

***Is Accounting 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 countries’ debt and equity markets. Contracting (debt markets) theory predicts conditional conservatism, in the Basu (1997) sense of asymmetrically timelier loss recognition than gain recognition, a proxy for which is greater sensitivity of earnings to negative returns than to positive returns. Contracting theory also predicts the degree of asymmetry increases in the importance of a country’s debt markets, but not in the importance of equity markets. In contrast, value relevance (equity markets) theory implies a symmetric and strong relation between earnings and returns, regardless of the sign of returns. Furthermore, contracting theory predicts that unconditional conservatism, in the sense of unconditionally low earnings and book values, does not increase contracting efficiency, and thus is unrelated to debt market importance. Data from a small cross-sectional sample of 22 countries are consistent with all of the predictions of “costly contracting” theory.

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1. Introduction

Conservatism is a long-standing and pervasive property of financial reporting rules and practice, yet its economic origins have been explored only recently. A fundamental issue is whether accounting conservatism is a response to the reporting demands of debt markets, or of equity markets. To shed some light on the origins of conservatism, we conduct a simple test of the relation between national measures of conservatism and the depth of countries’ debt markets and equity markets. We interpret market depth as a measure of the strength of the demand for conservative financial reporting that arises from debt and equity investors respectively.

We define conservatism in the conditional sense of asymmetrically timely loss recognition (Basu 1997), though we also study measures of the more traditional definition of conservatism in the form of an unconditional bias in net book value. Our evidence implies that conservatism in the sense of asymmetrically timely loss recognition exists in large part for efficient debt market contracting, but conservatism in the sense of unconditional bias does not.

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 it indeed is the most likely explanation. In general, this literature has not clearly distinguished conservatism in its conditional and unconditional senses. We formulate the contracting role of debt as the hypothesis that conditional conservatism exists in large part to facilitate efficient contracting in debt markets, and refer to it as the “debt hypothesis.”

An influential alternative view is that the primary or exclusive function of public financial reporting is to inform share markets. An implication of this view is that financial reporting rules and practice are (or, for some, should be) determined by the demands of the equity market for new information. This view implies that the relation between earnings and stock returns is both symmetric (accounting earnings is informative about both gains and losses) and strong (with a high R^2 , per Lev 1989). We refer to this view as the “equity hypothesis.”

Despite the centrality of this issue, to the best of our knowledge, there has been no direct test of the debt hypothesis against credible alternatives, including the equity hypothesis. We offer a simple discriminating test that utilizes international data. At the individual country level, we estimate both gain and loss recognition timeliness (and the asymmetry between them, or conditional conservatism) from Basu (1997) piecewise linear regressions of earnings on returns. We estimate unconditional conservatism from the regression intercepts (which control for conditional conservatism) and from book/market ratios. We then investigate whether the conservatism estimates are associated internationally with the relative sizes of countries’ debt and equity markets, using data from La Porta et al. (1997, 1998). The market size variables are scaled by

countries' Gross National Products, and hence they proxy for the relative importance of debt markets and equity markets in the countries' economies.¹

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 either negative or (in regressions that control for properties of countries' legal systems) statistically insignificant. Further, we find no relation between timeliness of *gain* recognition and either debt or equity market size. We interpret the debt market relation with loss recognition and the absence of an equivalent relation with gain recognition as confirmation of the debt hypothesis (which predicts such an asymmetry). On the other hand, we interpret the apparent lack of a relation between timely gain and loss recognition and the size of equity markets as a rejection of the equity hypothesis. In addition, we interpret the lack of relation between the size of equity markets and overall timely gain and loss recognition (measured by the earnings-returns R^2) as further rejection of the equity hypothesis.

We also study measures of unconditional conservatism, defined as reporting unconditionally low earnings and book values, independent of contemporary economic income. We find no significant relation between an earnings-based estimate of unconditional conservatism and either debt market size or equity market size. All results are robust with respect to controls for book-to-market ratios, a balance-sheet-based measure of conservatism.

¹ 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). Regrettably, the debt data available to us do not include trade credit, however.

