Credit Risk and IFRS: The Case of Credit Default Swaps

Gauri Bhat*, Jeffrey L. Callen**, Dan Segal***

January 2011

*Olin Business School, Washington University in St. Louis, One Brookings Drive, MO 63105, USA; bhat@wustl.edu

**Rotman School of Management, University of Toronto, 105 St. George St., Toronto Ontario, Canada M5S 3E6; callen@rotman.utoronto.ca

*** Arison School of Business, Interdisciplinary Center Herzliya, Israel 46510; dsegal@idc.ac.il

Acknowledgements

Bhat gratefully acknowledges the Center for Research in Economics and Strategy (CRES) at the Olin Business School for financial support. Callen gratefully acknowledges the Humanities and Social Sciences Research Council of Canada for financial support. We thank the workshop participants at the University of Waterloo, University of Missouri at Columbia, and participants at the 21st Annual Conference on Financial Economics and Accounting for helpful comments.

Credit Risk and IFRS: The Case of Credit Default Swaps

Abstract

Theory predicts that the accounting information transparency affects credit spreads. Given that one of the putative benefits of International Financial Reporting Standards (IFRS) is transparency of accounting information; this study evaluates the impact of IFRS on the pricing of credit spreads in the over-the-counter Credit Default Swap market. Where it is relevant, we match on U.S. firms as a validity check. Our overall results indicate that while earnings are a significant determinant of credit risk, adoption of IFRS did not change the CDS-earnings relation. Given that potential IFRS-induced transparency would not have affected all firms in all countries at the same manner, we further examine two dimensions of IFRS-induced transparency. At the country level, we examine the impact of the institutional factors that have been shown to affect the quality of accounting information on the CDS-earnings relation, viz. the system of laws (code vs. common law), the quality of securities law enforcement, the pervasiveness of earnings management, the extent of differences between local GAAP and IFRS and conditional conservatism, on the CDS-earnings relation. We find that the adoption of IFRS did not change the CDS-earnings relation after controlling for these factors. Using firm-level measures of earnings transparency, we find that more transparent earnings are associated significantly with lower CDS spreads, but the relation between the spread and profitability is not affected by changes in transparency following the adoption of IFRS. Overall, we document that the adoption of IFRS did not change the credit risk informativeness of earnings.

Key words: Credit Default Swaps, Credit Risk, IFRS

JEL Classification: M40, M41, G13, G20

Data Availability: All data are publicly available.

1. Introduction

This study evaluates the impact of International Financial Reporting Standards (IFRS) on the pricing of credit risk in the over-the-counter Credit Default Swap (CDS) market. The CDS is essentially a "pure" credit default instrument that provides a far less noisy measure of credit risk by comparison to corporate bonds or credit ratings. Callen, Livnat, and Segal (2009) show that U.S. GAAP earnings are an important determinant of CDS spreads. In their levels analysis, they find that a one percent increase in earnings (normalized by total assets) reduces CDS spreads by a non-trivial nine percent. The intent of this study is to compare the credit risk information conveyed by IFRS earnings relative to local GAAP earnings for countries where IFRS are mandatory.

In their seminal study, Duffie and Lando (2001) show theoretically that CDS spreads are negatively correlated with the transparency of accounting information because transparency reduces the noise about the reference firm's asset structure and wealth dynamics. The adoption of IFRS provides a unique research opportunity to examine the impact of accounting information transparency on the relation between credit risk and financial statement information, particularly earnings. However, any increase in accounting information transparency as a result of IFRS adoption is potentially contingent on country level institutional factors that complement accounting standards and shape financial reporting incentives. The extant prior literature documents that institutional factors are associated with the quality of accounting information (e.g. Ahmed, Neel, and Wang 2010, Chen, Tang, Jiang and Lin 2010, Alford, Jones, Leftwich and Zmijewski 1993, Ali and Hwang 2000, Bartov and Goldberg 2001, Bushman and Piotroski 2006, Ball, Kothari and Robin 2000). Thus, we examine the variation in institutional factors on CDS spreads including the system of laws (code vs. common law – a proxy for quality of financial statement information), the quality of securities law enforcement, the pervasiveness of earnings management, the extent of differences between local GAAP and IFRS and the level of conservatism. More fundamentally, the change from local GAAP to IFRS should induce higher transparency at firm level. Therefore, we also investigate the effect of IFRS-induced

transparency at the firm level on the informativeness of earnings with respect to credit risk using two transparency metrics based on analyst forecasts.

Our study is guided by the theoretical CDS pricing models of Merton (1974) and Duffie and Lando (2001). The latter model provides justification for the relevance of noisy accounting information as a determinant of CDS prices. Although accounting plays no role in the former, the Merton model motivates the need to control for other determinants of CDS spreads. We focus our analysis on accounting earnings and book values of equity as proxies for the firm's uncertain wealth and noisy asset dynamics. To the extent that these are meaningful proxies, the hybrid CDS pricing model of Duffie and Lando (2001) predicts an inverse relation between CDS spreads and earnings and CDS spreads and book values. We measure the informativeness of earnings (book values) with respect to credit risk by the earnings (book value) coefficient in a regression of CDS spreads on normalized earnings (book values) controlling for other potential determinants of the spread. The more negative the coefficient, the more informative the credit risk information conveyed by earnings (book values). We use these coefficients to test the relation between financial statement variables and CDS spreads, rather than simple correlations, in order to allow for a richer, more powerful analysis.[1]

We perform three distinct tests of the credit risk informativeness of earnings and book values under IFRS. First, we examine the associations of earnings and book values of equity with CDS spreads under both local GAAP (i.e. pre-IFRS) and IFRS, and test whether the adoption of IFRS changed the association between these variables. Second, we examine whether the associations of earnings and book values with CDS spreads subsequent to the adoption of IFRS depend on country level institutional factors including the system of laws (code vs. common law – a proxy for quality of financial statement information), extent of regulation enforcement, degree of earnings management, extent of differences between local GAAP and IFRS and differential timeliness at the country level (proxies for IFRS induced transparency at the country

[1]Simple correlations potentially obfuscate the transition to IFRS if only because the volatility of many variables increased in the post-IFRS period consistent with the focus of IFRS on fair value accounting (Barth, Cram, and Nelson 2007).

level).[2,3] Finally, we examine the relation among CDS spreads, accounting information and transparency including an analysis of the relation between CDS spreads and accounting information for firms that experienced substantive change in transparency following the adoption of IFRS.

We find that earnings are a significant determinant of credit risk on average, both pre- and post-IFRS adoption, indicating that the transition to IFRS did not increase the informativeness of earnings with respect to credit risk on average. These results are robust to the inclusion of country level institutional factors. The latter robustness result is not consistent with the evidence regarding the impact of IFRS on firm values (Daske, Hail, Leuz, and Verdi 2007) and costs of capital (Li 2009) showing that increases (decreases) in firm value (cost of capital) following the adoption of IFRS depend on the enforcement of securities law. There are two plausible explanations. First, it is possible that factors which affect the 'value relevance' of earnings to equity holders are different from factors which affect 'credit informativeness' of earnings. Second, we control for change in industry composition of the firms pre vs. post IFRS, in contrast to these other studies. Absent industry controls, we also find that country level institutional factors matter.

Consistent with the conjecture of the proponents of IFRS, analysis at the firm-level reveals that transparency has increased in the post IFRS period; both analyst earnings forecast errors and forecast dispersions, our proxies for transparency, are lower as compared with the pre IFRS period. Confirming Duffie and Lando (2001), we find that there is a negative and significant association between the CDS spread and the level of earnings transparency for both of our transparency metrics. However, our transparency analysis indicates that changes in transparency did not affect the relation between CDS and earnings.

---

[2] Code-law accounting affords managers more latitude in timing income recognition thereby obfuscating the economic performance of the firm. For example, firms create earnings reserves in good years using excessive impairment charges and provisions, and use these reserves in bad years. The low quality of accounting information is attributed primarily to governance practices in code-law countries which are based on the stakeholder model, whereby the different stakeholders such as employees, government, lenders and shareholders are able to affect accounting choices. In particular, one of the main accounting incentives of the various stakeholders is to reduce the volatility of net income, thereby creating a strong incentive to smooth earnings (Ball et al. 2000).

[3] While differential timeliness (DT) is also related to country characteristics such as code vs. common law (Ball et al. 2000, Bushman and Piotroski 2006) and strength of securities law enforcement (Bushman and Piotroski 2006), we treat DT as an independent feature of the accounting system.

We contribute primarily to the two streams of literature. First, we contribute to the research on credit default swap spreads by documenting empirically that transparency is an important determinant of credit risk. Second, the results of this study add to the extant literature relating to IFRS, showing that in contrast to the equity market, IFRS had no impact on the credit informativeness of earnings.

In what follows, Section 2 provides the literature review and develops the hypotheses based primarily on the Merton (1974) and Duffie-Lando (2001) models of CDS pricing. Section 3 describes the data. Section 4 presents the empirical results. Section 5 concludes.

