Article

Journal of Accounting,
Auditing & Finance
2015, Vol. 30(2) 150–180

DOI: 10.1177/0148558X14549458
jaf.sagepub.com
SAGE

Who Are the Losers of IFRS Adoption in Europe? An Empirical Examination of the Cash Flow Effect of Increased Disclosure

Andreas Charitou[1], Irene Karamanou[1], and Neophytos Lambertides[2]

Abstract

Unlike prior studies that examine the denominator effect, this study investigates the cash flow effect of disclosure as captured by firms exhibiting increases in default risk (DR) around the 2005 mandatory International Financial Reporting Standards (IFRS) adoption in Europe. Using the Merton (1973, 1974) option-based probability of default measure (DR) on a data set of 415 winner firms (with decreases in DR) and 295 loser firms (with increases in DR), we show that loser firms exhibit the same or better financial characteristics in the pre-IFRS adoption period compared with the winner sample. However, after IFRS, loser firms exhibit deteriorating characteristics, with smaller increases in their Tobin's *q* valuations, greater increases in leverage, and poorer return performance. Logistic analysis suggests that even though in the pre-IFRS period loser firms exhibit greater profitability and analyst following and lower leverage, in the post-IFRS period their profitability is less than that of winner firms while exhibiting similar leverage and analyst following characteristics. Through an examination of the determinants of the change in DR, the results suggest that loser firms incur a greater increase in DR the poorer their home country's legal enforcement environment, the lower their analyst following, and the greater their propensity to manage earnings. In general, our results are consistent with the existence of a significant cash flow effect for the loser sample.

Keywords

IFRS adoption, disclosure, cash flow effect, default risk, losers

[1]University of Cyprus, Nicosia, Cyprus
[2]Cyprus University of Technology, Limassol, Cyprus

Corresponding Author:
Andreas Charitou, Department of Accounting and Finance, University of Cyprus, P.O. Box 20537, 1678 Nicosia, Cyprus.
Email: charitou@ucy.ac.cy

Introduction

The benefits of increased disclosure have been extensively examined, both analytically and empirically, in the accounting and finance literature. Yet, even though increased disclosure can affect both the firm's cost of capital (denominator or uncertainty reduction effect) and market expectations of future cash flows (numerator or cash flow effect), studies in the area predominantly focus on the effects of the former. Kothari, Li, and Short (2009) recognize that these studies examine mostly the effects of the quality of disclosure and not so much its content, whereas Leuz (2003) recognizes the gap in the literature and calls for research that separates the denominator from the numerator effect of disclosure on firm value. This article fills this gap by examining changes in default risk (DR) around the mandatory International Financial Reporting Standards (IFRS) adoption to isolate the cash flow effect of disclosure. DR is measured as the option-based probability of default at debt maturity proposed by Merton (1973, 1974).

The analytical literature suggests that, under the assumptions that the market is aware of the existence of private information and the cost of revealing this information is low, the unraveling result will eventually be realized whereby all firms voluntarily disclose information revealing their true type (Grossman, 1981; Milgrom, 1981). If these assumptions are not met, a market solution will not likely result in a socially optimal level of disclosure, while the existence of agency conflicts may even result in the underproduction of information (Kothari, Ramanna, & Skinner, 2010; Leuz & Wysocki, 2008). The goal of optimal information production can, in this case, be better achieved through regulatory changes in required disclosure. Regulatory intervention can thus take the form of mandating increased disclosure even though other mechanisms also exist that could result in the same outcome. For example, Dontoh, Ronen, and Sarath (2013) suggest that the use of financial statement insurance coverage can also help investors distinguish high from bad disclosure quality firms.

Unlike changes in specific accounting rules, which may not result in significant revisions in future cash flow expectations, rendering the cash flow effect an elusive disclosure outcome to capture, a mandated disclosure change to an altogether different set of accounting standards can thus have a substantial impact on the information disclosed by the firm. The 2005 mandated adoption of IFRS in Europe is a good example of such regulatory intervention and provides an ideal testing stage to examine the cash flow effect of disclosure that has been overlooked in the relevant academic literature. The European Union's (EU) directive 1606/2002 explicitly states that harmonizing financial information through the mandated IFRS adoption is expected to result in a high degree of transparency and comparability. Pownall and Schipper (1999) define transparency as the revelation of the events, transactions, judgments, and estimates underlying the financial statements, along with their implications. Inevitably, the revelation of this new information through IFRS adoption will induce revisions in the expectations of future cash flows, providing a unique setting to examine this disclosure effect. There are a number of possible reasons why firms may have not revealed their true type prior to IFRS adoption. This may be related to firm choice (see, for example, the theoretical framework of Teoh & Hwang, 1991) or to constraints embedded in local Generally Accepted Accounting Principles (GAAP) that limited their ability to do so.[1] To argue that increased disclosure due to the IFRS switch helps to differentiate between firms that did not voluntarily reveal their high type, in expectation of future good news, from firms that did not reveal their low type to be perceived as high-type firms.[2]

Most studies that examine the IFRS adoption event focus on its effect on the cost of capital (or other related financial measures), which stems mainly from a reduction in information uncertainty. Barry and Brown (1985) and Merton (1987) argue that managers can reduce information risk through increased disclosure. Similarly, Easley and O'Hara (2004) demonstrate that investors demand a higher return to hold stocks with greater private information and suggest that firms can directly lower their cost of capital by increasing the precision of accounting information, something that can be achieved through their choice of accounting standards. Similar to the cost of capital, DR captures an element of riskiness or uncertainty that is expected to be reduced through enhanced disclosure, irrespective of the nature of the information's news, leading to a reduction in DR (the uncertainty effect).[3] Myers and Majluf (1984), for example, note that the issuance of both equity and debt is costly to shareholders in the presence of information asymmetry. Unlike the cost of capital, DR also captures future cash flow expectations, which can be revised through enhanced disclosure, which reduces information asymmetry. The direction of this revision, however, cannot, a priori, be established (the cash flow effect).[4]

Even though related research documents a strong association between disclosure quality and the cost of debt, the issue of whether increased disclosure affects the amount and timing of future cash flow expectations remains largely unanswered. The fact that DR is affected by both the cash flow and uncertainty reduction effects of disclosure provides a unique setting that enables us to examine the differential benefits of IFRS adoption by isolating the cash flow effect and to contribute to the related emerging literature on the effects of the mandatory adoption of IFRS.[5] If the new information revealed by IFRS adoption leads to a downward revision in expected cash flows, DR will increase. In this case, the increased disclosure effect on DR will be related to the relative strength of the uncertainty reduction and cash flow effects.

As the expected impact of IFRS on DR cannot be directionally defined, we use the actual change in DR around IFRS adoption to separate firms into a subsample of winners, representing firms that experience an overall reduction in DR, and a subsample of losers, representing firms that experience an overall increase in DR. The cash flow effect cannot be separated from the uncertainty reduction effect for the winner sample. For these firms, the dominant disclosure effect may be either the uncertainty reduction effect or a positive cash flow effect (or both). We argue that the cash flow effect of disclosure can be captured by the loser subsample. In this case, even though the uncertainty reduction effect leads to unequivocal decreases in DR, loser firms are affected mostly by a negative and dominating cash flow effect, resulting in a net increase in DR.

Our sample comprises 710 European firms that switched to IFRS in 2005 following the EU mandate, with 295 of these experiencing an overall increase in DR (losers) and 415 an overall decrease in DR (winners) after the switch. We perform a number of analyses to examine whether the increase in DR for the loser sample is related to the cash flow disclosure effect.

We first show that loser firms exhibit the same financial characteristics, or better, as winner firms in the pre-IFRS period as measured by Tobin's q, annual abnormal returns, and leverage. In the post-IFRS adoption period, consistent with IFRS disclosures revealing unfavorable news, loser firms exhibit deteriorating characteristics, with smaller increases in Tobin's q valuations, poorer return performance, and greater increases in leverage.

To provide further support for the existence of a cash flow effect, we next examine the differences between the two samples by employing logistic analysis. The results suggest that winners tend to be larger firms, but, surprisingly, in the year prior to IFRS adoption,

losers have greater analyst following, are less leveraged, and exhibit greater profitability (as evidenced by return on equity) and a greater propensity to manage earnings compared with winners. In the post-adoption period, loser firms are less profitable and do not differ from winner firms in analyst following, leverage, or the propensity to manage earnings. We conjecture that in the pre-adoption period, low-type firms mimic high-type firms, not only by not disclosing information (Teoh & Hwang, 1991) but also by misleading the market about their true type. The mandated increase in disclosure, however, has severely limited the ability of loser firms to effectively fool the market.

We next examine the cross-sectional determinants of the change in DR for the two samples separately. We find that for our sample of winners, the decrease in DR is greater, and hence the benefits of IFRS adoption are also greater, the lower the analyst following, firm profitability, and sales growth and the greater the firm's leverage. Contrary to the results for the winner sample, and consistent with the cash flow effect of disclosure, we find some evidence that the increase in DR for the loser sample is greater, and hence the benefits of IFRS adoption are lower, for firms that manage earnings and are followed by fewer analysts. We next examine the effect of country enforcement on the documented relations for our loser sample. Some very interesting relations emerge from this analysis suggesting that in countries with weak legal enforcement the cash flow effect of disclosure is stronger, in contrast to the results for the winner sample, which support the complementarity between disclosure and legal enforcement.

To alleviate the concern that the observed change in DR may be related to other correlated omitted variables and not to the IFRS adoption event, we perform a number of robustness tests. First, we perform a difference-in-differences analysis by examining the magnitude of the change in DR around IFRS adoption and around 2003 for both our loser sample and a matched sample of firms that had voluntarily adopted IFRS prior to 2005. Results confirm that, in the period around IFRS adoption, the increase in DR is greater for mandatory switchers. Second, we redefine the loser and winner samples based on the unexpected change in DR around the IFRS event. The results remain qualitatively unchanged.

Taken together, the results of this study suggest that firms that were more able to hide their true low type in the pre-IFRS period faced a more adverse impact related to the mandated increase in disclosure. Mandated disclosure is therefore beneficial not only because it reduces uncertainty regarding future cash flows but also because the content of the additional disclosures allows investors to readjust their expectations about the amount and timing of future cash flows accordingly. Put differently, this study documents that an important benefit of increased disclosure is the content of the new information revealed that helps the market adjust the pricing of DR.

Background, Motivation, and Expectations

Background and Motivation

The existence of debt creates an agency relationship between shareholders and consequently management and debt holders. The framework developed by Jensen and Meckling (1976) suggests that higher agency costs, proxied by poorer disclosure quality, should be related to a higher cost of debt. Kothari et al. (2010) note that these agency costs arise from problems associated with asset substitution and underinvestment, whereas Armstrong, Guay, and Weber (2010) refer to the important role that information asymmetry and information uncertainty play in debt contracting. Both studies highlight the need for greater

financial reporting reliability, so that lenders can better assess the amount, timing, and uncertainty of future cash flows. To the extent that the switch to IFRS enhances the information environment, both the uncertainty of future cash flows will be reduced and the expectations of future cash flows revised. Research to date has mainly examined the effects of disclosure on the former.