The conclusion that conservative financial reporting (in the conditional form of asymmetrically timely loss recognition) exists primarily for the efficiency of debt market contracting has substantial implications for accounting research and practice. For researchers, the debt hypothesis 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 result is inconsistent with the basic premise of the “value relevance” school of accounting thought, but consistent with the “costly contracting” school.² Our results shed some weak light on that debate.

The evidence is relevant to students of international accounting and economic differences. The Basu (1997) asymmetry in U.S. loss recognition timeliness subsequently has been shown to be substantially more pronounced in companies listed in common law countries than in companies listed elsewhere (Ball, Kothari and Robin 2000; Ball, Robin and Wu 2001, 2003). Our evidence suggests that 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 in the debt market suggests the long-standing ambivalence of standard-setters to conservatism 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.³ Further, the result that debt

² The two schools of thought are debated in Holthausen and Watts (2001) and Beaver et al. (2001).

³ AICPA (1970, para. 35); FASB (1980, paras. 91-97).

markets – but not equity markets – are associated with an important property 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.”⁴ 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, which has long been viewed as the dominant rationale for continental European conservatism, particularly in Germany (European Federation of Accountants 1997; Haller 1998; Nobes 1998; Schneider 1995).

Our research design does not rely on subjective scoring of countries’ formal accounting standards to estimate conservatism because, following Ball, Kothari and Robin (2000, pp. 4-5), it utilizes observable properties of the financial statements that firms in different countries actually report. All results for debt markets are robust with respect to controls for the country variables reported in La Porta et al. (1997, 1998), including legal system origin (English, French, German or Scandinavian), Rule of Law, Corruption and Creditors’ Rights.

We recognize that our research design is simple, and far from perfect. The sample size 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 and robust results for the debt market proxy. As in most cross-sectional international studies, correlated omitted variables are a potential problem, though we argue below that they do not alter our fundamental conclusions.

⁴ FASB (1978, para. 30).

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. Hypothesis: Asymmetrically Timely Loss Recognition (Conditional Conservatism) Primarily Satisfies Debt 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 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 accounting accruals, 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. Because economic gains and losses are transitory (Samuelson 1965; Fama 1970), timely gain recognition and loss recognition incorporate positive and negative transitory components respectively in accounting income.

Untimely gain and loss recognition can occur when revisions in expected future cash flows are not recognized when they occur, and hence do not lead to revisions in book values and in accounting income at that time, but instead are recognized when the cash flows later 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 choice variables. At the country level, the choice of financial reporting properties such as timely loss recognition likely involves political factors. Ball, Kothari and Robin (2000) and Ball, Robin and Wu (2003) report that loss recognition timeliness differs predictably across countries, as a function of variables that include the extent of political involvement in financial reporting. Economic factors likely are involved also. Financial reporting is a 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 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 originating from those sources.

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.⁵ Conditional conservatism is the stricter concept, imposing the requirement that the accounting bias is conditional on contemporaneous economic income.⁶ 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 *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. In a sequence of papers, Ball, Kothari and Robin (2000), Ball (2001, 2004), Ball, Robin and Wu (2000, 2003) 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

⁵ We view these as economically different *concepts* of conservatism, as distinct from different measures of conservatism (cf. Roychowdhury and Watts 2004), because they arise from different sources and have substantively different economic effects. We view unconditional conservatism as arising from tax, political 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) describe the distinction 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 (Roychowdhury and Watts 2004), though the measure of unconditional conservatism we use below attempts to control for conditional conservatism.

⁶ 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); Ball (2004, pp. 126-131)].

“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.⁷ 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 triggering 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 give lenders the right to approve subsequent actions by managers that further decrease the value of debt. Such actions include dividend and

⁷ These points are made in the context of German *vorsicht* unconditional conservatism in Schneider (1995, pp. 136-137) and Ball (2004). Reporting unconditionally low earnings and book values traditionally has been defended in Germany in terms of creditor protection, but this seems an unlikely explanation. Both companies and creditors would contract around a known bias but would face risk whenever (as seems highly likely) the exact bias is unknown. The most likely explanations of historically conservative German accounting are the historically high correspondence between German book and tax reporting and the latitude that hidden reserves give self-interested managers to manipulate earnings.

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.

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 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.⁸ 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.

⁸ 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.

