loss recognition measures and debt market size. In contrast, the relation between timely loss recognition and equity market size is negative and in most tests is statistically insignificant. Further, we find no relation between timeliness of *gain* recognition and either debt or equity market size. Nor is there an evident relation between equity market size and *overall* earnings timeliness, as measured by the R^2 in a Basu (1997) piecewise linear regression of earnings on fiscal-year returns. Finally, both book-to-market ratios and earnings-sheet-based measures of unconditional conservatism are not significantly related to either debt or equity market size. All results are robust with respect to a variety of controls.

We interpret the debt market relation with loss recognition and the absence of an equivalent relation with gain recognition as confirmation of the debt contracting hypothesis (which predicts such an asymmetry). On the other hand, we interpret the lack of a consistent relation between the size of equity markets and *both* timely gain and timely loss recognition, as well as overall timely gain and loss recognition (measured by the piecewise linear earnings-returns R^2), as a rejection of the value relevance hypothesis.

The conclusion that important financial reporting properties are associated internationally with debt markets more than equity markets has substantial implications for accounting research and practice. For researchers, the result that conservatism (in the conditional form of asymmetrically timely loss recognition) is a function of debt market demand is inconsistent with any theory or model in which the sole (or predominant) criterion for financial reporting is the linear (Pearson) correlation between book value and any notion of underlying market or "true" value. That is, the conclusion is inconsistent

with the basic premise of the "value relevance" school of accounting thought, but consistent with the "costly contracting" school.[3]

The evidence is relevant to students of international accounting and economic differences. The Basu (1997) asymmetry in U.S. loss recognition timeliness is substantially more pronounced in companies listed in common law countries than in companies listed elsewhere (Ball, Kothari and Robin, 2000; Ball, Robin and Wu, 2000; 2003). Our evidence suggests that this result is due more to differences between common law and other countries in the depth of their debt markets, than to differences in the depth of their equity markets.

For practitioners, the result that conditional conservatism arises primarily from legitimate demand from debt markets suggests that the long-standing ambivalence of standard-setters to conservatism in financial reporting could be misplaced, and perhaps based in part on a confusion between conditional and unconditional conservatism (Ball and Shivakumar, 2005), or alternatively on the misconception that the demand for financial reporting originates primarily or exclusively in the equity market.[4] Further, the result that debt markets – but not equity markets – are associated with important properties of public financial reporting brings into question the fundamental concept of "general purpose external financial reporting," that it "is directed toward the common interest of various potential users."[5] Finally, the result that unconditional conservatism is unrelated to debt market importance is inconsistent with the notion that low book values are justifiable for creditor protection, as argued in Ball (2004) and Ball and Shivakumar (2005). This has long been viewed as the dominant rationale for continental European

[3] The two schools of thought are debated in Holthausen and Watts (2001) and Barth et al. (2001).
[4] AICPA (1970, para. 35); FASB (1980, paras. 91-97).
[5] FASB (1978, para. 30).

conservatism, particularly in Germany (Schneider, 1995; European Federation of Accountants, 1997; Haller, 1998; Nobes, 1998), but it does not make compelling economic sense and is inconsistent with our results.

We recognize that our research design is simple, and far from perfect. As in most cross-sectional international studies, correlated omitted variables are a concern. The sample is small (we have usable data for only twenty two countries), and we have only proxies for the dependent and independent variables. Nevertheless, we are able to explain approximately half of the cross-country variation in estimated loss recognition timeliness and obtain statistically significant results for the debt market proxy. The research design does not rely on subjective scoring of countries' formal accounting standards to estimate conservatism, because standards are not implemented uniformly internationally. Following Ball, Kothari and Robin (2000, pp. 4-5), the research utilizes observable properties of the financial statements that firms in different countries actually report.

Section two of the paper develops the debt hypothesis, that asymmetrically timely loss recognition (conditional conservatism) primarily satisfies debt market demand, and contrasts it with the equity hypothesis. Section three describes the sample, data, estimation procedures, and across-country regressions used to test the hypotheses. Section four outlines the results. Section five discusses issues of causation and correlated omitted variables in this research design, and section six presents brief conclusions.

2. Hypotheses: Timely Financial Reporting Primarily Satisfies Debt or Equity Market Demand

This section describes timeliness of gain and loss recognition as an accounting choice variable. It then contrasts conditional conservatism (asymmetrically timely loss

recognition relative to gain recognition), with unconditional conservatism (reporting low earnings and book values, independent of economic income). Finally, it develops the predictions of the debt and equity hypotheses concerning conservatism.

2.1 Timeliness: An Important Accounting Choice

Economic gains and losses can be thought of as increases and decreases respectively in the present values of expected future cash flows. There is comparatively little timing discretion over the recording of actual cash flows, because there is little ambiguity concerning when they eventuate (in accounting parlance, when they are "realized"). In contrast, there is considerable accounting discretion over when revisions in expectations are incorporated in the financial statements (in accounting parlance, there is discretion when they are "recognized").

By definition, timely gain or loss recognition incorporates present value revisions in reported income around the time those revisions occur. This likely requires costly accounting accruals based on revisions of expected future cash flows (Ball and Shivakumar 2006), because the gains or losses are not fully realized at that point in time (i.e., they are not yet fully reflected in actual cash flows). Examples of loss accruals are write-downs in accounts receivable due to downward revisions in expected future cash collections, write-downs in inventory (due to loss, damage, obsolescence, declines in market price, or other decreases in expected future cash flows arising from the inventory), booked decreases in values of marketable securities and fair values of derivatives, foreign currency losses, provisions for environmental liabilities, provisions for litigation settlements, loss provisions, restructuring charges, and asset impairment charges. Examples of gain accruals are booked increases in values of marketable

securities and fair values of derivatives, foreign currency gains, and long-term asset revaluations.

A lower-cost alternative to timeliness is to defer recognition until the cash flow outcomes eventuate. For example, reduced expected future cash flows from a long term asset can be incorporated in accounting income gradually over its economic life, by waiting until the reduced cash flows are realized, rather than by triggering a single transitory impairment charge. Similarly, increases in expected future cash flows can be recognized gradually over time as the increased cash flows are realized, or as a transitory revaluation gain. Untimely gain and loss recognition thus are more likely to incorporate persistent positive and negative components in accounting income, respectively.

Because they require action to incorporate revisions in expectations into earnings, timely gain recognition and timely loss recognition are economic choice variables. Financial reporting is an economically costly activity, so it seems reasonable to expect that some type of cost-benefit tradeoff underlies countries' financial reporting systems. In particular, we assume that if timely loss recognition is in lower demand in a country because it has more poorly developed debt or equity markets, then that country will be less likely to expend costly resources in implementing timely loss recognition in practice. One measure of demand is market size. This paper therefore investigates the extent to which loss recognition timeliness and gain recognition timeliness are associated with the depths of countries' debt markets and equity markets, which are offered as proxies for the extent of demand for timely recognition originating from those sources. At the country

level, financial reporting choices likely also involve political factors, for which we implement controls.[6]

2.2 Conditional and Unconditional Conservatism

Basu (1997, page 4) defines conservatism as "accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements … earnings reflects bad news more quickly than good news." Ball and Shivakumar (2005) and Beaver and Ryan (2005) describe this as "conditional conservatism," in contrast with "unconditional conservatism" which is an accounting bias toward reporting low book values of stockholders equity.[7] Conditional conservatism is the stricter concept, imposing the requirement that the accounting bias is conditional on contemporaneous economic income.[8] This requirement is not satisfied by accounting biases such as routinely over-expensing, routinely expensing early or routinely deferring revenue recognition, because their effect on accounting income is not related to economic income. Basu's contribution is to study the asymmetric incorporation of

[6] See Ball, Kothari and Robin (2000), Ball, Robin and Wu (2003), Bushman, Piotroski and Smith (2004), Bushman and Smith (2004), and Leuz, Nanda and Wysocki (2003).

[7] We view these as economically different *concepts*, as distinct from measures, of conservatism (cf. Roychowdhury and Watts 2005), because they arise from different sources and have substantively different economic effects. We view unconditional conservatism as arising from tax, political costs and managerial self interest, and conditional conservatism as arising from efficient debt and governance contracting. Basu (1997, p. 8) draws a distinction between the concepts, though he does not use this terminology and clouds the distinction in his citation (p.7) of FASB (1980, para. 95). Ball, Kothari and Robin (2000, n. 15) make the distinction, but describe it somewhat inaccurately as "income statement" versus "balance sheet" conservatism. Beaver and Ryan (2005) also use the terms "conditional" and "unconditional." Confusion of the unconditional and conditional versions of conservatism is evident as early as Gilman (1939, page 130) and *APB Statement No. 4*. The concepts clearly are related (Ball, Kothari and Robin 2000, fn. 15, Roychowdhury and Watts, 2005), though the measure of unconditional conservatism we use below controls for conditional conservatism.

[8] Under clean surplus accounting, reporting low book values implies reporting low average net incomes, though not necessarily in any given year and hence not necessarily related to contemporary economic losses. Further, unconditional conservatism creates "hidden reserves" (a.k.a. "cookie jar reserves") that allow firms to *increase* earnings in loss periods. See Schneider (1995, pp. 136-137); Ball, Kothari and Robin (2000, fn. 15); and Ball (2004, pp. 126-131).

contemporaneous economic gains and losses in accounting income, and hence into book values on balance sheets.

The distinction between conditional and unconditional asymmetry is central to understanding the role of conservatism in efficient contracting. Ball (2004) and Ball and Shivakumar (2005) argue that the gains in contracting efficiency arise only from conservatism in the Basu (1997) sense of asymmetrically timely loss recognition, and not from unconditional conservatism in the sense of simply reporting low numbers. In debt contracting, the effect of an unconditional accounting bias of known magnitude would be neutralized by rational borrowers and lenders, who would simply "contract around" it. For example, if a firm reduced its reported total assets by an exact and costlessly observable fifty percent then, other things equal, it would agree with lenders to double any maximum leverage covenant based on debt as a proportion of total assets. However, an unconditional bias of unknown magnitude cannot be neutralized, and introduces uncertainty in the payoffs to both borrower and lender. Consequently, unconditional conservatism would be inefficient or at best neutral in debt contracting and cannot be justified on grounds of contracting efficiency. In contrast, in the following subsection we outline some of the feasible debt contracting roles of the conditional form of conservatism, or asymmetrically timely loss recognition.