A number of studies, for example, examine the association between earnings quality and different measures of the cost of debt.[6] Even though extant research documents a strong relation between disclosure and the cost of debt, whether increased disclosure affects future cash flow expectations remains largely an open question requiring further investigation.

The European-wide adoption of IFRS is an example of regulated financial reporting that, according to Kothari et al. (2010), can be explained by three major theories of regulation. According to ideology theory in particular, the effectiveness of disclosure regulation depends on the ideologies of the regulators and the strength and interests of the lobbying parties. In the context of the theory, then, the success of the mandated IFRS switch is an open empirical question. Recent evidence on the effects of the mandatory IFRS switch on disclosure quality support the idea that IFRS adoption enhances disclosure quality. Byard, Li, and Yu (2011); Horton, Serafeim, and Serafeim (2013); and Tan, Wang, and Welker (2011) find that mandatory IFRS adoption is related to improved analyst forecast accuracy; Landsman, Maydew, and Thornock (2012) find that the information content of earnings announcements increases; and DeFond, Hu, Hung, and Li (2011) document higher foreign mutual fund ownership around the mandated IFRS switch. Evidence of Kim, Li, and Li (2011) corroborates the above findings, as it suggests that U.S. investors perceive IFRS to be of high quality, comparable with that of U.S. GAAP.[7]

Studies by Christensen, Lee, and Walker (2009) and Wang and Welker (2011) acknowledge, but do not explicitly test, the important role of the cash flow effect of disclosure. Specifically, Christensen et al. (2009) find that the market reaction to reconciliation announcements such as IFRS is more pronounced for firms with a greater likelihood and costs of covenant violation. Wang and Welker document a negative association between IFRS reconciliations and the likelihood of equity issuance in the 3-year period before the IFRS switch, suggesting that firms strategically time financing decisions to take advantage of the new information that will be revealed. We extend this line of research by focusing on the effects of IFRS adoption on future cash flow expectations that we isolate based on the change in DR.

The results of extant research also highlight the importance of examining the impact of legal enforcement on the cash flow disclosure effect. Specifically, studies by Ball, Kothari, and Robin (2000); Ball, Robin, and Wu (2003); Ball and Shivakumar (2005); Burgstahler, Hail, and Leuz (2006); and Street and Gray (2001), among others, point to the limited role of accounting standards and highlight the importance of firms' reporting incentives and, more generally, of the institutional environment in determining observed accounting quality. The importance of the legal environment is also documented in more recent studies that specifically examine the impact of IFRS adoption. Daske, Hail, Leuz, and Verdi (2008) find that IFRS adoption is related to increased market liquidity and valuation and decreased costs of capital, but these results hold only for firms in countries with strong legal enforcement. Beuselinck, Joos, Khurana, and Van der Meulen (2009) find that IFRS adoption increases stock price informativeness, with stronger results for firms domiciled in countries with strong legal enforcement. Landsman et al. (2012) find that firms from countries with strong enforcement experience a greater change in the information content of earnings announcements than firms from countries with weak enforcement. Similarly,

Shima and Gordon (2011) document that mandatory IFRS adoption is attractive to U.S. investors only for countries with a strong regulatory environment. Finally, Li (2010) finds a significant reduction in the firms' cost of equity capital, albeit only for firms in strong legal enforcement environments. Overall, the results of extant research highlight the importance of examining the impact of legal enforcement on the cash flow disclosure effect.[8]

Expectations and Research Design

Based on the aforementioned evidence, which supports, on one hand, the existence of a strong relation between disclosure and the cost of debt and, on the other hand, the enhancement in the information environment from IFRS adoption, we expect that the mandated IFRS switch should decrease the uncertainty regarding the market's future cash flow expectations, decreasing, in turn, DR.

What makes DR an interesting measure to study is the fact that it is affected not just by the firm's inherent uncertainty for default but also by future cash flow expectations. Even though the effect of enhanced disclosure on the level of uncertainty and, in turn, DR is negative, the relation between cash flow expectations and DR is contingent upon the nature of the new information revealed.[9] In the theoretical framework developed by Teoh and Hwang (1991), this new disclosure will help differentiate firms that did not voluntarily adopt IFRS in expectation of future good news—that is, high-type firms—from firms that did not voluntarily adopt IFRS in expectation of future bad news—that is, low-type firms. Alternatively, this non-revelation of the firm's type in the pre-IFRS period may not reflect the firm's choice but rather be related to the inability to do so due to constraints embedded in local GAAP. The increased disclosure that is related to the mandated IFRS adoption reveals their true type irrespective of the underlying reason that prohibited them in doing so in the first place.

For high-type firms, both the cash flow revision and uncertainty reduction effects of increased disclosure result in a reduction in DR after IFRS adoption. In the case of low-type firms, IFRS adoption will, on the one hand, decreases DR by reducing uncertainty and, on the other, increases DR by the negative revision in cash flow expectations after the revelation of the firm's true type. If the increase in DR from the cash flow effect is weaker than the related decrease due to the uncertainty reduction effect, then the net change in DR will be favorable (i.e., DR will decrease). Low-type firms (i.e., those revealing bad news) for which the uncertainty reduction effect dominates and high-type firms (i.e., those revealing positive news) comprise our winner sample, as both experience an overall reduction in DR. Our loser sample, however, comprises low-type firms for which the increase in DR from the negative cash flow effect is stronger than the related decrease due to the uncertainty reduction effect, resulting in a net increase in DR.

Figure 1 graphically explains the underlying assumptions made in the construction of the two subsamples. As the figure suggests, even though it is not possible to separate the two disclosure effects for the winner sample, for the loser sample the two effects affect DR in opposite directions, making the cash flow effect of disclosure more detectable. The tests in the results section are designed to provide empirical support for the conjecture that increased disclosure results in a negative revision of future cash flows for the loser sample.

In seeking to provide evidence on the cash flow effect of disclosure, we examine the differences between the two samples across two classes of variables. The first category of variables affects the ability of the firm to mislead. Richer information environments hinder the ability of low-type firms to conceal their true type. According to Gray, Meek, and

	Uncertainty reduction effect is dominant	Cash flow effect is dominant
Cash flow effect is positive	DR decreases (Winner firms)	DR decreases (Winner firms)
Cash flow effect is negative	DR decreases (Winner firms)	DR increases (Loser firms)

Figure 1. The effect of disclosure on DR.

Note. This figure shows how the two subsamples of winners and losers are constructed. Loser firms are those firms that experience an overall increase in DR after IFRS adoption due to a negative and dominating cash flow effect. Winners are those firms that experience an overall decrease in DR with either a positive cash flow effect or a negative cash flow effect with a dominating uncertainty reduction effect. The uncertainty reduction effect of enhanced disclosure is related to a reduction in information asymmetry that reduces the uncertainty regarding future cash flows, leading to a decrease in DR. The cash flow effect of disclosure may be positive if the additional information revealed by IFRS adoption induces a positive revision in cash flow expectations, or negative if the additional information revealed induces a negative revision in cash flow expectations. DR = default risk; IFRS = International Financial Reporting Standards.

Roberts (1995); Healy and Palepu (2001); and Ndubizu (1992), disclosure reduces information asymmetry in the market and thus uncertainty, which, in turn, prevents market failure and increases market liquidity. Increasing the level of disclosure increases the level of transparency between the firm and outside investors, reduces agency conflicts, and consequently improves the firm's valuation. In the case of DR, however, the richness of the information environment is expected to affect not only the level of uncertainty reduction but also the magnitude of cash flow revisions. For the sample of losers, that is, those firms for which the cash flow effect of disclosure dominates the uncertainty reduction effect, IFRS adoption is expected to result in more unfavorable revisions in cash flows, as the firms' true low type could have been better concealed in a poor disclosure regime. Thus, the increase in DR will be greater for firms with poor information quality prior to the increase in disclosure quality. For our sample of winners, however, the decrease in DR will be greater for firms with poor information environments, in turn decreasing DR. Winners from poor disclosure environments will benefit more from a reduction in uncertainty and/or the revelation of good news, leading to greater decreases in DR.

The ability of a low-type firm to conceal its true type should also be inversely related to the quality of its auditor. Low-type firms audited by a non-Big Four audit firm are better able to conceal their true type. The increase in disclosure will therefore have a greater adverse impact on these firms, leading in turn to greater increases in DR. For the winner firms, information uncertainty is lower if audited by a Big Four audit firm, leading to smaller decreases in DR after the increase in disclosure.

The country level of legal enforcement can also severely limit a firm's ability to mislead. Legal enforcement is a particularly important factor affecting financial reporting quality (Ball et al., 2000; Ball et al., 2003; Burgstahler et al., 2006; Bushman & Piotroski, 2006; Eccher & Healy, 2000; Hung & Subramanyan, 2007) and investor protection (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1998). For the loser sample, therefore, weak legal enforcement in the home country increases the firm's ability to mislead. Under the assumption that IFRS adoption results in an increase in the quality of reporting (even if this increase can still result in lower quality IFRS reporting than that of strong enforcement

environments), we expect that the negative impact on cash flow expectations for loser firms will be stronger for firms in weak enforcement environments. In contrast, for winner firms that did not have bad news to hide in the pre-adoption period, the effect of legal enforcement is expected to affect mostly the quality of IFRS reporting. Based on the results of prior research, we expect that strong enforcement should result in a greater decrease in uncertainty and greater reduction in DR. This expectation is based on the results of Beuselinck et al. (2009), Daske et al. (2008), and Li (2010), who find that the benefits of IFRS adoption are greater in countries with strong legal enforcement, and Hope (2003), who finds that strong legal enforcement leads to more reliable applications of accounting rules, in turn increasing analyst forecast accuracy.

Finally, the firm's ability to conceal its true type can also be captured by the firm's propensity to manage earnings. According to Graham, Harvey, and Rajgopal (2005), volatile earnings command a risk premium, creating an incentive for managers to smooth earnings. Loser firms that managed earnings are those that will reveal more negative news after the mandated increases in disclosure. Winner firms that, for strategic reasons, were hiding their true high type are not expected to have engaged in earnings management. Therefore, for the winner sample, earnings management should be related to the change in DR (ΔDR) only for low-type firms with a dominant uncertainty reduction effect. To the extent that the earnings management dummy (EMD) captures greater overall uncertainty for the future prospects of the firm, the relation should be negative.

The second category of variables relates to the incentives firms face to conceal their true low type. We argue that the incentive to conceal bad news increases with firm leverage and sales growth.[10] Jensen and Meckling (1976) suggest that agency costs are higher for more leveraged firms, whereas Watts and Zimmerman (1990) predict that higher leverage increases the probability of covenant violations, in turn inducing managers to make income-increasing accounting choices. DeFond and Jiambalvo (1994) report evidence consistent with firms increasing accruals in the year of a debt covenant violation and the preceding year. Firms with higher sales growth are also subject to greater agency costs (Smith & Watts, 1992). Skinner and Sloan (2002) document that the stock market penalizes high-growth firms more than low-growth firms for missing an earnings target. Roychowdhury (2006) finds evidence that firms with higher growth opportunities and outstanding debt manage real earnings to a greater extent. Therefore, the incentive to conceal bad news should increase with growth and leverage, leading to the revelation of more negative information around mandated increases in disclosure for the loser sample.