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 and 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. We refer to this view as the “equity hypothesis.”

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 linear correlation between earnings and stock returns, or between book and market values. This criterion has been widely espoused since Lev (1989) in particular.⁹ 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 proof that substantial economic functions of earnings lie outside the share markets.

The predicted financial reporting practice under the equity hypothesis is symmetrically timely recognition of all economic income – that is, of both gains and losses. It is true that shareholders have an interest in the efficiency of firms’ debt

⁹ Holthausen and Watts (2001) provide a survey of the use of the “value relevance” criterion.

contracting and in the actions of lenders, and hence have an indirect interest in asymmetric accounting for gains and losses. Nevertheless, controlling for their indirect interest in debt market demand, the direct interest of shareholders in accounting most likely reflects their more symmetric payoff function. The equity hypothesis therefore predicts that both timely loss recognition and gain recognition increase with the importance of equity markets in countries' economies, controlling for the importance of debt markets. It thus predicts that loss recognition asymmetry decreases with equity market size. 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 .

2.5 Unconditional Conservatism

While our focus is on conditional conservatism, we also study measures of its unconditional form, defined as reporting low earnings and book values unconditionally. This type of conservatism is unconditional in the sense that the accounting bias 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.” How one could advocate considering all risks but not symmetrically advocate considering all opportunities such as economic rents (Roychowdhury and Watts 2004), without thereby implicitly advocating a conservative bias in financial reporting, is not made clear by either body. One possibility is confusion among standard setters between the conditional and unconditional concepts of conservatism.¹⁰

Second, the unconditional definition of conservatism has been employed in much prior literature, including the empirical international accounting literature.¹¹ 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.¹² Under the

¹⁰ IASB staff (2005), describing a joint project with FASB on this issue, wryly note that their new emphasis on “neutrality” over conservatism “did not end controversy over conservatism.”

¹¹ For example, Watts and Zimmerman (1986) state: “Conservatism means that the accountant should report the lowest value among possible alternative values for assets and the highest alternative value for liabilities. Revenues should be recognized later rather than sooner and expenses sooner than later.” This definition does not specify *conditionally* low equity or income, and hence does not address loss-recognition timeliness. A representative empirical study of unconditional conservatism internationally is Gray (1980).

¹² 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

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 conservative book values, or to reduce interest rates, but not to 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 reserves” or “cookie jar reserves”) give self-interested managers to manipulate future earnings.

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

We test the competing views by investigating the relation between unconditional conservatism and the size of countries’ debt markets, controlling for conditional 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.

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.”

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 Timeliness of Gain and Loss Recognition

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 sample for the earnings-returns regressions comprises 80,272 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.¹³ Second, we calculate price-deflated earnings per share NI_t as $X_t/(N_t P_{t-1})$, 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 delete the top and bottom percentiles of the earnings and returns variables. Fourth, we only use data in a particular year for a country with at least 25 observations. This allows us to calculate the annual country mean return, so that we could calculate mean-adjusted returns R to control for differences in expected return across countries and across years. Fifth, we require at least 400 firm/year earnings and return observations in each country. This selection from the Global Vantage data results in 83,466 firm/year observations from 26 countries. This sample is reduced to 80,272 observations from 22 countries due to data on our control variables (described in the following subsection) not being available for four countries.

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

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

¹³ We currently are exploring earnings measures other than Global Vantage Data Item 32.

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.

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 R_i^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 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 the demand for 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 level of conditional conservatism is expected to vary with respect to the legal environment. For example, common law countries would have higher demand for conservatism. Bushman and Piotroski (2004) 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, their implementation by firms, and 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 is difficult to predict the coefficient sign for all three measures of the legal environment.

We discard four countries (Bermuda, Hong Kong, Switzerland and Taiwan) because their Debt/GNP, Equity/GNP, Rule of Law, Corruption or Creditors' Rights data are not reported in La Porta et al. (1997, 1998). The resulting sample contains 22 countries. Countries' financial reporting properties are estimated from 80,272 firm/year observations, ranging from 415 (Chile) to 27,938 (USA). The sample data are reported in Table 1.

