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Abstract

We hypothesize debt markets – not equity markets – are the primary influence on "association" metrics studied since Ball and Brown (1968). Debt markets demand high scores on timeliness, conservatism and Lev's (1989) R^2, because debt covenants utilize reported numbers. Equity markets do not rate financial reporting consistently with these metrics, because (among other things) they control for the total information incorporated in equity prices. Single-country studies shed little light on the relative influences of debt and equity, because their firms operate under a homogeneous reporting regime. International data are consistent with our hypothesis. This is a fundamental issue in accounting.

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Does the demand for financial reporting arise primarily in debt markets or in equity markets? Are timely financial statements more useful to lenders or to shareholders? Is debt or equity primarily responsible for accounting conservatism? In an attempt to shed some light on these fundamental questions, we formulate and test the hypothesis that debt markets –not equity markets – exert the primary influence on the financial reporting metrics commonly estimated in "association" studies. These metrics, which include "earnings response coefficients" and the contemporaneous R^2 between earnings and returns (Lev, 1989), are intended to capture important fundamental properties of financial reporting, such as relevance, timeliness and conservatism. They have been extensively studied in the accounting literature since Ball and Brown (1968).

We propose that debt markets create a demand for financial reporting that scores highly on traditional association-study metrics. Association studies measure the contemporaneous relation between financial statement variables and stock returns. Assuming market efficiency, they measure the timeliness of accounting recognition (i.e., how quickly available information is incorporated in the financial statements). Timeliness affects debt contracting because reported financial statement variables affect various covenanted financial ratios, including balance sheet leverage and earnings-based interest coverage ratios, and also affect dividend and stock repurchase restrictions. In particular, timely recognition of losses is necessary for loss-making firms to violate covenanted ratios in a timely fashion. Timely covenant violation leads to timely triggering of lenders' contractual rights to veto major decisions by loss-making managers that could further erode debt quality, such as risky new investments and acquisitions, borrowing, dividends and stock repurchases. Untimely loss recognition reduces the effectiveness of contractual restrictions on the decision rights of loss-making managers that are based on

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financial-statement outcomes. Debt markets therefore prefer a strong association between financial statement variables and the information incorporated in share prices. [1]

We propose that equity markets create a relatively low demand for association *per se*. The primary reason for this hypothesis is that all association-study metrics *control for* the first-order concern of equity markets, namely the total amount of information incorporated in share prices. For example, the contemporaneous R^2 between earnings and returns (Lev, 1989) measures the proportion of the total information used by the equity market that is captured in earnings in the same period. *Given the total information available to it,* the proportion from one source or another seems a second-order concern to the equity market. For this and other reasons outlined below, we propose that equity markets are not the primary source of demand for financial reporting that rates highly on commonly-studied association-study metrics. [2]

Like all economic activities, financial reporting is costly, and not in unlimited supply. At the country level, there are costs of developing and operating complex institutions such as independent audit professions, independent and effective judicial and regulatory systems to enforce securities contracts and laws, and various monitoring mechanisms (analysts, rating agencies, short sellers, press). At the company level, there are costs of installing and operating information systems and accounting and control functions, of management and board time, and of internal and external auditing. Because financial reporting is a costly activity, we expect the resources devoted to it depend on demand. [3] Our fundamental proposition therefore is that debt

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[1] Gilman (1939, page 232), Jensen and Meckling (1976, page 338), Smith and Warner (1979), Leftwich (1983) and Watts (1977, 1993, 2003a, 2003b) and Holthausen and Watts (2001) address the relation between financial reporting and debt contracting. Basu (1997) is the first to study timely loss recognition, and Ball (2001), Ball, Robin and Wu (2003) and Ball and Shivakumar (2005) address its debt-contracting role.

[2] Association-study metrics are of interest to the accounting profession (for example, the association-study R^2 is a type of information-market share variable), though the usefulness of financial reporting likely is not a monotone increasing function of R^2 (Ball, 2001).

[3] An effective institutional structure is easily taken for granted by participants in a highly developed economy. U.S. participants have been alerted recently to Sarbanes-Oxley Act compliance costs, yet these are but a subset of the total costs of an effective reporting system. Lesser-developed economies do not devote the same amount of

markets generate more demand than equity markets for financial reporting that scores highly on association study measures, and are more likely to influence those scores.

Out tests of this proposition exploit variation among countries in relative debt and equity market demands on financial reporting. The proxies for debt and equity demands are the sizes of countries' debt markets and equity markets. We expect that, other things equal, the countries with smaller capital markets generate less demand for effective financial reporting and hence devote fewer resources to developing and operating costly financial reporting systems. Conversely, countries with larger capital markets can devote more resources to effective financial reporting. This simple logic underlies our tests, in which measures of *countries'* financial reporting properties are regressed on the *countries'* debt and equity market sizes, to estimate where the demand for financial reporting resides.

We first estimate, from Basu (1997) piecewise-linear regressions of earnings on returns, country-level financial reporting timeliness (loss and gain recognition timeliness, the R^2 measure of overall timeliness). We also estimate country-level conservatism (conditional conservatism, unconditional conservatism, and the market/book ratio). We then regress countries' these estimated financial reporting properties on the sizes of their debt and equity markets.[4] The sample comprises 78,949 firm-year observations during 1992-2003 from 22 countries. We aggregate the observations within each country and study variation across countries, so the regressions have 22 observations. While this design gives the appearance of studying a small sample of only 22 countries, the underlying sample is large.

Relative to studying the data at the firm level, the country-level design has several advantages. First, our hypothesis is that financial reporting practice is a function of the size of a

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resources to institutional development and operation as is familiar in countries with more developed financial systems. See Ball (2001) for an analysis of efficient financial reporting systems in developing economies.
[4] Data are from La Porta et al. (1997, 1998). Debt excludes trade credit, which we expect induces a demand for timely loss recognition in working capital (inventory and receivables write-downs, and loss accruals).

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country's debt and equity market sizes, so the appropriate level of observation is not the individual firm. Studying even a large sample of individual firms within a single country is unlikely to shed much light on how financial reporting is shaped by satisfying debt versus equity market demand. Public firms within one country generally operate under a single reporting, litigation and regulatory regime. The underlying effects of debt and equity market demand thus are relatively constant across firms within one regime, independent of the firms' individual financing policies. For example, the accounts of all public U.S. firms are prepared under U.S. GAAP, are audited according to U.S. standards, and (perhaps more importantly) are subject to S.E.C. enforcement and stockholder litigation under U.S. laws – regardless of their individual use of debt versus equity finance.[5] Second, clustering by country avoids over-stating test statistics by treating individual firm and year observations within a country as independent. Under our hypothesis, financial reporting practice within a country is determined by its institutional structure, so financial reporting practices of individual firms are not independent across either firms or years. Third, our procedure of treating each country as an observation avoids the fitted regression being dominated by countries with large numbers of public firms (sample sizes range from 379 for Chile to 27,559 for U.S.).

The regressions control for various non-market determinants of financial reporting practice, using La Porta et al. (1997, 1998) data. The controls include countries' legal system origins (English, French, German or Scandinavian). Ball, Kothari and Robin (2000) view legal origin as a proxy for the degree of political influence on financial reporting (versus debt and equity market influences), and show it is related to timeliness and conditional conservatism. The regressions also control for three legal-system variables that Bushman and Piotroski (2006)

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[5] Some conclusions can be drawn from single-country studies, for example that the asymmetry reported by Basu (1997) for U.S. firms is consistent with debt exerting an important influence on financial reporting (Holthausen and Watts 2001), but the evidence underlying these conclusions is from what in essence is a single observation.

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report are related to timeliness and conditional conservatism: Rule of Law, Corruption and Creditors' Rights. All results are robust with respect to these controls. In particular, we obtain consistently statistically significant results for the debt-market proxy.

The results are not driven by outliers. Within each country, we exclude extreme earnings and return observations when estimating the country-level association-study metrics. The country-level data reported in Table 1 show no evidence of outliers in the important dependent and independent variables. Consistent with the apparent absence of outliers, the results are not sensitive to deleting individual countries from the sample (i.e., there is no evidence of a "knife edge" effect). Because the precision of the estimates of countries' financial reporting properties likely varies (due, for example, to different sample sizes), we also report Weighted Least Squares (WLS) results, weighting the countries' observations by the inverse of the standard errors of the country level association-study metrics. The WLS results are even stronger.