2. Literature Review and Hypotheses Development[4]

The extant research on IFRS adoption is concerned almost exclusively with equity markets (see for example Daske et. al. 2007 and Li 2009). But, as the financial crisis of 2008 has shown, debt markets are no less crucial than equity markets for the functioning of the financial system in general and in the financing of public corporations in particular. The issue that we address is whether IFRS conveys better information about the firm's credit risk, proxied by the level of CDS spreads, than local GAAP. In theory, the credit risk information conveyed by IFRS earnings could be evaluated through debt markets, such as the corporate bond market, rather than through the CDS market. In the absence of arbitrage opportunities, contractual features (such as embedded options, covenants, and guarantees), and market frictions, the CDS spread and the corporate bond yield spread—the difference between the bond yield and the risk-free rate—are necessarily identical for floating rate corporate debt (Duffie 1999). Nevertheless, it is precisely because of these latter factors—contractual features, market frictions and fixed-rate debt—that CDS offer many advantages over corporate bonds (and other debt instruments) for analyzing the determinants of credit risk. First, the finance literature has shown that corporate bond spreads include factors unrelated to credit risk, such as systematic risk unrelated to default (Elton, Gruber, Agrawal and Mann 2001) and especially illiquidity (Longstaff, Mithal and Neis 2005). Huang and Huang (2002) conclude that less than 25 percent of the credit spread in corporate

[4] We do not summarize in this study the burgeoning literature on IFRS and equity markets.

bonds is attributable to credit risk. Second, interest risk drives fixed-rate corporate bond yields for fixed rate debt quite independently of credit risk. Third, in contrast to CDS instruments, corporate bonds are replete with embedded options, guarantees, and covenants. Heterogeneity in these features potentially distorts the relationship between accounting numbers and credit risk in cross-sectional studies. Even more problematic is that they may generate a spurious relation between earnings and credit risk. For example, the positive relation between earnings and corporate bond prices could be driven by earnings-based covenants rather than by credit risk per se. With lower earnings, earnings-based covenants are more likely to be binding, increasing the probability of technical bankruptcy and concomitant expected transactions (renegotiation) costs, thereby, leading to reduced bond prices. In contrast, except in rare cases, technical default is not a credit event in CDS contracts and thus has little impact on CDS spreads. Fourth, the available empirical evidence indicates that credit risk price discovery takes place first in the CDS market and only later in the bond and equity markets (Blanco, Brennan and Marsh 2005; Zhu 2006; Daniels and Jensen 2005; Berndt and Ostrovnaya 2008). The bond market's lagged reaction potentially distorts empirical studies relating earnings to bond prices. Fifth, unlike corporate bond yield spreads, no benchmark risk-free rate need be specified for CDS spreads minimizing potential misspecification of the appropriate risk-free rate proxy (Houweling and Vorst 2005). Sixth, CDS rates are closely related to the par value of the reference bond, whereas corporate bond values (including their taxability characteristics) are affected by coupons. Heterogeneity in coupon rates potentially distorts the relationship between earnings and credit risk in cross-sectional studies. Finally, bond yield spreads are affected by tax differentials in bond pricing. Elton et al. (2001) document a tax premium of 29 to 73 percent of the corporate bond spread, depending on the rating.[5]

[5] One may still be tempted to argue that since CDS instruments are derivatives whose price depend on the value of the underlying debt, the role of accounting information in determining the CDS spread is unclear because the prices and volatilities of the underlying financial instruments are observable. However, as shown by Duffie and Lando (2001), even noisy accounting information is relevant for the pricing of CDS because the accounting provides information about the firm's wealth and asset dynamics and, hence, about the probability of the occurrence of a credit event such as bankruptcy. Also, unlike equities, even the largest corporate bonds do not trade very often and bond prices are often not observable. Published bond prices are often stale or simply interpolated. Thus, bond yield volatilities are often impossible to estimate.

Of the information provided by financial statements that relates to credit risk, we focus our analysis on earnings—and to a lesser extent on book equity--for two reasons.[6] First, earnings are (arguably) the most important information variable used by investors to evaluate firm performance and, hence, firm wealth, a major determinant of credit risk. Second, earnings can be used by investors to estimate the reference entity's true asset (wealth) dynamics, another important determinant of credit risk. More specifically, increased profitability of the firm, as measured by current accounting earnings, should reduce its credit risk since, with increased profitability, the reference entity is wealthier and less likely to default. Moreover, accounting studies have shown that current earnings are a good predictor of future earnings (Finger 1994; Nissim and Penman 2001), future cash flows (Dechow, Kothari and Watts 1998; Barth, Cram, and Nelson 2001) and firm equity performance (Dechow 1994). In other words, an increase (decrease) in earnings portends an increase (decrease) in current and future operating and equity performance and, hence, a reduced (increased) probability of bankruptcy. Also, earnings comprise a significant portion of the short-term change in firm assets (via clean surplus) and, therefore, provide information to investors about the firm's asset and wealth dynamics, crucial variables in the estimation of credit risk (Duffie and Lando 2001). Consistent with these arguments, Callen et al. (2009), Batta (2006) and Das, Hanouna, and Sarin (2009) show that earnings are an important determinant of CDS spreads, indicating that earnings provide relevant information in assessing firm wealth and asset dynamics. Given the link between earnings and CDS spreads, the impact of IFRS on credit risk can be gauged by examining the association between CDS spreads and earnings pre and post IFRS adoption. Specifically, we follow Callen al. (2009) in assuming that the credit risk information conveyed by earnings is captured by the earnings coefficient from a regression of CDS spreads on earnings (and other explanatory variables). We therefore analyze the impact of IFRS earnings on CDS spreads focusing on institutional factors, differential timeliness, and transparency, and examine how these factors affect the coefficient on earnings in CDS spread regressions.

[6] Banks and other financial intermediaries are excluded from our sample.

2.1 Earnings, Book Values and CDS Spreads

Duffie and Lando (2001) show that the wealthier the reference firm, the smaller is the CDS spread, ceteris paribus. The intuition is straightforward. The wealthier the firm, the less likely it is to have a credit event and, hence, the smaller the spread. Furthermore, to the extent that accounting earnings and book values proxy for the firm's wealth (and asset dynamics), their theory implies an inverse relation between CDS spreads and earnings and CDS spreads and book values. Although Callen et al. (2009), Batta (2006) and Das, Hanouna and Sarin (2009) show that earnings are relevant for assessing credit risk, the findings in these studies are based primarily (but not exclusively) on U.S reference entities employing U.S GAAP. Given the relatively high quality accounting standards together with effective regulation and securities laws enforcement in the U.S., one cannot generalize these findings to an international setting where countries differed in their accounting standards prior to IFRS adoption, and differ in securities law enforcement, quality of financial information, and extent of earnings management. These considerations lead to our first hypothesis:

H1a: CDS spreads are negatively correlated with earnings and book values both pre- and post-IFRS adoption.

Proponents of IFRS argue that a single set of high quality accounting standards enhances the transparency and comparability of financial statements. These factors are potentially important for evaluating the firm's credit risk. For example, more transparent statements are likely to provide better information about the firm's ability to pay back its debts. More transparent statements are also likely to provide debt markets with better estimates of the potential for the firm to recover from a credit event such as bankruptcy and better estimates of the amounts that debt holders might recover conditioned on the firm going bankrupt. Enhanced comparability should allow for easier and/or better assessment of credit risk especially when the reference entity and the firm ensuring itself against the credit risk of the reference entity via CDS instruments reside in different local GAAP jurisdictions.

The [limited] evidence in the literature would appear to support these conjectures. Specifically, Beneish, Miller and Yohn (2009) find that IFRS adopting countries attract more debt investment, and have lower extent of debt home bias. They also find that their result is

contextual and is driven by adopting countries that have weaker investor protection and higher financial risk. They argue that their findings indicate that IFRS adoption reduces the agency costs of debt in countries with less developed investor protection and greater financial risk, consistent with IFRS providing more transparent information. Florou and Kossi (2009) examine whether the mandated introduction of IFRS affects the source and cost of corporate debt. They find that mandatory IFRS adopters are more likely to issue public bonds than to borrow privately. They also find that mandatory IFRS adopters pay lower bond yield spreads but not in the case of private loans. They argue that their findings are consistent with IFRS enhancing the quality and comparability of accounting information. Their findings also suggest that mandatory IFRS adoption is especially beneficial for public bond investors, who rely much more on financial statements and have much less monitoring and renegotiating privileges compared to private lenders. Finally, they show that the positive consequences of IFRS for debt financing are present only in countries with stricter enforcement rules, higher control of corruption and lower financial risk. Christensen, Lee and Walker (2009) show that mandatory IFRS affects debt contracting. Their results suggest that as a result of change to IFRS, the likelihood of debt covenant violations increases, requiring costly renegotiations between lenders and debtors. These arguments lead to the following hypothesis:

H1b: CDS spreads are more negatively correlated with earnings post-IFRS adoption than pre-IFRS adoption.

2.2 Institutional differences, Conditional Conservatism and CDS Spreads

Skeptics of the IFRS endeavour often question whether IFRS can credibly provide more transparent information and raise concerns regarding whether the "one size fits all" approach does not simply distort economic, political and regulatory differences among firms in different jurisdictions. Furthermore, the implementation of IFRS crucially depends on the effectiveness of regulation which is likely to depend on the underlying economic and political institutions influencing the incentives of the managers and auditors responsible for financial statement preparation (e.g., Ball, Robin and Wu 2003).

Empirical evidence highlights the role of institutions, despite uniform IFRS across countries. Daske, Hail, Leuz and Verdi (2007) and Li (2009) show that IFRS has an impact on

cost of equity and valuation only in countries with strong enforcement of securities laws. In a recent working paper, Kosi, Pope and Florou (2010) find a significant increase in the credit relevance of financial statement information to firm ratings for mandatory IFRS adopters. The increase is greater than for a matched sample of US firms, and is more pronounced in countries with strong enforcement regimes and higher discrepancies between local standards and IFRS. Thus, using IFRS may not improve the accounting quality of credit risk relevant information uniformly for each firm and country because of additional factors such as legal and political systems and incentives of financial reporting.

Earnings opacity, the reverse of earnings transparency is a result of complex interaction between managerial motivation, accounting standards, and the enforcement of accounting standards. On one hand managers may intentionally manipulate earnings leading to less transparent earnings, while on the other hand less transparent earnings may be a result of lax enforcement or poor accounting standards. While earnings transparency at country level is inherently difficult to measure, as management's motives are not observable, we try to get at accounting information transparency at country level by using factors that affect the quality of the accounting information. We use five such factors in our analysis, two which speak to enforcement - origin of the legal system and level of enforcement, two which measure the distributional properties of earnings - level of earnings management and conditional conservatism, and one which tries to quantify differences between local GAAP and IFRS

While the role of accounting is to provide accounting information in common law countries, accounting standards in code law countries are primarily influenced by governmental priorities. Political influences in accounting standard setting in code law countries make accounting a measure to divide profits among various stakeholders such as governments, shareholders, banks, and labor unions (Ball et al., 2000). Thus, earnings in code law countries reflect economic profits in a less timely manner than dividends. Arguably, earnings in code law countries are less informative about the credit risk than the earnings in common law countries pre IFRS as well as post IFRS adoption.