Method

DR

A firm's DR is measured by the option-based probability of default at debt maturity proposed by Merton (1973, 1974). The Merton default prediction model has been one of the most influential and widely used models in corporate finance. It has been widely used to investigate, inter alia, default probabilities and recovery rates (e.g., Bharath & Shumway, 2008; Hillegeist, Keating, Cram, & Lundstedt, 2004), DR and returns (e.g., Chava & Purnanandam, 2010; Da & Gao, 2010; Garlappi, Shu, & Yan, 2008; Vassalou & Xing, 2004), DR and executive compensation (e.g., Kadan & Swinkels, 2008), as well as default correlations and default determinants (e.g., Campbell, Hilscher, & Szilagyi, 2008).

The basic intuition behind the Merton option-based bankruptcy prediction model is that the equity of a levered firm can be viewed as a call option to acquire the value of the firm's assets (V) by paying off (i.e., having as an exercise price) the face value of the debt (D) at the debt's maturity (T).[11] From this perspective, a firm will be insolvent if the value of its assets falls below what it owes its creditors at debt maturity (i.e., when $V_T < D$).

The value of equity of such a levered firm, being analogous to a call option on the value of the firm's assets, V, is given by the Black–Scholes–Merton formula for a European call option (adjusted for a payout δ on firm value):

$$\mathrm{E}(V,\tau) = V\mathrm{e}^{-\delta\tau}\mathrm{N}(d_1) - D\mathrm{e}^{-r\tau}\mathrm{N}(d_2), \tag{1}$$

where $d_2 = \{\ln(V/D) + (r - \delta - 1/2\sigma^2)\tau\} / \sigma\sqrt{\tau}$, $d_1 = d_2 + \sigma\sqrt{\tau}$, $\mathrm{N}(d)$ is the (univariate) cumulative standard normal distribution function (from $-\infty$ to d), D is the face value (principal) of the debt, V is the value of the firm's assets, σ is the standard deviation of firm value changes (returns in V), δ is the constant payout on firm value, r is the risk-free interest rate, $\tau(= T - t)$ is the time to debt maturity, and $\mathrm{N}(-d_2)$ is the (risk-neutral) probability of the firm defaulting at maturity. This article uses $\mathrm{N}(-d_2)$ as our measure of DR, calculated as in Bharath and Shumway (2008).[12]

The main advantage of using option-pricing models in calculating the default likelihood is that they provide guidance about the theoretical determinants of bankruptcy and supply the necessary structure to extract bankruptcy-related information from market prices. The effectiveness of bankruptcy probability measures based on accounting data is being questioned for several reasons (Begley, Ming, & Watts, 1996; Hillegeist et al., 2004). Not only are financial statements designed to measure past performance and may therefore not be very informative about the future status of a firm, but also they are formulated under the going-concern principle, which consequently limits, by design, the accuracy and reliability of the bankruptcy probability assessment. In addition, these models fail to incorporate any asset volatility measures, which likely leads to a substantial reduction of their performance, as firms exhibit considerable cross-sectional variation in volatility, while they rely on the assumption that the market can impound all publicly available information into prices. Hillegeist et al. (2004) suggest using the Black–Scholes–Merton models as a proxy for the probability of bankruptcy instead of traditional accounting-based measures, which do not seem to add any incremental information beyond the standard option variables.[13]

Following extant research, we proxy for DR using the option-based probability of default. As we are interested in the effects of IFRS adoption on DR, we compute the change in DR around 2005, year t, which signifies the year of the mandatory switch in Europe, as follows:

$$\underline{\underline{\Delta \mathrm{DR}}} = \frac{\mathrm{DR}_{t+1} - \mathrm{DR}_{t-1}}{|\mathrm{DR}_{t-1}|}. \tag{2}$$

Data Set

Our data set consists of all European firms that mandatorily adopted IFRS in 2005, with data available from the Datastream and I/B/E/S databases. The initial sample of mandatory adopters consisted of 1,142 firms from 19 countries. To be included in the tests, firms were required to have the data available to compute the DR measure for the years before and after the IFRS mandatory adoption, resulting in a sample of 710 mandatory adopters. Of

Table 1. Country Distribution.

Country	Initial	%	Final	%	Winners	%	Losers	%
Austria	7	0.61	3	0.42	2	0.48	1	0.34
Belgium	42	3.68	25	3.52	15	3.61	10	3.39
Czech Republic	11	0.96	0	0.00	0	0.00	0	0.00
Denmark	32	2.80	22	3.10	11	2.65	11	3.73
Finland	35	3.06	25	3.52	14	3.37	11	3.73
France	175	15.32	132	18.59	85	20.48	47	15.93
Germany	77	6.74	33	4.65	19	4.58	14	4.75
Greece	42	3.68	27	3.80	12	2.89	15	5.08
Hungary	3	0.26	0	0.00	0	0.00	0	0.00
Ireland	20	1.75	13	1.83	9	2.17	4	1.36
Italy	129	11.30	77	10.85	51	12.29	26	8.81
Luxemburg	15	1.31	1	0.14	1	0.24	0	0.00
The Netherlands	95	8.32	59	8.31	36	8.67	23	7.80
Norway	27	2.36	19	2.68	11	2.65	8	2.71
Poland	38	3.33	11	1.55	4	0.96	7	2.37
Portugal	38	3.33	14	1.97	8	1.93	6	2.03
Spain	96	8.41	65	9.15	34	8.19	31	10.51
Sweden	62	5.43	45	6.34	21	5.06	24	8.14
United Kingdom	198	17.34	139	19.58	82	19.76	57	19.32
Total	1,142		710		495		295	

Note. This table presents the initial and final sample of mandatory adopters by country. For each country, the final number of available firm observations is then split between winners and losers. Winners (losers) are firms that exhibit a reduction (increase) in their default risk around the mandatory adoption of IFRS. IFRS = International Financial Reporting Standards.

these, 415 firms experienced a decrease in DR (winner sample) and 295 an increase in DR (loser sample) around the IFRS adoption event. Table 1 presents the initial and final samples of mandatory adopters by country and then by the number of winners and losers for each country. The final sample includes firms from 17 countries, with the United Kingdom, France, and Italy having the greatest numbers of adopters. We also note that for most of the countries in our sample, there are no substantive differences between the proportion of winners and losers.

Empirical Results

Descriptive Statistics

The variables used in the study are measured as follows: Analyst following (FOLL) and analyst forecast dispersion (DISPERSION) capture the quality of the information environment. FOLL is measured as the number of analysts who have issued at least one forecast for the 2004 fiscal year, obtained from the I/B/E/S consensus database, while DISPERSION is the standard deviation of the most recent earnings forecast of each analyst in the same period. Analyst following and dispersion are used as proxies for the information environment in a number of papers (Cheng & Subramanyam, 2008; Lang, Lins, & Miller, 2003; Lang & Lundholm, 1993, 1996). We also examine the effects of firm size, SIZE, measured as the natural logarithm of firm total assets; firm profitability, proxied by the return on equity, ROE; growth opportunities, proxied by growth in sales, SALESGR,

computed as the average change in sales over revenues in the 2 years prior to the IFRS switch; leverage, measured as the ratio of total liabilities to total assets; and the quality of the firm's financial reporting, through a binary variable, AUDITOR, that takes the value 1 if the firm is audited by a Big Four audit firm, and 0 otherwise (see, for example, Ball et al. 2003; Bhattacharya, Daouk, & Welker, 2003). Data for these variables are obtained from Datastream. The efficiency of the judicial system, JUDEFF, is taken from La Porta et al. (1998) to proxy for the country's level of enforcement. The efficiency of the judicial system is an index that takes values from 1 to 10, with higher values representing more efficient judicial systems and greater investor protection.

Finally, we also examine the effect on DR of a firm's propensity to manage earnings, EMD.[14] We use a firm-specific measure of earnings management based on the ratio of the standard deviation of firm earnings divided by the standard deviation of the firm's cash flow from operations (Leuz, Nanda, & Wysocki, 2003). This measure is based on the assumption that earnings smoothing results in a lower variability of earnings compared with the variability of cash flows, so that lower ratios are indicative of greater earnings smoothing and, hence, earnings management.[15] To avoid large decreases in our sample, we compute the standard deviation of earnings and cash flows at the firm level in the 3-year period before the mandatory adoption of IFRS and then construct a dummy variable, EMD, that equals 1 for values of the ratio less than 0.90, and 0 otherwise. The use of a dummy variable avoids any estimation errors of the ratio, due to the limited number of observations used, and simplifies the interpretation of the interaction results.

Table 2 shows the mean, standard deviation, and median values for the main variables. The first row of each variable cell displays these values for the winner sample, the second row displays the values for the loser sample, whereas the third row displays the p value of a t test (Wilcoxon) for the difference in means (medians). The mean and median changes in DR for the winner sample are -0.493 and -0.308, respectively, whereas these values for the loser sample are 0.203 and 0.179, respectively. The impact of IFRS adoption on the winner firms is stronger than the impact on the loser firms, but this is expected, as for the loser firms the two disclosure effects have opposite signs, partly canceling out each other. For the winner firms, the uncertainty reduction and cash flow revision effects can have the same sign, driving up the impact on DR (see Figure 1). Apart from ΔDR, all the other variables are measured at the end of year $t - 1$. The mean and/or median tests reveal that in the year prior to IFRS adoption, winner firms are larger than loser firms but also exhibit lower profitability and growth in sales and higher dispersion and leverage. Interestingly, loser firms do not differ from winner firms in their propensity to be audited by a Big Four audit firm and the number of analysts following the firm. These results are consistent with the conjecture that low-type firms mimic high-type firms and are successful in concealing their true type through poor disclosure. As expected, the frequency of earnings management is greater for the loser sample, suggesting that this is one way loser firms use to mislead the market.

Table 3 presents the variable correlations separately for each subsample: The correlations for the winner (loser) sample are shown above (below) the diagonal. For our sample of winners, the variable correlations with our variable of interest, ΔDR, suggest that IFRS adoption is more beneficial for firms with poorer information environments, lower profitability and sales growth, and greater leverage. These results suggest that IFRS adoption is more beneficial for firms with greater uncertainty. For the loser sample, the earnings management indicator variable is strongly and positively associated with ΔDR, while analyst following, unlike for the winner sample, exhibits a negative but insignificant correlation

Table 2. Tests of Means and Medians.