An attractive feature of the research design is that the dependent variables (estimated properties of financial reporting, such as timeliness) are not derived from a scoring of countries' formal accounting standards. Standards are an imperfect guide to financial reporting practice because they are not implemented uniformly around the world. Following Ball, Kothari and Robin (2000), the research utilizes observable properties of the financial statements that firms in different countries actually report.

We recognize the research design has limitations. As in most cross-country studies, the potential for correlated omitted variables is a concern, despite controlling for several variables. We have only proxies for the dependent and independent variables, though the model explains approximately half of the cross-country variation in estimated loss recognition timeliness.

We report robust evidence that debt markets – but not equity markets – are associated with important financial reporting properties, consistent with our hypothesis. This is a

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fundamental issue in accounting, but to our knowledge it has not previously been investigated directly. At the most fundamental level, the conclusion speaks to the economic origins of financial reporting. The apparent primacy of debt market influence on reporting is inconsistent with the "value relevance" school of accounting thought, in which financial reporting exists primarily to inform share markets, but is consistent with a "costly contracting" view.[6]

Our results suggest an alternative interpretation of the remarkable increase over time in loss recognition timeliness documented by Basu (1997, Figure 3) and replicated internationally by Ball, Kothari and Robin (2000, Table 8): corporate debt markets increasing over time in economic importance. Basu attributes the result to legal liability, but that could to some degree be an endogenous response to increasing debt market demand.

For practitioners, the evidence of debt market demand for conditional conservatism 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, as suggested by Ball and Shivakumar (2005), or alternatively on the misconception that the demand for financial reporting originates primarily or exclusively in the equity market.[7] Further, the result that debt markets – but not equity markets – are associated with important properties of 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."[8]

Finally, the result that both the balance-sheet-based and income-statement-based measures of *unconditional* conservatism are unrelated to debt market importance is inconsistent with the notion that unconditionally low book values exist for creditor protection. This has long been the dominant rationale for continental European conservatism, particularly in Germany

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[6] The two schools of thought are debated in Holthausen and Watts (2001) and Barth et al. (2001).
[7] AICPA (1970, para. 35); FASB (1980, paras. 91-97).
[8] *Statement of Financial Accounting Concepts No. 1*, FASB (1978, ¶ 30).

(Schneider, 1995; European Federation of Accountants, 1997; Haller, 1998; Nobes, 1998). The creditor protection rationale for unconditional conservatism is inconsistent with our results, supporting the Ball (2004) and Ball and Shivakumar (2005) argument that it does not make compelling economic sense.

The first section of the paper describes timely financial reporting as an economic activity, subject to costly supply. Section two outlines important differences between debt and equity market demands on financial reporting, and develops our hypotheses. Section three describes the sample, data, estimation procedures, and across-country regressions used to test the hypotheses. Section four outlines the results. Section five presents conclusions and a discussion of issues including omitted variables and causality.

1. Timely Financial Reporting as a Costly Accrual Accounting Activity

This section observes that increasing the timeliness of earnings relative to cash flows requires accrual accounting, which it describes as a costly economic activity. The following section argues that the amount of resources devoted to accrual accounting, and hence to increasing the timeliness of earnings and balance sheet variables, depends on the demand for it.

By definition, timely gain and loss recognition incorporates information about future cash flows into accounting income around the time the information arises. This requires accounting accruals (Ball and Shivakumar 2006), because gains and losses normally have not been fully realized at the time they occur (i.e., they have not yet been fully reflected in 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 decreases in expected future cash flows from the investment in inventory, due to physical loss, damage, obsolescence, decline in market price, etc.), booked decreases in values of marketable securities and derivatives, foreign currency losses, provisions for environmental liabilities, provisions for litigation

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settlements, loss provisions, restructuring charges, and asset impairment charges. Examples of gain accruals are booked increases in values of marketable securities and derivatives, foreign currency gains, and long-term asset revaluations. In general, timely gain and loss accruals incorporate new information into earnings around the time it arrives, thereby increasing the score of earnings on various association-study metrics.

There is comparatively little timing discretion over recording actual cash flows, because there is little ambiguity concerning when they eventuate (in accounting parlance, when they are "realized"). In contrast, there is considerable discretion over when and if revisions in future cash flow expectations are incorporated in the financial statements (in accounting parlance, when they are "recognized"). Because managers cannot be expected to exercise discretion only in the interests of financial-statement users, costly systems are required to ensure that accruals are implemented, particularly timely recognition accruals.

Financial reporting costs occur at the country level and also at level of individual companies. Country-level costs of implementing timely financial reporting most likely are economically substantial, due to the complexity of the institutional framework needed to ensure that companies actually practice it. There are costs associated with training accountants and in training an effective auditing profession, and with developing accounting standards and detailed audit procedures to ensure that standards in fact are implemented. There are costs of developing and operating the myriad other monitoring mechanisms that developed economies take for granted (including company boards, audit committees, stock exchanges, security analysts, credit rating agencies and an independent press). There are costs of developing and operating an independent and effective judicial system in which private litigation can occur, as well as in

developing and operating an effective regulatory system. We hypothesize these costs are economically substantial, particularly for the countries with smaller capital markets.[9]

Company-level reporting costs arise because timeliness requires accounting accruals which incur incremental managerial, accounting and auditing costs relative to simply recording realized cash outcomes. Reviewing inventory on a regular basis to check for wastage, obsolescence, theft, damage and other losses consumes managerial, accounting and audit verification resources. Regular reviews of receivables, provisions – and accruals in general – involve equivalent costs. Implementation of an asset impairment standard such as *SFAS No. 144* involves costly periodic review of assets' expected future cash flows.

In sum, to the extent that financial reporting practice is determined by market (as distinct from political) factors, the amount of resources devoted to countries' financial reporting systems are expected to reflect demand and cost (supply) considerations. Comparative debt and equity market demands for timely financial reporting are studied in the following section.[10]

2. Differences between Debt and Equity Market Demands for Timely Recognition.

Debt and equity markets differ in the extent and nature of their demands for financial reporting. In this section, we emphasize four fundamental differences that suggest financial reporting practice is shaped to a larger degree by the debt market. The effects of political (i.e., non-market) and legal factors are discussed in the following section.

2.1 Greater Importance of Accounting Recognition for Debt Contracting.

One important difference between debt and equity lies in the distinction between the total amount of information available to investors and other economic agents, and the incorporation of

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[9] See Ball (2001) for an analysis of effective financial reporting systems in a developing economy and Ball (2006) for the argument that the major costs of effective reporting systems lie in enforcement rather than standard-setting.
[10] Political solutions differ from market solutions, and vary internationally. We therefore control for various country-level system variables when testing the influence of debt and equity markets on financial reporting.

that information in the financial statements (known in accounting as "recognition"). Given the available information, debt markets are more likely than equity markets to demand its timely recognition, because many debt covenants are written in terms of financial-statement variables such as interest coverage and financial leverage (Smith and Warner, 1979).

Like equity markets, debt markets utilize both financial-statement and other information in pricing decisions, at issuance and in the secondary market. But debt differs from equity in that many of the post-issuance contractual rights of lenders are couched in terms of financial statement variables alone. Available information that is not reflected in the financial statements does not affect those rights. Timely recognition (incorporation of economic gains and losses in earnings and hence on balance sheets) therefore is important *per se* for debt markets. Shareholders are comparatively indifferent as to whether gain and loss information is reflected in the financial statements or received via non-financial disclosure, so long as they receive it.

This reasoning implies that the contemporaneous R^2 between earnings and returns, a summary timeliness metric popularized by Lev (1989), has greater relevance for debt markets than equity markets.[11] The R^2 metric controls for the total amount of information available, and there is no first-order reason for the equity market to care about the proportion arising from one source or another, *given the total amount of information available*.[12] Accountants might be worried about the proportion of total information incorporated in financial statements, as a

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

[12] Differential costs of processing financial-statement versus other information do not affect this argument, because the amount of information incorporated in prices reflects processing costs. Second-order effects could arise if, for some reason, there were non-optimal quantities of either financial-statement or other information in supply, for example due to agency costs or political intervention (for which we control). Shareholders have indirect interests in reporting timeliness that we discuss below.

measure of "market share," but equity investors most likely are relatively indifferent to it.