[Table 1 here]

3.3 Control for Market-to-Book Ratio

Our regression analysis includes an additional control variable, the market-to-book ratio (MTB).¹⁵ The effect of MTB on the earnings-returns relation can be described

¹⁵ We report results using the book-to-market (BM) ratio, or the inverse of MTB. The key results remain unchanged if the MTB is used instead.

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. Start with the basic pricing equation where dividends D are discounted at expected rates of return ER :

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

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

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

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

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

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).

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

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 return response coefficients in Equation (1).

The effect MTB on the earnings-returns relation applies to periods of 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.¹⁸ Consequently, we make no prediction for the effect of MTB on the incremental loss recognition slope β_{3i} .

The effect of MTB on Equation (1) is evident in our data. We estimate its inverse BM, the book-to-market ratio, as the median value for firms and years in each country.¹⁹ BM is positively correlated with β_0 , β_1 , β_2 , $(\beta_2 + \beta_3)$ and the regression R^2 . The strongest correlations are with β_2 (the timely gain recognition coefficient) and the regression R^2 , explaining approximately 25% of their variation. However, BM is only weakly correlated with the Basu incremental loss-year intercept β_{3i} , explaining only 4% of its variation.

4. Results: Debt Markets, Stock Markets and Conservatism

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 defined as the mean of RD_{jt} for that country (unconditional conservatism, controlling for contemporary gains and losses). Each earnings property then is regressed on institutional characteristics of the countries' economies:

¹⁸ 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.

¹⁹ 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.

$$Earnings\ Property_i = \delta_0 + Legal\ Origin\ Dummies_i + \delta_1 (Debt/GNP)_i + \delta_2 (Equity/GNP)_i + \delta_3 Rule\ of\ Law_i + \delta_4 Corruption_i + \delta_5 Creditors'\ Rights_i + \delta_6 BM_i + \varepsilon_i \quad (5)$$

Results from estimating alternative versions of Equation (5) are reported in Tables 2 through 8. Since the sample comprises only 22 observations, the regressions generally do not include all the Rule of Law, Corruption and Creditors' Rights variables. In each case, Column (A) reports regressions that control only for the legal origin dummy variables (with German origin countries as the base), and columns (B) through (H) also control for Rule of Law, Corruption and Creditors' Rights, respectively. Column (I) includes the controls for the legal environment and BM. Due to the small sample size, the conventional 95% level for the t -statistic ranges from 2.13 (for 15 degrees of freedom) to 2.20 (for 11 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.’ ... Arguing in relation to the prudence principle was common until around the middle 1980s, when the matching principle started to establish itself in accounting debate.

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 dummy 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 (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

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

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). We offer no explanation for the negative result, but note that it is inconsistent with the hypothesis that equity markets drive the demand for timely loss recognition in accounting.

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 Timely Gain Recognition

[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 -1.72 to 0.33 and -1.97 to 1.26 , respectively. The regression model (5), in specifications excluding the BM ratio, explains only 0-25% of the variation in countries' gain recognition timeliness measures. This compares with the 45-48% 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 the recognition of economic gains, inconsistent with the predictions of the equity hypothesis.

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.

[Table 4 here]

4.3 Incremental Loss Recognition Timeliness (Conditional Conservatism)

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 enhance conditional conservatism and equity markets somewhat mitigate it. 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 3.²² The estimated coefficients on the debt and equity market size variables, and their standard errors, are essentially unchanged.

²² 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.

4.4 Overall Gain and Loss Timeliness

While we focus on timely loss recognition, for completeness we also report the effect of the legal and financial market variables on the overall timeliness of earnings in various countries in gain and loss years combined. Table 5 reports results when the accounting property that is specified as 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 fiscal year economic income (both gains and losses) that can be explained by variation in current-year earnings.

[Table 5 here]

The results in Table 5 are generally 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 the equity hypothesis. Equivalently, it is consistent with the hypothesis that the primary role of accounting earnings in equity markets is not to inform in a timely manner but to confirm and hence discipline prior non-financial disclosures.²³

These results are not materially affected by the control for BM (column I), which is statistically insignificant (*t*-statistic of 1.10) and does not alter the model's explanatory power.