Variable	*n*	*M*	*SD*	Median
ΔDR	415 295	−0.493 0.203 (.01)***	0.625 0.134	−0.308 0.179 (.01)***
FOLL	415 295	1.865 1.843 (.75)	0.960 0.858	1.946 1.946 (.50)
DISPERSION	358 260	0.075 0.078 (.89)	0.678 0.604	0.009 0.006 (.01)***
SIZE	415 295	15.05 14.59 (.01)***	1.968 1.704	14.67 14.41 (.01)***
ROE	415 295	0.094 0.141 (.01)***	0.329 0.154	0.121 0.139 (.01)***
SALESGR	415 295	0.074 0.092 (.17)	0.173 0.180	0.038 0.053 (.05)**
LEV	415 295	0.610 0.538 (.01)***	0.168 0.171	0.598 0.541 (.01)***
EMD	377 267	0.634 0.698 (.07)**	0.482 0.460	1.000 1.000 (.07)*
AUDITOR	415 295	0.858 0.851 (.79)	0.349 0.357	1.000 1.000 (.79)
JUDEFF	410 262	8.600 8.642 (.71)	1.451 1.501	9.000 9.500 (.59)

Note. This table shows descriptive statistics for the main variables. All variables except for ΔDR are measured in the year before IFRS adoption (fiscal year 2004). The first row of each variable cell displays these values for the winner sample, the second row displays the values for the loser sample, whereas the third row displays the *p* values of a *t* test (Wilcoxon) for the difference in means (medians). ΔDR is the change in DR 1 year after and before the adoption year, $[DR_{t+1} - DR_{t-1}] / |DR_{t-1}|$; FOLL is measured as the number of analysts that issued at least one forecast for the 2004 fiscal year; DISPERSION is the standard deviation of all forecasts made in 2004, keeping only the most recent earnings forecast of each analyst; SIZE is computed as the natural logarithm of the firm's total assets, measured in U.S. dollars; ROE is return on equity; SALESGR is computed as the average change in sales in the 2 years prior to IFRS adoption; LEV is leverage, measured as the ratio of total liabilities to total assets; EMD is an earnings management dummy that equals 1 if the value of the ratio of the standard deviation of firm earnings to the standard deviation of the firm's cash flows from operations is less than 0.90, and 0 otherwise; AUDITOR takes the value 1 if the firm is audited by a Big Four audit firm, and 0 otherwise; and JUDEFF is the efficiency of the judicial system taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). DR = default risk; IFRS = International Financial Reporting Standards.
*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

with ΔDR (*p* value = .15). The tests that follow examine in greater detail the differences between the two samples to provide evidence of the effects of cash flow revisions on DR.

Differences Between Winners and Losers: Valuation and Leverage Effects

Panel A of Table 4 examines the valuation differences between the two subsamples in three periods, two periods before IFRS adoption (2003 vs. 2001, 2002 vs. 2000) and the period around the increase in disclosure (2006 vs. 2004). The first two periods assume that the event year is 2002 and 2001, respectively, whereas for the test period the event year is 2005, that is, the year of the mandated IFRS switch. CAR is cumulated daily abnormal returns over the specified fiscal year; ΔLEV is the change in leverage, where leverage is measured as the ratio of total liabilities to total assets; and ΔTobin's *q* is the change in Tobin's *q*, where Tobin's *q* is the ratio of the market value of equity less the book value of equity plus the book value of total assets to the book value of total assets.

Tobin's *q* results indicate that in the two pre-adoption periods, loser firms exhibit significantly higher valuation changes than winner firms. Interestingly, this pattern is reversed in the post-IFRS period, where loser firms exhibit significantly lower Tobin's *q* changes. Similarly, the increase in leverage around IFRS adoption for loser firms is greater than that for winner firms, but the two samples do not exhibit significantly different changes in leverage in the two periods before IFRS adoption. We also examine the return performance

Table 3. Correlation Analysis.

Variable	ΔDR	FOLL	LEV	DISPERSION	SIZE	ROE	SALESGR	EMD	AUDITOR	JUDEFF
ΔDR	1	.191*** (.01)	−.285*** (.01)	.035 (.51)	.075 (.13)	.486*** (.01)	.165*** (.01)	.091* (.06)	.012 (.81)	.002 (.98)
FOLL	−.083 (.15)	1	.132*** (.01)	.073 (.17)	.579*** (.01)	.105** (.03)	−.119** (.02)	−.065 (.18)	.148*** (.01)	.149*** (.01)
LEV	.020 (.74)	.057 (.33)	1	−.082 (.12)	.474*** (.01)	−.129*** (.01)	−.096** (.05)	.167*** (.01)	.035 (.48)	−.040 (.42)
DISPERSION	−.041 (.51)	.089 (.15)	.071 (.25)	1	.122** (.02)	.023 (.66)	.018 (.73)	−.025 (.64)	.034 (.52)	.083 (.12)
SIZE	−.025 (.66)	.513*** (.01)	.457*** (.01)	.163*** (.01)	1	.173*** (.01)	−.050 (.31)	.046 (.34)	.282*** (.01)	.018 (.72)
ROE	.107* (.07)	.113** (.05)	.125** (.03)	.022 (.73)	.107* (.07)	1	.182*** (.01)	.139*** (.01)	.091* (.07)	.115** (.02)
SALESGR	.042 (.47)	−.201*** (.01)	−.155*** (.01)	−.017 (.79)	−.119** (.04)	.054 (.36)	1	.107** (.03)	.056 (.25)	.021 (.67)
EMD	.174*** (.01)	−.119** (.04)	.179*** (.01)	−.034 (.59)	.004 (.95)	.149*** (.01)	.027 (.65)	1	−.152*** (.01)	−.298*** (.01)
AUDITOR	.004 (.95)	.220*** (.01)	.122** (.04)	.036 (.56)	.196*** (.01)	−.061 (.30)	−.214*** (.01)	−.026 (.65)	1	.169*** (.01)
JUDEFF	−.052 (.38)	.022 (.71)	−.085 (.15)	.090 (.15)	−.115** (.05)	−.042 (.48)	−.004 (.95)	−.307*** (.01)	.113* (.06)	1

Note. This table presents the variable correlations separately for each subsample. The correlations for the winner (loser) sample are shown above (below) the diagonal. ΔDR is the change in DR 1 year after and before the adoption year, $[DR_{t+1} - DR_{t-1}] / |DR_{t-1}|$; FOLL is measured as the number of analysts that issued at least one forecast for the 2004 fiscal year; DISPERSION is the standard deviation of all forecasts made in 2004, keeping only the most recent earnings forecast of each analyst; SIZE is computed as the natural logarithm of the firm's total assets, measured in U.S. dollars; ROE is return on equity; SALESGR is computed as the average change in sales in the 2 years prior to IFRS adoption; LEV is leverage, measured as the ratio of total liabilities to total assets; EMD is an earnings management dummy that equals 1 if the value of the ratio of the standard deviation of firm earnings to the standard deviation of the firm's cash flows from operations is less than 0.90, and 0 otherwise; AUDITOR takes the value 1 if the firm is audited by a Big Four audit firm, and 0 otherwise; and JUDEFF is the efficiency of the judicial system taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). DR = default risk; IFRS = International Financial Reporting Standards.
*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Table 4. Valuation and Leverage Effects.

Panel A.

	ΔTobin's *q* 2004-2006 IFRS effect	ΔTobin's *q* 2001-2003 Pre-IFRS	ΔTobin's *q* 2000-2002 Pre-IFRS	ΔLEV 2004-2006 IFRS effect	ΔLEV 2001-2003 Pre-IFRS	ΔLEV 2000-2002 Pre-IFRS	CAR 2003 Pre-IFRS	CAR 2006 Post-IFRS
Mean–winners	0.199	0.190	−0.004	0.035	−0.036	−0.088	−0.417	0.392
Mean–losers	0.096	0.255	0.043	0.164	0.066	−0.062	−0.207	0.336
Difference	0.103***	−0.065*	−0.047**	−0.130***	−0.100	−0.025	−0.210***	0.057***
Median–winners	0.121	0.117	−0.006	0.044	−0.048	−0.125	−0.336	0.383
Median–losers	0.055	0.255	0.018	0.088	−0.051	−0.129	−0.147	0.334
Difference	0.066***	−0.138**	−0.024***	−0.044***	0.003	0.004	−0.189***	0.049**

Panel B.

	CAR 2003	CAR 2006
Intercept	−0.141 (0.34)	0.663*** (0.01)
D_Winners	−0.173*** (0.01)	0.080*** (0.01)
BM	−0.209*** (0.01)	−0.101*** (0.01)
SIZE	−0.012 (0.16)	−0.014** (0.02)
Country-fixed effects	Yes	Yes
Industry-fixed effects	Yes	Yes
n	703	705
R^2	.18	.14

Note. Panel A examines the valuation differences between the winner and loser samples in three periods: Two periods before (2003 vs. 2001, 2002 vs. 2000) and the period around the mandatory IFRS adoption event (2006 vs. 2004). Panel B shows the multivariate regression results, where the dependent variable is CAR, cumulated daily abnormal returns over the specified fiscal year, measured in the fiscal years 2003 and 2006. The variable D_winners is a dummy variable that takes the value 1 for winner firms, and 0 for loser firms; BM is the book-to-market equity ratio; SIZE is computed as the natural logarithm of the firm's total assets measured in U.S. dollars; ΔLEV is the change in leverage, where leverage is measured as the ratio of total liabilities to total assets; and ΔTobin's *q* is the change in Tobin's *q*, where Tobin's *q* is the ratio of market value of equity less the book value of equity plus the book value of assets to the book value of assets. IFRS = International Financial Reporting Standards.
*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. Parentheses include the p-value.

Table 5. Logistic Analysis.

Panel A: Pre-IFRS Adoption Period.

	1	2	3	4
Intercept	−5.266*** (.01)	−4.702*** (.01)	−5.323*** (.01)	−6.547*** (.01)
ROE	−2.080*** (.01)	−1.848*** (.01)	−2.304*** (.01)	−2.317*** (.01)
FOLL	−0.445*** (.01)	−0.463*** (.01)	−0.411*** (.01)	−0.478*** (.01)
LEV	3.207*** (.01)	3.528*** (.01)	3.674*** (.01)	3.777*** (.01)
SIZE	0.318*** (.01)	0.300*** (.01)	0.329*** (.01)	0.335*** (.01)
SALESGR	−0.315 (.53)	−0.228 (.65)	−0.042 (.95)	−0.047 (.94)
AUDITOR	−0.120 (.67)	−0.187 (.51)	−0.345 (.28)	−0.370 (.19)
EMD		−0.475** (.02)	−0.363* (.08)	−0.375* (.07)
DISPERSION			0.071 (.72)	−0.077 (.58)
JUDEFF				0.189* (.06)
French_Law				0.236 (.45)
German_Law				0.213 (.64)
Scandin_Law				−0.458 (.13)
Industry-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	Yes	No
n ΔDR = 1	415	415	357	354
n ΔDR = 0	295	295	261	254
Pseudo-R^2	.20	.19	.22	.21

Panel B: Post-IFRS Adoption Period.