Paradoxically, the importance of timely accounting recognition for debt, but not for equity – an important point largely unrecognized in the literature – implies the association between financial statement variables and equity returns is more important to debt markets than equity markets.[13]

A parallel implication for balance sheets is that equity markets are relatively indifferent to the book/market ratio. When interpreted as a measure of financial reporting conservatism, this ratio measures the proportion of equity value contemporaneously captured in balance sheet book values. Here too, there is no first-order reason to believe that equity investors are concerned about the proportion of market value that accountants report on the balance sheet, *given market value*. The proportion might concern accountants, but it too controls for the total amount of information incorporated in market value, which is the equity market's primary concern.

The argument can be generalized to all association-study measures of financial reporting, because they control for the total information incorporated in prices. This is *not* to argue there is no equity market demand for timely new accounting information. The point is equivalent to arguing that association does not imply correlation.

2.2 Confirmation Demand for Accounting

A second difference between debt and equity demands for financial reporting arises from the interaction between financial reporting and other disclosures. Gigler and Hemmer (1998) and Ball (2001) argue that accurate reporting of actual outcomes (such as realized cash flows) exerts a discipline on managers' public disclosures about expected outcomes (such as growth prospects and earnings forecasts), because managers then know they later will be held more accountable for their statements. This both increases the information contained in non-financial disclosures,

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[13] The point is hinted at in Dhaliwal et al. (1999, fn. 5), a reference that Holthausen and Watts (2001, p.15) describe as "probably unique."

and decreases the information content of financial reports. Both effects reduce financial reporting scores on association-study metrics, including R^2.

The debt-equity difference arises here because equity markets have more to gain from sacrificing financial reporting timeliness for non-financial disclosure informativeness, if this leads to a net increase in total information quantity. The argument here is that the equity market might prefer an accounting regime that is *not* oriented to timely reporting of new information. The point turns on the distinction between the average amount of new information in financial reporting and the marginal effect of financial reporting on the total amount of new information.

2.3 Equity Portfolio Diversification.

A third difference between debt and equity demands for financial reporting arises from equity portfolio diversification. To the extent equity investors are concerned about the R^2 between earnings and returns, portfolio diversification implies the relevant R^2 is at the portfolio level, not the individual-security level (Ball and Brown 1969, p. 316). The portfolio-level R^2 is expected to be substantially larger than the individual-firm R^2. In contrast, debt contracts are written in terms of individual firms' financial statement variables, so individual-firm and not portfolio-level associations are relevant in debt markets. This difference sharpens the paradox, stated above, that the timeliness with which financial statements reflect the individual-firm information incorporated in equity prices is more relevant to the debt market than to the equity market. The point does not apply to regression slopes (a portfolio slope is the average of the individual slopes), but it does apply to the regression R^2 (which is not additive across securities).

2.4 Asymmetric Debt Market Demand for Timely Recognition.

A final important difference between debt and equity arises from the asymmetric relation between changes in firm value and the value of its debt. In contrast to equity, the value of debt

claims generally is more asymmetrically sensitive to decreases in firm value than to increases. Consequently, debt contracts treat gains and losses asymmetrically.

Debt contracts commonly contain leverage, interest coverage and other financial covenants that are triggered by substantial decreases in the value of the firm (Smith and Warner, 1979). Covenant violations typically give lenders the right to veto specific decisions by managers that could further reduce debt value, including major financing decisions that weaken their security (dividends, stock repurchases, capital distributions to shareholders, and additional debt issuance) and major investment decisions that are potentially negative-NPV (new investments, acquisitions and asset sales).[14] Such violations are triggered by losses, not gains.

Timely accounting recognition of economic losses increases debt contract effectiveness, because it leads to timelier revision of earnings and of book values of assets, liabilities and equity, and in turn into timelier violation of financial covenants. This more quickly transfers important decision rights from loss-making managers to lenders.[15] Untimely loss recognition allows managers to continue impairing debt value, without restrictions on asset distributions to shareholders via dividends and repurchases, and without restrictions on investment.

Because timely loss recognition makes debt a more efficient form of financing, in countries that practice it we should observe comparatively larger corporate debt markets. In countries without timely loss recognition, debt is less efficient. We therefore predict that timely loss recognition increases in the importance of debt markets.

Debt market demand for timely recognition is not symmetric, however. Relative to loss recognition, the debt market generates a lower demand for timely gain recognition because debt

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[14] Presumably, this is because: (1) managers who have made negative-NPV decisions in the past are more likely to keep making bad decisions in the future, due for example to poor strategies and/or low ability or effort; and (2) managers in firms that are "out of the money" options due to past losses have incentives to gamble on new investments and acquisitions even if they have a negative expected NPV.

[15] See Ball (2001), Ball, Robin and Wu (2003) and Ball and Shivakumar (2005).

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covenants are violated by losses, not gains. Timely gain recognition can improve debt contracting under some circumstances, most notably when economic losses that earlier were recognized in the accounts subsequently reverse and thus there is a less reason for lenders to restrict their risk exposure. Losses followed by gains are less frequent than losses, so gain recognition is in lower demand than loss recognition.[16]

Lower debt market demand for timely gain recognition than for loss recognition, when coupled with both being in costly supply, implies we should observe a greater quantity of timely loss recognition than timely gain recognition. If both were costless, we would expect to observe them supplied in equal amounts. But because they are costly economic activities, gain and loss recognition can be expected to bear some relation with their respective demands, which are not symmetric and which we expect to vary according to the size of a country's capital markets.

2.5 The Relative Roles of Equity and Debt Markets: Tested Hypotheses

We have reviewed four differences between debt and equity market demands for financial reporting. Each implies that the association-study correlation between financial statement variables and equity returns is more important to debt markets when returns are negative than when they are positive, but does not imply a parallel result for equity markets. Asymmetric correlation was first observed by Basu (1997), and is known as "conditional conservatism" (Ball and Shivakumar, 2005; Beaver and Ryan, 2005). We predict that conditional conservatism increases in the size of debt markets, but not equity markets.

Our testable hypotheses can be stated as follows:

Debt Hypotheses

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

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[16] Losses followed by gains can be handled by lenders electing not to exercise their decision rights. Some demand for timely gain recognition is generated by debt repricing (Asquith, Beatty and Weber, 2005) and by debt selling substantially below face value. The argument is not that there is *no* debt demand for timely gain recognition; it is that there is *less* demand for it than for losses.

H2:   Conditional conservatism (asymmetrically timely loss recognition relative to gain

recognition) increases in the importance of debt markets.

H3:   Unconditional conservatism (low reported earnings and book values, independent

of economic gains and losses) does not increase in the importance of debt

markets, controlling for conditional conservatism.

Equity Hypotheses

H4:   Timely gain and loss recognition do not increase in the importance of equity

markets.

H5:   Conditional conservatism (asymmetrically timely loss recognition relative to gain

recognition) does not increase in the importance of equity markets.

H6:   Overall gain and loss timeliness does not increase in the importance of equity

markets.

The following section outlines our tests of these hypotheses.

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

This section describes the estimation procedures we follow in testing the effect of debt

and equity markets on financial reporting practice. First, association-study metrics are estimated

for each country using pooled data for firms and years in that country. The metrics estimated are:

gain and loss recognition timeliness, overall timeliness, unconditional income statement

conservatism, and market-to-book ratios. Second, these metrics are regressed on debt and equity

market size, as well as variables that control for non-market influences on financial reporting.

The sample comprises 78,949 fiscal-year observations during 1992-2003 from 22

countries. It is constructed as follows. First, for all firm/years with data, we obtain net income

before extraordinary items X from the Global Vantage Industrial/Commercial file (Data Item 32),

and calculate fiscal-year stock returns using year-end prices and dividends from the Global Vantage Issue file. Each firm/year is assigned to a country based on Periodic Descriptor Array 13, indicating the accounting standards used in preparing its financial statements that year.[17] Second, we calculate price-deflated earnings per share NI_t as $X_t/(N_t P_{t-1})$, where N is number of shares outstanding, P is stock price and t is fiscal year. Adjustments are made for splits and dividends. Third, we require at least 400 observations per country. This produces a sample of 26 countries with 85,497 firm/year observations. Fourth, we discard four countries (Bermuda, Hong Kong, Switzerland and Taiwan) due to missing control variables (described below), reducing the sample to 82,185 observations. Fifth, we delete the top and bottom percentiles of the earnings and returns variables, further reducing the sample to 79,116 observations. Finally, we only use data for a country in years with at least 25 observations, to allow reliable calculation of annual country mean returns, which we use in calculating mean-adjusted returns R to control for differences in expected return across countries and across years.