2.3 Debt Markets and Asymmetrically Timely Loss Recognition

This subsection outlines how efficiency gains in debt contracting can arise from conditional conservatism, that is from asymmetrically timely loss recognition. It first describes the function of timely loss recognition in debt contracting and then addresses the issue of why efficient debt contracting does not imply symmetric gain recognition.

The primary effect of timely loss recognition on debt contracts is to more quickly trigger violations of debt covenants and thereby to transfer decision rights to lenders more quickly. Economic losses decrease the value of outstanding debt, and debt contracts may contain leverage, interest coverage and other covenants designed to restrict further decreases. Covenant violations then prohibit – or give lenders the right to veto – specific subsequent actions by managers that could further decrease value. Such actions could include dividend and capital distributions to shareholders, new borrowing, and major potentially negative-NPV transactions such as new investments, acquisitions and asset sales. Timelier loss recognition translates into timelier revision of book values of assets, liabilities and equity, and in turn into timelier covenant violation. This allows lenders to more quickly exercise their contractual rights to restrict the actions of managers, thereby making debt contracts more effective.[9]

The debt hypothesis implies that countries with comparatively large debt markets are more likely to exhibit timely loss recognition in published financial statements. If timely loss recognition increases the efficiency of debt contracting, debt becomes a more efficient form of financing and we therefore should observe comparatively more of it. In countries without timely loss recognition, debt is a less efficient source of finance. We therefore predict that timely loss recognition increases in the importance of debt markets.

Relative to loss recognition, the debt market generates a lower demand for timely gain recognition. Debt contracts are more likely to be violated conditional on economic losses, than conditional on economic gains. Timely gain recognition could improve debt contracting under some circumstances, most notably when economic losses that earlier

[9] For example, untimely loss recognition allows managers to distribute dividends that would have otherwise triggered leverage covenants or even result in the effective distribution of equity capital.

were recognized in the accounts subsequently reverse and there is a less reason to restrict lender risk, but these circumstances can be handled by lenders electing not to exercise their decision rights.[10] Lower debt market demand for timely gain recognition, coupled with costs of both gain and loss recognition (including verification costs), together imply that efficient debt contracting involves asymmetrically timely loss recognition.

We therefore predict that conditional conservatism (asymmetrically timely loss recognition relative to gain recognition) increases in the importance of debt markets. Equivalently, we predict that timely loss recognition is more prevalent than timely gain recognition in countries with comparatively large debt markets.

2.4 Stock Markets, Timeliness and Asymmetrically Timely Loss Recognition

An influential alternative view is that financial reporting exists primarily to inform share markets. The implication of this view is that financial reporting is (or should be) determined largely by the demands of the equity market, not the debt market. This is commonly referred to as the "value relevance" hypothesis. The hypothesis is implicit in studies that use the degree of association between market prices and financial statement variables as a criterion.

Such criteria are evident in the literature as far back as Canning (1929), and were central to the debates in the so-called "golden era" of accounting research (for example, Chambers 1966). More recently, these criteria have resurfaced in the seemingly widely held view that the primary role – for some, the only role – of financial reporting is to inform the share market. This view has been formulated as the "value relevance" hypothesis, in which the efficiency of financial reporting is said to increase in the

[10] Some demand for timely gain recognition is generated by debt repricing (Beatty and Weber, 2002) and by debt selling substantially below face value, but the asymmetry remains nevertheless.

correlation between earnings and stock returns, or between book and market values. This criterion has been widely espoused and researched since Lev (1989) in particular.[11] Under this view, the low surprise content of earnings – documented by Ball and Brown (1968) and many subsequent studies – is viewed as evidencing a failure of financial reporting, rather than as evidence that substantial economic functions of earnings might lie outside the share markets.

The value relevance hypothesis predicts symmetrically timely recognition of all economic income – that is, of both gains and losses (Holthausen and Watts 2001). In its strict form, the value relevance hypothesis predicts that both timely loss recognition and gain recognition increase with the importance of equity markets in countries' economies, because shareholders face a more symmetric payoff function than lenders. If equity markets alone matter, the demand for gains and loss recognition in financial reporting are approximately symmetric and, assuming it is equally costly to recognize gains and losses, we should observe more of both as equity markets develop in size and generate more demand for both. Furthermore, the equity hypothesis predicts that economically important stock markets demand a stronger overall earnings-returns relation, implying a positive relation between equity market size and the earnings-returns R^2 (Lev 1989). As Holthausen and Watts (2001) observe, this strict form of value relevance underlies a substantial literature that claims to offer results of interest to accounting standard setters.

A modified version of the value relevance hypothesis could recognize the interests of both debt and equity users. This might seem to imply that, holding debt market size constant, larger equity markets will exhibit more symmetry. The prediction

[11] For example, see Collins, Maydew and Weiss (1997) and Brown, Lo and Lys (1999), Holthausen and Watts (2001) provide a survey of the use of the extensive "value relevance" literature.

then might be that loss recognition asymmetry decreases with equity market size. We believe that the issue is more complex than that, and more specifically that the incremental effect of equity on the loss recognition asymmetry depends on the shape of the accounting supply function. By way of background, we note that shareholders have an interest in the efficiency of firms' debt contracting and in the actions of lenders, and hence have an indirect interest in the demand from debt markets for timely loss recognition. Hence, the effect of equity market demand can be considered incrementally with respect to debt market demand.

The following example illustrates the importance of supply effects. Suppose debt market demand in a particular country implies an optimal timely gain-recognition sensitivity β_2 of 0.05 in the Basu (1997) regression (1) described below, and an asymmetrically higher timely loss-recognition sensitivity ($\beta_2 + \beta_3$) of 0.30. Assume that equity market demand is symmetric. If the marginal costs of supplying additional timely gain and loss recognition are equal and independent of the amount supplied, then equity market demand would increase the optimal sensitivities symmetrically: for example, by 0.15 to 0.20 and 0.45 respectively. However, if supplying additional timely gain and loss recognition encounters increasing marginal costs, then equity market demand would not increase the optimal gain and loss sensitivities symmetrically: for example, they might increase by 0.15 to 0.20 and by 0.05 to 0.35, respectively.

The modified version of the value relevance hypothesis therefore predicts that the *incremental* effect of equity market size on the loss recognition asymmetry, given the effect of debt market size, is non-positive. At the same time, the modified hypothesis predicts that equity market size is positively correlated with timely *gain* recognition; it

does not predict that the incremental effect of equity markets on the loss recognition asymmetry occurs by reducing loss recognition timeliness.

One concern is that equity market size could be correlated with the extent to which a country has professional managers who are compensated in part on the basis of accounting earnings. To the extent that timely loss recognition increases the efficiency of contracting with managers (e.g., Ball, Kothari and Robin 2000), we would observe a positive correlation between equity and the loss asymmetry.

2.5 Unconditional Conservatism

While our focus is on conditional conservatism, we also study its unconditional form, defined as reporting low earnings and book values unconditionally (i.e., an accounting bias that is not primarily dependent of the sign of contemporary economic income). Unconditional conservatism arises from practices such as routinely over-expensing, early expensing, and deferring revenue recognition. The resulting bias takes the form of unconditionally low earnings and book values.

We study unconditional conservatism for several reasons. First, this traditionally has been an important definition of conservatism used by standard setters, who increasingly have viewed it negatively. For example, in Concepts Statement No. 2, FASB (1980) defined conservatism as "prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered," and then stated (¶93): "Conservatism in financial reporting should no longer connote deliberate, consistent understatement of net assets and profits." Recently, the International Accounting Standards Board (2001, ¶37) replaced the concept of conservatism with that of "prudence," defined as "the inclusion of a degree of caution in the exercise of

judgments needed in making the estimates required under conditions of uncertainty, such that assets or income are not overstated and liabilities or expenses are not understated," and then stated (¶37) that "the exercise of prudence does not allow, for example, the creation of hidden reserves or excessive provisions, the deliberate understatement of assets or income, or the deliberate overstatement of liabilities or expenses."

Second, the unconditional definition of conservatism has been employed in much prior literature, including the empirical international accounting literature.[12] Third, in contrast with the argument in section 2.2 above that unconditional biases are contracting-neutral at best, creditor protection historically has been offered as the main explanation for the conservative balance sheets of German companies in particular.[13] Under the *vorsicht* principle, firms historically have engaged in unconditionally conservative practices such as charging future operating expenses against current-period income. The likely effect of such practices would be to either increase lending as a proportion of conservatively decreased book values, or to reduce lending risk and hence borrowers' interest rates, but it would not increase either the efficiency of debt contracting or creditor welfare. It is more likely that unconditionally conservative German accounting is due to the historically high correspondence between German book and tax reporting, political costs of reporting higher earnings, and the latitude that low book values ("hidden

[12] For example, Gray (1980).

[13] Haller (1998, pp. 78-79) states: "the principle of creditor protection has been the central concern of accounting in Germany and has had a major impact on accounting. … Another effect of this focus on protecting creditors is the overall principle of conservatism." Nobes (1998, pp 31-32) states: "the importance of banks in Germany may be a reason for greater conservatism in reporting. It is widely held that bankers are more interested in 'rock-bottom' figures in order to satisfy themselves that loans are safe." The European Federation of Accountants (1997, ¶10.1) states that prudence as practiced in Austria, Czechoslovakia, Germany, Luxembourg and Switzerland was incorporated in the European Union's Fourth Directive "with a view to protecting the interests of creditors … but also to protect management."

reserves" or "cookie jar reserves") give self-interested managers to manipulate future earnings (Ball 2004).

2.6 Predictions: The Roles of Stock and Bond Markets in Accounting Conservatism

Our testable hypotheses can be stated as follows:

Debt Hypotheses

H1: Timely loss recognition increases in the importance of debt markets;

H2: Asymmetrically timely loss recognition (timeliness of loss recognition relative to gain recognition) increases in the importance of debt markets;

H3: Unconditional conservatism (low reported earnings and book values, independent of economic gains and losses) does not increase in the importance of debt markets, controlling for conditional conservatism.

Equity Hypotheses

H4: Timely gain and loss recognition *both* increase in the importance of equity markets;

H5: Asymmetrically timely loss recognition (timeliness of loss recognition relative to gain recognition) does not increase in the importance of equity markets; and

H6: Overall gain and loss timeliness increases in the importance of equity markets.