Enforcement of legal system also affects accounting quality directly, through enforcement of accounting standards and litigation against managers and auditors. This

enforcement role of legal systems is especially important in context of IFRS for two reasons. First, IASB issues IFRS, but does not have the power to enforce. It is the local legal systems of each country where firms are listed that are responsible for the enforcement (Schipper, 2005). Second, IFRS are principles-based, which means that auditors and accountants need to use judgment and discretion rather than detailed standards in order to adapt these principles to specific situations (Ball, 2006). Thus, earnings in countries with high legal enforcement may be more reflective of credit risk than earnings in countries with low legal enforcement pre IFRS and post IFRS adoption.

Earnings management is a measure of earnings opacity, the opposite of earnings transparency. While it is difficult to measure earnings transparency directly at country level, we focus on distributional properties of reported accounting numbers across countries and across time that is captured by the Leuz et al. 2003 measure of earnings management at the country level. We focus on this measure because the past literature has identified the existence of earnings management as weakening the link between accounting performance and the true economic performance of a firm. Thus, one would expect earnings in countries with high earnings management to be less informative about credit risk than earnings in countries with low earnings management.

We use the difference between local GAAP and IFRS at the country level to identify countries which stand to benefit the most from the transition to IFRS. If the difference between the local GAAP and IFRS is large, the IFRS induced transparency would be high for that country, the underlying assumption being that IFRS is more transparent.

Conditional conservatism should be of particular importance to CDS investors (and bondholders) who are far more concerned with earnings decreases than earnings increases (Callen et al. 2009). As emphasized by Watts (2003), conditional conservative accounting is demanded by debt holders because it reduces management's ability to artificially increase earnings and asset values. Specifically, when future negative cash flow shocks are anticipated, conservative accounting requires the firm to recognize future losses immediately in income, resulting in a concomitant reduction in asset values. Shareholder-oriented managers will accede to bondholder demands for conservative accounting in order to reduce debt financing costs. More

importantly, in the context of our study, the degree of conditional conservatism has a direct impact on the informativeness of earnings in assessing credit risk. The more conservative the firm, the more likely is the firm's accounting to act as a trip wire regarding anticipated future negative cash flow shocks that may reduce the firm's ability to pay back its debt. Thus, one should expect ex ante that the more conservative the firm, the more informative its earnings about firm credit risk and, hence, the more negative the relation between earnings and CDS spreads. One of the major characteristics of IFRS, however, is their anti-conservative nature. The International Accounting Standards Board has explicitly rejected the notion of conservatism in accounting and indicated a preference for neutral accounting (Watts 2003). This is evident in several IFRS standards that reduce conservatism by design. For instance, IFRS disallow the completed contract method, allow for fair value accounting for investment properties, allow for impairment reversals, and for the revaluation of PP&E and biological assets. Empirical evidence that IFRS reduces conditional conservatism is provided by Ahmed, Neel and Wang (2010) who show that firms exhibited more conservative accruals and more timely loss recognition in the pre-adoption period. Thus, if IFRS yield financial statements that are less conservative by comparison to local GAAP, we should expect a weaker inverse relation between credit spreads and IFRS earnings relative to local GAAP earnings. This leads to our next set of hypotheses:

H2a: The relations between CDS spreads and each of earnings and book values, both pre- and post-IFRS adoption, depend on country-wide institutional differences such as code versus common law, regulation enforcement, earnings management, local GAAP-IFRS differences and conditional conservatism.

H2b: The change in association between CDS spreads and post-IFRS earnings relative to the association of CDS spreads with pre-IFRS earnings depends on country-wide institutional differences such as code versus common law, regulation enforcement, earnings management, local GAAP-IFRS differences and conditional conservatism.

Although the IFRS literature tends to find that country-wide factors matter, two caveats are in order regarding the effect of institutional factors on the credit risk informativeness of earnings. First, the extant empirical literature which looks at the relation between institutional

factors and earnings quality focuses on the equity markets as the end-users. Hence it is possible, that these findings do not extend to credit risk informativeness of earnings as measured by CDS spreads. Second, the analyses using country-wide factors are based inevitably on levels regressions which suffer from potential correlated omitted variables. Indeed, our results suggest that country-wide factors may be proxying for more basic explanatory variables such as industry.

2.3 Transparency

One of the presumed benefits of IFRS is increased financial statement transparency-- see for example EC Regulation No. 1606/2002. With the exception of Duffie and Lando (2001), extant CDS models neither relate to accounting information nor to the transparency of accounting information. Duffie and Lando (2001) show theoretically that the more transparent (less noisy) the accounting information about the reference firm's asset structure and wealth dynamics, the smaller is the CDS spread. This yields the following hypothesis:

H4a: CDS spreads are inversely related to financial statement earnings transparency.

Although the Duffie-Lando model implies that transparency and wealth operate in the same direction in reducing CDS spreads, their model does not provide clear cut hypotheses regarding the impact on CDS spreads of simultaneous changes in wealth and in transparency.[7] Assuming once more that the impact of accounting characteristics such as transparency are captured in the association between CDS spread and earnings leads to the following hypothesis stated in the alternative.

H4b: IFRS earnings are more (less) negatively correlated with CDS spreads for firms whose transparency increased (decreased) after IFRS adoption.

In addition to the impact of accounting numbers on CDS spreads, CDS spreads are also affected by a number of other firm-level factors. Following the extensive empirical literature generated by the structural Merton (1974) model, we also control for leverage, credit ratings, firm risk, and the country's riskless rate of interest in the multivariate analysis below.[8] This

[7] Except of course in the special case where both wealth and transparency change simultaneously in the same direction.
[8] See Callen et al. (2009) for a review of this literature.

literature indicates that CDS spreads increase with leverage and firm risk and decrease with the quality of credit ratings and the country's risk-free interest rate. We also control for the global crisis years of 2007 and 2008 since CDS spreads in those years are larger than for other years.

3. Sample Data and Univariate Empirical Results

CDS data, currency exchange rates and interest rates are collected from Thomson DataStream Navigator. Thomson has Credit Market Analysis (CMA) data covering CDS contracts for 70 countries from 2003 through 2008. Deleting CDS indices and keeping CDS contracts of reference entities in countries which adopted IFRS results in an initial sample of 187 firms and 2,610 firm-quarters. For each firm-quarter we obtain the price of CDS contracts with maturities ranging from 1 year to 10 years issued 45 days after the fiscal-quarter-end. If there are no CDS issued at the 45th day after fiscal quarter-end, we utilize the first CDS contract issued in the range from 42 to 48 days after the quarter-end. The spread for each CDS contract is derived from mid-market quotes contributed by investment banks and default-swap brokers. For our sample of firm-quarters we obtain 22,620 CDS contracts with maturities ranging from 1 to 10 years. Thus, the sample could include up to 10 contracts for each firm-quarter. For each CDS contract, we collect data on its seniority (senior or subordinated), the currency of the underlying debt, which in turn determines the currency of the CDS contract, and the initial maturity of the CDS contract (1-10 years).[9] We convert the CDS quotes to U.S. dollars (USD) using the exchange rate as of the CDS quote date. We obtain quarterly financial statement data required to compute market value of equity, ROA, and leverage from the Worldscope database. We download the financial information in USD wherever available; otherwise, we convert the variables to USD using the exchange rate as of the fiscal quarter-end. When available we use short-term credit ratings from S&P to proxy for credit ratings; otherwise, we use long-term credit ratings. We impose the following restrictions on the sample: non-missing market value of equity, positive leverage (measured as short term debt plus long term debt scaled by market value of equity plus total liabilities), return on assets (computed as income before extraordinary items scaled by total assets), standard deviation of stock returns (computed on a rolling basis using the

[9] Restructuring clauses are only available from 2008. As a result we do not control for this variable in the analysis.

most recent 12 monthly returns with at least 6 data points), and credit rating. In addition, all sample CDS contracts in this study are limited to senior debt both because there are very few junior CDS contracts in our initial sample and because their pricing determinants are very different from senior contracts. Also, given the paucity of voluntary adopters in our data, we eliminate voluntary adopter observations from our sample. Finally, we remove firm-quarters for which we could not find a U.S match (see section 4.1 below). These restrictions reduce the sample size to 158 firms, 1,873 firm-quarters, and 16,632 CDS contracts across 17 countries. To mitigate the effect of outliers, all continuous variables are winsorized at the top and bottom 1%.

Table 1, Panel A lists the number of firms, the number of firm-quarter observations and the number of CDS-contracts pre- and post-IFRS adoption by country for the sample period. Most of the data are from six countries: the U.K., France, Australia, Sweden, Germany and Italy in that order. The data also indicate that there are significantly more CDS contracts (12,064) and, hence, sample data, post-IFRS adoption by comparison to pre-IFRS adoption (4,568). This is consistent with the world-wide secular increase in CDS usage.[10]

(Insert Table 1 about here)

Panels B lists (reference firm) means for the main variables used in the multivariate analyses by country including Market Values (MV), CDS spreads (5-year instruments only) measured in basis points, Log Book Values (LOGBV), Return on Assets (ROA), Leverage (LEV), Standard Deviations of Returns (SD_RET), the country's risk-free rate of interest (SPOT), and S&P firm ratings (RATING).[11] On the whole, the data show significant variation across countries.

Panel C shows the institutional variables by country. CODE is equal to 1 if the country is characterised as code (common) law system, and zero otherwise. Out of the 17 countries in our sample, 4 countries are common law countries. The RULE column conditions earnings on the strength of legal enforcement based on the year 2005 proxy from Kaufmann, Kraay, and Mastruzzi (2007). The EM column measures the extent of earnings management as measured by

[10] Of the total number of firms (158), 156 have data in the post period. Thus, there are two firms for which data are available in the pre but not in the post-IFRS periods.
[11] The sample includes other than 5 year terms but 5 years is the most common.

the country-wide aggregate earnings management score from Leuz, Nanda, and Wysocki (2003). The DIFF column measures the extent of accounting differences between local GAAP and IFRS based on the summary score of 21 key accounting dimensions as computed by Bae, Tan, and Welker (2008). The fifth column gives the average differential timeliness (DT) during the sample period. DT represents accounting conservatism measured using the Basu (1997) differential timeliness (DT) metric at the country level following Ball, Robin and Sadka (2000). We estimate DT for each country in the period prior to the adoption of IFRS (2003-2005) and in the period after the adoption (2006-2008) using the entire cross-section of firms for which we could find the required data on Datastream.