3.1 Gain and Loss Timeliness Estimates from Earnings-Returns Regressions

Separately for each country i, we estimate a Basu (1997) piecewise-linear regression of accounting income on stock return, using fiscal-year data pooled across firms and years:

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

Here i, j and t denote country, firm and year respectively. R_{jt} is the fiscal-year t stock return of firm j, adjusted for its country 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. The coefficient β_{3i} on the product of stock return and the return dummy measures the *incremental* timeliness of loss recognition in that country. Timely loss recognition is measured by $(\beta_{2i} + \beta_{3i})$

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[17] No allowance is made for cross-listing, which constitutes a bias against our hypotheses.

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and asymmetrically timely loss recognition implies $\beta_{3i} > 0$. Overall income timeliness, for both

gains and losses combined, is measured by the adjusted R^2 of the regression. [18]

3.2 Controls for Countries' Political and Legal Systems

We control for several variables that prior studies have to be useful proxies for countries'

political and legal environments. In principle these controls work against our hypotheses,

because they likely are correlated with capital market development, which is our underlying

dependent variable, but in fact the controls exhibit only weak effects.

The control variables are countries' legal origins (English, French, German and

Scandinavian) and their legal enforcement and investor protection ratings (Rule of Law,

Corruption, and Creditors' Rights). The importance of these variables for financial markets is

demonstrated by La Porta et al. (1997, 1998, 2000) and Shleifer and Vishny (1997). In a

financial reporting context, Ball, Kothari and Robin (2000) and Ball, Robin and Wu (2000, 2003)

show that timeliness and conditional conservatism vary with legal origin (a proxy for political

influences on financial reporting). Notably, common law countries exhibit more timely loss

recognition. Bushman and Piotroski (2006) show that timely loss recognition is affected by the

legal environment. We 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.

The Rule of Law variable measures a country's tradition of law and order. A country with

a stronger law and order tradition is likely to have more-developed financial markets and more-

effective financial reporting practices. Stronger Rule of Law limits firms' ability to exploit debt

holders, and hence could be associated with the development and comparative size of debt

markets. In addition, higher Rule of Law could result in more enforcement of timely loss

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

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

The Corruption variable measures the probability that corrupted governments, officials and special interest groups inhibit financial-market growth through the costs and risks they impose on financial intermediaries and firms (Rajan and Zingales, 2003). The efficiency of financial reporting can be impeded by governments, officials and others interfering in accounting standards, in the implementation of standards, or in enforcement by courts and government agencies. Moreover, it might be in the interest of government officials to smooth earnings, and hence to suppress timely loss recognition in a bad year for the economy, to maintain a steady flow of taxes. On the other hand, more corruption might increase the demand for conservatism via substitution, due to the lack of alternative protection for creditors.

The Creditors' Rights control variable proxies for the extent to which creditors have the right to make and enforce loans, which affects debt market development. Lenders and borrowing firms could be more willing to contract 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 credit markets. It therefore is difficult to predict the coefficient sign for all three measures of the legal environment.

3.3 Control for Market-to-Book Ratio

We also report regressions that control for the market-to-book ratio (MTB). The effect of MTB on the earnings-returns relation can be described in two ways. First, MTB contains information about both expected returns and expected earnings (Vuolteenaho, 2002). Second, MTB proxies for the proportion of the variation in the market value of equity that is due to

factors (such as synergies and rents) that are not reflected in book value, and hence affect returns but not earnings.[19]

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

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

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

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

Equation (3) implies the relation between earnings and returns depends both on expected returns and on expected earnings.[20] Vuolteenaho (2000, 2002) shows that the MTB can be decomposed into those two components, expected returns and expected earnings:

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

Here, lowercase denotes logs, 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. Roychowdhury and Watts (2007) use the intuition in Equation (4), Collins and Kothari (1989), and Easton and

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[19] Givoly and Hahn (2000), Beaver and Ryan (2005), Givoly, Hayn, and Natarajan (2007) and Roychowdhury and Watts (2007).

[20] See also Collins and Kothari (1989) and Easton and Zmijewski (1989).

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 in its books. Therefore, in a regression of earnings on returns, variation in their values is incorporated in returns but not in earnings, reducing the Basu regression coefficients towards zero.[21] The variance of "unbooked" gains and losses increases in the MTB ratio, which reflects the proportion of firm value represented by unbooked assets such as synergies and growth potential, so we expect a negative relation between MTB and the coefficients in Equation (1).

The effect of MTB on the earnings-returns relation applies to both negative and positive returns in the Basu (1997) regression model. Therefore, we expect a negative relation between MTB and 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 because positive and negative return variances are not equal.[22] Consequently, we make no prediction for the effect of MTB on the incremental loss recognition slope β_{3i}. We estimate the MTB inverse, the book-to-market ratio (BM), as the median value for all firms and years in each country.[23] We report below that it is positively correlated with β_1, β_2, β_3, $(\beta_2 + \beta_3)$ and R^2.

4. Results: Debt, Equity and Financial Reporting Timeliness and Conservatism

The following financial reporting properties are estimated separately for each country i from regression (1): β_{2i} (timely gain recognition coefficient); $\beta_{2i} + \beta_{3i}$ (timely loss recognition

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[21] Consistent wit the interpretation in Ball and Kothari (2007), we model this as a property of equilibrium income recognition practices in each country. Roychowdhury and Watts (2007) model it as an errors-in-variables issue.

[22] More precisely, the ratio of the variances of booked and unbooked economic gains need not equal the corresponding ratio for booked and unbooked economic losses. Here, "unbooked" refers to gains and losses that are not recorded in contemporary accounting income, such as revisions in the value of economic rents.

[23] 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.

coefficient); β_{3i} (incrementally timely loss recognition coefficient); the regression R_i^2 (overall

timeliness); and $\beta_{0i} + \beta_{1i}LF_i$, where LF_i is the loss frequency in country i and is the country mean

of RD_{jt} (unconditional conservatism, controlling for contemporary gains and losses). The data

are arrayed in Table 1. There is no evidence of outliers in the important variables.[24]

[Tables 1 and 1a here]

Table 1a reports the correlation between the important institutional variables and the gain

and loss timeliness coefficients. At the outset, it is important to note that while the financial

reporting properties are correlated with the control variables, their univariate correlations with

the debt and equity market size variables are consistent with results from the multivariate

regression models that include the controls. For example, the correlation of timely loss

recognition ($\beta_{2i} + \beta_{3i}$) with Debt/GNP is 0.27, but its correlation with Equity/GNP actually is

negative, -0.16, consistent with our conclusions below. This gives us confidence that the results

for the debt and equity variables in the multivariate regressions are not induced by the controls.

In the multivariate model, each estimated financial reporting property is regressed on the

country institutional characteristics:[25]

$Earnings\ Property_i = \delta_0 + Legal\ Origin\ Dummies_i + \delta_1\ (Debt/GNP)_i + \delta_2\ (Equity/GNP)_i$

$+ \delta_3\ Rule\ of\ Law_i + \delta_4\ Corruption_i + \delta_5\ Creditors'\ Rights_i + \delta_6\ BM_i + \varepsilon_i$ (5)

Results from estimating versions of Equation (5) are reported in Tables 2 through 8. In

each table, Column (B) reports a regression incorporating the debt and equity variables, with

controls for only the three legal origin dummy variables (German origin is the base). This

regression has 16 degrees of freedom. Columns (B) through (H) report regressions with controls

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[24] The market/book ratio has extreme values for Brazil and Indonesia, perhaps due to inflation, but is used only in some specifications, and then as a robustness control (without materially influencing the results).

[25] In contrast to Bushman and Piotroski (2006), who use debt/equity ratios, our regression includes both debt and equity as independent variables because our goal is to assess their individual roles. For example, a positive coefficient on debt/equity can indicate a positive association with debt, a negative association with equity, or both.

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for the individual legal environment variables: Rule of Law, Corruption and Creditors' Rights, respectively. Column (I) also controls for BM. The conventional 95% significance level for the t-statistic ranges from 2.12 (for 16 degrees of freedom) to 2.18 (for 12 d.f.).