We test these hypotheses by estimating gain and loss recognition timeliness in each country for which we have sufficient data, and relating those estimates to measures of debt and equity market importance in the country's economy.

3. Tests of Debt, Equity Relation with Gain and Loss Recognition Timeliness

This section describes the estimation procedures we follow in testing the effect of debt and equity market importance on gain and loss recognition timeliness. The timeliness of gain and loss recognition is estimated for each country from a Basu (1997) earnings-returns regression that uses a pooled time-series and cross-section of years and firms in that country. The estimated gain and loss recognition coefficients then are regressed on debt and equity market size, as well as various control variables.

3.1 Gain and Loss Timeliness Estimates from Earnings-Returns Regressions

The final sample for the earnings-returns regressions comprises 78,949 fiscal-year earnings and returns observations during 1992-2003 from 22 countries. It is constructed as follows. First, for all firm/years with the data available, we obtain net income before extraordinary items (Data Item = 32) from the Global Vantage Industrial/Commercial file, and calculate fiscal-year stock returns using year-end stock prices and annual dividends from the Global Vantage Issue file. Second, we calculate price-deflated earnings per share NI_t as $X_t/(N_tP_{t-1})$, where X is net income before extraordinary items, N is the number of shares outstanding, P is stock price per share and t is fiscal year. Appropriate adjustments are made for stock splits and stock dividends. Third, we require at least 400 observations per country: this produces a sample of 26 countries with a total of 85,497 observations. Fourth, we discard four countries (Bermuda, Hong Kong, Switzerland and Taiwan) due to missing control variables (described in the following subsection), thereby reducing the sample to 82,185 observations. Fifth, we delete the top and bottom percentiles of the earnings and returns variables, further reducing the sample to 79,116 observations. Finally, we only use data in a particular year for a country with

at least 25 observations to allow reliable calculation of annual country mean returns, which we use in calculating mean-adjusted returns *R* that attempt to control for differences in expected return across countries and across years. This final step reduces the sample from 79,116 to 78,949 observations.

Separately for each country *i*, we estimate the following Basu (1997) piecewise linear regression of accounting income on stock return, using fiscal-year data pooled across all firms and years for that country: [14]

$$NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt} R_{jt} + \varepsilon_{jt} \qquad (1)$$

Here *i*, *j* and *t* denote the country, firm and year respectively. R_{jt} is the fiscal-year *t* stock return of firm *j*, adjusted for its country's annual mean return. RD_{jt} is a dummy variable equaling one if R_{jt} is negative (indicating economic losses), and zero otherwise (indicating economic gains). The coefficient β_{2i} on stock return measures the timeliness of gain recognition in country *i* and the coefficient β_{3i} on the product of stock return and the return dummy measures the *incremental* timeliness of loss recognition in that country's sample. Asymmetrically timely loss recognition implies $\beta_{3i} > 0$. The *total* timeliness of income in reflecting current fiscal-year decreases in stock market value is measured by $(\beta_{2i} + \beta_{3i})$. Our measure of overall income timeliness, for both gains and losses combined, is the adjusted R^2 of the individual-country regression (1).

3.2 Controls for Countries' Legal Systems

We control for several variables that capture properties of countries' legal environments and enforcement. In principle these controls work against our hypotheses

[14] Data limitations do not permit an analysis of changes over time. Basu (1997) shows that gain recognition timeliness in the U.S. has increased over time. Ball, Kothari and Robin (2000, Table 8) report similar evidence across countries.

because debt and equity market sizes likely are correlated with the control variables, but in practice the controls exhibit only weak effects. We note that these variables are proxies for countries' institutional characteristics, and while they have been found useful in prior studies they nevertheless measure their underlying constructs with error.

Our regression models include the effects of countries' legal origins (i.e., English, French, German and Scandinavian), legal enforcement and investor protection (i.e., Rule of Law, Corruption, and Creditors' Rights) on timely gain or loss recognition. The importance of these variables for financial markets is demonstrated by La Porta et al. (1997, 1998). Shleifer and Vishny (1997) and La Porta et al. (2000) identify investor protection as a key institutional factor affecting corporate policy choices. In a financial reporting context, Ball, Kothari and Robin (2000) and Ball, Robin and Wu (2000, 2003) point out that the equilibrium levels of timeliness and conditional conservatism are expected to vary with respect to legal origin (a proxy for political influence on financial reporting) and the legal environment generally. For example, common law countries would have higher demand for conservatism. Bushman and Piotroski (2006) also show that conditional conservatism is affected by the legal environment. We therefore add these control variables to verify that our results are not driven by omitted institutional variables that are correlated with debt and equity market importance.

Rule of Law is a measure of the tradition of law and order in a country. A country with a stronger tradition for law and order is likely to have more developed financial markets and more efficient accounting standards. In relation to debt markets, higher Rule of Law limits firms' ability to exploit debt holders, and hence could be associated with the comparative size of debt markets. In addition, higher Rule of Law could result in

stronger enforcement of accounting standards for timely loss recognition. On the other hand, higher Rule of Law could reduce the demand for conditional conservatism due to substitution effects, by the protection Rule of Law provides to creditors.

The second control variable is a measure of government corruption. The higher the Corruption score, the higher the probability of special interest groups slowing financial growth (see e.g., Rajan and Zingales, 2003). A corrupted government and corrupted officials would slow financial growth through the costs and risks they impose on financial intermediaries and firms. The efficiency of financial reporting can be impeded by governments interfering in accounting standards, in their implementation by firms, or in their enforcement by the courts and by government agencies. In an economy where the government and public officials are corrupted it is easy for special interest groups to manipulate this process. Moreover, it might be in the interest of government officials to smooth earnings in order to keep a steady flow of taxes, and hence to suppress timely loss recognition in a bad year for the economy. On the other hand, more corruption might increase the demand for conservatism via substitution, due to the lack of alternative protection for creditors.

The third control variable proxies for creditors' rights. Higher creditors' rights could help debt markets evolve. Individuals could be more willing to lend and firms could be more willing to borrow when their rights are better protected by the legal system. As is the case with Rule of Law and Corruption, the effect of the Creditors' Rights score on timely loss recognition is unclear because it depends on whether timely loss recognition and creditor protection are complements or substitutes for creditors. It

therefore is difficult to predict the coefficient sign for all three measures of the legal environment.

3.3 Control for Market-to-Book Ratio

We also report regressions that control for the market-to-book ratio (MTB).[15] The effect of MTB on the earnings-returns relation can be described in two ways. First, MTB contains information about both expected returns and expected earnings (e.g., Vuolteenaho, 2002). Second, MTB proxies for the proportion of the variation in the market value of equity that is due to factors (such as rents) that are not reflected in book value, and hence affect returns but not earnings (e.g., Roychowdhury and Watts, 2005).[16]

The relation between earnings, returns and MTB can be described as follows. In the basic pricing equation, dividends D are discounted at rates of return R_{t+i}:

$$P_t = \sum_{j=1}^{\infty} \frac{D_{t+j}}{\prod_{i=1}^{j} (1 + R_{t+i})} \tag{2}$$

Assume that $D_{t+j}=a_{t+j} \cdot X_{t+j}$, where X_t denotes earnings, and that $X_{t+j}=b_{t+j} \cdot X_t$. Thus, $D_{t+j}= a_{t+j} \cdot b_{t+j} \cdot X_t$. Substituting in Equation (2) and scaling by P_{t-1} gives:

$$R_t = \left(\sum_{j=1}^{\infty} \frac{a_{t+j} \cdot b_{t+j}}{\prod_{i=1}^{j} (1 + R_{t+i})} \right) \cdot \frac{X_t}{P_{t-1}} \tag{3}$$

Equation (3) suggests that the relation between earnings and returns depends both on expected returns and on expected earnings. [17]

[15] We report use the book-to-market (BM) ratio. Key results are unchanged if the inverse (MTB) is used.
[16] See also Givoly and Hahn (2000), Givoly, Hayn, and Natarajan (2004) and Beaver and Ryan (2005).
[17] See also Collins and Kothari (1989) and Easton and Zmijewski (1989).

Vuolteenaho (2000, 2002) shows that the MTB can be decomposed into two components, expected returns and expected earnings (lowercase denotes logs):

$$bm_t \approx \sum_{j=1}^{\infty} \rho^j r_{t+j} - \sum_{j=1}^{\infty} \rho^j \left(e^*_{t+j} \right) \quad (4)$$

Here, bm_t denotes the book-to-market ratio (the inverse of MTB), r_t denotes stock return and e_t^* denotes the book return on equity. Equation (4) suggests that high MTB indicates low expected returns and/or high profitability. Collins and Kothari (1989) use the intuition described in Equations (3) and (4) to conclude that higher MTB results in lower return response coefficients. Equation (4) suggests that a high MTB implies low expected returns and/or high expected profits. Equation (3) suggests that the return response coefficient is positively related to expected returns and inversely related to expected profits. Hence, a high MTB suggests a low return response coefficient.

Roychowdhury and Watts (2005) use the intuition in Equation (4), Collins and Kothari (1989), and Easton and Zmijewski (1989) to develop predictions about the relation between MTB and the Basu gain and loss recognition coefficients. They observe that some growth options and most synergies that arise from the firm's collection of tangible and intangible assets are not recognized for accounting purposes. Therefore, in a regression of earnings on returns, variation in their values is incorporated in the explanatory variable (returns) but not in accounting earnings. The extent of such variation increases in the MTB ratio, which reflects the proportion of firm value represented by unbooked assets such as synergies and growth potential. This variation reduces the Basu regression coefficients towards zero, so we expect a negative relation between MTB and the coefficients in Equation (1). We estimate its inverse, the book-to-market ratio (BM),

as the median value for firms and years in each country.[18] BM is positively correlated with β_1 , β_2 , β_3 , ($\beta_2 + \beta_3$) and the regression R^2.

The effect of MTB on the earnings-returns relation applies to both negative and positive returns in the Basu (1997) regression model. Therefore, we expect a negative (positive) relation between MTB (BM) for both β_{2i} and ($\beta_{2i} + \beta_{3i}$) in regression model (1). While we expect the direction of the effect to be the same for both positive and negative returns, its magnitude need not be the same in both cases because positive and negative return variances are not equal.[19] Consequently, we make no prediction for the effect of MTB on the incremental loss recognition slope β_{3i}.