Panel D shows means of the main variables of interest pre- and post IFRS adoption. The table indicates that he sample firms are larger in the post period, both in terms of market values and book values of equity, are more profitable, have higher credit ratings, and greater volatility of stock returns. In addition, interest rates are also higher in the post period. Nevertheless, the mean (5 year) CDS spreads are significantly higher in the post-IFRS adoption period, indicating an increase in the average level of credit risk. Possible explanations for these results include the overall impact of the credit crisis on widening CDS spreads and a sample composition in which the number of reference entities is much higher in the post-IFRS period.

Panel E presents the correlations between the CDS spread and the primary determinants of the spread pre- and post-IFRS adoption. All correlations are highly significant at the 1% level and the signs pre- and post-IFRS are consistent. With one exception, these correlations are also consistent with the underlying theory (Merton 1974; Duffie and Lando 2001). Specifically, the higher are book values and profitability (ROA), the lower the CDS spread. Furthermore, the more levered the firm, the lower its ratings quality—the higher the ratings number the lower the quality-- the greater the CDS spread. The positive correlation between CDS and the spot rate, however, is not consistent with theory. We elaborate more on this issue below.

4. Multivariate Empirical Results

We analyze the impact of IFRS on CDS premia and the relation between CDS premia and earnings using a levels analysis. Lack of sufficient appropriate cross-country data, primarily CDS related data, precludes us from bringing to bear changes and event study analyses to the issue at hand.[12] Section 4.1 estimates the general relation between CDS and ROA (normalized earnings) pre and post-IFRS. Section 4.2 examines whether the relation depends on country characteristics such as code vs. common law, degree of securities law enforcement, extent of country level earnings management, extent of differences in local GAAP prior to IFRS adoption and IFRS standards, and the level of conditional conservatism. Section 4.3 explores the impact of transparency on CDS spreads in general and on the relation between CDS spreads and earnings. Section 4.4 presents some additional tests.

We investigate the relation between CDS and ROA in the pre and post-IFRS periods. We also investigate the impact of the level and change in transparency between the two periods on this relation. To make sure that our results are attributable solely to IFRS and not to timing, we match our IFRS sample with a U.S. sample. Specifically, we match each firm-quarter in the sample with a U.S domiciled firm-quarter utilising a Propensity Score matching methodology. For each fiscal quarter we estimate the propensity score using CDS determinants, namely, size (measured as log book value of equity), leverage, credit rating, stock return volatility, and two-digit SIC code. For the purpose of the propensity score estimation, we measure the SIC code as a continuous variable because we do not have sufficient data to incorporate industry dummies. We select the U.S match based on the closest propensity score without replacement.

Following Cram et al. (2010) we control for each matched pair using a dummy variable in each of the regressions. None of our results change if we use the alternative matching approach in which the regressions are based on matched pair differences for the dependent and independent variables.

[12] CDS markets are over the counter and individual firm CDS spread data are observable only at the initial contract date; they are generally not observable over time. Changes and event study analyses require CDS contracts for the same reference firm with the similar contractual features at different points in time, as in the study by Callen et al. (2009). Only U.S. databases provide sufficient data for such analyses.

4.1 Base Regressions

Based on the predictions of the Merton (1974) and Duffie and Lando (2001) models, Callen et al. (2009) argue that CDS spreads should be decreasing with the reference firm's earnings, book values, ratings quality and increasing with the reference firm's leverage, the volatility of its stock returns, and the risk-free rate of interest in the economy. In addition, we control for the financial crisis period by including an indicator variable (CRISIS) which takes the value of 1 if the fiscal quarter-end date is on or after June 30, 2007.

(Insert Table 2 about here)

Table 2 shows the base line regression coefficient estimates in column (1) for a pooled sample of IFRS firms and the matched sample of US firms. In this regression and in all other regressions in this study, we control for industry, CDS term to maturity, year, and country fixed-effects (untabulated). Statistical significance is based on robust standard errors corrected for firm clustering, time clustering and multiple CDS contracts per firm (Petersen 2009). Because the ratings numbers are inversely related to the quality of the firm's rating, the CDS spread should increase with credit rating (labelled as RATING) in our analyses.

The results are broadly consistent with the Merton and Duffie-Lando model predictions.[13] In particular, the CDS spread increases significantly with leverage (LEV), ratings (RATING), and the volatility of stock returns (SD_RET), and decreases significantly with earnings (IFRS_ROA) and book value (LOGBV). The coefficient on the dummy variable for the 2007/2008 crisis years (CRISIS) is positive and highly significant consistent with higher credit risk during the crisis period. Contrary to expectation, the coefficient on the risk-free rate is positive and significant. We checked the correlation of CDS spreads with the spot rate by country to see if the results are driven by specific countries, but we obtain positive correlations across all countries. One plausible explanation for the positive correlation is that when interest rates are low, the cost of financing is also low leading to a lower probability of default.[14] The

[13] p-values in the tables are at the two-tailed level. However, we refer to one-tailed significance results in the text when theory or the empirical evidence in the literature dictates a directional relation between a variable and the CDS spread. Unless explicitly noted otherwise, significance is two-tailed.

[14] Offsetting this explanation is the possibility that lower interest rate regimes are often symptomatic of a recessionary economy and, therefore, increased credit risk.

coefficients on CRISIS suggest that the increase in CDS spreads in the post-IFRS period—see Table 1, Panel C-- is likely attributable to the financial crisis of 2007-8. Directly related to our research question, we find that the coefficient on ROA for both the IFRS and US sample firms are negative and significant, consistent with Callen et al. (2009). The coefficient on the post-IFRS period indicator variable (IFRS_POST) is negative and marginally significant (p-value, two-tailed=0.13), and the coefficient on the post-IFRS period indicator variable for the matched sample (US_POST) is negative and highly significant (p-value<0.01). These results indicate that average CDS premia decreased in the post IFRS periods both in countries that adopted IFRS and in the U.S, implying that the decrease in CDS premia in the post-IFRS period is attributable to factors other than the adoption of IFRS. Interestingly, the coefficient on the US dummy is positive and significant suggesting that credit risk was higher in the US during the sample period.

Column (2) replicates the base regression except that ROA is now separated into pre- and post-IFRS adoption periods for the IFRS and US sample. Specifically, IFRS_ROA_BEF (IFRS_ROA_AFT) equals ROA if the fiscal quarter-end is in the period prior to (after) the adoption of IFRS and zero otherwise. The results are similar to the base regression; the coefficients on IFRS_ROA_BEF and IFRS_ROA_AFT are negative and significant at the 1% level. The F-test at the bottom of the table shows that pre- and post-IFRS earnings (ROA) coefficients are not significantly different from each other. These results indicate that the association between the spread and earnings did not change following the adoption of IFRS, indicating that IFRS did not increase the credit risk informativeness of earnings. The coefficients on US_ROA_BEF (-15.3) and US_ROA_AFT (-8.5) are statistically significant as is the difference between the two coefficients (F test p-value=0.07), indicating that U.S firms experienced a decrease in the credit informativeness of earnings. IFRS_POST is no longer significant whereas US_POST remain negative and highly significant. The coefficients on the control variables (leverage, volatility of returns, risk free rate and the financial crisis period) are virtually identical to those in column 1.

Column (3) further breaks down book values, leverage and ratings into pre- and post-IFRS periods for the main sample as well as the matching US sample in addition to earnings. The results are quite similar to the prior column with earnings significant both post- and pre-IFRS.

Book value of equity, leverage and ratings are also significant both in the pre- and post-IFRS periods. US_POST is no longer significant likely reflecting the fact that the bifurcation of earnings, book values, leverage and ratings into pre- and post-IFRS variables subsumes the dummy US_POST control, or alternatively because of the high correlation between book values in the pre and post-IFRS periods. F-tests indicate that the earnings, book value, leverage and ratings coefficients are not significantly different pre- and post IFRS for the IFRS sample whereas the earnings and book value coefficients are significantly different for the US sample pre- and post IFRS.

Overall, Table 2 indicates that earnings are a significant determinant of credit risk pre and post-IFRS (both for IFRS firms and a matching US firms sample), and that earnings are not more informative about credit risk post-IFRS for the IFRS firms. Similar results are obtained with respect to leverage, rating and book value of equity.

4.2 Institutional differences, conditional conservatism and CDS spreads

The three regressions in Table 2 do not account for certain country and firm-level factors that might be related to the credit risk informativeness of earnings, especially when contrasting pre- and post-IFRS adoption periods. Table 3 replicates Table 2 controlling separately for code versus common law countries, strong versus weak legal enforcement countries, the extent of country-level earnings management, the extent to which IFRS and local GAAP standards differ from each other, and differences in country-level differential timeliness. Multicollinearity concerns induced by the correlations among these conditioning variables and the extensive breakdowns of earnings pre- and post-IFRS interacted with a relatively large number of conditioning variables preclude us from controlling for all five additional factors simultaneously. Instead, we evaluate each of the conditioning variables separately. The analysis focuses on earnings (ROA) because we are primarily interested in the extent to which earnings convey credit risk information (pre- and post-IFRS adoption).[15] Given that these institutional variables relate to the sample of IFRS firms only, the regressions exclude the matched U.S sample.

[15] Nevertheless, as a sensitivity analysis we break book value, leverage and credit rating in addition to profitability into pre and post-IFRS periods, similar to the analysis in Table 2, Column 3. The results are very similar to those reported.

4.2 Institutional differences, conditional conservatism and CDS spreads

(Insert Table 3 about here)

The CODE column of Table 3 conditions earnings on code law versus common law countries. ROA_BEF_COND (ROA_BEF_NO_COND) equals ROA if the fiscal quarter-end is in the pre-IFRS period and the country is characterised as a code (common) law system, and zero otherwise. ROA_AFT_COND and ROA_AFT_NO_COND are defined similarly if fiscal quarter-end is in the post-IFRS period. The ROA coefficient is negative and significant in pre-IFRS (p-value=0.07) and post-IFRS (p-value<0.01) for code law countries, and negative and highly significant (p-value<0.01) in the pre and post-IFRS periods for common law countries. F-tests indicate that the change in the coefficients on ROA for code and common law countries is not significantly different from zero, and that the coefficients on ROA are not different across code and common law countries. These results suggest that the origin of the legal system CODE vs. COMMON is not related to the credit informativeness of earnings and general, and did not affect the coefficient on ROA in the pre and post-IFRS periods.