4.1 Loss Recognition Timeliness

[Table 2 here]

Table 2 reports results for estimated loss recognition timeliness, $(\beta_{2i} + \beta_{3i})$. The central result is confirmation of the hypothesis that debt markets and not equity markets are associated with the level of timely loss recognition. The coefficient on debt is positive for all model specifications, with t-statistics ranging from 2.25 to 3.45. A one standard deviation increase in Debt/GNP translates into a 0.08 increase in the regression slope for accounting income on negative stock returns, $\beta_{2i} + \beta_{3i}$, which is large in comparison with the 0.21 mean across countries (Table 1). The relation between debt market size and loss recognition timeliness therefore is in the predicted direction, and economically as well as statistically significant.

In contrast, the coefficient on equity is negative, though it is statistically significant in only two of the nine specifications (t-statistics range from -0.99 to -2.46). The absence of a positive relation is inconsistent with a strict "value relevance" hypothesis that equity markets alone drive the demand for timely loss recognition in accounting.

A significant result is the importance of legal origin in explaining loss recognition timeliness. Controlling for the sizes of their debt and equity markets, German origin countries exhibit the lowest average levels of loss recognition timeliness, followed by French origin countries, consistent with Ball, Kothari and Robin (2000). Scandinavian and English origin countries are associated with economically and statistically significantly higher levels of timely loss recognition, with dummy intercepts ranging 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), and with t-statistics

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ranging from 2.17 to 3.54. This result is consistent with the conclusion of Artburg (1998, pp. 284-285) that Scandinavian accounting has gravitated from German to Anglo-Saxon approaches to conservatism. [26] The regressions control for debt and equity market size, so the country effects are due to other factors (e.g., political or tax influences on financial reporting practice).

In contrast, the three variables that control for legal environment contribute little to explaining loss recognition timeliness, both individually and collectively. Their individual coefficients are statistically insignificant: the t-statistics for Rule of Law, Corruption and Creditors' Rights are 0.60, -0.33 and -0.82 respectively, in columns (B) through (D).[27] The 49% adjusted R^2 of the column (A) specification omitting the three legal environment controls is exceeded in none of the column (B) through (H) specifications that include them.

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

Overall, the results in Table 2 are consistent with the hypothesis that debt markets, not equity markets, are the basic determinant of timely loss recognition. The regression model explains a surprisingly high 44-52% of the variation in countries' loss recognition timeliness measures, which is encouraging because the sample is small, and both the dependent and the independent variables are proxies that likely measure their underlying constructs with error. While loss recognition timeliness is correlated with the legal origin control variables, its

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

[27] 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 legal system origins (e.g., Ball, Kothari and Robin, 2000) performs better than more specific measures of legal environment (e.g., Leuz, Nanda and Wysocki, 2003). The result is insensitive to including various combinations of the legal environment variables in the regression.

univariate correlation with the debt and equity market variables (Table 1a) is consistent with the results from the multivariate regression model with the controls.

4.2 Gain Recognition Timeliness

[Table 3 here]

Table 3 reports results for estimated gain recognition timeliness, β_{2i}. We expect debt markets exhibit a lower association with timely gain recognition than reported above for loss recognition. We also expect gain recognition to be independent of equity market size. The results are consistent with these hypotheses. The t-statistics for the debt and equity variables range from −1.71 to 0.33 and -1.97 to 1.26, respectively, none of which is significant. In specifications excluding the BM ratio, the regression model explains only 5-25% of the variation in countries' gain recognition timeliness measures, compared with 44-49% for loss recognition timeliness in Table 2. These full-model results are consistent with the β_{2i} coefficient's univariate correlation of only 0.02 with equity market size and its negative correlation with debt market size (Table 1a). .

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

4.3 Incremental Loss Recognition Timeliness (Conditional Conservatism)

Table 4 reports results for estimated conditional conservatism, β_{3i}, the incremental timeliness of loss recognition relative to gain recognition. 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). Empirically, debt markets are associated with enhanced

conditional conservatism, and equity markets are not. [28]

[Table 4 here]

Conditional conservatism is significantly greater in countries of English and

Scandinavian legal origin, consistent with Ball, Kothari and Robin (2000). When BM is included

in the incremental loss recognition regression (column I), the model's explanatory power is

essentially unchanged. The coefficient on BM is insignificant (t-statistic of 0.40), reflecting the

almost symmetric effect of BM on the gain and loss recognition coefficients, reported earlier in

Tables 2 and 3.[29] Overall, the regression models describing incremental timeliness of loss

recognition perform well, with adjusted R^2 statistics of 40% to 56%.

4.4 Overall Gain and Loss Recognition Timeliness

Table 5 reports results for overall gain and loss recognition timeliness, measured by the

R_i^2 of the individual-country earnings-returns regression (1). In its linear form, this is commonly

espoused as a metric of financial reporting informativeness to investors (Lev 1989), and is

viewed as a measure of the "value relevance" of earnings. The results generally are consistent

with those in previous tables, though there are some differences.

[Table 5 here]

The coefficient on debt is positive in all nine regressions, though it is statistically

significant in two only. We interpret this weak positive relation as a combination of the strong

positive relation between debt and timely loss recognition (Table 2) and the absence of an

equivalent relation with timely gain recognition (Table 3). The coefficient on equity flips sign

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[28] The negative slope for equity cannot be explained by incremental loss recognition sensitivity encountering increasing marginal costs, because it does not occur by equity market size increasing timely *gain* recognition: it occurs by equity market size *decreasing timely loss* recognition. We are aware of no version of the "value relevance" hypothesis that is consistent with this result.

[29] 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 ratio for booked and unbooked losses.

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across the regressions and is not significant in any, indicating that overall reporting timeliness is not associated with the importance of a country's equity markets. This result is consistent with the weak relation reported above between equity market size and both timely loss and timely gain recognition (Tables 2 and 3), and is inconsistent with the value relevance hypothesis.[30]

The French, English and Scandinavian dummies are positive in all specifications, indicating that countries with German legal origins have the lowest overall earnings timeliness, consistent with Ball, Kothari and Robin (2000). 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 explanatory power increases from 26% to 41%.

4.5. 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 earnings and book values of stockholders equity.[31] Conditional conservatism is the stricter concept, requiring

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[30] It is consistent with the hypothesis that the primary role of accounting earnings in equity markets is not to inform them in a timely manner, but to subsequently confirm or contradict managers' non-financial forecasts and disclosures, and hence exert a discipline on them. See Ball (2001, pages 133-138).

[31] We view these as economically different *concepts*, as distinct from measures, of conservatism (cf. Roychowdhury and Watts 2007), because they have substantively different economic and political roles. We view unconditional conservatism as arising from tax, political costs and managerial self interest, and conditional conservatism as arising from efficient debt and governance contracting. Basu (1997, p. 8) draws a distinction between the concepts, though he does not use this terminology and clouds the distinction in his citation (p.7) of FASB (1980, para. 95). Ball, Kothari and Robin (2000, n. 15) make the distinction, but describe it 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

the accounting bias to be conditional on the sign of contemporaneous economic income, and hence to be a function of new information.[32] This requirement is not satisfied by accounting biases such as routinely over-expensing, routinely expensing early or routinely deferring revenue recognition, independent of economic income.

We study unconditional conservatism for several reasons. First, the distinction between conditional and unconditional asymmetry is important in any contracting context, including debt, because unconditional conservatism is not a function of new information. Ball (2004) and Ball and Shivakumar (2005) argue that gains in contracting efficiency therefore can arise only from conditional conservatism. If firms simply reported unconditionally low numbers, rational economic agents would try to "contract around" the bias. For example, borrowers and lenders alike would realize that assets are unconditionally under-stated, and would set leverage covenants appropriately. Unconditional biases thus are contracting-neutral at best.

Second, standard setters traditionally have not clearly distinguished the two concepts of conservatism, and increasingly have viewed conservatism 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." The International Accounting Standards Board (2001, ¶37) reiterated these views recently, though it replaced the unfashionable term "conservatism" with "prudence." None of these statements refers to the gain/loss asymmetry in financial reporting practice observed by Basu (1997), or the rationales for it.

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130) and *APB Statement No. 4*. The concepts clearly are related (Ball, Kothari and Robin, 2000, fn.15; Roychowdhury and Watts, 2007).