4. Results: Debt Markets, Stock Markets and Financial Reporting Timeliness

The following earnings properties are estimated separately for each country *i* from regression (1): $\beta_{2i} + \beta_{3i}$ (timely loss recognition coefficient); β_{3i} (incrementally timely loss recognition coefficient); β_{2i} (timely gain recognition coefficient); the regression R_i^2 (a measure of overall gain and loss timeliness); and $\beta_{0i} + \beta_{1i}LF_i$, where LF_i is the loss frequency in country *i* and is the country mean of RD_{jt} (unconditional conservatism, controlling for contemporary gains and losses). The data are described in Table 1.

[Table 1 here]

Each earnings property then is regressed on country institutional characteristics:

$$\textit{Earnings Property}_i = \delta_0 + \textit{Legal Origin Dummies}_i + \delta_1 (\textit{Debt/GNP})_i + \delta_2 (\textit{Equity/GNP})_i + \delta_3 \textit{Rule of Law}_i + \delta_4 \textit{Corruption}_i + \delta_5 \textit{Creditors' Rights}_i + \delta_6 BM_i + \varepsilon_i \quad (5)$$

[18] Our results are robust with respect to alternative specifications of BM. We also find similar results when we exclude two countries (Brazil and Indonesia) with unusually low values for BM.

19 More precisely, the ratio of the variances of booked and unbooked economic gains need not be the same as the equivalent ratio for booked and unbooked economic losses. Here, "unbooked" refers to gains and losses that are not recorded in accounting income, such as revisions in the value of economic rents.

In contrast to Bushman and Piotroski (2005), who use ratios of debt-to-equity, our regression model includes both an independent debt variable and an independent equity variable (both scaled by country GNP). Our goal in this study is to assess the independent role of equity and debt markets in determining income recognition; therefore, it is necessary to include the two variables separately rather than their ratio. For example, a positive coefficient on a debt-to-equity variable can suggest either a positive association with debt or a negative association with equity, or both.

Results from estimating alternative versions of Equation (5) are reported in Tables 2 through 8. Because the sample comprises only 22 observations, the regressions generally do not include all the control variables (Legal Origin, Rule of Law, Corruption and Creditors' Rights). In each table, Column (B) reports a regression incorporating only the Debt/GNP and Equity/GNP variables, with controls for only the three legal origin dummy variables (with German origin countries as the base). This regression has 16 degrees of freedom. Columns (B) through (H) also control for the legal environment variables, Rule of Law, Corruption and Creditors' Rights, respectively. Column (I) also controls for BM. Due to the small sample sizes, the conventional 95% significance level for the *t*-statistic ranges from 2.12 (for 16 degrees of freedom) to 2.18 (for 12 d.f.).

4.1 Loss Recognition Timeliness

[Table 2 here]

Table 2 reports results when the accounting property specified as the dependent variable is a measure of loss recognition timeliness, ($\beta_{2i} + \beta_{3i}$). The regression model (5) reported in Table 2 explains a surprisingly high 44-52% of the variation in countries' loss

recognition timeliness measures. These R^2 statistics are from regressions with only 22 sample countries, and are adjusted for degrees of freedom.

A significant result is the importance of legal origin. Scandinavian and English origin countries are associated with economically and statistically significantly higher levels of timely loss recognition than the German origin countries. The Scandinavian and English origin countries' dummy intercepts range from 0.166 to 0.305 in different specifications, which is large in relation to the mean of 0.21 across all countries (Table 1), with *t*-statistics ranging from 2.17 to 3.54. This result is consistent with the conclusion of Artburg (1998, pp. 284-285) concerning Scandinavian accounting:[20]

> The prudence principle has been interpreted differently over the years. Historically it was interpreted in the German way, i.e. building reserves was permitted and even encouraged. Today prudence is more often interpreted in the Anglo-Saxon way as 'reasonable prudence in accordance with normal business risks.' … .

German origin countries exhibit the lowest average levels of loss recognition timeliness, followed by French origin countries, consistent with Ball, Kothari and Robin (2000). The regressions control for the debt and equity market size variables, so the country effects are due to other factors (e.g., political or tax influences on financial reporting practice).

In contrast, the three variables that control for legal environment both individually and collectively contribute nothing to explaining loss recognition timeliness. Their individual coefficients all are statistically insignificant, with *t*-statistics for Rule of Law, Corruption and Creditors' Rights separately estimated in columns (B) through (D) as 0.60, -0.33 and -0.82 respectively.[21] The 49% adjusted R^2 of the column (A) specification

[20] See also Alexander and Schwencke (2003).

[21] This result implies that, for the purpose of predicting countries' earnings qualities measured in terms of loss recognition timeliness, a simple classification of countries by origins of their legal systems (e.g., Ball, Kothari and Robin, 2000) performs better than the more specific measures of legal environment (e.g., Leuz,

(that omits the three legal environment controls) is exceeded in none of the column (B) through (H) specifications that include them in various combinations.

The central result in Table 2 is the confirmation of the hypothesis that debt markets rather than stock markets determine the equilibrium level of timely loss recognition in accounting. The coefficient on Debt/GNP is positive for all model specifications, with *t*-statistics ranging from 2.25 to 3.45. A one standard deviation increase in Debt/GNP translates into a 0.08 increase in the regression slope for accounting income on negative stock returns, $\beta_{2i} + \beta_{3i}$, which is large in comparison with the 0.21 mean across all countries (Table 1). The hypothesized relation between Debt/GNP and loss recognition timeliness therefore is in the predicted direction, and economically as well as statistically significant.

While the coefficient on Debt/GNP is significantly positive, the coefficient on Equity/GNP is negative, though it is statistically significant in only two of the nine specifications (*t*-statistics range from -0.99 to -2.46). If significant, a negative coefficient would indicate that equity markets prefer less timely loss recognition, and would be inconsistent with the strict "value relevance" hypothesis that equity markets alone drive the demand for timely loss recognition in accounting. We also interpret the significant negative coefficient in some specifications as inconsistent with the modified hypothesis that larger equity markets exhibit more symmetry. This modification does not imply that equity markets demand less of *either* loss or gain recognition.[22]

Nanda and Wysocki, 2003). The result is largely insensitive to including various combinations of the legal environment variables in the regression (Table 5).

[22] In a *univariate* regression of $\beta_{2i} + \beta_{3i}$ on Equity/GNP, the slope is negative (-0.043; simple correlation = -0.157), indicating the negative slope is not due to including other variables such as debt in the regression.

When BM is included in the loss recognition regression (column I), the model's explanatory power increases only slightly. The estimated coefficient on BM is 0.140. The BM coefficient has the predicted sign, but it is not statistically significant (*t*-statistic of 1.61). The estimated coefficient on debt market size falls, but it remains statistically significant. The equity coefficient remains insignificant.

Overall, the simple regression model reported in Table 2 performs surprisingly well. It explains almost half of the variation across countries in estimated loss recognition timeliness. Both country of origin and debt market importance are incrementally informative, consistent with the debt hypothesis. Equity market importance is only weakly informative, but in the opposite direction to the prediction of the equity hypothesis. The model performance is surprising because the sample is small and both the dependent and the independent variables are proxies, and likely measure their underlying constructs with error.

4.2 Gain Recognition Timeliness

[Table 3 here]

Table 3 reports results when the dependent variable is the measure of gain recognition timeliness, β_{2i}. While we expect debt markets to generate demand for timely loss recognition, we do not expect similar results for timely gain recognition. The results are consistent with this hypothesis. Few coefficients are statistically significant. The *t*-statistics for the debt and equity market variables range from –1.71 to 0.33 and -1.97 to 1.26, respectively. The regression model (5), in specifications excluding the BM ratio, explains only 5-25% of the variation in countries' gain recognition timeliness measures. This compares with the 44-49% of loss recognition timeliness explained by the model, as

reported in Table 2. These results are consistent with our hypothesis that while debt markets increase the demand for timely loss recognition, they do not affect the recognition of economic gains.

Nor do equity markets appear to affect gain recognition timeliness, inconsistent with the predictions of the value relevance hypothesis, even in its form that is modified to accommodate the existence of debt. We are aware of no version of the value relevance hypothesis that is consistent with equity markets exerting no influence on timely *gain* recognition.

When BM is included in the gains recognition regression (column I), the model's explanatory power more than doubles, to 55%. The estimated coefficient on BM is 0.104. The BM coefficient has the predicted sign, is statistically significant (*t*-statistic of 3.10), and is similar to the equivalent estimate of 0.140 in Table 2 for the loss recognition regression. The debt and equity market size variables remain insignificant when BM is added to the gains recognition regression.

4.3 Incremental Loss Recognition Timeliness (Conditional Conservatism)

[Table 4 here]

Table 4 reports results when the dependent variable is the measure of conditional conservatism, that is the *incremental* timeliness of loss recognition relative to gain recognition, β_{3i}. The coefficients in Table 4 are a simple linear combination of those reported in Tables 2 and 3, though the *t*-statistics are not. The results confirm earlier results about the relative importance of debt markets in determining conditional conservatism. The *t*-statistic for Debt/GNP ranges from 2.36 to 3.40, and affirms the importance of debt markets in determining conditional conservatism.

As in Table 2, the coefficient on Equity/GNP is negative though not always significant (*t*-statistic of -0.89 to -2.86). Thus debt markets are associated with enhanced conditional conservatism, and equity markets are not. While this evidence might at first blush seem consistent with the modified form of the value relevance hypothesis, in which incremental loss recognition sensitivity encounters increasing marginal costs, on closer inspection it is not. The negative effect of equity on the Basu conditional conservatism coefficient does not occur by equity market size increasing timely *gain* recognition (relative to the apparently sparse demand for gain recognition from debt): it occurs by equity market size *decreasing* timely *loss* recognition. We are aware of no version of the value relevance hypothesis that is consistent with this result. [23]

Other results also are affirmed. Conditional conservatism is significantly greater in countries of English and Scandinavian legal origin. Overall, the regression models describing incremental timeliness of loss recognition perform very well, with adjusted R^2 statistics of 40% to 56%.