The RULE column conditions earnings on the strength of legal enforcement. Values above (below) the median represent countries with strong (weak) legal enforcement. The coefficient on ROA is negative and significant before and after IFRS adoption for countries with strong legal enforcement and countries with weak legal enforcement. F-tests indicate that the adoption of IFRS had no significant effect on the credit risk information conveyed by earnings irrespective of the level of legal enforcement. These results suggest that earnings convey credit risk relevant information irrespective of strength of legal enforcement and that IFRS adoption is not consequential.

The EM column of Table 3 conditions earnings on the extent of earnings management. Values above (below) the median represent countries with high (low) earnings management. ROA is negative and significant before and after IFRS adoption for countries with low earnings management and for countries with high earnings management. F-tests indicate that the adoption of IFRS had no significant effect on the credit risk information conveyed by earnings whether earnings management is high or low. These results further suggest that earnings convey credit

risk relevant information irrespective of the level of earnings management, and that IFRS adoption is not consequential.

The DIFF column of Table 3 conditions earnings on the extent of accounting differences between local GAAP and IFRS. Values above (below) the median represent countries with high (low) local GAAP-IFRS differences. ROA is negative and significant before and after IFRS adoption for countries irrespective of the differences between local GAAP and IFRS. In addition, F-tests indicate that the coefficient on ROA did not change after the adoption of IFRS for both high and low accounting differences countries. Overall, these results suggest that earnings convey credit risk relevant information for countries irrespective of GAAP-IFRS differences both before and after IFRS adoption.

The DT column conditions earnings on the extent of conditional conservatism measured at country-year level. In untabulated results, we find that DT has decreased significantly after the adoption of IFRS; mean (median) DT in the pre and post-IFRS periods is 0.33 (0.33) and 0.15 (0.19), respectively, consistent with IFRS being less conservative than local GAAP standards. We rank countries according to the DT measure in the pre and post-IFRS periods, and classify countries with DT values above (below) the median as COND (NO_COND). For example, ROA_BEF_COND (ROA_BEF_COND) equals to ROA if the period is pre-IFRS and the country is characterised as high (low) DT. The results indicate that IFRS adoption had no impact on the credit risk information conveyed by earnings. Specifically, the coefficient on ROA before and after the adoption of IFRS is negative and significant irrespective of the level of DT. Untabulated results indicate similar results with respect to book value of equity.

Overall, the evidence from Table 3 suggests that the institutional factors, origin of law, strength of the legal system, level of earnings management, difference between local GAAP and IFRS and level of conditional conservatism, do not affect the CDS-earnings relation. Furthermore, the adoption of IFRS does not change this latter result. It should be noted that these results are conditioned on controlling for industry. When we do not control for industry we find that earnings convey credit risk relevant information in common law countries (in contrast to code law countries), in countries with strong legal enforcement (in contrast to weak legal enforcement), in countries with low earnings management (in contrast to high earnings

management), in countries with low GAAP-IFRS differences (in contrast to high GAAP-IFRS differences) and in countries that are characterized with high DT both before and after IFRS adoption. However, similar to the results reported above, IFRS adoption is not consequential, except in the case of code law countries, where earnings convey credit risk information in the post IFRS period (the coefficient in the post IFRS period is marginally significant at a p-value of 12%).

4.3 Transparency and Credit Risk

Since our earnings transparency measures severely limit the sample size for some regressions, we elected to analyze transparency separately despite its centrality to the IFRS debate.[16] We first examine the association between the CDS spread and transparency, and then analyze the potential impact of the *change* in transparency on the relation between CDS and earnings.

We elect to focus on accounting earnings transparency. Specifically, we measure earnings transparency by four metrics, two of which are based on analyst earnings forecast accuracy and two based on analyst earnings forecast dispersion. More specifically, we measure transparency by: (1) analyst accuracy (AF_ACC) computed as the annual earnings per share (EPS) forecast error, and the forecast error based on quarterly earnings per share (AF_ACC_Q); and. (2) analyst dispersion (AF_DSP) computed as the dispersion of annual analyst EPS forecasts, and based on the dispersion of the quarterly forecasts (AF_DSP_Q). All measures of transparency are scaled by price per share at the beginning of the quarter. It should be noted that the data requirements to compute these metrics severely reduce the number of sample observations.

Table 4, Panel A shows the mean of each of the transparency measures in the pre- and post-IFRS periods for the sample firms that adopted IFRS and for the U.S sample. The panel shows a significant decrease in mean analyst forecast errors and in the dispersion of annual forecasts in the post-IFRS period as compared with the pre period, consistent with IFRS resulting

[16] The number of observations decreases substantially depending on the transparency measure used. . For example, the number of observations with annual forecast error is 8,694 as compared with 32,974 observations used in the main analysis.

in higher earnings transparency. In contrast, the matched U.S sample firms experienced decreased transparency. Both the forecast errors and the dispersion of the forecasts increased in the post-IFRS period, and the decrease is highly significant for the dispersion measures.

Panel B of Table 4 regresses CDS spreads on its determinants controlling for transparency (TRANSPARENCY) measured both in terms of analyst forecast error and analyst forecast dispersion at the firm level. Similar to Table 2, we analyze transparency separately for each of the IFRS and US samples, to determine whether the impact of transparency on CDS premia is different across the two samples. The coefficients on the transparency metrics are all negative and generally significant, indicating that CDS premia are negatively related to transparency, consistent with the prediction of Duffie and Lando (2001). Consistent with the results of Table 2, Column 1, the coefficient on ROA is negative and significant for the IFRS and U.S samples. In contrast to the results in Table 2, the coefficient on the POST indicator variable is not significant for the U.S sample and positive and significant for the IFRS sample, indicating that CDS premia increased in the post-IFRS period. One possible explanation for this contradicting finding is the smaller sample size. Other coefficient estimates are similar in sign and significance to those of Table 2 with the exception of the coefficients on the spot rate, which are now insignificant.

(Insert Table 4 about here)

Panel C shows the result of the analysis of the impact of the change in transparency on the association between CDS spread and profitability. The question we wish to address here is whether the association between CDS spreads and earnings is more negative (i.e. earnings is more informative about credit risk) for firms whose transparency increased subsequent to IFRS adoption. We compute the change in firm-level transparency as the change between the firm's average transparency for the years (2003-2005) and the firm's average transparency for the years (2006-2008) utilizing the same transparency metrics as in Panel A.[17]

[17] There are more observations in Panel C by comparison to Panel B because the change in transparency may be computed based on fewer observations of transparency in the pre and post periods. For example, suppose that there are data available for the years 2003-2008, but forecast error data only for fiscal years 2005 and 2007. We compute the change in transparency as the forecast accuracy in 2007 minus the forecast accuracy in 2005. We then assign the

Consistent with the prediction of Duffie and Lando (2001), the coefficient on the change in transparency is negative and significant for the sample of U.S firms across the transparency measures with the exception of the annual forecast error measure. However, the coefficient on the change in transparency for the IFRS sample is generally not significant. Similar to the results documented above, the coefficient on ROA before and after the adoption of IFRS is negative and significant for the sample of U.S firms, but the interaction variable of ROA post-IFRS and the change in transparency is not significant. The coefficient on ROA before the adoption of IFRS for the IFRS sample is insignificant, but is significant in the post-IFRS period. The insignificant coefficient on ROA pre-IFRS is not consistent with the results documented above, and may be due to the significantly smaller size available for the transparency analysis. Similar to the U.S sample, the interaction variable of ROA post-IFRS and the change in transparency is not significant. Altogether, the results suggest that the change in transparency did not affect the relation between CDS and earnings.

4.5 Robustness Checks

We perform several additional tests to ensure that our results are robust. Although not discussed by Hail, Leuz & Wysocki (2009), comparability is also likely to be negatively associated with CDS spreads because comparability should allow for a more informative and transparent analysis of accounting information. Presumably, if IFRS enhances comparability of statements across countries, statements become more transparent and less noisy for users in different jurisdictions compared to local GAAPs. However, comparability should affect firms differentially depending upon their need for comparable cross-jurisdictional information. As emphasized by Hail, Leuz and Wysocki (2009), comparability should benefit primarily firms with extensive international business dealings rather than firms that operate domestically. For example, a firm that operates domestically can more readily evaluate the credit risk of say its major customer using local GAAP reports than can a firm from another accounting jurisdiction. To the extent that IFRS enhances comparability, IFRS will better help the firm from the other jurisdiction evaluate the major customer's accounting reports than the domestic firm which has less of a comparability problem to begin with. We condition on the ratio of firm's foreign sales

change in transparency to 2006 and 2008,. In contrast, Panel A requires each firm-quarter to have transparency data because the level of transparency is an explanatory variable in the regression.

to total sales. Values above (below) the median ratio are considered high (low) foreign sales firms. The (untabulated) results show that the level of foreign sales does not affect the CDS-earnings relation. F-tests indicate that the coefficients on ROA did not change in the post relative to the pre periods both for firms with high foreign sales as well as low foreign sales.

5. Conclusion

The adoption of IFRS provides a unique setting for examining how changes in accounting standards affect the credit risk informativeness of accounting numbers. Proponents of IFRS argue that one of the major benefits of IFRS is increase in transparency. Our analysis indicates that while earnings are a significant determinant of credit risk, there is no difference in the CDS-earnings relation pre vs. post-IFRS adoption.

While it is difficult to measure transparency at the country level, the extant prior literature documents that institutional factors affect accounting information quality and hence arguably transparency. Therefore, we investigate whether credit risk informativeness is affected by country-level institutional factors, including code vs. common law, strength of security law enforcement, prevalence of earning management, IFRS-local GAAP differences, and conditional conservatism. However, in contrast to the extant documentation regarding the equity related effects of IFRS, after controlling for industry, we find no evidence that the ability of earnings to convey credit risk information depends on institutional factors or conditional conservatism nor evidence of differences pre versus post IFRS.