[32] 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. Unconditional conservatism also creates "hidden reserves" ("cookie jar reserves") that allow firms to *increase* earnings in loss periods. See Schneider (1995, pp. 136-137); Ball, Kothari and Robin (2000, fn. 15); and Ball (2004, pp. 126-131).

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Third, the unconditional definition of conservatism has been employed in much prior literature, including the international accounting literature (e.g., Gray, 1980). Notably, creditor protection has been offered as the main explanation for the conservative balance sheets of German companies in particular.[33] Under the *vorsicht* principle, German firms historically have engaged in unconditionally conservative practices such as charging future operating expenses against current-period income. We argue that this would not increase either the efficiency of debt contracting or creditor welfare.

[Table 6 here]

We therefore test the hypothesis that unconditional conservatism, in the form of low earnings and book values independent of economic outcomes, does not increase debt contracting efficiency and hence is not demanded by debt markets. A testable prediction is that unconditional conservatism is not associated with debt market size, controlling for conditional conservatism.

A test of this prediction is obtained by regressing the mean intercept from (1) on debt and equity market size. The mean intercept is $\beta_{0i} + \beta_{1i}LF_i$, where LF_i is the frequency of losses in country i, defined as the country mean of RD_{jt}. The Basu regression (1) controls for stock returns and the sign of stock returns, so the mean intercept captures the mean reported net income relative to stock returns, after controlling for conditional conservatism. A negative coefficient on debt is predicted if unconditional conservatism *per se* is demanded by debt markets.

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

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

on debt is positive and statistically insignificant (coefficient of 0.053, $t = 1.68$). Equity also is insignificantly associated with unconditional conservatism (coefficient -0.007, $t = -0.35$). These results suggest the origin of unconditional accounting conservatism 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 (Schneider, 1995; Ball, 2004), in taxation, or in political costs of reporting higher earnings (Gilman, 1939; Watts, 1977; Watts and Zimmerman, 1986).

This measure of unconditional conservatism is noisy because it is based on a maximum of only 12 annual earnings observations. For example, if firms in a particular country have reported low earnings in years prior to the sample period, clean surplus accounting could require them to report high earnings during the sample years, other things equal. This provides a motivation for studying the book-to-market ratio as an alternative dependent variable.

4.6 Book-to-Market Ratios

We next report results with book-to-market ratio as the dependent variable, as distinct from the prior tables where it is a control variable. Pae, Thornton and Welker (2005) and Roychowdhury and Watts (2007) document a relation between book-to-market ratios and conditional and unconditional conservatism. Book-to-market is referred to as a measure of unconditional conservatism by Beaver and Ryan (2005). To the extent that book-to-market reflects unconditional conservatism, in the form of low book values independent of economic outcomes, we expect it does not increase debt contracting efficiency and hence is not demanded by debt markets. To the extent the ratio reflects conditional conservatism (i.e., decreases in book value that are correlated with decreases in economic value, and hence contain information), we expect it is associated with the importance of debt markets.

[Table 7 here]

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

4.7. Weighted Least Squares

To address the fact that the dependent variables are estimates for countries with different sample sizes, we estimate Weighted Least Squares (WLS) regressions. Each country's observation is weighted by the inverse of the square of the standard error of its β_{3i} estimate. This is expected to increase the efficiency of the regression models by assigning lower weight to country observations that are measured with higher error. All WLS results are consistent with, and stronger than, the OLS results in Tables 1 – 6. For brevity, in Table 8 we present only the results with β_{3i} and $\beta_{2i} + \beta_{3i}$ as dependent variables. These results are even stronger than the OLS equivalents reported in Tables 2 and 4. The explanatory power of the model increases from 52% in Table 2 Column (I) and 53% in Table 4 Column (I), to 73% and 80% in Table 8. The debt variable loads positively, with increased t-statistics of 3.24 to 4.69 across models. The importance of the legal origin dummies in Tables 2 and 4 above is reaffirmed in Table 8. We conclude that our results are not due to estimation error in the Basu regression coefficients.[34]

[Table 8 here]

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

4.8. Deleting Individual Countries

The results are robust with respect to marginal changes in the sample. This alleviates the concern that the 22-country estimates are unduly influenced by individual countries. We create 22 different samples, each of 21 countries, by deleting a country at a time. We find virtually no changes in the results. The significance of the debt variable is maintained in 19/22 instances; in the other three instances (deletions of Denmark, Singapore and Thailand respectively), the debt variable is significant at the 10% level. The equity variable remains insignificant in all except one instance (deletion of Sweden), where it is significantly negative. The behavior of the control variables remains unchanged also. The dummies for English and Scandinavian countries are significantly positive in all except three and four cases respectively, and in the majority of these the significance is maintained at the 10% level. There is no evidence of "knife-edge" effects in the data, or that the results and their significance are volatile.

4.9. Two-Year Basu Slopes

In the previous tables we estimate Equation (1) from annual earnings and returns. However, expected slope coefficients depend on the intervals over which returns and earnings are measured (e.g., Kothari and Sloan, 1992; Basu, 1997; Roychowdhury and Watts, 2007). While we prefer annual intervals because they directly address the issue of timeliness of annual earnings, we re-estimate Equation (1) using two-year-windows for both returns and earnings as in Roychowdhury and Watts (2007).

The sample sizes fall dramatically because two consecutive calendar years of both earnings and returns data now are required. We therefore drop the requirement of at least 400 total observations per country over the entire period, because that would decrease the number of countries for the cross-sectional analysis from 22 to only 10. Even with this compromise, which

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allows us to use all 22 countries, the total sample falls from 78,949 one-year observations to 33,494 two-year observations.

The average country's asymmetric timeliness coefficient β_{3i} declines with the longer horizon, consistent with Basu (1997) and Roychowdhury and Watts (2007), and the standard errors of the coefficients of Equation (1) almost double on average. We therefore use a WLS model for estimating Equation (5), using the inverse of the squared standard error of β_{3i} to weight each country's observation, as in Section 4.7. The results (not reported) are qualitatively the same as the results using one-year horizon results. In particular, the results for debt do not change, insofar as debt is positive and statistically significant for β_{3i} as well as $\beta_{2i} + \beta_{3i}$.

4.10. CIFAR scores

We study the financial reporting scores developed by the Center for International Financial Analysis and Research (CIFAR, 1995) to help validate the association-study results reported above. A CIFAR score is a reporting quality index, based on the exclusion or inclusion of 85 items in individual firms' annual reports. Despite their seemingly arbitrary nature, country-level scores, aggregated across firms, have been widely used to measure financial reporting quality (e.g., La Porta et al., 1998; Bushman, Piotroski and Smith, 2004).

[Table 9 here]

Results are reported in Table 9. Panel A covers 21 of the 22 countries in previous tests (excluding Indonesia, for which a CIFAR score was not available), and Panel B reports results for a larger sample of 35 countries with available CIFAR data. English and Scandinavian origin countries have the highest CIFAR scores, other things equal, and French and German origin countries have the lowest. CIFAR scores are positively but weakly related to debt (t-statistics ranging from 0.72 to 2.08) and even more weakly to equity (t-statistics of 0.03 to 1.43). Due largely to the legal origin variables, the model explains more than 50% of the variation in scores.

The results are not materially affected by the control for BM. These results are very similar to those reported in Table 5 for the earnings-returns R^2 measure of overall gain and loss recognition timeliness, our measure which corresponds most closely to what CIFAR scores capture. This give us added confidence in the validity of the country-level association-study measures.

5. Conclusions and Discussion

In concluding their survey of the "value relevance" literature, Holthausen and Watts (2001, p.65) call for research on the following question: "Is the form and content of the balance sheet largely driven by the demands of debtholders as opposed to equity investors?" Despite the centrality of this issue to accounting, we are aware of no direct test of the roles of debt and equity in shaping financial reporting practice. We conduct a direct test that utilizes variation among countries in debt market and equity market demands on country-level financial reporting. Within-country research designs suffer from homogeneity of regulatory regime, litigation and financial reporting and auditing requirements across firms, but cross-country designs offer an opportunity to observe the separate effects of debt and equity market demands.

Our research design regresses individual-country measures of gain and loss recognition timeliness, and overall timeliness, on the sizes of the countries' debt and equity markets. The rationale is that timely financial reporting is a costly activity, and the quantity of it in observed in practice should depend on demand. If timely gain and/or loss recognition is in lower demand in a country with poorly developed capital markets, that country is less likely to expend costly resources in implementing it. Our measure of demand is market size.