When BM is included in the incremental loss recognition regression (column I), the model's explanatory power is essentially unchanged. The estimated coefficient on BM is statistically insignificant (*t*-statistic of 0.40). This result reflects the almost symmetric effect of BM on the gain and loss recognition coefficients, reported earlier in Tables 2 and 3.[24] The estimated coefficients on the debt and equity market size variables, and their standard errors, are essentially unchanged.

4.4 Overall Gain and Loss Recognition Timeliness

[23] In a *univariate* regression of β_{3i} on Equity/GNP, the slope is negative (-0.044; simple correlation = -0.156), indicating the negative slope is not due to including other variables such as debt in the regression.
[24] The apparent symmetry is consistent with but not required by the Vuolteenaho (2000, 2002) model. The ratio of the variances of booked and unbooked economic gains need not be the same as the equivalent ratio for booked and unbooked economic losses.

Table 5 reports results when the accounting property studied is overall earnings timeliness, including both gain and loss recognition timeliness. The dependent variable is the R_i^2 of the individual-country earnings-returns regression (1). This measure captures the proportion of the variation in earnings that can be explained by variation in current-year economic income (proxied by fiscal year stock returns). In its linear form, this is commonly espoused as a metric of financial reporting informativeness to investors (Lev 1989), and viewed as measuring the "value relevance" of earnings.

[Table 5 here]

The results in Table 5 generally are consistent with those in previous tables, though there are some notable differences. The French, English and Scandinavian dummies are positive in all specifications, indicating that countries with German legal origins have the lowest overall earnings timeliness. Countries with Scandinavian legal origins appear to have the highest. Unlike the case of conservatism, overall timeliness seems to be affected by the legal environment, in that the Rule of Law, Corruption and Creditors' Rights dummy variables all are significant when considered individually, with *t*-statistics of 2.35, 2.42 and -2.05 respectively. Consequently, when Rule of Law, Corruption and Creditors' Rights are included in the model, the adjusted R^2 increases substantially, from 26% to 41%.

The coefficient on Debt/GNP is positive in all nine regressions, though it is statistically significant in two only. We interpret this weakly positive relation as a combination of the strong positive relation between debt market size and timely loss recognition (Table 2) and the absence of an equivalent relation with timely gain recognition (Table 3). This result is consistent with the debt hypothesis.

In contrast, the coefficient on Equity/GNP flips sign across the regressions and is not significant in any, indicating that overall financial reporting timeliness is not associated with the importance of a country's equity markets. This result is consistent with the weak relation between equity market size and both timely loss and timely gain recognition (Tables 2 and 3), and is inconsistent with all forms of the value relevance hypothesis. Equivalently, it is consistent with the hypothesis that the primary role of accounting earnings in equity markets is not to inform them in a timely manner but to confirm and hence discipline prior non-financial disclosures.[25]

These results are not materially affected by the control for BM (column I), which is statistically insignificant (*t*-statistic of 1.09) and does not increase the model's explanatory power.

4.5. Unconditional Conservatism

The international data provide a test of the proposition that unconditional conservatism, in the form of low earnings and book values independent of economic outcomes, does not increase debt contracting efficiency and hence is not demanded by debt markets. A testable prediction is that unconditional conservatism is not associated with the importance of debt markets, controlling for conditional conservatism.

[Table 6 here]

This prediction is tested in the Basu (1997) framework by regressing the mean intercept from (1) on the measures of debt and equity market importance. The mean intercept is $\beta_{0i} + \beta_{1i}LF_i$, where LF_i is the loss frequency in country i (that is, the relative frequency with which the loss dummy takes the value 1 in the country's Basu regression),

[25] See Ball (2001, pages 133-138).

defined as the mean of RD_{jt} for the country. The Basu regression (1) controls for stock returns and the sign of stock returns, so the mean intercept captures the mean reported net income after controlling for current stock returns and conditional conservatism. If unconditional conservatism *per se* is associated with debt, then a negative coefficient is predicted in a regression (5) of the mean Basu model intercept on debt market importance.

The results reported in Table 6 are consistent with the hypothesis that debt markets do not demand unconditional conservatism. The coefficient for the mean intercept $\beta_{0i} + \beta_{1i}LF_i$ regressed on Debt to GNP is positive and statistically insignificant (coefficient of 0.053, $t = 1.68$). Equity also is insignificantly associated with unconditional conservatism (coefficient of -0.007, $t = -0.35$). These results suggest that the origin of unconditional conservatism in accounting lies outside the capital markets, perhaps in book-tax conformity (Ali and Hwang, 2000), in the capacity it gives managers to draw on hidden reserves at a later date to hide losses and hence avoid personal costs (Schneider, 1995; Ball, 2004), or in political costs (Gilman, 1939; Watts, 1977; Watts and Zimmerman, 1986).

These results certainly do not imply that unconditional conservatism does not exist. Common financial reporting practices associated with unconditional conservatism include the essential absence of intellectual property and growth options on balance sheets, leading to unconditionally low book values of stockholders' equity. These practices lead to equivalently low cumulative net income, as the costs associated with creating intellectual property and growth options are expensed. What the results do imply is that unconditional conservatism (when measured in the income statement, and

controlling for conditional conservatism) *is independent of the importance of debt*. This result should not be surprising, since debt covenants seldom define borrowers' assets to include either intellectual property or growth options.

We caution that this measure of unconditional conservatism potentially is noisy, since it is based on a maximum of only 12 annual earnings observations. For example, we are unable to observe whether firms in a particular country have reported low earnings in years prior to the sample, which (given clean surplus accounting) could require them to report high earnings during the sample years. This provides one motivation for studying the book-to-market ratio as an alternative dependent variable.

4.6. The Book-to-Market Ratio

Pae, Thornton and Welker (2005) and Roychowdhury and Watts (2005) document the relation between book-to-market ratio and conditional and unconditional conservatism. In addition, book-to-market is referred to as a measure of unconditional conservatism by Beaver and Ryan (2005). To the extent that book-to-market reflects unconditional conservatism, in the form of book values independent of economic outcomes, we expect it does not increase debt contracting efficiency and hence is not demanded by debt markets. To the extent the ratio reflects conditional conservatism (i.e., decreases in book value that are correlated with decreases in economic value, and hence contain information), we expect it is associated with the importance of debt markets. We therefore report results when the book-to-market ratio is the dependent variable in the cross-country regressions, as distinct from the prior tables where it is a control variable.

[Table 7 here]

The results in Table 7 show a positive relation between BM and both our debt and equity variables. However, the statistical significance of the results is relatively weak. The *t*-statistic varies from 0.71 to 1.52 for the debt variable and from 0.88 to 2.21 for the equity variable. The explanatory power of the model never exceeds 24%, one half of which is due to Rule of Law and Corruption: when both are included in the model its explanatory power doubles (compare Columns (e) and (F)). Overall, we find no significant relation between this measure of conservatism and either debt or equity markets. One interpretation of this result is that international variation in book-to-market ratios is dominated by differences in unconditional, not conditional, reporting conservatism.

4.7. Weighted Least Squares

To address the fact that the dependent variables are estimates, we report a Weighted Least Squares (WLS) regression, using the inverse of the square of the standard error of β_{3i} to weight the observations. Weighting the individual-country observations increases the efficiency of the regression model insofar as it assigns lower weights to Basu estimates that are measured with higher error, due for example to lower sample sizes. The results for the weighted least squares regressions are reported in Table 8. The overall results are consistent with Tables 1 – 6, yet, for brevity we present only a summary of our major findings, using β_{3i} and $\beta_{2i} + \beta_{3i}$ as dependent variables.

[Table 8 here]

The results in Table 8 are consistent with the results reported in Tables 2 and 4; in fact the results are stronger. The explanatory power of the model increases from 52% in Table 2 Column (I) and 53% in Table 4 Column (I), to 73% and 80% in Table 8. The

Debt-to-GNP ratio loads positively and with increased *t*-statistics that vary from 3.24 to 4.69 across models. In addition, the importance of the legal origin dummies in Tables 2 and 4 above is reaffirmed in Table 8. We conclude that our results are not due to estimation error in the Basu regression coefficients.[26]

4.8. Two-Year Basu Slopes

In the previous tables we estimate Equation (1) from annual earnings and returns. However, expected slope coefficients depend on the intervals over which returns and earnings are measured (e.g., Kothari and Sloan, 1992; Basu, 1997; Roychowdhury and Watts, 2005). While we prefer annual intervals because they directly address the issue of timeliness of annual earnings, we re-estimate Equation (1) using two-year-windows for both returns and earnings as in Roychowdhury and Watts (2005). The average country's asymmetric timeliness coefficient β_{3i} declines with the longer horizon, consistent with Basu (1997) and Roychowdhury and Watts (2005), but the sample sizes from which the coefficients are estimated decrease dramatically. The decreases arise because two consecutive calendar years of both earnings and returns data now are required for each of the observations used in estimating the Basu regression coefficients.

In order to provide results with two-year slopes, we adopt the following compromise sample. We follow the same procedure for deleting extreme observations and the same requirement of at least 25 firm observations per period for calculating country-mean adjusted returns. However, we drop the requirement of at least 400 total observations per country over the entire period, because that would decrease the number

[26] Malaysia and Singapore exhibit seemingly high values for the equity variable (Table 1). We believe these data to be correct, and note that Malaysia and Singapore have substantial listed agriculture and technology sectors respectively (relative to their GDP). Nevertheless, to alleviate concerns that error in these observations drives our results, we re-estimate the regressions using 20 countries excluding the countries from the sample. The results are qualitatively unchanged.

of countries for the cross-sectional analysis from 22 to only 10. Even with this compromise procedure, which allows us to use all 22 countries, the total sample falls from 78,949 one-year observations to 33,494 (two-year) observations.

The standard errors of the coefficients of Equation (1) almost double on average with the two-year interval data. We therefore use a WLS model in which the inverse of the squared standard error of β_{3i} is used to weight each country's observation (as in Section 4.8.). The results (not reported) are qualitatively the same as the results using one-year horizon results. In particular, the results for debt do not change, insofar as debt is positive and statistically significant for β_{3i} as well as $\beta_{2i} + \beta_{3i}$.

4.9. CIFAR scores

To expand our analysis of the importance of debt and stock markets in shaping the financial reporting, we study their relation with the financial reporting scores developed by the Center for International Financial Analysis and Research (CIFAR, 1995). The CIFAR score is a reporting index, based on the exclusion or inclusion of 85 items in individual firms' annual reports, that has been aggregated across firms to obtain a country-wide score. Despite their seemingly arbitrary nature, country-level CIFAR scores have been widely used to measure financial reporting quality (e.g., La Porta et al., 1998; Bushman, Piotroski and Smith, 2004).