We measure earnings transparency at the firm level using analyst forecast accuracy and dispersion. The analysis suggests that earnings transparency reduces CDS spreads, consistent with the prediction by Duffie and Lando (2001). Nevertheless, the credit risk informativeness of earnings did not change for the firms which experienced a change in transparency as a result of IFRS adoption.

References

Ahmed, A.S., M.J. Neel, and D.D. Wang. 2010. Does mandatory adoption of ifrs improve accounting quality? Preliminary evidence" W.P., Texas A&M University.

Alford, A., J. Jones, R. Leftwich and M. Zmijewski. 1993. The relative informativeness of accounting disclosures in different countries. *Journal of Accounting Research* 31(Supp): 183-229.

Ali, A. and L. Hwang. 2000. Country-specific factors related to financial reporting and the value relevance of accounting data. *Journal of Accounting Research* 38 (1): 1-21.

Bae, K., H. Tan and M. Welker. 2008. International gaap differences: The impact on foreign analysts. *The Accounting Review* 83 (3): 593-628.

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

Ball, R., A. Robin and J. S. Wu. 2003. Incentives versus standards: Properties of accounting income in four east asian countries. *Journal of Accounting and Economics* 36 (1-3): 235-270.

Barth, M.E., D. Cram, and K. Nelson. 2001. Accruals and the prediction of future cash flows. *The Accounting Review* 76 (1): 27-58.

Bartov, E. and S. R. Goldberg. 2001. The valuation-relevance of earnings and cash flows: An international perspective. *Journal of International Financial Management and Accounting* 12 (2): 103-132.

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

Batta, G. 2006. Credit derivatives and financial information," W. P., University of Southern California.

Beneish, M.D., P.B. Miller and T.L. Yohn. 2009. The effect of IFRS adoption on cross-border investment in equity and debt markets. W.P. Indiana University

Berndt, A. and A. Ostrovnaya. 2008. Do equity markets favor credit markets news over options market news? W.P. Carnegie-Mellon University.

Blanco, R., S. Brennan, and I. W. Marsh. 2005. An empirical analysis of the dynamic relation between investment-grade bonds and credit default swaps. *Journal of Finance* 60 (5): 2255-2281.

Bushman, R. and J. D. Piotroski. 2006. Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics* 42(1/2): 107-148.

Callen, J.L., J. Livnat and D. Segal. 2009. The impact of earnings on the pricing of credit default swaps. *The Accounting Review* 84 (5): 1363-1394.

Chen, H., Q. Tang, Y. Jiang, and Z. Lin 2010. The role of international financial reporting standards in accounting quality: Evidence from the european union." *Journal of International Financial Management & Accounting*: forthcoming.

Christensen, H, E. Lee, and M. Walker. 2009. Do IFRS reconciliations convey information? The effect of debt contracting. *Journal of Accounting Research* 47: 1167–1199.

Daniels, K. N., and M. S. Jensen. 2005. The effect of credit ratings on credit default swap spreads and credit spreads. *Journal of Fixed Income* 15 (3): 16-33.

Das, S. R., P. Hanouna, and A. Sarin. 2009. Accounting-based versus market-based cross-sectional models of cds spreads. *Journal of Banking and Finance* 33 (4): 719-730.

Daske, H., L. Hail, C. Leuz, and R. Verdi. 2007. Adopting a label: Heterogeneity in the economic consequences of ifrs adoptions." *Journal of Accounting Research* 46 (5): 1085-1142.

Dechow, P. 1994. Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. *Journal of Accounting and Economics* 18 (1): 3-42.

Dechow, P., S. Kothari, and R. Watts. 1998. The relation between earnings and cash flows. *Journal of Accounting and Economics* 25 (2): 133-168.

Duffie, D. 1999. Credit swap valuation. *Financial Analyst Journal* 55 (1): 73-87.

Duffie, D. and D. Lando. 2001. Term structures of credit spreads with incomplete accounting information. *Econometrica* 69 (3): 633-644.

Elton, E. J., M. J. Gruber, D. Agrawal, and C. Mann. 2001. Explaining the rate of spread on corporate bonds. *Journal of Finance* 56 (1): 247-277.

Finger, C. 1994. The ability of earnings to predict earnings and cash flows. *Journal of Accounting Research* 32 (2): 210-223.

Florou A. and U. Kossi. 2009. The economic consequences of mandatory IFRS adoption for debt financing. W.P. University of Lancaster and University of Macedonia

Hail, L., C. Leuz, and P. D. Wysocki, 2009. Global accounting convergence and the potential adoption of IFRS by the United States: An analysis of economic and policy factors. Working Paper, University of Pennsylvania, University of Chicago and MIT.

Houweling, P., and T. Vorst. 2005. Pricing default swaps: Empirical evidence. *Journal of International Money and Finance* 24 (8): 1200-1225.

Huang, M., and J. Huang. 2002. How much of the corporate-treasury yield spread is due to credit risk? Working paper, Stanford University.

Kaufmann, D., A. Kraay, and M. Mastruzzi. 2007. Governance matters vi: Governance indicators for 1996-2006. Research W.P. No. 4280, The World Bank.

Kosi, Urska, Pope, Peter F. and Florou, Annita. Credit Relevance and Mandatory IFRS Adoption (August 2010). INTACCT Working Paper Series. Available at SSRN: http://ssrn.com/abstract=1679672

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

Li S. 2010. Does mandatory adoption of international financial reporting standards in the european union reduce the cost of equity capital? *The Accounting Review* 85 (2): 607-640

Longstaff, F. A., S. Mithal, and E. Neis. 2005. Corporate yield spreads: default risk or liquidity? New evidence from the credit default swap market. *Journal of Finance* 60 (5): 2213-2253.

Merton, R. C. 1974. On the pricing of corporate debt: The risk structure of interest rates. *Journal of Finance* 29 (2): 449-470.

Nissim, D., and S. Penman. 2001. Ratio analysis and equity valuation: From research to practice. *Review of Accounting Studies* 6 (1): 109-154.

Petersen, M. A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22 (1): 435-480.

Soderstrom, Naomi S. and Sun, Kevin Jialin, IFRS Adoption and Accounting Quality: A Review. European Accounting Review, Forthcoming. Available at SSRN: http://ssrn.com/abstract=1008416

Thomas, W. B. 1999. A test of the market's mispricing of domestic and foreign earnings. *Journal of Accounting and Economics* 28: 243–67.

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

Zhu, H. 2006. An empirical comparison of credit spreads between the bond market and the credit default swap market. *Journal of Financial Services Research* 29 (3): 211-235.

Table 1 - Descriptive Statistics

Panel A: Firms and CDS Contracts by Country

	FIRMS		FIRM-QUARTERS		CDS CONTRACTS-QUARTERS	
	POST	PRE	POST	PRE	POST	PRE
AUSTRALIA	17	16	93	48	806	239
BELGIUM	3	2	31	6	275	42
DENMARK	2	2	22	14	220	122
FINLAND	4	2	48	15	480	105
FRANCE	21	20	154	92	1,500	743
GERMANY	18	6	193	32	1,870	302
HONG KONG	9	5	41	16	362	104
IRELAND	3	3	17	11	150	86
ITALY	9	8	103	33	917	282
NETHERLANDS	8	8	79	53	790	485
NORWAY	4	3	34	15	338	105
POLAND	2	2	23	20	195	145
PORTUGAL	1	1	10	8	100	80
SPAIN	7	6	66	46	611	348
SWEDEN	13	12	142	92	1,285	662
SWITZERLAND	9	2	76	10	747	100
UNITED KINGDOM	26	24	149	81	1,418	618
TOTAL	**156**	**122**	**1281**	**592**	**12064**	**4568**

Panel B: Main variables by country

	MV	CDS (5 Yr)	LOGBV	ROA	LEV	SD_RET	SPOT	RATING
AUSTRALIA	17,391	52	8.096	0.040	0.169	0.061	6.049	8.543
BELGIUM	22,995	51	9.097	0.013	0.177	0.050	3.732	8.216
DENMARK	16,208	102	8.774	0.007	0.452	0.046	3.320	10.472
FINLAND	22,872	340	8.350	0.013	0.246	0.076	3.514	11.619
FRANCE	31,036	111	9.267	0.015	0.210	0.067	3.124	9.650
GERMANY	37,407	113	9.502	0.008	0.245	0.068	3.687	8.231
HONG KONG	41,295	109	9.068	0.035	0.230	0.070	5.119	10.393
IRELAND	13,477	54	8.699	0.005	0.362	0.059	3.173	8.000
ITALY	21,569	110	8.921	0.006	0.319	0.059	3.513	8.963
NETHERLANDS	27,389	72	9.032	0.017	0.159	0.062	3.242	9.174
NORWAY	29,349	211	9.203	0.014	0.204	0.083	4.024	9.213
POLAND	1,508	61	6.123	0.003	0.337	0.109	3.222	10.977
PORTUGAL	10,423	33	8.399	0.002	0.401	0.069	3.031	8.500
SPAIN	36,894	79	9.053	0.012	0.303	0.057	3.190	8.902
SWEDEN	11,192	59	8.124	0.019	0.187	0.065	2.841	8.543
SWITZERLAND	43,885	98	9.130	0.018	0.202	0.066	2.097	7.576
UNITED KINGDOM	33,902	130	8.680	0.027	0.211	0.066	4.788	9.407

Table 1 (Cont)

Panel C: Institutional variables by country

	CODE	RULE	EM	DIFF	DT
AUSTRALIA	0	1.81	-4.8	4	0.285
BELGIUM	1	1.45	-19.5	13	0.080
DENMARK	1	2.03	-16.0	11	0.236
FINLAND	1	1.95	-12.0	14	0.216
FRANCE	1	1.31	-13.5	12	0.191
GERMANY	1	1.77	-21.5	11	0.269
HONG KONG	0	1.45	-19.5	3	0.103
IRELAND	0	1.62	-5.1	1	0.025
ITALY	1	0.37	-24.8	12	0.457
NETHERLANDS	1	1.75	-16.5	4	0.154
NORWAY	1	2.02	-5.8	7	0.271
POLAND	1	NA	NA	12	0.190
PORTUGAL	1	NA	-25.1	13	0.430
SPAIN	1	1.10	-18.6	14	0.406
SWEDEN	1	1.86	-6.8	10	0.279
SWITZERLAND	1	1.96	-22.0	12	0.259
UNITED KINGDOM	0	1.73	-7.0	1	0.292