4.5. Unconditional Conservatism

We argue that unconditional conservatism, in the form of low earnings and book values independent of economic outcomes, is inefficient or at best neutral in debt contracting, and hence can only reduce contracting efficiency. We therefore predict 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

²³ See Ball (2001, pages 133-138).

frequency with which the loss dummy takes the value 1 in the country's Basu regression), 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.

4.6. CIFAR scores

To expand our analysis of the importance of debt and stock markets in shaping the equilibrium properties of financial reports, we study their relation with the accounting scores developed by the Center for International Financial Analysis and Research (CIFAR). Results are reported in Table 7. Panel A covers the 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.

[Table 7 here]

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 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. 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 a firm's current year stock return -- and hence are more likely to affect the intercepts but not the slopes in a Basu (1997) regression. International tax differences thus are 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 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

Our analysis of data from twenty-two countries supports the hypothesis that financial reporting conservatism – in the Basu (1997) sense of conditional conservatism, or timelier loss recognition than gain recognition – originates in the reporting demands of debt markets, but not of equity markets. 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).

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 test relates individual country measures of gain and loss recognition timeliness with the relative sizes of the countries’ debt and equity markets, scaled by their Gross National Products. These variables proxy for the relative importance of debt markets and equity markets in the countries’ economies. The rationale for this measure is that financial reporting is a costly activity, and the observed quantity of it in practice should depend on demand. If timely 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.

We find a significant positive relation between all measures of loss recognition and debt market size, but a negative or insignificant relation with equity market size. 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. Further, we find no relation between timeliness of *gain* recognition and either debt or equity market size. The asymmetry between the loss and gain recognition results is inconsistent with "value relevance," which predicts symmetry. Finally, as predicted by costly contracting theory, we find no relation between unconditional conservatism and debt markets.

We conclude that conditional conservatism (asymmetrically timely loss recognition) exists for efficiency of contracting in debt markets, and unconditional conservatism (low book values, independent of economic gains and losses) does not.

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 | Corrupt ion | 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 | 0.097 |
| 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 | 0.100 |
| France | French | 0.06 | 0.01 | 0.04 | 0.25 | 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 | 0.12 | 0.07 | 0.55 | 0.08 | 8.33 | 6.13 | 2 | 0.375 |
| Netherlands | French | 0.09 | -0.01 | 0.00 | 0.19 | 0.14 | 1.08 | 0.52 | 10.00 | 10.00 | 2 | 0.575 |
| Spain | French | 0.06 | 0.01 | 0.09 | 0.11 | 0.14 | 0.75 | 0.17 | 7.80 | 7.38 | 2 | 0.611 |
| Germany | German | 0.07 | 0.01 | 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 | 0.033 |
| 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 | 0.10 | 0.21 | 0.21 | 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 | 0.11 | 0.77 | 0.53 | 8.21 | 7.96 | 2.3 | 0.630 |
| Median | | 0.07 | 0.01 | 0.04 | 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 | 0.283 |