[Table 9 here]

Results are reported in Table 9. Panel A covers 21 of the 22 countries in previous tests (excluding Indonesia, for which a CIFAR score was not available), and Panel B reports results for a larger sample of 35 countries with available CIFAR data.

The impact of legal origin on CIFAR scores is consistent with our earlier results of its effect on conditional conservatism. The English and Scandinavian origin countries have the highest CIFAR scores, other things equal, and the French and German origin countries have the lowest. In contrast, the Debt to GNP variable shows only a weak, positive relation with CIFAR scores (*t*-statistics ranging from 0.72 to 2.08), and the Equity to GNP variable exhibits even weaker results (*t*-statistics of 0.03 to 1.43). Nevertheless, the model adjusted R^2 exceeds 50%. The results are not materially affected by the control for BM.

5. Interpretation of the Results

We have argued that loss recognition timeliness increases the efficiency of debt contracting, makes debt a more efficient form of financing, and hence is associated with larger debt markets. That is, we hypothesize that an important source of demand for financial reporting – and financial reporting properties – lies in debt markets. This hypothesis does not distinguish between two explanations concerning the sequencing of supply and demand. One sequence is that financial reports exhibiting timely loss recognition are supplied by firms and their auditors, and this facilitates the creation of debt markets. The alternative sequence is that debt markets put pressure on firms and their accountants, either through litigation or regulation, to increase loss recognition timeliness. Either way, the ultimate source of the demand for financial reporting practice is the debt market.

We recognize that, as is the case in most cross-sectional international studies, correlated omitted variables pose a potential problem. Fortunately, many of these variables seem more likely to affect unconditional conservatism than its conditional

cousin, asymmetrically timely loss recognition. The difference between the two conservatism concepts is illustrated by the possibility of international taxation institutions being a correlated omitted variable. Book-tax conformity could be a particular concern, since the use of debt could be correlated with corporate tax rates, which in turn could be correlated with the extent of government involvement in financial reporting and hence with book-tax conformity rules.[27] Against this, we note two points. First, the financial reporting practices leading to the Basu (1997) asymmetry, such as timely loss provisioning and asset impairment, generally are not allowed with the same frequency for income tax purposes. Tax rules generally do not allow deductions based on downward revisions of expectations concerning future cash flows, and generally require losses to be realized for them to be tax-deductible. Second, book-tax conformity would be more likely to produce unconditional conservatism, because conservative tax reporting practices such as generous depreciation allowances are largely unrelated to the sign of contemporaneous stock returns -- and hence are more likely to affect the intercepts but not the slopes in a Basu (1997) regression. International tax differences thus are a more likely to affect the legal origin variables than the loss recognition slopes.

Another possible omitted variable arises from corporate governance and management compensation. Ball (2001, p.139) argues that timely loss recognition makes managers "more likely to incur the personal cost of abandoning losing investments and strategies and less likely to invest in negative-NPV projects that give them personal utility." Internationally, the extent of reliance on financial reporting – and hence timely loss recognition – to monitor and discipline professional managers seems likely to be

[27] A potential contributor to the Basu asymmetry is that tax systems provide managers with an incentive to realize losses more quickly than gains. This incentive is universal, and in particular seems unlikely to be related to the sizes of countries' debt and equity markets.

positively correlated with the depth of equity markets. It is particularly likely to be correlated with our measure of market depth, which excludes large shareholders such as controlling families. Large shareholders can monitor managers more directly as "insiders," rather than via financial reporting. It therefore is somewhat surprising that we do not observe a positive correlation between timely loss recognition and our measure of equity market depth.

Finally, we note that correlated institutional variables do not necessarily alter our fundamental conclusions. Institutional complementarity implies the existence of jointly-caused and hence correlated variables in these contexts, and it is not always meaningful to assign causation to individual variables. Nevertheless, we caution readers that ours is a small-sample, cross-sectional international research design, and hence correlated omitted variables cannot be ruled out as a problem.

6. Conclusions

Despite the centrality of this issue, we are aware of no direct test of the roles of debt and equity markets in shaping financial reporting practice. Our research design regresses individual-country financial reporting measures of gain and loss recognition timeliness, and overall timeliness, on the sizes of the countries' debt and equity markets, scaled by their Gross National Products. These market size variables proxy for the demand for financial reporting timeliness arising from the countries' debt and equity markets. The rationale for these measures is that financial reporting is a costly activity, and the observed quantity of it in practice should depend on demand. If timely gain and/or loss recognition is in lower demand in a country because it has more poorly

developed capital markets, then that country will be less likely to expend costly resources in implementing it. Our measure of demand is market size.

The data from twenty-two countries supports the hypothesis that important properties of financial reporting originate in the reporting demands of debt markets, but not of equity markets. Gain and loss recognition timeliness, as well as overall financial reporting timeliness, are not associated with equity market size. In contrast, financial reporting conservatism – in the Basu (1997) sense of conditional conservatism, or timelier loss recognition than gain recognition – is associated with debt market size, which we view as a proxy for the extent of debt market demand. The loss recognition effect is economically as well as statistically significant, in that a one standard deviation increase in a country's ratio of debt to GNP is associated with a 0.08 increase in the regression slope for accounting income on negative stock returns, which is large in relation to the cross-country mean of 0.21. We conclude that conditional conservatism (asymmetrically timely loss recognition) exists for efficiency of contracting in debt markets. Consistent with the arguments in Ball (2004) and Ball and Shivakumar (2005), we also conclude that unconditional conservatism (low book values, independent of economic gains and losses) does not arise from debt market demand.

These results are inconsistent with the basic premise of the "value relevance" school of accounting thought, in which the sole criterion for financial reporting is the linear correlation between book values and some notion of underlying market or "true" value. The results are consistent with the "costly contracting" school of accounting thought, and in particular with the hypothesis that the reporting demands of the debt market exert a substantial impact on accounting practice. This hypothesis has origins at

least as early as Gilman (1939), and more recently has been proposed by Watts and Zimmerman (1986), Watts (1993, 2003a,b) and Holthausen and Watts (2001). We believe the results are of interest to researchers and accounting practitioners.

Appendix: Data Description

All variables except BM are extracted from La Porta et al. (1997, 1998).

Variable	Description
Origin	The legal origin of the Company Law or Commercial Code of each country.
Equity/GNP	The ratio of the stock market capitalization held by minorities to gross national product for 1994. The stock market capitalization held by minorities is computed as the product of the aggregate stock market capitalization and the average percentage of common shares not owned by the three top three shareholders in the ten largest non-financial, privately owned domestic firms in a given country. A firm is considered privately owned if the state is not a known shareholder in it.
Debt/GNP	Ratio of the sum of bank debt of the private sector and outstanding non-financial bonds to GNP in 1994, or last available.
Rule of Law	Assessment of the law and order tradition in the country. Average of months of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with lower scores for less tradition for law and order.
Creditors Rights	An index aggregating creditor rights. The index is formed by adding 1 when: (1) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization; (2) secured creditors are able to gain possession of their security once the reorganization petition has been approved (no automatic stay); (3) the debtor does not retain the administration of its property pending the resolution of the reorganization; (4) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. The index ranges from 0 to 4.
Corruption	ICR's assessment of the corruption in government. Lower scores indicate that "high government officials are likely to demand special payments" and "illegal payments are generally expected throughout lower levels of government" in the form of "bribes connected with import and export licenses, exchange controls, tax assessment, policy protection, or loans." Average of the months of April and October of the monthly index between 1982 and 1995. Scale from zero to 10, with lower scores for higher levels of corruption.
BM	The ratio of Shareholder's Equity (Global Vantage Data Item 135) divided by the market value of equity (price times number of shares). For each country, we calculate a median ratio, first by estimating the median value annually and then by taking the median of such annual median values. We exclude years with fewer than 25 observations.

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Table 1: Sample Data

This table reports the data used in the regressions in Tables 2-6. β_{0i}, β_{1i}, β_{2i}, β_{3i} and R_i^2 are estimated for each country i from the pooled (across firms j and years t) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm j in year t, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. The table also reports Legal Origin, Debt to GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights, extracted from La Porta et al. (1997, 1998). For the definitions of these variables and their sources see the Appendix.

Country	Origin	β_{0i}	β_{1i}	β_{2i}	β_{3i}	R_i^2	Debt/ GNP	Equity/ GNP	Rule of Law	Corruption	Creditor Rights	Book-to-Market
Australia	English	0.06	0.02	0.01	0.28	0.16	0.76	0.49	10.00	8.52	1	0.642
Canada	English	0.07	0.02	-0.01	0.26	0.12	0.72	0.39	10.00	10.00	1	0.645
Malaysia	English	0.02	0.01	-0.01	0.18	0.03	0.84	1.48	6.78	7.38	4	0.727
Singapore	English	0.03	-0.03	0.03	0.01	0.06	0.60	1.18	8.57	8.22	3	0.879
South Africa	English	0.08	0.03	0.14	-0.02	0.10	0.93	1.45	4.42	8.92	4	0.525
Thailand	English	0.04	0.00	0.04	0.38	0.03	0.93	0.56	6.25	5.18	3	1.097
UK	English	0.07	0.01	0.01	0.22	0.11	1.13	1.00	8.57	9.10	4	0.492
USA	English	0.05	0.02	-0.02	0.28	0.10	0.81	0.58	10.00	8.63	1	0.474
Brazil	French	0.09	-0.07	0.01	0.04	0.02	0.39	0.18	6.32	6.32	1	0.004
Chile	French	0.10	-0.03	0.05	0.15	0.17	0.63	0.80	7.02	5.30	2	1.100
France	French	0.07	0.01	0.03	0.26	0.19	0.96	0.23	8.98	9.05	0	0.644
Indonesia	French	0.03	-0.03	0.01	-0.02	0.01	0.42	0.15	3.98	2.15	4	0.001
Italy	French	0.05	-0.02	0.02	0.14	0.07	0.55	0.08	8.33	6.13	2	0.375
Netherlands	French	0.09	0.00	0.00	0.20	0.15	1.08	0.52	10.00	10.00	2	0.575
Spain	French	0.07	0.00	0.06	0.14	0.12	0.75	0.17	7.80	7.38	2	0.611
Germany	German	0.07	0.02	0.05	0.24	0.12	1.12	0.13	9.23	8.93	3	0.555
Japan	German	0.02	-0.01	0.04	0.13	0.07	1.22	0.62	8.98	8.52	2	1.033
South Korea	German	0.12	-0.08	0.06	-0.02	0.04	0.74	0.44	5.35	5.30	3	0.366
Denmark	Scand.	0.07	0.05	0.16	0.10	0.17	0.34	0.21	10.00	10.00	3	0.853
Finland	Scand.	0.12	0.02	0.09	0.21	0.20	0.75	0.25	10.00	10.00	1	0.840
Norway	Scand.	0.06	-0.01	0.02	0.21	0.10	0.64	0.22	10.00	10.00	2	0.719
Sweden	Scand.	0.09	0.00	0.05	0.37	0.16	0.55	0.51	10.00	10.00	2	0.706
Mean		0.07	0.00	0.04	0.17	0.10	0.77	0.53	8.21	7.96	2.3	0.630
Median		0.07	0.00	0.03	0.19	0.11	0.75	0.47	8.78	8.58	2.0	0.643
Standard Deviation		0.03	0.03	0.05	0.12	0.06	0.25	0.42	1.95	2.10	1.2	0.290