Panel D: Mean of the main variables – Pre vs. Post

	POST	PRE	POST-PRE
MV	30,822	22,683	8,139***
CDS (5 YR)	114	74.6	39.4***
LOGBV	8.86	8.53	0.33***
ROA	0.016	0.014	0.001**
LEV	0.221	0.230	-0.009*
SD_RET	0.066	0.064	0.002*
SPOT	4.39	2.5	1.89***
RATING	9.02	9.29	-0.27**

Panel E: Correlation with CDS premia

	POST	PRE
ROA	-0.240	-0.267
	(<0.01)	(<0.01)
LOGBV	-0.170	-0.238
	(<0.01)	(<0.01)
LEV	0.338	0.395
	(<0.01)	(<0.01)
SPOT	-0.012	0.032
	(0.541)	(0.276)
SD_RET	0.460	0.456
	(<0.01)	(<0.01)
RATING	0.236	0.454
	(<0.01)	(<0.01)

Notes Table 1:

Panel A presents sample descriptive statistics by country including the number of firms, the number of firm-quarter observations and the number of CDS contracts before and after IFRS adoption. Panel B presents sample means of the main variables in the multivariate analysis by country. MV is denominated in $US adjusted for exchange rate changes at the fiscal quarter-end. The CDS spread for the 5 years contract is measured in basis points. ROA is measured as earnings before extraordinary items divided by total assets. LOGBV is the log book value of equity. LEV is leverage. SD_RET is the standard deviation of equity returns (computed on a rolling basis using the most recent 12 monthly returns with at least 6 data points). SPOT is the annualized 3-month Treasury Bill rate. RATING is the S&P rating. Panel C presents the institutional factors by country, viz. origin of legal system (CODE), strength of enforcement (RULE), level of earnings management (EM), difference between local GAAP and IFRS (DIFF) and differential timeliness (DT) . Panel D presents sample means of the main variables in the multivariate analysis by pre- and post- IFRS adoption periods. . Panel E presents sample correlation of CDS spreads with selected variables in the pre- and post-IFRS adoption periods. All correlations are significant at the 1% level or less

Table 2 - The Determinants of CDS Spreads Before and After IFRS Adoption

VARIABLES	COL 1	COL 2	COL 3
CONSTANT	3.470***	3.441***	2.922***
	(0.000)	(0.000)	(0.000)
US_DUMMY	0.347**	0.453***	-0.281
	(0.013)	(0.006)	(0.572)
IFRS_POST	-0.114	-0.085	0.597
	(0.132)	(0.315)	(0.160)
US_POST	-0.215***	-0.303***	0.457
	(0.006)	(0.001)	(0.308)
IFRS_ROA	-5.252***		
	(0.000)		
US_ROA	-9.344***		
	(0.000)		
IFRS_ROA_BEF		-3.987***	-4.364***
		(0.001)	(0.001)
IFRS_ROA_AFT		-5.483***	-5.882***
		(0.000)	(0.000)
US_ROA_BEF		-15.303***	-12.323***
		(0.000)	(0.000)
US_ROA_AFT		-8.458***	-6.526***
		(0.000)	(0.000)
BV	-0.199***	-0.196***	
	(0.000)	(0.000)	
IFRS_BV_BEF			-0.153***
			(0.001)
IFRS_BV_AFT			-0.220***
			(0.000)
US_BV_BEF			-0.071
			(0.170)
US_BV_AFT			-0.176***
			(0.000)
LEV	1.823***	1.823***	
	(0.000)	(0.000)	
IFRS_LEV_BEF			1.501***
			(0.000)
IFRS_LEV_AFT			1.341***
			(0.000)
US_LEV_BEF			2.619***
			(0.000)
US_LEV_AFT			2.328***
			(0.000)
RATE	0.039***	0.038***	
	(0.000)	(0.000)	
IFRS_RATE_BEF			0.047***
			(0.002)
IFRS_RATE_AFT			0.034***
			(0.000)
US_RATE_BEF			0.024*
			(0.076)
US_RATE_AFT			0.043***
			(0.000)
SD_RET	6.972***	6.980***	6.992***
	(0.000)	(0.000)	(0.000)
SPOT	0.035**	0.034**	0.040***
	(0.017)	(0.018)	(0.003)
CRISIS	0.834***	0.836***	0.821***
	(0.001)	(0.001)	(0.001)

OBSERVATIONS	32,974	32,974	32,974
R-SQUARED	0.860	0.861	0.862
F TEST: IFRS_ROA_BEF=IFRS_ROA_AFT		1.172	1.165
PROB>F		0.279	0.280
F TEST: US_ROA_BEF=US_ROA_AFT		3.188*	2.986*
PROB>F		0.074	0.084
F TEST: IFRS_BV_BEF=IFRS_BV_AFT			2.561
PROB>F			0.110
F TEST: IFRS_LEV_BEF=IFRS_LEV_AFT			0.173
PROB>F			0.677
F TEST: IFRS_RATE_BEF=IFRS_RATE_AFT			0.549
PROB>F			0.459
F TEST: US_BV_BEF=US_BV_AFT			4.923**
PROB>F			0.026
F TEST: US_LEV_BEF=US_LEV_AFT			0.326
PROB>F			0.568
F TEST: US_RATE_BEF=US_RATE_AFT			1.868
PROB>F			0.172

Notes to Table 2:

The Table shows the regressions of the CDS spread on its determinants. All regressions control for CDS maturity, industry, year, and country fixed-effects (not reported). Two-tailed p-values are in parentheses. All regressions are estimated using OLS with robust standard errors corrected for firm clustering, time clustering and multiple CDS contracts per firm. Column 1 shows the base regression of the CDS spread on profitability (ROA), leverage (LEV), the country risk-free interest rate (SPOT), volatility of returns (SD_RET), and credit rating (RATING). In addition, we include two indicator variables – POST equals 1 if the period is post-IFRS and 0 otherwise and CRISIS equals 1 for the recent financial crisis period (July 07-Dec 08) and 0 otherwise. US_DUMMY is an indicator with 1 for US observation and zero otherwise. Column 2 replicates the base regression except that ROA is bifurcated into ROA prior to the adoption of IFRS (ROA_BEF) and after the adoption of IFRS (ROA_AFT). Specifically, ROA_BEF (ROA_AFT) equals to ROA if fiscal quarter-end is in the pre-IFRS (post-IFRS) period, and zero otherwise. The prefix IFRS (US) indicates the main sample (matching sample). Column 3 replicates the base regression except that each of ROA, LEV and RATING are bifurcated into before and after IFRS adoption periods in similar fashion to the bifurcation of ROA in Column 2. F-tests compare the estimated the ROA, LEV, and Rating coefficients pre- and post-IFRS.

Table 3 - The Determinants of CDS Spreads Before and After IFRS Adoption and Five Conditioning Variables

VARIABLES	(1) CODE	(2) RULE	(3) EM	(4) DIFF	(5) DT
CONSTANT	2.067***	2.150***	2.085***	2.045***	1.640**
	(0.008)	(0.006)	(0.008)	(0.008)	(0.031)
POST	-0.270***	-0.264***	-0.267***	-0.275***	-0.308***
	(0.008)	(0.008)	(0.008)	(0.007)	(0.003)
CONDITION	-0.207	-0.124	0.045	0.065	0.040
	(0.412)	(0.634)	(0.872)	(0.810)	(0.520)
ROA_BEF_COND	-4.171*	-5.218***	-6.075***	-5.951***	-5.266***
	(0.068)	(0.002)	(0.003)	(0.005)	(0.006)
ROA_AFT_COND	-4.767***	-5.273***	-3.839**	-4.908**	-4.515***
	(0.002)	(0.000)	(0.023)	(0.014)	(0.000)
ROA_BEF_NO_COND	-8.359***	-8.109***	-6.280***	-6.435***	-4.302**
	(0.000)	(0.001)	(0.001)	(0.000)	(0.030)
ROA_AFT_NO_COND	-6.522***	-5.606**	-6.516***	-5.649***	-8.061***
	(0.000)	(0.034)	(0.000)	(0.000)	(0.009)
BV	-0.176***	-0.183***	-0.184***	-0.174***	-0.176***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LEV	0.998***	1.033***	1.015***	0.989***	0.938***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
RATE	0.050***	0.047***	0.047***	0.050***	0.050***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SD_RET	7.304***	7.557***	7.712***	7.299***	7.474***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
SPOT	0.115*	0.120*	0.119*	0.111*	0.153**
	(0.087)	(0.080)	(0.087)	(0.092)	(0.026)
CRISIS	1.009***	0.985***	0.982***	1.013***	1.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
OBSERVATIONS	16,632	16,112	16,292	16,632	13,586
R-SQUARED	0.737	0.741	0.744	0.737	0.736
ROA_BEF_COND=ROA_AFT_COND	0.0583	0.00181	1.321	0.196	0.140
PROB>F	0.809	0.966	0.251	0.658	0.780
ROA_BEF_NO_COND=ROA_AFT_NO_COND	1.252	1.036	0.0358	0.314	1.850
PROB>F	0.263	0.309	0.850	0.575	0.175
ROA_BEF_COND=ROA_BEF_NO_COND	1.811	1.184	0.00750	0.0373	0.102
PROB>F	0.179	0.277	0.931	0.847	0.750
ROA_AFT_COND=ROA_AFT_NO_COND	0.889	0.0157	2.287	0.140	1.301
PROB>F	0.346	0.900	0.131	0.708	0.254

Notes to Table 3:

The table shows regressions of the CDS spread on its determinants conditioning for various legal/financial reporting characteristics. With the exception of ROA, all determinants are identical to those in Table 2. All regressions control for CDS maturity, industry, year, and country fixed-effects (not reported). Two-tailed p-values are in parentheses. All regressions are estimated using OLS with robust standard errors corrected for firm clustering, time clustering and multiple CDS contracts per firm. The ROA variables in each column are defined as follows:

The column labeled CODE conditions on Code vs. Common law countries.
COND=1 if code law country and zero otherwise
ROA_BEF_COND=ROA pre-IFRS adoption if code law and zero otherwise.
ROA_AFT_COND=ROA post-IFRS adoption if code law and zero otherwise.
ROA_BEF_NO_COND=ROA pre-IFRS adoption if common law and zero otherwise.
ROA_AFT_NO_COND=ROA post-IFRS adoption if common law and zero otherwise.