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 (-0.95) | -0.136 (-1.10) | -0.089 (-0.79) | -0.050 (-0.40) | -0.158 (-1.27) | -0.070 (-0.41) | 0.014 (0.09) | -0.067 (-0.40) | -0.080 (-0.50) |
| French | 0.082 (1.26) | 0.075 (1.12) | 0.085 (1.26) | 0.065 (0.95) | 0.081 (1.21) | 0.065 (0.92) | 0.066 (0.95) | 0.067 (0.96) | 0.077 (1.16) |
| English | 0.188 (2.81) | 0.171 (2.31) | 0.196 (2.67) | 0.169 (2.37) | 0.178 (2.41) | 0.166 (2.17) | 0.182 (2.48) | 0.171 (2.29) | 0.182 (2.56) |
| Scandinavian | 0.267 (3.54) | 0.238 (2.60) | 0.288 (2.86) | 0.251 (3.18) | 0.284 (2.86) | 0.243 (2.58) | 0.305 (3.02) | 0.297 (2.92) | 0.236 (2.29) |
| Debt/GNP | 0.320 (3.45) | 0.288 (2.65) | 0.343 (2.88) | 0.301 (3.12) | 0.341 (2.91) | 0.292 (2.62) | 0.361 (3.03) | 0.354 (2.95) | 0.277 (2.25) |
| Equity/GNP | -0.147 (-2.46) | -0.128 (-1.85) | -0.149 (-2.41) | -0.117 (-1.67) | -0.100 (-1.38) | -0.115 (-1.55) | -0.105 (-1.45) | -0.078 (-0.99) | -0.151 (-1.73) |
| Rule of Law | - | 0.008 (0.60) | | - | 0.023 (1.24) | 0.003 (0.18) | - | 0.018 (0.92) | 0.003 (0.16) |
| Corruption | - | - | -0.004 (-0.33) | - | -0.022 (-1.13) | - | -0.013 (-0.87) | -0.025 (-1.25) | -0.009 (-0.40) |
| Creditors' Rights | - | - | - | -0.016 (-0.82) | - | -0.013 (-0.56) | -0.026 (-1.14) | -0.019 (-0.80) | -0.010 (-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 (1.09) | 0.107 (1.77) | 0.061 (1.02) | 0.031 (0.48) | 0.123 (2.15) | 0.100 (1.18) | 0.011 (0.14) | 0.098 (1.24) | 0.088 (1.44) |
| French | -0.031 (-0.92) | -0.023 (-0.70) | -0.031 (-0.88) | -0.021 (-0.60) | -0.027 (-0.87) | -0.022 (-0.63) | -0.022 (-0.59) | -0.023 (-0.71) | -0.016 (-0.62) |
| English | -0.049 (-1.41) | -0.027 (-0.74) | -0.049 (-1.27) | -0.038 (-1.03) | -0.032 (-0.94) | -0.026 (-0.70) | -0.042 (-1.09) | -0.030 (-0.86) | -0.023 (-0.83) |
| Scandinavian | 0.025 (0.64) | 0.063 (1.42) | 0.026 (0.49) | 0.035 (0.85) | 0.030 (0.66) | 0.063 (1.35) | 0.018 (0.34) | 0.027 (0.56) | -0.019 (-0.47) |
| Debt/GNP | -0.024 (-0.49) | 0.018 (0.33) | -0.023 (-0.37) | -0.013 (-0.25) | -0.020 (-0.38) | 0.017 (0.31) | -0.031 (-0.50) | -0.024 (-0.43) | -0.081 (-1.71) |
| Equity/GNP | 0.039 (1.26) | 0.014 (0.33) | 0.039 (1.21) | 0.022 (0.60) | -0.006 (-0.17) | 0.013 (0.31) | 0.018 (0.47) | -0.012 (-0.31) | -0.066 (-1.97) |
| Rule of Law | - | -0.010 (-1.58) | - | - | -0.021 (-2.45) | -0.010 (-1.21) | - | -0.020 (-2.13) | -0.031 (-3.84) |
| Corruption | - | - | -0.0001 (-0.02) | - | 0.016 (1.78) | - | 0.004 (0.52) | 0.017 (1.78) | 0.029 (3.49) |
| Creditors' Rights | - | - | - | 0.009 (0.93) | - | 0.001 (0.11) | 0.013 (1.04) | 0.005 (0.46) | 0.012 (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 (-1.39) | -0.243 (-1.88) | -0.150 (-1.22) | -0.080 (-0.61) | -0.280 (-2.36) | -0.171 (-0.95) | 0.003 (0.02) | -0.165 (-1.04) | -0.169 (-1.02) |