	1	2	3	4
Intercept	−3.361*** (.01)	−4.371*** (.01)	−3.529*** (.01)	−5.158*** (.01)
ROE	1.603*** (.01)	2.168*** (.01)	1.197** (.02)	1.847*** (.01)
FOLL	−0.032 (.83)	0.075 (.66)	−0.040 (.79)	0.086 (.59)
LEV	0.550 (.35)	0.021 (.97)	0.313 (.59)	−0.127 (.84)
SIZE	0.190** (.02)	0.189** (.02)	0.186*** (.01)	0.189*** (.01)
SALESGR	0.108 (.48)	−0.133 (.44)	0.081 (.58)	−0.148 (.38)
AUDITOR	0.031 (.93)	0.230 (.53)	0.051 (.87)	0.183 (.59)
EMD		0.291 (.17)		0.273 (.19)
DISPERSION		76.25*** (.01)		70.64*** (.01)
JUDEFF			0.112 (.20)	0.210** (.03)
French_Law			0.066 (.82)	0.057 (.83)
German_Law			0.235 (.61)	−0.245 (.60)
Scandin_Law			−1.077*** (.01)	−1.486*** (.01)
Industry-fixed effects	Yes	Yes	Yes	Yes
Country-fixed effects	Yes	Yes	No	No
n ΔDR = 1	341	330	338	327
n ΔDR = 0	256	252	252	248
Pseudo-R^2	.11	.19	.08	.16

Note. This table shows the logistic regression results to determine the differences between winner and loser firms. Panels A and B present results based on the financial characteristics of firms in the year prior to IFRS adoption (i.e., fiscal year 2004) and the year after (i.e., fiscal year 2006), respectively. The dependent variable, D_winners, takes the value 1 for firms that experience a decrease in DR (winners) around IFRS adoption, and 0 for firms that experience an increase in DR (losers); FOLL is measured as the number of analysts that issued at least one forecast for the fiscal year 2004; DISPERSION is the standard deviation of all forecasts made in 2004, keeping only the most recent earnings forecast of each analyst; SIZE is computed as the natural logarithm of the firm's total assets, measured in U.S. dollars; ROE is return on equity; SALESGR is computed as the average change in sales in the 2 years prior to IFRS adoption; LEV is leverage, measured as the ratio of total liabilities to total assets; EMD is an

earnings management dummy that equals 1 if the value of the ratio of the standard deviation of firm earnings to the standard deviation of the firm's cash flows from operations is less than 0.90, and 0 otherwise; AUDITOR takes the value 1 if the firm is audited by a Big Four audit firm, and 0 otherwise; JUDEFF is the efficiency of the judicial system, taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998); French_Law takes the value 1 if the firm belongs to the French civil-law countries, and 0 otherwise; German_Law takes the value 1 if the firm belongs to the German civil-law countries and 0 otherwise; and Scandin_Law takes the value 1 if the firm belongs to the Scandinavian civil-law countries, and 0 otherwise. The *p* values appear beneath the coefficient estimates in parentheses. IFRS = International Financial Reporting Standards; DR = default risk.
*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

of each subsample in the periods before and after the mandated increase in disclosure. We again find that while in 2003 loser firms exhibit higher abnormal returns than their winner firm counterparts, in the year after the adoption CAR is significantly lower for the loser sample. The CAR results are also obtained in a multivariate regression setting, shown in Panel B of Table 4. Specifically, we find that the coefficient of D_winners, a dummy variable that takes the value 1 for winner firms and 0 for loser firms, is significantly positive in the period after IFRS adoption, but significantly negative in the period before the adoption. Overall, the results suggest that even though before IFRS adoption loser firms exhibit better valuation and leverage statistics, after IFRS this picture is reversed. Thus, the results are consistent with the conjecture that the 2005 increase in disclosure revealed new and unfavorable information for loser firms, forcing their Tobin's *q* valuations to decrease and firm leverage and return performance to deteriorate.

Differences Between Winners and Losers: Logistic Analysis

Table 5 examines the differences between winner and loser firms in a logistic regression setting, where the dependent variable, D_winners, takes the value 1 for firms that experience a decrease in DR (winners), and 0 for firms that experience an increase in DR (losers) around IFRS adoption. Panels A and B of Table 5 present results based on the financial characteristics of firms in the year prior to IFRS adoption (i.e., fiscal year 2004) and in the year after (i.e., fiscal year 2006), respectively.[16] In general, the results indicate that prior to IFRS adoption winner firms are larger, but with lower analyst following and profitability and higher leverage than loser firms. The logistic results also provide evidence that loser firms tend to manage earnings more than winner firms, consistent with the significant difference obtained between the two subsamples in the univariate analysis. Overall, the results confirm the expectation that loser firms exploit the poor information environment in their home country to conceal their true type and mimic high-type firms by exhibiting the same or even more favorable financial characteristics.

Interestingly, loser firms exhibit *lower* profitability in the post-IFRS period, as depicted in Panel B of Table 5.[17] In this period, loser firms do not exhibit higher analyst followings or lower leverage, even though they do exhibit greater forecast dispersion. In addition, loser firms do not differ from winner firms in their propensity to manage earnings.[18] Taken together, this evidence suggests that increased disclosure mitigates the ability of firms to mislead the market by revealing their true type.

Differences Between Winners and Losers: Determinants of the Change in DR

We proceed to examine the determinants of the change in DR by investigating the effects of the information environment, the level of legal enforcement in the home country,

earnings quality, and the incentive to mislead for the winner and loser samples, separately. We predict that these variables will have a differential impact on DR between firms with a predominantly negative cash flow effect and firms with a positive cash flow effect or a predominant uncertainty reduction effect.

We run the following cross-sectional model:

$$\Delta DR = a + b_1 ROE + b_2 FOLL + b_3 SIZE + b_4 SALESGR + b_5 LEV + b_6 EMD + b_7 AUDITOR + b_8 DISPERSION + \varepsilon, \quad (3)$$

where ΔDR is the percentage change in DR between the year after and the year before the mandated IFRS adoption, as already defined above. All explanatory variables are measured for year $t - 1$ and are defined above. The model is run separately for the winner and loser samples and the results are presented in Panel A of Table 6. The first three models in Panel A include country- and industry-fixed effects. To examine the impact of legal enforcement on changes in DR around IFRS adoption, in Model 4 we drop country-fixed effects and include three indicator variables representing the legal origin of the firm's home country, as well as a variable capturing the level of legal enforcement. Panel B of Table 6 examines in greater detail the effects of legal enforcement for the loser sample by considering the interactions of this variable with proxies for the incentives and the ability to mislead. Note that for all observations the explanatory variables are measured in 2004; hence, there is no need to include time effects in the model.

The results presented in Panel A of Table 6 suggest that the determinants of the change in DR around IFRS adoption differ between the two subsamples.[19] Specifically, for the sample of winners, the evidence is consistent with the uncertainty reduction effect of disclosure. The results suggest that firms with lower analyst following and sales growth and higher leverage, and hence greater uncertainty in the pre-adoption period, benefit more from increased disclosure. In essence, IFRS adoption leads to greater uncertainty reduction for these firms, leading, in turn, to greater decreases in DR. Winner firms also gain more from increased disclosure, the lower their profitability. This result is consistent with both the uncertainty reduction and positive cash flow effects related to increased disclosure.

In contrast, for the loser sample the coefficient on analyst following is negative and significant and consistent with the cash flow effect of disclosure. Firms with lower analyst following and a poorer information environment revealed the least about themselves in the pre-adoption period and were thus more successful in concealing their true type. The negative information revealed through the mandated increase in disclosure has a greater impact on these firms, leading to greater increases in DR. Interestingly, even though the EMD does not explain the decrease in DR for the winner sample, it exhibits a positive and significant relation to increases in DR for the loser sample. This result is also consistent with the cash flow effect of disclosure. Increased disclosure unravels the firm's true low type leading to downward revisions in future expected cash flows, an effect that is stronger for firms that managed earnings.[20]

We examine the effects of the country's level of legal enforcement in Model 4 of Table 6. For both samples, the coefficient of JUDEFF is negative and significant. For the winner sample, the negative coefficient suggests that the switch to IFRS is more reliable in a high enforcement environment, resulting in greater decreases in DR. This evidence is consistent with the results of extant research that highlights the importance of enforcement in

Table 6. Cross-Sectional Analysis.

Panel A: Basic Models.

	1		2		3		4	
	ΔDR < 0 Winners	ΔDR > 0 Losers	ΔDR < 0 Winners	ΔDR > 0 Losers	ΔDR < 0 Winners	ΔDR > 0 Losers	ΔDR < 0 Winners	ΔDR > 0 Losers
Intercept	−0.080 (.79)	0.236** (.02)	−0.127 (.68)	0.221** (.03)	−0.010 (.98)	0.285*** (.01)	0.741 (.10)	0.545*** (.01)
ROE	0.824*** (.01)	0.084 (.13)	0.813*** (.01)	0.064 (.25)	0.908*** (.01)	0.057 (.32)	0.887*** (.01)	0.057 (.29)
FOLL	0.148*** (.01)	−0.028** (.05)	0.145*** (.01)	−0.024* (.08)	0.172*** (.01)	−0.017 (.30)	0.184*** (.01)	0.001 (.93)
JUDEFF							−0.081*** (.01)	−0.020** (.02)
SIZE	−0.004 (.88)	0.008 (.29)	−0.002 (.93)	0.008 (.29)	−0.035 (.19)	0.005 (.58)	−0.039 (.14)	0.004 (.61)
SALESGR	0.286* (.07)	−0.006 (.91)	0.276* (.08)	−0.013 (.78)	0.424** (.02)	0.010 (.87)	0.420** (.02)	0.020 (.73)
LEV	−0.910*** (.01)	−0.023 (.70)	−0.941*** (.01)	−0.053 (.36)		−0.062 (.32)	−0.778*** (.01)	−0.019 (.75)
EMD			0.045 (.45)	0.049*** (.01)	0.013 (.83)	0.034* (.09)	0.012 (.84)	0.034* (.08)
AUDITOR	−0.147 (.11)	−0.011 (.69)	−0.135 (.14)	−0.014 (.61)	−0.084 (.39)	−0.007 (.81)	−0.053 (.54)	0.002 (.94)
DISPERSION					0.001 (.99)	−0.011 (.44)	0.003 (.95)	−0.009 (.53)
French_Law							−0.231*** (.01)	−0.063** (.03)
German_Law							−0.019 (.89)	−0.059 (.16)
Scandin_Law							−0.108 (.27)	0.018 (.49)
Industry	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes	No	No
n	415	295	415	295	357	261	354	254
Adjusted R^2	.37	.01	.32	.03	.37	.02	.37	.03

Panel B: Legal Enforcement Interactions for the Loser Sample.

	1	2	3
Intercept	0.285 (.26)	−0.080 (.78)	−0.103 (.75)
ROE	0.058 (.27)	0.064 (.23)	0.101 (.60)
FOLL	−0.084 (.21)	−0.040 (.56)	−0.045 (.52)
LEV	0.730*** (.01)	0.775*** (.01)	0.820*** (.01)
JUDEFF	0.011 (.66)	0.050* (.09)	0.053 (.13)
SIZE	−0.007 (.36)	−0.006 (.41)	−0.007 (.40)
SALESGR	0.032 (.58)	0.041 (.48)	0.998*** (.01)
AUDITOR	−0.006 (.82)	−0.001 (.96)	−0.046 (.83)
EMD	0.037** (.05)	0.302** (.03)	0.277** (.05)
DISPERSION	7.949** (.04)	8.402** (.03)	10.742*** (.01)

(continued)

Table 6. continued

Panel B: Legal Enforcement Interactions for the Loser Sample.