Table 2
Timely Loss Recognition ($\beta_2 + \beta_3$)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. β_{2i} and β_{3i} are estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	-0.010	-0.136	-0.089	-0.050	-0.158	-0.070	0.014	-0.067	-0.080
	(-0.95)	(-1.10)	(-0.79)	(-0.40)	(-1.27)	(-0.41)	(0.09)	(-0.40)	(-0.50)
French	0.082	0.075	0.085	0.065	0.081	0.065	0.066	0.067	0.077
	(1.26)	(1.12)	(1.26)	(0.95)	(1.21)	(0.92)	(0.95)	(0.96)	(1.16)
English	0.188	0.171	0.196	0.169	0.178	0.166	0.182	0.171	0.182
	(2.81)	(2.31)	(2.67)	(2.37)	(2.41)	(2.17)	(2.48)	(2.29)	(2.56)
Scandinavian	0.267	0.238	0.288	0.251	0.284	0.243	0.305	0.297	0.236
	(3.54)	(2.60)	(2.86)	(3.18)	(2.86)	(2.58)	(3.02)	(2.92)	(2.29)
Debt/GNP	0.320	0.288	0.343	0.301	0.341	0.292	0.361	0.354	0.277
	(3.45)	(2.65)	(2.88)	(3.12)	(2.91)	(2.62)	(3.03)	(2.95)	(2.25)
Equity/GNP	-0.147	-0.128	-0.149	-0.117	-0.100	-0.115	-0.105	-0.078	-0.151
	(-2.46)	(-1.85)	(-2.41)	(-1.67)	(-1.38)	(-1.55)	(-1.45)	(-0.99)	(-1.73)
Rule of Law	-	0.008		-	0.023	0.003	-	0.018	0.003
		(0.60)			(1.24)	(0.18)		(0.92)	(0.16)
Corruption	-	-	-0.004	-	-0.022	-	-0.013	-0.025	-0.009
			(-0.33)		(-1.13)		(-0.87)	(-1.25)	(-0.40)
Creditors' Rights	-	-	-	-0.016	-	-0.013	-0.026	-0.019	-0.010
				(-0.82)		(-0.56)	(-1.14)	(-0.80)	(-0.41)
BM	-	-	-	-	-	-	-	-	0.140
									(1.61)
Adjusted R^2	0.49	0.46	0.46	0.47	0.47	0.44	0.47	0.46	0.52

Table 3
Timely Gain Recognition (β_2)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. β_{2i} is estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	0.060	0.107	0.061	0.031	0.123	0.100	0.011	0.098	0.088
	(1.09)	(1.77)	(1.02)	(0.48)	(2.15)	(1.18)	(0.14)	(1.24)	(1.44)
French	-0.031	-0.023	-0.031	-0.021	-0.027	-0.022	-0.022	-0.023	-0.016
	(-0.92)	(-0.70)	(-0.88)	(-0.60)	(-0.87)	(-0.63)	(-0.59)	(-0.71)	(-0.62)
English	-0.049	-0.027	-0.049	-0.038	-0.032	-0.026	-0.042	-0.030	-0.023
	(-1.41)	(-0.74)	(-1.27)	(-1.03)	(-0.94)	(-0.70)	(-1.09)	(-0.86)	(-0.83)
Scandinavian	0.025	0.063	0.026	0.035	0.030	0.063	0.018	0.027	-0.019
	(0.64)	(1.42)	(0.49)	(0.85)	(0.66)	(1.35)	(0.34)	(0.56)	(-0.47)
Debt/GNP	-0.024	0.018	-0.023	-0.013	-0.020	0.017	-0.031	-0.024	-0.081
	(-0.49)	(0.33)	(-0.37)	(-0.25)	(-0.38)	(0.31)	(-0.50)	(-0.43)	(-1.71)
Equity/GNP	0.039	0.014	0.039	0.022	-0.006	0.013	0.018	-0.012	-0.066
	(1.26)	(0.43)	(1.21)	(0.60)	(-0.17)	(0.36)	(0.47)	(-0.31)	(-1.97)
Rule of Law	-	-0.010	-	-	-0.021	-0.010	-	-0.020	-0.031
		(-1.58)			(-2.45)	(-1.21)		(-2.13)	(-3.84)
Corruption	-	-	0.000	-	0.016	-	0.004	0.017	0.029
			(-0.02)		(1.78)		(0.52)	(1.78)	(3.49)
Creditors' Rights	-	-	-	0.009	-	0.001	0.013	0.005	0.012
				(0.93)		(0.11)	(1.04)	(0.46)	(1.36)
BM	-	-	-	-	-	-	-	-	0.104
									(3.10)
Adjusted R^2	0.11	0.19	0.05	0.11	0.29	0.13	0.06	0.25	0.55

Table 4
Incremental Loss Recognition Slope (β_3)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. β_{3i} is estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	-0.160	-0.243	-0.150	-0.080	-0.280	-0.171	0.003	-0.165	-0.169
	(-1.39)	(-1.88)	(-1.22)	(-0.61)	(-2.36)	(-0.95)	(0.02)	(-1.04)	(-1.02)
French	0.113	0.098	0.117	0.087	0.107	0.087	0.087	0.090	0.093
	(1.60)	(1.40)	(1.58)	(1.19)	(1.68)	(1.18)	(1.20)	(1.37)	(1.36)
English	0.237	0.198	0.245	0.207	0.210	0.192	0.225	0.202	0.204
	(3.25)	(2.55)	(3.06)	(2.73)	(2.97)	(2.41)	(2.91)	(2.86)	(2.79)
Scandinavian	0.242	0.174	0.262	0.216	0.253	0.180	0.287	0.270	0.255
	(2.94)	(1.83)	(2.38)	(2.57)	(2.66)	(1.83)	(2.71)	(2.82)	(2.39)
Debt/GNP	0.344	0.271	0.367	0.314	0.361	0.275	0.392	0.378	0.358
	(3.40)	(2.38)	(2.81)	(3.05)	(3.21)	(2.36)	(3.14)	(3.35)	(2.83)
Equity/GNP	-0.186	-0.142	-0.188	-0.139	-0.095	-0.128	-0.123	-0.066	-0.085
	(-2.86)	(-1.97)	(-2.79)	(-1.86)	(-1.36)	(-1.65)	(-1.62)	(-0.89)	(-0.95)
Rule of Law	-	0.018	-	-	0.045	0.012	-	0.039	0.035
		(1.31)			(2.47)	(0.74)		(2.04)	(1.59)
Corruption	-	-	-0.004	-	-0.038	-	-0.018	-0.041	-0.037
			(-0.29)		(-2.03)		(-1.09)	(-2.21)	(-1.70)
Creditors' Rights	-	-	-	-0.025	-	-0.015	-0.039	-0.024	-0.022
				(-1.22)		(-0.59)	(-1.61)	(-1.08)	(-0.91)
BM	-	-	-	-	-	-	-	-	0.036
									(0.40)
Adjusted R^2	0.44	0.46	0.40	0.45	0.55	0.44	0.46	0.56	0.53

Table 5
Overall Gain and Loss Timeliness (R^2)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. R_i^2 is estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	-0.061	-0.135	-0.100	0.008	-0.125	-0.076	-0.050	-0.077	-0.082
	(-0.95)	(-2.08)	(-1.70)	(0.12)	(-1.90)	(-0.86)	(-0.67)	(-0.86)	(-0.92)
French	0.077	0.064	0.064	0.054	0.062	0.055	0.054	0.055	0.058
	(1.96)	(1.81)	(1.81)	(1.44)	(1.74)	(1.50)	(1.49)	(1.47)	(1.57)
English	0.049	0.013	0.017	0.023	0.010	0.009	0.010	0.007	0.011
	(1.20)	(0.34)	(0.44)	(0.58)	(0.25)	(0.22)	(0.27)	(0.17)	(0.26)
Scandinavian	0.143	0.083	0.063	0.121	0.061	0.087	0.071	0.068	0.045
	(3.11)	(1.71)	(1.20)	(2.78)	(1.15)	(1.79)	(1.34)	(1.25)	(0.78)
Debt/GNP	0.140	0.075	0.051	0.114	0.050	0.078	0.059	0.057	0.028
	(2.48)	(1.30)	(0.82)	(2.14)	(0.80)	(1.36)	(0.95)	(0.89)	(0.40)
Equity/GNP	-0.021	0.018	-0.013	0.019	0.005	0.030	0.008	0.017	-0.011
	(-0.59)	(0.51)	(-0.41)	(0.50)	(0.14)	(0.78)	(0.21)	(0.41)	(-0.22)
Rule of Law	-	0.016	-	-	0.009	0.012	-	0.006	0.000
		(2.35)			(0.87)	(1.41)		(0.58)	(0.04)
Corruption	-	-	0.017	-	0.010	-	0.012	0.009	0.015
			(2.42)		(1.00)		(1.54)	(0.82)	(1.24)
Creditors' Rights	-	-	-	-0.022	-	-0.012	-0.012	-0.010	-0.007
				(-2.05)		(-0.98)	(-1.04)	(-0.79)	(-0.50)
BM	-	-	-	-	-	-	-	-	0.053
									(1.09)
Adjusted R^2	0.26	0.42	0.43	0.38	0.42	0.42	0.44	0.41	0.42