Our analysis of 78,949 annual earnings observations from twenty-two countries supports the hypothesis that important properties of financial reporting originate in the reporting demands of debt markets, but not of equity markets. Gain and loss recognition timeliness, as well as

overall reporting timeliness, are not associated with equity market size. In contrast, timely loss

recognition, overall timeliness and conditional conservatism (timelier loss recognition than gain

recognition) are associated with debt market size. The loss recognition effect is economically as

well as statistically significant, in that a one standard deviation increase in a country's Debt/GNP

is associated with a 0.08 increase in the regression slope for accounting income on negative stock

returns, which is large in relation to the cross-country mean of 0.21. We conclude that these

important properties of financial reporting exist more for their role in efficient debt contracting

than to inform equity markets.

These results are inconsistent with the basic premise of the influential "value relevance"

school of accounting thought, in which financial reporting exists primarily to inform equity

markets. This viewpoint is implicit in studies that use the R^2 measure of association between

market prices and financial statement variables as a financial reporting criterion. In contrast, the

results are consistent with the "costly contracting" school of accounting thought, and in

particular with the hypothesis that the debt market exerts a substantial impact on accounting

practice. This hypothesis has origins at least as early as Gilman (1939), and more recently has

been proposed by Watts and Zimmerman (1986), Watts (1993, 2003a,b) and Holthausen and

Watts (2001). We argue 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

lies in debt markets.

This hypothesis does not attempt to distinguish between two explanations concerning the

sequencing of supply and demand. One sequence is that financial reports exhibiting timely loss

recognition are supplied by firms and their auditors, and this facilitates the creation of debt

markets. The alternative sequence is that debt markets put pressure on firms and their

accountants, either through litigation or regulation, to increase loss recognition timeliness. Either way, the ultimate source of the demand for financial reporting practice is the debt market.

We recognize that, as is the case in most cross-sectional international studies, correlated omitted variables pose a potential problem. Fortunately, many of these variables seem more likely to affect unconditional conservatism than its conditional cousin, asymmetrically timely loss recognition. For example, the use of debt could be correlated internationally 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.[35] However, the financial reporting practices leading to conditional conservatism, such as timely loss provisioning and asset impairment, generally are not allowed 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. Further, book-tax conformity would be more likely to produce unconditional conservatism, because conservative tax reporting practices such as generous depreciation allowances are largely unrelated to the sign of contemporaneous stock returns -- and hence are more likely to affect the intercepts but not the slopes in a Basu (1997) regression. In our study, 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

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

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 who can monitor managers more directly as "insiders," rather than via financial reporting. It therefore is surprising that we do not observe a *positive* correlation between timely loss recognition and our measure of equity market depth.

Shareholders have an indirect interest in timely loss recognition via its effect on the efficiency of debt contracting and hence the cost of capital. We do not view this as an omitted effect because it should increase in the amount of debt: that is, it is a component of the debt-induced demand for financial reporting timeliness. To the extent it is a function of the size of the equity market, it too predicts a positive slope on the equity variable, whereas the observed slope is negative.

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.

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.

References

Alexander, D. and H. R. Schwencke, 2003. Accounting change in Norway, European Accounting Review 12, 549 – 566.

Ali, A. and L. Hwang, 2000, Country Specific Factors Related to Financial Reporting and the Relevance of Accounting Data, Journal of Accounting Research 38, 1-21.

American Institute of Certified Public Accountants, 1970. Basic concepts and accounting principles underlying financial statements of business enterprises. Statement of the Accounting Principles Board No. 4. New York, NY: American Institute of Certified Public Accountants.

Asquith, Paul, Anne Beatty and Joseph Weber, 2005. Performance pricing in bank debt contracts, Journal of Accounting and Economics 40, 101-128.

Ball, R., 2001. Infrastructure requirements for an economically efficient system of public financial reporting and disclosure, Brookings-Wharton Papers on Financial Services, 127-169.

Ball, R., 2004. Daimler-Benz AG: Evolution of corporate governance from a code-law "stakeholder" to a common-law "shareholder value" system. In: Hopwood, A., Leuz, C. and Pfaff, D. (Eds.), The Economics and Politics of Accounting: International Perspectives. Oxford, England: Oxford University Press.

Ball, R., 2006. International Financial Reporting Standards (IFRS): Pros and Cons for Investors, Accounting and Business Research (International Accounting Policy Forum), 5-27.

Ball, R., Brown, P., 1968. An empirical evaluation of accounting income numbers, Journal of Accounting Research 6, 159-178.

Ball, R., Brown, P., 1969. Portfolio Theory and Accounting, Journal of Accounting Research 7, 300-23

Ball, R., Kothari, S.P., Robin, A., 2000. The effect of international institutional factors on properties of accounting earnings, Journal of Accounting & Economics 29, 1-51.

Ball, R., Kothari, S.P., 2007, Econometrics of the Basu asymmetric timeliness coefficient and accounting conservatism, unpublished manuscript, MIT and University of Chicago, September.

Ball, R., Robin, A., Wu, J.S., 2000. Accounting Standards, the Institutional Environment and Issuer Incentives: Effect on Accounting Conservatism in China, Asia Pacific Journal of Accounting and Economics 7, pp. 71-96.

Ball, R., Robin, A., Wu, J.S., 2003. Incentives versus standards: Properties of accounting income in four East Asian countries and implications for acceptance of IAS, Journal of Accounting & Economics 36, 235-270.

Ball, R., Shivakumar L., 2005. Earnings quality in U.K. private firms, Journal of Accounting and Economics 39, 83-128.

Ball, R., Shivakumar L., 2006. The role of accruals in asymmetrically timely gain and loss recognition, Journal of Accounting Research 42, 207-242.

Barth, M. E., Beaver W.H., Landsman, W.R., 2001. The relevance of the value relevance literature for financial accounting standard setting: Another view, Journal of Accounting and Economics 31, 77-104.

Basu, S., 1997. The conservatism principle and asymmetric timeliness of earnings, Journal of Accounting & Economics 24, 3-37.

Beaver, W. H., Ryan S., 2005. Conditional and unconditional conservatism: Concepts and modeling, Review of Accounting Studies 10, 269-309.

Bushman, R., Piotroski, J., 2006. Financial reporting incentives for conservative accounting: The influence of legal and political institutions. Journal of Accounting & Economics 42, 107-148.

Bushman, Robert M., Joseph Piotroski and Abbie J. Smith, 2004 What Determines Corporate Transparency, Journal of Accounting Research 42, 207-252.

Canning, J. B., 1929. The economics of accountancy. New York: Ronald Press.

Chambers, R. J., 1966. Accounting, evaluation, and economic behavior. Englewood Cliffs, N. J.: Prentice-Hall.

Center for International Financial Analysis and Research (CIFAR), 1995. International Accounting and Auditing Trends. Princeton, N.J.: CIFAR.

Collins, Daniel W., S.P. Kothari, 1989, An analysis of intertemporal and cross-sectional determinants of earnings response coefficients, Journal of Accounting and Economics, 11, 143-181.

Dhaliwal, D., R. Subramanyam and R. Trezevant, 1999. Is comprehensive income superior to net income as a measure of firm performance? Journal of Accounting and Economics 26, 43–67.

Easton, Peter E., and Mark E. Zmijewski, 1989, Cross-sectional variation in the stock market response to accounting earnings announcements, Journal of Accounting and Economics 11, 117-141.

European Federation of Accountants (FEE), 1997, FEE Comparative Study on Conceptual Accounting Frameworks in Europe. Brussels: FEE.

Financial Accounting Standards Board, 1978. Concepts Statement No. 1: Objectives of Financial Reporting by Business Enterprises. Norwalk, Connecticut: Financial Accounting Standards Board.

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Financial Accounting Standards Board, 1980. Concepts Statement No. 2: Qualitative Characteristics of Accounting Information. Norwalk, Connecticut: Financial Accounting Standards Board.

Financial Accounting Standards Board, 1984. Concepts Statement No. 5: Recognition and measurement in financial statements of business enterprises. Norwalk, Connecticut: Financial Accounting Standards Board.

Gigler, F. and T. Hemmer, 1998, On the frequency, quality, and informational role of mandatory financial reports, Journal of Accounting Research 36, 117-147.

Gilman, S., 1939. Accounting Concepts of Profit. New York, N.Y.: The Ronald Press Company.