	1	2	3
French_Law	−0.074*** (.01)	−0.077*** (.01)	−0.09*** (.01)
German_Law	−0.075* (.08)	−0.074* (.08)	−0.075* (.07)
Scandin_Law	0.009 (.71)	−0.0001 (.99)	−0.005 (.83)
JUDEFF × FOLL	0.011 (.15)	0.006 (.42)	0.007 (.38)
p value of *F* test	.22	.59	.54
JUDEFF × DISPERSION	−0.796** (.04)	−0.841** (.03)	−1.075*** (.00)
p value of *F* test	.04**	.03**	.01***
JUDEFF × LEV	−0.086*** (.01)	−0.091*** (.01)	−0.096*** (.01)
p value of *F* test	.01***	.01***	.01***
JUDEFF × EMD		−0.029* (.06)	−0.026* (.09)
p value of *F* test		.03**	.05**
JUDEFF × SALESGR			−0.110*** (.01)
p value of *F* test			.01***
JUDEFF × ROE			−0.016 (.71)
p value of *F* test			.59
JUDEFF × AUDITOR			0.006 (.81)
p value of *F* test			.83
Industry effects	Yes	Yes	Yes
n	254	254	254
Adjusted R^2	.07	.09	.07

Note. This table presents the coefficient estimates of Equation 3. Panel A presents the cross-sectional regression results separately for the winner and loser samples. The first three models in Panel A include country- and industry-fixed effects. Model 4 drops the country-fixed effects and includes three indicator variables representing the legal origin of the firm's home country, as well as a variable capturing the level of legal enforcement. Panel B shows extended models using only the loser sample. The dependent variable is the change in DR (ΔDR); FOLL is measured as the number of analysts that issued at least one forecast for the fiscal year 2004; DISPERSION is the standard deviation of the most recent earnings forecast of each analyst; SIZE is computed as the natural logarithm of the firm's total assets, measured in U.S. dollars; ROE is return on equity; SALESGR is computed as the average change in sales in the 2 years prior to IFRS adoption; LEV is leverage, measured as the ratio of total liabilities to total assets; EMD is the earnings management dummy; AUDITOR takes the value 1 if the firm is audited by a Big Four audit firm, and 0 otherwise; JUDEFF is the efficiency of the judicial system, taken from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998); French_Law takes the value 1 if the firm belongs to the French civil-law countries, and 0 otherwise; German_Law takes the value 1 if the firm belongs to the German civil-law countries, and 0 otherwise; Scandin_Law takes the value 1 if the firm belongs to the Scandinavian civil-law countries, and 0 otherwise. All explanatory variables are measured in year $t - 1$. The row showing the *p* value of the *F* test in Panel B tests the significance of the sum of the individual and interacted variable coefficients. The results are shown after the elimination of outliers at 2.5 standard deviations, based on studentized residuals. The *p* values appear beneath the coefficient estimates in parentheses. DR = default risk; IFRS = International Financial Reporting Standards.

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

disclosure quality and further supports the complementary relation of the legal environment and accounting standards.

In contrast, the negative coefficient of JUDEFF for the loser sample does not support the complementarity between accounting standards and the efficiency of the judicial system. The negative coefficient suggests instead that the cash flow effect of disclosure is weaker for firms in strong legal environments. We argue that low-type firms were able to better conceal bad news in poor legal enforcement environments while the enhancement in disclosure from IFRS adoption is sufficiently strong to reveal their true type. In Panel B of Table 6, we further investigate this result by interacting the judicial efficiency variable with the main explanatory variables of the models.

The results in Panel B of Table 6 confirm the result in Panel A, that is, the negative cash flow effect for the loser sample is stronger for firms in weak enforcement environments. Specifically, the evidence suggests that firms from low enforcement environments experience a greater increase in DR as forecast dispersion, leverage, earnings management, and sales growth increase. These results suggest that firms from a poor information environment, as proxied by forecast dispersion, and stronger incentives to conceal bad news, as proxied by sales growth and leverage, were more successful in misleading the market if they were operating in weak enforcement environments. The earnings management results suggest that one possible mechanism through which this was made possible stemmed from their ability to manage earnings. Interestingly, these relations are weaker, yet still significant, for stronger enforcement levels, suggesting that to some extent the ability of firms to mislead about their true type was mitigated, but not eliminated, by effective enforcement in the home country. Taken together, the evidence presented in Table 6 suggests that, unlike the uncertainty reduction effect, the cash flow effect of disclosure is more pronounced for firms in countries with weak enforcement.

Sensitivity Analysis

This section further examines the robustness of the above results in two ways, to provide greater assurance that the increase in DR observed around the mandated IFRS adoption for our loser sample is indeed related to this specific event. First, we utilize a sample of voluntary adopters—that is, firms that voluntarily switched to IFRS before this being mandated by the EU—which also exhibit an increase in DR around the mandatory IFRS adoption event. We include in the voluntary sample all qualified matches to our mandatory loser firms based on country and industry (one-digit Standard Industrial Classification [SIC]), conditional on their size being within 30% of the size of the matched mandatory counterpart. If the change in DR is related to another event and not to the IFRS event per se, we would expect to see that voluntary adopters also experience a significant increase in their DR around the same period. To make the two samples more comparable, we utilize a difference-in-differences approach by including in the sample observations regarding the change in DR in both a pre-mandatory IFRS period (2003 vs. 2001) and a post-mandatory IFRS period (2006 vs. 2004). The dependent variable is the change in DR (ΔDR). The dummy variable d_mand takes the value 1 for mandatory adopters and 0 for voluntary adopters. The dummy variable d_post takes the value 1 in the period after IFRS mandatory adoption and 0 in the period before.

Table 7 presents weak evidence that the increase in DR for our loser sample is greater for mandatory adopters in the period around IFRS adoption. Specifically, the coefficient of the interaction between the dummy variable for mandatory versus voluntary firms and the

Table 7. Sensitivity Analysis: Difference-in-Differences Approach.

Intercept	0.310* (0.08)	0.337*** (0.01)
d_mand	−0.046 (0.13)	−0.019 (0.52)
d_post	−0.028 (0.27)	−0.025 (0.31)
d_mand × d_post	0.059* (0.07)	0.051 (0.10)
ROE	0.061 (0.14)	0.074* (0.07)
FOLL	−0.032*** (0.01)	−0.031*** (0.01)
SIZE	−0.001 (0.82)	−0.003 (0.54)
SALESGR	−0.0002 (0.92)	0.0004 (0.78)
LEV	−0.022 (0.65)	−0.028 (0.57)
EMD	0.008 (0.56)	0.0144 (0.28)
DISPERSION	−0.007 (0.64)	−0.005 (0.75)
AUDITOR	0.035* (0.07)	0.045** (0.02)
JUDEFF		−0.013* (0.09)
French_Law		−0.040 (0.13)
German_Law		0.022 (0.43)
Scandin_Law		−0.006 (0.79)
Industry	Yes	Yes
Country	Yes	No
n	644	636
Adjusted R^2	.11	.10

Note. This table provides sensitivity analysis using a sample of voluntary adopters (firms that voluntarily switched to IFRS before this was mandated by the EU). Our mandatory loser firms are matched by a sample of voluntary firms based on country, industry, and size. We utilize a difference-in-differences approach by including in the sample observations regarding the change in DR in a pre-mandatory IFRS period (2003 vs. 2001), in addition to our post-mandatory IFRS period (2006 vs. 2004). The dependent variable is the change in DR (ΔDR); d_mand takes the value 1 for mandatory adopters, and 0 for voluntary; d_post takes the value 1 in the period after IFRS mandatory adoption, and 0 in the period before. See Table 5 for the other variable definitions. IFRS = International Financial Reporting Standards; EU = European Union; DR = default risk.

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. Parentheses include the p-value.

dummy variable for the period after versus before IFRS adoption is positive and weakly significant. The inability of the test to adequately differentiate between the two samples may be weakened if the mandated IFRS switch further enhances disclosure quality for the voluntary adopters (Daske et al., 2008).

Given the inherent difficulties in benchmarking the change in DR for the mandatory adopters around the related change for the voluntary adopters, we next estimate an abnormal DR level for our mandatory sample in the post-IFRS period based on their respective DR values in a pre-IFRS period. Specifically, we estimate DR in 2002 and 2003 for each group of country and one-digit SIC combinations, with at least 12 observations in the group, and use the coefficients to predict the level of DR for 2006. In this model, DR levels measured at the end of year t are regressed on ROE, FOLL, SIZE, and leverage measured at the end of year $t - 2$.[21] The difference between the actual DR and its estimated expected level is our proxy for the abnormal level of DR, which is then used to construct our loser and winner samples. We posit that the abnormal DR measure is less likely to be related to events affecting DR, other than the change in accounting standards, if these events can be adequately captured by the estimation model. The number of observations in this analysis drops slightly due to the loss of observations because of either the nonavailability of data in fiscal years 2002 and 2003 or the small number of observations in

the country and industry group that renders the model's estimation unreliable. The descriptive statistics presented in Panel A of Table 8 confirm the results of Table 4. Specifically, after IFRS adoption, loser firms exhibit lower valuations, as reflected by their Tobin's *q* values, and higher leverage. Neither of these differences are significant in the pre-IFRS period. In addition, even though the cumulative return performance of the two samples is not reliably different in the post-IFRS period, loser firms exhibit much better performance than their winner counterparts in the pre-IFRS period. Untabulated regression results explaining the return performance over the two periods confirm these findings.

Panel B of Table 8 presents the logistic analysis in the pre-IFRS (2003) and post-IFRS (2006) periods and the multivariate analysis of abnormal DR in 2006, separately for the two samples. The logistic results suggest that even though in the pre-IFRS period the only differences between the two samples relate to the greater propensity of loser firms to manage earnings and to be audited by a Big Four audit firm, in the post-IFRS period loser firms exhibit lower profitability, lower analyst following and forecast dispersion, lower propensity to be audited by a Big Four auditor, and higher leverage. With the exception of the analyst forecast dispersion result, the results of the logistic analysis are in line with IFRS disclosure uncovering the firm's bad news that was successfully concealed in the pre-IFRS period. Finally, the cross-sectional regression results of the abnormal level of DR in 2006 suggest that winner firms benefit more from enhanced disclosure the lower their profitability and the greater their leverage. In contrast, the negative cash flow revision effect is stronger for loser firms that are more leveraged and exhibit greater forecast dispersion.

Overall, the results of this study are consistent with the existence of a cash flow effect suggesting that loser firms benefit less from mandated changes in disclosure. Put differently, this study documents that an important benefit of increased disclosure is the content of the new information revealed that helps the market adjust the pricing of DR.

Conclusion

This study contributes to the literature in two ways. First, it enhances our understanding regarding the economic consequences of IFRS adoption on DR. Second, determining the effects of IFRS adoption on DR enables us to examine an aspect of enhanced disclosure that has been largely ignored in the literature: the nature of the information revealed. Teoh and Hwang (1991) theoretically show that low-type firms do not disclose information to mimic high-type firms that do not disclose information in anticipation of future good news. The mandatory adoption of IFRS significantly enhances the information environment of the firm and can therefore result in a significant cash flow revision effect that can prove quite elusive to document in other instances of less comprehensive disclosure changes.