Table 6
Unconditional Conservatism ($\beta_0 + \beta_1 LF$)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. β_{0i} and β_{1i} are estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt}R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. LF_i is the loss frequency in country *i*, defined as the mean of RD_{jt} for country *i*. Thus, ($\beta_{0i} + LF_i\beta_{1i}$) is the unconditional regression intercept for country *i*. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

Dependent Variable	Intercept	French	English	Scandinavian	Debt/ GNP	Equity/ GNP	Adjusted R^2
β_{0i}	0.058	0.009	-0.014	0.022	0.007	0.003	-0.05
	(1.59)	(0.39)	(-0.61)	(0.86)	(0.22)	(0.15)	-
β_{1i}	-0.094	0.026	0.054	0.068	0.079	-0.017	0.35
	(-2.95)	(1.33)	(2.63)	(2.96)	(2.78)	(-0.95)	-
$\beta_{0i} + \beta_{1i}LF_i$	0.002	0.024	0.018	0.062	0.053	-0.007	0.12
	(0.06)	(1.10)	(0.78)	(2.41)	(1.68)	(-0.35)	-

Table 7
Book-to-Market

This table reports coefficients and t-statistics (in parenthesis) for OLS cross-sectional regressions using Book-to-Market as the dependent variable. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	0.346	0.112	-0.120	0.140	0.334	-0.226	0.080	0.567	0.095
	(1.69)	(0.32)	(-0.30)	(0.37)	(0.83)	(-0.60)	(0.14)	(1.21)	(0.19)
French	-	-0.005	-0.046	0.004	-0.079	-0.021	-0.077	-0.078	-0.070
		(-0.03)	(-0.21)	(0.02)	(-0.35)	(-0.10)	(-0.34)	(-0.35)	(-0.33)
English	-	0.026	-0.084	0.049	-0.057	-0.050	-0.100	-0.008	-0.072
		(0.12)	(-0.35)	(0.20)	(-0.24)	(-0.22)	(-0.40)	(-0.03)	(-0.32)
Scandinavian	-	0.354	0.165	0.411	0.281	0.387	0.180	0.481	0.434
		(1.41)	(0.56)	(1.22)	(1.09)	(1.29)	(0.59)	(1.47)	(1.42)
Debt/GNP	0.265	0.453	0.248	0.517	0.369	0.502	0.261	0.588	0.548
	(1.00)	(1.46)	(0.71)	(1.30)	(1.16)	(1.41)	(0.72)	(1.52)	(1.52)
Equity/GNP	0.153	0.187	0.310	0.181	0.317	0.444	0.349	0.363	0.523
	(0.98)	(0.94)	(1.40)	(0.88)	(1.38)	(2.02)	(1.46)	(1.54)	(2.21)
Rule of Law	-	-	0.050	-	-	0.125	0.035	-	0.108
			(1.19)			(2.19)	(0.68)		(1.79)
Corruption	-	-	-	-0.012	-	-0.105	-	-0.050	-0.116
				(-0.27)		(-1.81)		(-0.99)	(-1.95)
Creditors' Rights	-	-	-	-	-0.070	-	-0.041	-0.108	-0.068
					(-1.10)		(-0.53)	(-1.45)	(-0.94)
Adjusted R^2	0.04	0.11	0.13	0.05	0.12	0.24	0.08	0.12	0.24

Table 8
Weighted Least Squares: Timely Loss Recognition ($\beta_2 + \beta_3$) and Incremental Loss Recognition Slope (β_3)

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available earnings and returns data for 22 countries reported in Table 1. β_{2i} and β_{3i} are estimated for each country *i* from the pooled (across firms *j* and years *t*) piecewise linear regression model $NI_{jt} = \beta_{0i} + \beta_{1i} RD_{jt} + \beta_{2i} R_{jt} + \beta_{3i} RD_{jt} R_{jt} + \varepsilon_{jt}$, where NI_{jt} and R_{jt} denote earnings (scaled by price) and returns for firm *j* in year *t*, and RD_{jt} is a dummy variable that receives the value of 1 if $R_{jt} < 0$ and zero otherwise. The inverse of the square of the SE of β_{3i} is used as the weight. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

	(B)	(C)	(E)	(F)
Dependent Variable	$\beta_2 + \beta_3$		β_3	
Intercept	-0.063	-0.090	-0.102	-0.160
	(-0.85)	(-0.66)	(-1.25)	(-1.16)
French	0.049	0.088	0.066	0.099
	(1.11)	(1.51)	(1.35)	(1.68)
English	0.199	0.198	0.255	0.218
	(5.66)	(2.58)	(6.63)	(2.81)
Scandinavian	0.257	0.292	0.208	0.248
	(3.45)	(2.90)	(2.55)	(2.44)
Debt/GNP	0.304	0.312	0.323	0.329
	(4.69)	(3.24)	(4.54)	(3.39)
Equity/GNP	-0.214	-0.137	-0.255	-0.119
	(-4.94)	(-1.81)	(-5.36)	(-1.55)
Rule of Law	-	0.003	-	0.018
		(0.13)		(0.92)
Corruption	-	-0.003	-	-0.014
		(-0.22)		(-0.87)
Creditors' Rights	-	-0.023	-	-0.027
		(-1.42)		(-1.62)
BM	-	0.028	-	-0.023
		(0.32)		(-0.26)
Adjusted R^2	0.68	0.73	0.73	0.80

Table 9
CIFAR Financial Reporting Scores

This table reports coefficients and *t*-statistics (in parenthesis) for OLS cross-sectional regressions using the available data. Panel A reports results for 21 countries reported in Table 1 (excluding Indonesia) and Panel B reports results for 34 countries with available data. The log of countries' CIFAR scores is the dependent variable. English, French and Scandinavian are dummy variables that receive the value of 1 if the firm/year's legal origin is English, French and Scandinavian respectively, and zero otherwise. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For variable definitions see the Appendix.

Panel A

	(A)	**(B)**	**(C)**	**(D)**	**(E)**	**(F)**	**(G)**	**(H)**	**(I)**
Intercept	3.947	3.807	3.853	4.014	3.803	3.874	3.916	3.866	3.896
	(34.21)	(27.37)	(31.06)	(32.09)	(26.89)	(22.88)	(27.12)	(22.31)	(23.04)
French	0.018	-0.005	-0.007	-0.017	-0.011	-0.021	-0.027	-0.026	-0.024
	(0.26)	(-0.07)	(-0.10)	(-0.23)	(-0.16)	(-0.30)	(-0.37)	(-0.36)	(-0.35)
English	0.184	0.134	0.139	0.151	0.126	0.124	0.124	0.117	0.118
	(2.62)	(1.84)	(1.93)	(2.05)	(1.68)	(1.63)	(1.65)	(1.49)	(1.56)
Scandinavian	0.243	0.166	0.136	0.224	0.130	0.168	0.141	0.135	0.206
	(3.02)	(1.84)	(1.35)	(2.79)	(1.27)	(1.84)	(1.38)	(1.28)	(1.80)
Debt/GNP	0.191	0.120	0.088	0.180	0.085	0.127	0.097	0.093	0.170
	(1.87)	(1.13)	(0.76)	(1.79)	(0.72)	(1.17)	(0.83)	(0.77)	(1.30)
Equity/GNP	0.002	0.064	0.019	0.061	0.051	0.089	0.058	0.075	0.129
	(0.03)	(0.91)	(0.31)	(0.79)	(0.69)	(1.12)	(0.76)	(0.90)	(1.43)
Rule of Law	-	0.024	-	-	0.015	0.019	-	0.011	0.025
		(1.63)			(0.79)	(1.21)		(0.56)	(1.14)
Corruption	-	-	0.025	-	0.015	-	0.021	0.014	-0.005
			(1.61)		(0.74)		(1.28)	(0.68)	(-0.19)
Creditors' Rights	-	-	-	-0.030	-	-0.018	-0.021	-0.017	-0.021
				(-1.26)		(-0.72)	(-0.87)	(-0.66)	(-0.83)
BM	-	-	-	-	-	-	-	-	-0.133
									(-1.35)
Adjusted R^2	0.51	0.56	0.56	0.53	0.54	0.54	0.55	0.52	0.55

Panel B

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
Intercept	3.874	3.824	3.832	3.920	3.834	3.870	3.878	3.875
	(32.10)	(29.78)	(26.89)	(27.91)	(26.84)	(26.19)	(24.43)	(24.30)
French	0.003	-0.012	-0.006	-0.027	-0.011	-0.041	-0.038	-0.039
	(0.03)	(-0.13)	(-0.06)	(-0.25)	(-0.11)	(-0.38)	(-0.35)	(-0.36)
English	0.169	0.148	0.151	0.165	0.152	0.145	0.146	0.147
	(1.78)	(1.54)	(1.50)	(1.72)	(1.50)	(1.48)	(1.43)	(1.43)
Scandinavian	0.283	0.218	0.238	0.269	0.227	0.206	0.220	0.212
	(2.60)	(1.77)	(1.75)	(2.40)	(1.66)	(1.63)	(1.58)	(1.51)
Debt/GNP	0.221	0.122	0.169	0.219	0.130	0.122	0.164	0.127
	(2.08)	(0.88)	(1.19)	(2.04)	(0.87)	(0.87)	(1.14)	(0.84)
Equity/GNP	0.052	0.088	0.065	0.068	0.088	0.103	0.082	0.103
	(0.61)	(0.96)	(0.72)	(0.75)	(0.94)	(1.07)	(0.86)	(1.05)
Rule of Law	-	0.016	-	-	0.018	0.016	-	0.017
		(1.10)			(0.94)	(1.07)		(0.88)
Corruption	-	-	0.011	-	-0.004	-	0.012	-0.003
			(0.57)		(-0.16)		(0.59)	(-0.11)
Creditors' Rights	-	-	-	-0.018	-	-0.017	-0.019	-0.017
				(-0.66)		(-0.64)	(-0.68)	(-0.62)
Adjusted R^2	0.47	0.47	0.46	0.46	0.45	0.46	0.45	0.44