The column labeled RULE conditions on the strength of legal enforcement. Values above (below) the median represent countries with strong (weak) legal enforcement.
COND=1 if strong legal enforcement and zero otherwise
ROA_BEF_COND=ROA pre-IFRS adoption if strong legal enforcement and zero otherwise.
ROA_AFT_COND=ROA post-IFRS adoption if strong legal enforcement and zero otherwise.
ROA_BEF_NO_COND=ROA pre-IFRS adoption if weak legal enforcement and zero otherwise.
ROA_AFT_NO_COND=ROA post-IFRS adoption if weak legal enforcement and zero otherwise.

The column labeled EM conditions on extent of earnings management prior to the adoption of IFRS. Values above (below) the median represent countries with high (low) earnings management.
COND=1 if high earnings management and zero otherwise
ROA_BEF_COND=ROA pre-IFRS adoption if high earnings management and zero otherwise.
ROA_AFT_COND=ROA post-IFRS adoption if high earnings management and zero otherwise.
ROA_BEF_NO_COND=ROA pre-IFRS adoption if low earnings management and zero otherwise.
ROA_AFT_NO_COND=ROA post-IFRS adoption if low earnings management and zero otherwise.

The column denoted DIFF conditions on the extent to which there are differences between local GAAP and IFRS. Values above (below) the median represent countries with large (small) IFRS-local GAAP differences.
COND=1 if large accounting differences and zero otherwise
ROA_BEF_COND=ROA pre-IFRS adoption if large accounting differences and zero otherwise.
ROA_AFT_COND=ROA post-IFRS adoption if large accounting differences and zero otherwise.
ROA_BEF_NO_COND=ROA pre-IFRS adoption if small accounting differences and zero otherwise.
ROA_AFT_NO_COND=ROA post-IFRS adoption if small accounting differences and zero otherwise.

The column denoted by DT conditions on the level of differential timeliness We estimate DT for each country separately in the pre (post) IFRS periods of 2002-2004 (2006-2008) using the Basu (1997) specification for those firms in each country for which earnings, returns and market values are available on Datastream. We classify each country to high (low) DT if the estimated DT is above (below) the median.
COND=1 if the country-year is classified as high DT and zero otherwise.
ROA_BEF_COND=ROA pre-IFRS adoption if high DT and zero otherwise.
ROA_AFT_COND=ROA post-IFRS adoption if high DT and zero otherwise.
ROA_BEF_NO_COND=ROA pre-IFRS adoption if low DT and zero otherwise.
ROA_AFT_NO_COND=ROA post-IFRS adoption if low DT and zero otherwise.

F-tests compare estimated ROA coefficients pre- and post-IFRS. The number of observations in the EM column is smaller because we do not have the EM measure for Poland.

Table 4- CDS Spreads and Transparency

Panel A: Transparency Measures in the Pre and Post IFRS periods

		AF_ACC	AF_DSP	AF_ACC_QTR	AF_DSP_QTR
IFRS SAMPLE	PRE IFRS	0.016	0.009	0.011	0.005
	POST IFRS	0.007	0.007	0.007	0.004
	DIFF (PRE-POST)	0.008***	0.002**	0.004*	0.000
US SAMPLE	PRE IFRS	0.003	0.002	0.002	0.001
	POST IFRS	0.008	0.004	0.004	0.002
	DIFF (PRE-POST)	-0.005	-0.001***	-0.001	-0.001***

Panel B: Determinants of CDS spreads and Transparency

	AF_ACC	AF_DSP	AF_ACC_QTR	AF_DSP_QTR
Constant	3.235***	3.296***	2.693***	3.053***
	(0.000)	(0.000)	(0.000)	(0.000)
US_Dummy	0.068	0.067	-0.082	-0.324
	(0.552)	(0.371)	(0.631)	(0.138)
US_POST	-0.098	-0.086	0.135	-0.248
	(0.550)	(0.556)	(0.349)	(0.395)
IFRS_POST	0.205**	0.159**	0.269*	-0.180
	(0.021)	(0.043)	(0.067)	(0.551)
US_TRANSPARENCY	-9.520***	-18.533*	-4.253	-13.811*
	(0.007)	(0.078)	(0.140)	(0.063)
IFRS_ TRANSPARENCY	-7.401***	-15.813***	-8.768***	-7.834
	(0.000)	(0.000)	(0.000)	(0.237)
US_ROA	-12.107***	-11.968***	-8.566***	-9.363***
	(0.002)	(0.003)	(0.000)	(0.003)
IFRS_ROA	-7.118***	-6.712***	-7.020***	-7.149**
	(0.000)	(0.000)	(0.009)	(0.013)
BV	-0.180***	-0.193***	-0.201***	-0.192***
	(0.001)	(0.003)	(0.000)	(0.000)
LEV	1.105***	1.059***	1.681***	2.088***
	(0.000)	(0.000)	(0.000)	(0.000)
RATE	0.033***	0.033***	0.040***	0.023***
	(0.000)	(0.000)	(0.000)	(0.007)
SD_RET	9.322***	9.396***	8.232***	7.320***
	(0.000)	(0.000)	(0.000)	(0.000)
SPOT	0.025	0.023	0.014	0.037**
	(0.545)	(0.555)	(0.267)	(0.032)
CRISIS	1.376***	1.304***	1.018***	0.734***
	(0.000)	(0.000)	(0.000)	(0.000)
Observations	8,694	8,427	14,699	10,295
R-squared	0.887	0.888	0.879	0.878

Panel C: Change in Transparency after adoption of IFRS and CDS spreads

VARIABLES	AF_ACC	AF_DSP	AF_ACC_Q	AF_DSP_Q
Constant	1.643***	1.610***	2.644***	2.669***
	(0.000)	(0.000)	(0.000)	(0.000)
US_Dummy	0.533***	0.561***	-0.231	-0.110
	(0.000)	(0.000)	(0.257)	(0.570)
US_POST	-0.120	-0.122	-0.130	-0.324
	(0.362)	(0.366)	(0.560)	(0.145)
IFRS_POST	0.166	0.197	0.289	0.136
	(0.172)	(0.111)	(0.171)	(0.498)
US_ Δ TRANSPARENCY	0.049*	-0.355**	-0.173*	-0.313**
	(0.075)	(0.015)	(0.057)	(0.037)
IFRS_ Δ TRANSPARENCY	0.020	0.135**	0.036	0.027
	(0.394)	(0.028)	(0.208)	(0.706)
US_ROA_BEF	-15.542***	-17.547***	-21.129***	-23.348***
	(0.000)	(0.000)	(0.000)	(0.000)
IFRS_ROA_BEF	-0.411	0.195	-0.584	1.194
	(0.797)	(0.927)	(0.823)	(0.572)
US_ROA_AFT	-13.295***	-14.243***	-8.030***	-9.182***
	(0.000)	(0.000)	(0.003)	(0.002)
US_ROA_AFT* Δ TRANSPARENCY	-0.723	-6.853	-3.386	2.979
	(0.296)	(0.373)	(0.289)	(0.438)
IFRS_ROA_AFT	-6.271***	-5.804***	-5.904**	-3.831**
	(0.000)	(0.000)	(0.014)	(0.041)
IFRS_ROA_AFT * Δ TRANSPARENCY	0.933	-1.833	-0.342	-4.354
	(0.318)	(0.363)	(0.875)	(0.541)
BV	-0.074**	-0.071**	-0.120***	-0.107***
	(0.011)	(0.015)	(0.001)	(0.002)
LEV	2.122***	2.032***	2.105***	2.406***
	(0.000)	(0.000)	(0.000)	(0.000)
RATE	0.024***	0.023***	0.031***	0.018**
	(0.002)	(0.003)	(0.000)	(0.032)
SD_RET	7.900***	8.065***	7.183***	5.831***
	(0.000)	(0.000)	(0.000)	(0.000)
SPOT	0.046***	0.045***	0.044***	0.047**
	(0.002)	(0.002)	(0.008)	(0.011)
CRISIS	0.537***	0.495***	0.376**	0.225
	(0.004)	(0.005)	(0.047)	(0.172)
Observations	15,271	14,797	11,578	9,341
R-squared	0.876	0.879	0.879	0.892

Notes to Table 4:

Panel A shows the mean of transparency measures in the pre and post-IFRS periods for the sample firms that adopted IFRS (IFRS Sample) and US firms. (1) analyst forecast accuracy (AF_ACC) computed as the annual EPS forecast error; (2) analyst forecast dispersion (AF_DSP) computed as the dispersion of annual analyst EPS forecasts; (3) analyst forecast accuracy (AF_ACC_Q) computed as the annualized quarterly forecast errors, and (4) analyst forecast dispersion (AF_DSP_Q) computed as the annualized dispersion of the quarterly EPS. All measures are scaled by price per share.

Panel B shows regressions of CDS spreads on its determinants including a transparency (TRANSPARENCY) measure.

Panel C presents the regressions of CDS spreads on transparency and change in transparency (Δ TRANSPARENCY). We compute the change in firm-level transparency as the change between the firm's average transparency for the years (2003-2005) and the firm's average transparency for the years (2006-2008).

Regressions in all panels control for CDS maturity, industry, year, and country fixed-effects (not reported). Two-tailed p-values are in parentheses. All regressions are estimated using OLS with robust standard errors corrected for firm clustering, time clustering and multiple CDS contracts per firm. The number of observations is determined by data availability of analyst earnings forecasts and dispersions.