| French | 0.113 (1.60) | 0.098 (1.40) | 0.117 (1.58) | 0.087 (1.19) | 0.107 (1.68) | 0.087 (1.18) | 0.087 (1.20) | 0.090 (1.37) | 0.093 (1.36) |
| English | 0.237 (3.25) | 0.198 (2.55) | 0.245 (3.06) | 0.207 (2.73) | 0.210 (2.97) | 0.192 (2.41) | 0.225 (2.91) | 0.202 (2.86) | 0.204 (2.79) |
| Scandinavian | 0.242 (2.94) | 0.174 (1.83) | 0.262 (2.38) | 0.216 (2.57) | 0.253 (2.66) | 0.180 (1.83) | 0.287 (2.71) | 0.270 (2.82) | 0.255 (2.39) |
| Debt/GNP | 0.344 (3.40) | 0.271 (2.38) | 0.367 (2.81) | 0.314 (3.05) | 0.361 (3.21) | 0.275 (2.36) | 0.392 (3.14) | 0.378 (3.35) | 0.358 (2.83) |
| Equity/GNP | -0.186 (-2.86) | -0.142 (-1.97) | -0.188 (-2.79) | -0.139 (-1.86) | -0.095 (-1.36) | -0.128 (-1.65) | -0.123 (-1.62) | -0.066 (-0.89) | -0.085 (-0.95) |
| Rule of Law | - | 0.018 (1.31) | - | - | 0.045 (2.47) | 0.012 (0.74) | - | 0.039 (2.04) | 0.035 (1.59) |
| Corruption | - | - | -0.004 (-0.29) | - | -0.038 (-2.03) | - | -0.018 (-1.09) | -0.041 (-2.21) | -0.037 (-1.70) |
| Creditors' Rights | - | - | - | -0.025 (-1.22) | - | -0.015 (-0.59) | -0.039 (-1.61) | -0.024 (-1.08) | -0.022 (-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 | -0.060 (-0.95) | -0.135 (-2.08) | -0.100 (-1.70) | 0.008 (0.12) | -0.125 (-1.90) | -0.076 (-0.86) | -0.050 (-0.67) | -0.077 (-0.86) | -0.082 (-0.92) |
| French | 0.077 (1.96) | 0.064 (1.81) | 0.064 (1.81) | 0.054 (1.44) | 0.062 (1.74) | 0.055 (1.50) | 0.054 (1.49) | 0.055 (1.47) | 0.058 (1.58) |
| English | 0.049 (1.20) | 0.013 (0.34) | 0.017 (0.44) | 0.023 (0.58) | 0.010 (0.25) | 0.009 (0.22) | 0.010 (0.27) | 0.007 (0.17) | 0.011 (0.27) |
| Scandinavian | 0.143 (3.11) | 0.083 (1.71) | 0.063 (1.20) | 0.121 (2.78) | 0.061 (1.15) | 0.087 (1.79) | 0.071 (1.34) | 0.068 (1.25) | 0.045 (0.77) |
| Debt/GNP | 0.140 (2.48) | 0.075 (1.30) | 0.051 (0.82) | 0.114 (2.14) | 0.050 (0.80) | 0.078 (1.36) | 0.059 (0.95) | 0.057 (0.89) | 0.027 (0.40) |
| Equity/GNP | -0.021 (-0.59) | 0.018 (0.51) | -0.013 (-0.41) | 0.019 (0.50) | 0.005 (0.14) | 0.030 (0.78) | 0.008 (0.21) | 0.017 (0.41) | -0.011 (-0.22) |
| Rule of Law | - | 0.016 (2.35) | - | - | 0.009 (0.87) | 0.012 (1.41) | - | 0.006 (0.58) | 0.0004 (0.04) |
| Corruption | - | - | 0.017 (2.42) | - | 0.010 (1.00) | - | 0.012 (1.54) | 0.009 (0.82) | 0.015 (1.24) |
| Creditors' Rights | - | - | - | -0.022 (-2.05) | - | -0.012 (-0.98) | -0.012 (-1.04) | -0.010 (-0.79) | -0.007 (-0.50) |
| BM | - | - | - | - | - | - | - | - | 0.053 (1.10) |
| 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 . 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 (1.59) | 0.009 (0.39) | -0.014 (-0.61) | 0.022 (0.86) | 0.007 (0.22) | 0.003 (0.15) | -0.05 - |
| β_{1i} | -0.094 (-2.95) | 0.026 (1.33) | 0.054 (2.63) | 0.068 (2.96) | 0.079 (2.78) | -0.017 (-0.95) | 0.35 - |
| $\beta_{0i} + \beta_{1i} LF_i$ | 0.002 (0.06) | 0.024 (1.10) | 0.018 (0.78) | 0.062 (2.41) | 0.053 (1.68) | -0.007 (-0.35) | 0.12 - |