To provide evidence of the cash flow revision effect of disclosure, we separate firms that exhibit an increase in their DR around IFRS adoption (loser sample) from those that exhibit a decrease in their DR (winner sample). We argue that the cash flow effect of disclosure can be isolated in the loser sample, as for this sample enhanced disclosure induces the market to negatively revise cash flow expectations. Even though for the loser sample enhanced disclosure reduces uncertainty, leading to decreases in DR, the negative cash flow effect dominates the uncertainty reduction effect, in turn leading to a net increase in DR. Our sample consists of 415 firms that benefit from mandatory IFRS adoption through a decrease in their DR (winner sample) and 295 firms that experience an overall increase in DR (loser sample).

Table 8. Sensitivity Analysis: Abnormal DR.

Panel A.

	ΔTobin's *q* 2004-2006	ΔTobin's *q* 2001-2003	ΔTobin's *q* 2000-2002	ΔLEV 2004-2006	ΔLEV 2001-2003	ΔLEV 2000-2002	CAR 2003	CAR 2006
Mean–winners	0.157	0.168	−0.022	0.0065	−0.034	−0.098	−0.396	0.348
Mean–losers	0.086	0.152	−0.0004	0.172	0.097	−0.111	−0.292	0.378
Difference	0.071***	0.016	−0.021	−0.106***	−0.131	0.013	−0.104**	−0.0306
Median–winners	0.079	0.118	−0.010	0.053	−0.046	−0.127	−0.290	0.343
Median–losers	0.054	0.083	−0.005	0.078	−0.049	−0.128	−0.230	0.364
Difference	0.025	−0.138	−0.024	−0.025***	0.003	0.004	−0.06**	−0.021

Panel B.

	1		2		3	
	Logistic 2003	Logistic 2006	ΔDR < 0 Winners	ΔDR > 0 Losers	ΔDR < 0 Winners	ΔDR > 0 Losers
Intercept	−0.102 (0.94)	12.48 (0.94)	−0.513 (0.65)	0.020 (0.91)	−0.344 (0.76)	−0.031 (0.87)
ROE	−0.712 (0.30)	1.956** (0.02)	0.666** (0.02)	0.064 (0.43)	0.697** (0.02)	0.036 (0.65)
FOLL	−0.098 (0.81)	0.392* (0.10)	−0.533 (0.12)	0.023 (0.68)	−0.529 (0.12)	0.029 (0.60)
SIZE	0.304*** (0.01)	−0.033 (0.77)	0.112 (0.22)	−0.033** (0.03)	0.111 (0.22)	−0.034** (0.03)
SALESGR	−0.741 (0.41)	−0.125 (0.51)	−0.488 (0.57)	−0.119 (0.30)	−0.437 (0.61)	−0.078 (0.49)
LEV	−0.603 (0.45)	−1.763* (0.07)	−2.676*** (0.01)	.505*** (0.01)	−2.616*** (0.01)	0.492*** (0.01)
EMD	−0.77*** (0.01)	0.103 (0.75)			−0.146 (0.56)	0.089** (0.04)
AUDITOR	−0.925** (0.04)	0.866* (0.09)	−0.448 (0.23)	0.063 (0.26)	−0.505 (0.19)	0.045 (0.36)
DISPERSION	−0.039 (0.83)	33.392** (0.05)	−0.024 (0.85)	0.063** (0.05)	−0.025 (0.85)	0.054* (0.09)
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Country	Yes	Yes	Yes	Yes	Yes	Yes
n	411	381	313	98	313	98
Adjusted R^2	.16	.22	.08	.18	.08	.21

Note. This table presents the results when the winner and loser samples are constructed based on the abnormal level of DR around the IFRS adoption event. Abnormal DR is estimated as the difference between the actual DR in 2006 and its expected level based on the model estimating ΔDR values in 2002 and 2003 for each group of country and one-digit SIC combinations, with at least 12 observations in the group. Panel A reports descriptive statistics. Panel B presents the logistic analysis in the pre-IFRS (2003) and post-IFRS (2006) periods and the multivariate analysis of abnormal DR in 2006, separately for the two samples. See Table 5 for the other variable definitions. DR = default risk; IFRS = International Financial Reporting Standards; SIC = Standard Industrial Classification.

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively. Parentheses include the p-value.

We first show that loser firms exhibit the same or even better financial characteristics in the pre-IFRS adoption period compared with the winner sample. However, after IFRS, and consistent with the notion that the firm's true type is revealed, loser firms exhibit deteriorating characteristics, with smaller increases in their Tobin's q valuations and greater increases in leverage. Loser firms also exhibit better (poorer) return performance in the pre-IFRS (post-IFRS) period. Logistic analysis corroborates the univariate results. Even though in the pre-IFRS period losers exhibit greater profitability, greater analyst following, and lower leverage, in the post-IFRS period their profitability is smaller than that of winner firms, while they exhibit similar leverage and analyst following characteristics. The logistic results also provide evidence that loser firms tend to manage earnings more than winner firms in the pre-IFRS period, but this is not the case after the adoption of IFRS.

Examining the determinants of the change in DR separately for the two samples reveals that, consistent with the uncertainty reduction effect of disclosure, winner firms benefit more from enhanced disclosure the lower their profitability, sales growth, and analyst following and the greater their leverage. In contrast, loser firms benefit more from enhanced disclosure (i.e., they incur a smaller increase in DR) the greater their analyst following and the lower their propensity to manage earnings. The results of examining the effect of legal enforcement for the loser sample suggest that low country legal enforcement is associated with a stronger cash flow effect, leading to greater increases in DR. Our results are robust to additional analyses, designed to provide greater assurance in the main conjecture that the observed change in DR is related to IFRS adoption and not to other unknown and unaccounted for events.

We interpret these findings by positing that in the pre-IFRS period loser firms were able to conceal their true type and mimic high-type firms by exhibiting the same or even more favorable financial characteristics. The enhanced disclosure associated with IFRS adoption, however, reveals the firm's true type, enabling the market to differentiate between the two types of firms and adjust the estimation of DR accordingly. Therefore, enhanced disclosure, in general, and IFRS adoption, in particular, are beneficial to the market not only because they reduce overall uncertainty regarding the firm but also because they reveal new information to the market that leads to the revision of the market's cash flow expectations.

Author's Note

Remaining errors are the responsibility of the authors.

Acknowledgment

We would like to thank C. Louca, G. Nishiotis, and participants of the 2010 European Accounting Congress and 2009 American Accounting Association for useful comments.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This project was partially financially supported by the Institute of Certified Public Accountants of Cyprus (Baker Tilly Klitou, Consulco & Partners, Deloittee, Ernst & Young,

Horwath DPS, KPMG, Treppides & Co, PWC) and by the European Union (INTACCT Research Program).

Notes

1. We thank an anonymous reviewer for pointing out this alternative explanation.
2. In addition to the Teoh and Hwang (1991) theoretical framework, the empirical and analytical literatures have provided a number of explanations why a firm in possession of good news might choose not to reveal it. These factors can be associated with proprietary costs or direct costs associated with preparing the information (Darrough & Stoughton, 1990; Dye, 1986; Jovanovic, 1982; Verrecchia, 1983). Healy and Palepu (2001) provide a very good review of the literature related to disclosure and discuss in detail a number of these issues.
3. Our reference to enhanced disclosure associated with International Financial Reporting Standards (IFRS) adoption is a generic term and includes not only footnote disclosure but also additional information that may be relevant due to changes in accounting measurement. Admittedly, we do not really expect changes in accounting methods and their influence on balance sheet and income statement numbers to significantly affect market expectations under the assumption that accounting choice per se does not reveal new information to the market.
4. Lambert, Leuz, and Verrecchia (2007) show that accounting information can also influence the cost of capital indirectly because the quality of information can affect the firm's real decisions. Examining this effect on cash flows requires a longer time series and is beyond the scope of this article.
5. Arguably, other measures of financial performance can also be affected by the cash flow effect of disclosure, such as firm value or Tobin's q. We choose to examine the cash flow effect of disclosure on default risk (DR), based, in particular, on the expectation that DR is especially sensitive to information related to cash flow.
6. See Armstrong, Guay, and Weber (2010) for a thorough overview of the extant research examining the role of financial accounting in the cost of debt. For example, Francis, LaFond, Olsson, and Schipper (2005) find that their measure of accrual quality is negatively related to the cost of debt measured as the ratio of the firm's interest expense to average interest-bearing debt outstanding. Similarly, Bharath, Sunder, and Sunder (2008) and Zhang (2008) find that their measures of accounting quality (based on abnormal accruals and accounting conservatism, respectively) are negatively related to interest rate spreads, whereas Beatty, Ramesh, and Weber (2002) find that accounting flexibility is associated with a higher premium in the cost of debt. Ashbaugh-Skaife, Collins, and LaFond (2006) document a positive relation between financial transparency, captured by accrual quality and earnings timeliness, and individual firm credit ratings, whereas Ahmed, Billings, Morton, and Stanford-Harris (2002) find that firms reporting more conservatively receive better credit ratings. Sengupta (1998) and Yu (2005) find that disclosure ratings are negatively related to the cost of debt and credit spreads, respectively. Mansi, Maxwell, and Miller (2011) find that analyst forecast dispersion is positively priced in corporate bond yields. Similarly, Cheng and Subramanyam (2008) document a negative relation between analyst following and firm credit ratings, thus supporting the monitoring and informational role of analysts. Monitoring costs are also lowered through auditor choice, which Pittman and Fortin (2004) relate to the cost of debt.
7. Even though the evidence on the mandatory IFRS effect is still limited, but growing, the results of empirical research on the effects of a voluntary switch to IFRS provide similar conclusions. Barth, Landsman, and Lang (2008), for example, show that international firms exhibit less earnings management, whereas Ashbaugh and Pincus (2001) find that analyst forecast accuracy improves after IFRS adoption. Similarly, Ferrari, Momentem, and Reggiani (2012) find that their sample of German firms exhibits better earnings quality and lower information asymmetry after International Accounting Standards (IAS) adoption, whereas Ozkan, Singer, and You (2012) provide evidence consistent with an improvement in earnings quality following the mandatory

adoption of IFRS. A number of papers document significant economic effects associated with IFRS adoption. Leuz and Verrecchia (2000) find that IFRS adoption results in lower bid–ask spreads and higher trading volumes; Covrig, Defond, and Hung (2007) find that the voluntary adoption of IFRS attracts foreign investors; and Karamanou and Nishiotis (2009) document significantly positive abnormal returns upon the announcement of IFRS adoption.