Givoly, D. and C. Hayn, 2000, The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? Journal of Accounting & Economics 29, 287-320.

Givoly, D., Hayn, C. and Natarajan, A., 2007, Measuring reporting conservatism, The Accounting Review 82, 65-106.

Gray, S., 1980, International accounting differences from a security analysis perspective, Journal of Accounting Research 18, 64-76.

Haller, A., 1998. Accounting in Germany. Chapter 4 in P. Walton, A. Haller and B. Raffournier, eds., International Accounting (International Thomson Business Press, London).

Holthausen, R.W., Watts, R.L., 2001. The relevance of the value-relevance literature for financial accounting standard setting, Journal of Accounting & Economics 31, 3-75.

International Accounting Standards Board (IASB), 2001, Framework for the Preparation and Presentation of Financial Statements. London: IASB.

Jensen, M. C., and Meckling, W. H., 1976. Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, Journal of Financial Economics 3, 305-60.

Kothari, S.P. and Sloan, R.G., 1992. Information in Prices About Future Earnings: Implications for Earnings Response Coefficients, Journal of Accounting & Economics 15, 143-171.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny R., 1997. Legal determinants of external finance, Journal of Finance 52, 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny R., 1998. Law and finance, Journal of Political Economy 106, 1113-1155.

Leuz, C., Nanda, D., Wysocki, P.D., 2003. Earnings management and investor protection: An international comparison, Journal of Financial Economics 69, 505-527.

Lev, B., 1989. On the usefulness of earnings and earnings research: Lessons and directions from two decades of empirical research, Journal of Accounting Research 27 (supplement): 153-92.

Leftwich, R., 1983. Accounting information in private markets: Evidence from private lending agreements. The Accounting Review 58, 23–42.

Nobes, C., 1998, Major international differences in financial reporting. Chapter 3 in C. Nobes and R. Parker, eds., Comparative International Accounting, 5th edn. (Englewood Cliffs, NJ: Prentice-Hall).

Pae, J., Thornton, D.B., and Welker M., 2005, The link between earnings conservatism and the price-to-book ratio, Contemporary Accounting Research, 22, 693-717.

Rajan, R.G., Zingales, L., 2003. The great reversals: The politics of financial development in the 20th Century, Journal of Financial Economics 69, 5-50.

Roychowdhury, S. and R. L. Watts, 2007, Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting, Journal of Accounting & Economics 44, 2-31.

Shleifer, A., Vishny, R., 1997. A survey of corporate governance, Journal of Finance 52, 737-783.

Schneider, D., 1995, The History of Financial Reporting in Germany, in Walton, P. (ed.) European Financial Reporting: A History (Academic Press: London).

Smith, C. and J. Warner, 1979. On financial contracting: An analysis of bond covenants. Journal of Financial Economics 7, 117–161.

Vuolteenaho, Tuomo, 2000, Understanding the Aggregate Book-to-Market Ratio and Its Implications to Current Equity-Premium Expectations, Working Paper, Harvard University.

Vuolteenaho, Tuomo, 2002, What drives firm-level stock returns? Journal of Finance, 57, 233-264.

Watts, R. L., 1977. Corporate Financial Statements: A Product of the Market and Political Processes. Australian Journal of Management 2, 52-75.

Watts, R.L., 1993. A proposal for research on conservatism, unpublished, University of Rochester.

Watts, R.L., 2003a. "Conservatism in accounting part I: Explanations and implications, Accounting Horizons 17, 207-221.

Watts, R.L., 2003b. "Conservatism in accounting part II: Evidence and research opportunities, Accounting Horizons 17,

Watts, R.L., Zimmerman, J.L., 1986. Positive Accounting Theory. Englewood Cliffs, N.J.: Prentice-Hall.

Table 1: Sample Data

This table reports the data used in the regressions in Tables 2-8. 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/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	No. of Observations	Debt/ GNP	Equity/ GNP	Rule of Law	Corruption	Creditor Rights	Book-to-Market
Australia	English	0.06	0.02	0.01	0.28	0.16	2241	0.76	0.49	10.00	8.52	1	0.642
Canada	English	0.07	0.02	-0.01	0.26	0.12	4201	0.72	0.39	10.00	10.00	1	0.645
Malaysia	English	0.02	0.01	-0.01	0.18	0.03	2766	0.84	1.48	6.78	7.38	4	0.727
Singapore	English	0.03	-0.03	0.03	0.01	0.06	1611	0.60	1.18	8.57	8.22	3	0.879
South Africa	English	0.08	0.03	0.14	-0.02	0.10	583	0.93	1.45	4.42	8.92	4	0.525
Thailand	English	0.04	0.00	0.04	0.38	0.03	1344	0.93	0.56	6.25	5.18	3	1.097
UK	English	0.07	0.01	0.01	0.22	0.11	8554	1.13	1.00	8.57	9.10	4	0.492
USA	English	0.05	0.02	-0.02	0.28	0.10	27558	0.81	0.58	10.00	8.63	1	0.474
Brazil	French	0.09	-0.07	0.01	0.04	0.02	614	0.39	0.18	6.32	6.32	1	0.004
Chile	French	0.10	-0.03	0.05	0.15	0.17	379	0.63	0.80	7.02	5.30	2	1.100
France	French	0.07	0.01	0.03	0.26	0.19	2106	0.96	0.23	8.98	9.05	0	0.644
Indonesia	French	0.03	-0.03	0.01	-0.02	0.01	623	0.42	0.15	3.98	2.15	4	0.001
Italy	French	0.05	-0.02	0.02	0.14	0.07	519	0.55	0.08	8.33	6.13	2	0.375
Netherlands	French	0.09	0.00	0.00	0.20	0.15	910	1.08	0.52	10.00	10.00	2	0.575
Spain	French	0.07	0.00	0.06	0.14	0.12	628	0.75	0.17	7.80	7.38	2	0.611
Germany	German	0.07	0.02	0.05	0.24	0.12	1706	1.12	0.13	9.23	8.93	3	0.555
Japan	German	0.02	-0.01	0.04	0.13	0.07	19389	1.22	0.62	8.98	8.52	2	1.033
South Korea	German	0.12	-0.08	0.06	-0.02	0.04	426	0.74	0.44	5.35	5.30	3	0.366
Denmark	Scand.	0.07	0.05	0.16	0.10	0.17	664	0.34	0.21	10.00	10.00	3	0.853
Finland	Scand.	0.12	0.02	0.09	0.21	0.20	453	0.75	0.25	10.00	10.00	1	0.840
Norway	Scand.	0.06	-0.01	0.02	0.21	0.10	617	0.64	0.22	10.00	10.00	2	0.719
Sweden	Scand.	0.09	0.00	0.05	0.37	0.16	1057	0.55	0.51	10.00	10.00	2	0.706
Mean		0.07	0.00	0.04	0.17	0.10	3589	0.77	0.53	8.21	7.96	2.3	0.630
Median		0.07	0.00	0.03	0.19	0.11	984	0.75	0.47	8.78	8.58	2.0	0.643
Standard Deviation		0.03	0.03	0.05	0.12	0.06	6805	0.25	0.42	1.95	2.10	1.2	0.290

Table 1a: Extract from Correlation Matrix

This table reports Pearson correlations among key variables in the regressions in Tables 2-8. 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. Debt/GNP, Equity/GNP, Rule of Law, Corruption and Creditors' Rights are extracted from La Porta et al. (1997, 1998). For the definitions of these variables and their sources see the Appendix.

	Debt/ GNP	Equity/ GNP	Rule of Law	Corruption	Creditor Rights	Book-to-Market
β_{2i}	-0.15	0.02	-0.14	0.17	0.25	0.27
β_{3i}	0.32	-0.16	0.61	0.41	-0.41	0.41
$\beta_{2i} + \beta_{3i}$	0.27	-0.16	0.59	0.50	-0.33	0.54

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

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

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

Table 3
Timely Gain Recognition (β_2)

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

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

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Table 4
Incremental Loss Recognition Slope (β_3)

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

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

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

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

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

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

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

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

Table 7
Book-to-Market

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

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

Table 8

Weighted Least Squares: Timely Loss Recognition (β_2+ β_3) and Incremental Loss Recognition Slope (β_3)

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

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

Table 9
CIFAR Financial Reporting Scores

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

Panel A

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

Panel B

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