Table 7
Accounting CIFAR 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 (34.21) | 3.807 (27.37) | 3.853 (31.06) | 4.014 (32.09) | 3.803 (26.89) | 3.874 (22.88) | 3.916 (27.12) | 3.866 (22.31) | 3.896 (23.05) |
| French | 0.018 (0.26) | -0.005 (-0.07) | -0.006 (-0.10) | -0.017 (-0.23) | -0.011 (-0.16) | -0.021 (-0.30) | -0.027 (-0.37) | -0.026 (-0.36) | -0.024 (-0.35) |
| English | 0.184 (2.62) | 0.134 (1.84) | 0.139 (1.93) | 0.151 (2.05) | 0.126 (1.68) | 0.124 (1.63) | 0.124 (1.65) | 0.117 (1.49) | 0.118 (1.56) |
| Scandinavian | 0.243 (3.02) | 0.166 (1.84) | 0.136 (1.35) | 0.224 (2.79) | 0.130 (1.27) | 0.168 (1.84) | 0.141 (1.38) | 0.135 (1.28) | 0.206 (1.80) |
| Debt/GNP | 0.191 (1.87) | 0.120 (1.13) | 0.088 (0.76) | 0.180 (1.79) | 0.085 (0.72) | 0.127 (1.17) | 0.097 (0.83) | 0.093 (0.77) | 0.170 (1.31) |
| Equity/GNP | 0.002 (0.03) | 0.064 (0.91) | 0.019 (0.31) | 0.061 (0.79) | 0.051 (0.69) | 0.089 (1.12) | 0.058 (0.76) | 0.075 (0.90) | 0.129 (1.43) |
| Rule of Law | - | 0.024 (1.63) | - | - | 0.015 (0.79) | 0.019 (1.21) | - | 0.011 (0.56) | 0.025 (1.14) |
| Corruption | - | - | 0.025 (1.61) | - | 0.015 (0.74) | - | 0.021 (1.28) | 0.014 (0.68) | -0.005 (-0.19) |
| Creditors' Rights | - | - | - | -0.030 (-1.26) | - | -0.018 (-0.72) | -0.021 (-0.87) | -0.017 (-0.66) | -0.021 (-0.83) |
| BM | - | - | - | - | - | - | - | - | -0.133 (-1.36) |
| 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 (32.10) | 3.824 (29.78) | 3.832 (26.89) | 3.920 (27.91) | 3.834 (26.84) | 3.870 (26.19) | 3.878 (24.43) | 3.875 (24.30) |
| French | 0.003 (0.03) | -0.012 (-0.13) | -0.006 (-0.06) | -0.027 (-0.25) | -0.011 (-0.11) | -0.041 (-0.38) | -0.038 (-0.35) | -0.039 (-0.36) |
| English | 0.169 (1.78) | 0.148 (1.54) | 0.151 (1.50) | 0.165 (1.72) | 0.152 (1.50) | 0.145 (1.48) | 0.146 (1.43) | 0.147 (1.43) |
| Scandinavian | 0.283 (2.60) | 0.218 (1.77) | 0.238 (1.75) | 0.269 (2.40) | 0.227 (1.66) | 0.206 (1.63) | 0.220 (1.58) | 0.212 (1.51) |
| Debt/GNP | 0.221 (2.08) | 0.122 (0.88) | 0.169 (1.19) | 0.219 (2.04) | 0.130 (0.87) | 0.122 (0.87) | 0.164 (1.14) | 0.127 (0.84) |
| Equity/GNP | 0.052 (0.61) | 0.088 (0.96) | 0.065 (0.72) | 0.068 (0.75) | 0.088 (0.94) | 0.103 (1.07) | 0.082 (0.86) | 0.103 (1.05) |
| Rule of Law | - | 0.016 (1.10) | - | - | 0.018 (0.94) | 0.016 (1.07) | - | 0.017 (0.88) |
| Corruption | - | - | 0.011 (0.57) | - | -0.004 (-0.16) | - | 0.012 (0.59) | -0.003 (-0.11) |
| Creditors' Rights | - | - | - | -0.018 (-0.66) | - | -0.017 (-0.64) | -0.019 (-0.68) | -0.017 (-0.62) |
| Adjusted R ² | 0.47 | 0.47 | 0.46 | 0.46 | 0.45 | 0.46 | 0.45 | 0.44 |