8. Christensen, Hail, and Leuz (2013) find that liquidity effects around IFRS adoption are more related to concurrent enforcement effects rather than the change in accounting standards per se. To the extent that firm information quality increases, irrespective of whether this is due to the IFRS switch or increases in enforcement, or both, we should be able to find evidence consistent with the cash flow effect of disclosure, the main research question of this study. Thus, our design is based on the observed, and undisputed, financial effects documented by related research irrespective of their underlying cause.
9. There are a number of differences in accounting treatments between each country's local Generally Accepted Accounting Principles (GAAP) and IFRS. Differences that could affect future cash flow expectations exist even between U.K. GAAP and IFRS, even though the former is considered very similar to IFRS. For the sake of argument, we note the difference in the estimation of asset impairment which under IFRS excludes cash flows expected to arise from a future restructuring while under IFRS 11 these are permitted. The treatment of employee benefits also differs between the two regimens, as IAS 19 applies to all types of employee benefits while IFRS 17 applies only to retirement benefits (Ernst & Young, 2011). We expect that similar and perhaps even more pronounced differences should exist between other country GAAPs and IFRS given their greater dissimilarities.
10. The incentive to mislead may also be correlated with the cost of equity capital. However, there is a lack of a theoretical association between the cost of equity capital and DR (Campbell, Hilscher, & Szilagyi, 2008; Garlappi, Shu, & Yan, 2008; Griffin & Lemmon, 2002; Vassalou & Xing, 2004). We therefore do not include a proxy for the cost of equity capital in the main models, as we cannot theoretically justify it. Nevertheless, the results (untabulated) remain qualitatively similar when a proxy for the cost of capital is included in the models.
11. Essentially, from an economic perspective, the creditors are considered to be the owners of the firm (rather than the equity holders, who are the legal owners), with equity holders having the right to acquire the firm after paying off what they owe.
12. It is worth noting that while the value of the option depends on the risk-neutral probability of default (where d_2 depends on the value of the risk-free rate, r), the actual probability of default at debt maturity depends on the future value of the firm's assets (V_T) and hence on the expected asset return, μ. The expected return on the firm's assets equals the firm's stock return over the previous year, $\mu = r_{it} - 1$. The face value of the debt (D) is the short-term debt plus one half of the long-term debt. The market value of the firm is the sum of the market equity E (defined as the number of shares outstanding multiplied by their market price) and the face value of debt D. The total payout by the firm, δ (including dividends and coupon payments to debt holders), is the sum of the interest expense and cash dividends. The firm volatility is the weighted average volatility of E and D: $\sigma_v = E / (E + D) \times \sigma_E + D / (E + D) \times \sigma_D$. The debt volatility is a function of the equity return volatility: $\sigma_D = 0.05 + 0.25\sigma_E$. We calculate the weekly return on equity, adjusted for dividend payments, as $R_E = \ln[(E_t + DV_t) / E_{t-1}]$, where DV_t is cash dividends. Using the past values of R (1-year window), we calculate σ_E and then assess the volatility σ_v. Finally, T is set equal to 1. See Bharath and Shumway (2008) for a detailed description of this approach.
13. An alternative source for calculating default probabilities is the bond market. One can use bond ratings or individual spreads between a firm's debt issues and an aggregate yield measure to deduce the firm's risk of default. Using bond downgrades and upgrades as a measure of default relies implicitly on the assumptions that all assets within a rating category share the same DR

and that this DR is equal to the historical average DR. It also assumes that it is impossible for a firm to experience a change in its default probability without also experiencing a rating change.

14. The literature proposes a few measures that seem to capture earnings management on a firm-level basis. Typically, these measures are estimated based on a cross-sectional model that assumes that the coefficients of each variable in the model are the same for all firms in the same industry (e.g., applications of the Jones and modified Jones model of 1991; Barth et al., 2008; Dechow & Dichev, 2002; Francis et al., 2005; Lang, Raedy, & Wilson, 2006). A time-series estimation of these models drops the assumption of the equality of coefficients across firms in the same country and industry but requires a large number of observations per firm.
15. Barth et al. (2008) and Lang et al. (2006) use a similar approach that is, however, based on the standard deviation of the residuals in earnings and cash flow cross-sectional regressions around the voluntary decisions to cross-list and to adopt IFRS, respectively. In that setting, there is no need to compute the measure at the firm level, as the authors are only interested at computing an overall measure of earnings management for their test and control samples. As we need a firm-specific measure of earnings management, we utilize a time-series approach that also eliminates the need to control for cross-sectional differences.
16. The logistic analysis is presented after the elimination of outliers at the 1% level.
17. The number of observations in Panel B of Table 5 is smaller than the number of observations in Panel A. Our reference sample consists of all firms with available data in the year 2004 (Panel A). For a number of these firms, some variables are not available for 2006, slightly decreasing the number of observations in the post-IFRS period.
18. In untabulated results, we test the statistical significance of the difference in the coefficients across the two periods by including both periods in a single model and by introducing a variable that takes the value 0 for the pre-IFRS period and the value 1 for the post-IFRS period. We then interact this variable with all explanatory variables in the model. Results confirm the main conclusions drawn from comparing the results of Panels A and B in Table 5. Specifically, we find that the coefficients on ROE, DISPERSION, and LEV (EMD and FOLL) for the post-IFRS period are statistically different from their respective counterparts in the pre-IFRS period at the 1% (10%) level and in the predicted direction.
19. The results are shown after the elimination of outliers at 2.5 standard deviations, based on the studentized residual. White's test does not reject homoskedasticity in any of the presented models, providing assurance as to the model's specification.
20. In untabulated results, we test the statistical significance of the difference in the coefficients across the winner and loser subsamples by combining them in a single model and interacting all explanatory variables with D_winners, which takes the value 1 if the change in DR is negative (winners) and 0 otherwise (losers). Results suggest that the coefficients on ROE, FOLL, and LEV (SALESGR) for the winner sample are significantly different from those of the loser sample at the 1% (5%) level and in the predicted direction.
21. Because of the change in accounting measurement that can affect the relations between the explanatory variables and DR, we use the company's latest available financial information based on local GAAP, that is, for fiscal year 2004, to predict DR in the post-IFRS period. Therefore, to be consistent with the period used for the prediction, the estimation model is based on financial information in year $t - 2$.

References

Ahmed, A. S., Billings, B. K., Morton, R. M., & Stanford-Harris, M. (2002). The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review*, *77*, 867-890.

Armstrong, C. S., Guay, W. R., & Weber, J. P. (2010). The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting & Economics*, *50*, 179-234.

Ashbaugh, H., & Pincus, M. (2001). Domestic accounting standards, international accounting standards, and the predictability of earnings. *Journal of Accounting Research*, *39*, 417-434.

Ashbaugh-Skaife, H., Collins, D., & LaFond, R. (2006). The effects of corporate governance on firm credit ratings. *Journal of Accounting & Economics*, *42*, 203-243.

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., Robin, A., & Wu, J. S. (2003). Incentives vs. standards: Properties of accounting income in four East Asian countries. *Journal of Accounting & Economics*, *29*, 235-270.

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

Barry, C. B., & Brown, S. J. (1985). Differential information and security market equilibrium. *Journal of Financial and Quantitative Analysis*, *20*, 407-422.

Barth, M., Landsman, W., & Lang, M. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*, 467-498.

Beatty, A., Ramesh, K., & Weber, J. (2002). The importance of accounting changes in debt contracts: The cost of flexibility in covenant calculations. *Journal of Accounting & Economics*, *33*, 205-227.

Begley, J., Ming, J., & Watts, S. (1996). Bankruptcy classification errors in the 1980's: An empirical analysis of Altman's and Ohlson's models. *Review of Accounting Studies*, *1*, 267-284.

Beuselinck, C., Joos, P., Khurana, I. K., & Van der Meulen, S. (2009, April). *Mandatory IFRS reporting and stock price informativeness* (Unpublished working paper). Tilburg University, Tilburg, The Netherlands.

Bharath, S. T., & Shumway, T. (2008). Forecasting default with the KMV-Merton model. *Review of Financial Studies*, *21*, 1339-1369.

Bharath, S. T., Sunder, J., & Sunder, S. (2008). Accounting quality and debt contracting. *The Accounting Review*, *83*, 1-28.

Bhattacharya, U., Daouk, H., & Welker, M. (2003). The world price of earnings opacity. *The Accounting Review*, *78*, 641-678.

Burgstahler, D. C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, *81*, 983-1017.

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

Byard, D., Li, Y., & Yu, Y. (2011). The effect of mandatory IFRS adoption on financial analysts' information environment. *Journal of Accounting Research*, *49*, 69-96.

Campbell, J. Y., Hilscher, J., & Szilagyi, J. (2008). In search of distress risk. *Journal of Finance*, *63*, 2899-2939.

Chava, S., & Purnanandam, A. (2010). Is default risk negatively related to stock returns? *Review of Financial Studies*, *23*, 2523-2559.

Cheng, M., & Subramanyam, K. R. (2008). Analyst following and credit ratings. *Contemporary Accounting Research*, *25*, 1007-1044.

Christensen, H. B., Hail, L., & Leuz, C. (2013). Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting & Economics*, *56*, 147-177.

Christensen, H. B., Lee, E., & Walker, M. (2009). Do IFRS/UK reconciliations convey new information? The effect of debt contracting. *Journal of Accounting Research*, *47*, 1167-1199.

Covrig, V. M., Defond, M. L., & Hung, M. (2007). Home bias, foreign mutual fund holdings, and the voluntary adoption of international accounting standards. *Journal of Accounting Research*, *45*, 41-70.

Da, Z., & Gao, P. (2010). Clientele change, liquidity shock and the return on financially distressed stocks. *Journal of Financial and Quantitative Analysis*, *45*, 27-48.

Darrough, M., & Stoughton, N. (1990). Financial disclosure policy in an entry game. *Journal of Accounting & Economics*, *12*, 219-243.

Daske, H., Hail, L., Leuz, C., & Verdi, R. (2008). Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research*, *46*, 1085-1142.

Dechow, P. M., & Dichev, I. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, *77*, 35-59.

DeFond, M. L., Hu, X., Hung, M., & Li, S. (2011). The impact of mandatory IFRS adoption on foreign mutual fund ownership: The role of comparability. *Journal of Accounting & Economics*, *51*, 240-258.

DeFond, M. L., & Jiambalvo, J. (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting & Economics*, *17*, 145-176.

Dontoh, A., Ronen, J., & Sarath, B. (2013). Financial statements insurance. *Abacus*, *49*, 269-307.

Dye, R. (1986). Proprietary and non-proprietary disclosure. *Journal of Business*, *59*, 331-366.

Easley, D., & O'Hara, M. (2004). Information and the cost of capital. *Journal of Finance*, *59*, 1553-1583.

Eccher, E., & Healy, P. (2000, June). *The role of international accounting standards in transitional economies: A study of the people's republic of China* (Unpublished working paper). Massachusetts Institute of Technology, Cambridge.

Ernst & Young. (2011). *UK GAAP vs. IFRS: The basics*. Retrieved from http://www.ey.com/Publication/vwLUAssets/UK_GAAP_v_IFRS_-_The_basics_-_Spring_2011/$FILE/EY_UK_GAAP_vs_IFRS_-_The%20basics_-_Spring_2011%20.pdf

Ferrari, M., Momentem, F., & Reggiani, F. (2012). Investor perception of the international accounting standards quality: Inferences from Germany. *Journal of Accounting, Auditing & Finance*, *27*, 527-556.

Francis, J., LaFond, R., Olsson, P., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting & Economics*, *39*, 295-327.

Garlappi, L., Shu, T., & Yan, H. (2008). Default risk, shareholder advantage, and stock returns. *Review of Accounting Studies*, *21*, 2743-2778.

Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting & Economics*, *40*, 3-73.

Gray, S. J., Meek, G. K., & Roberts, C. B. (1995). International capital market pressures and voluntary annual reports disclosures by US and UK multinational. *Journal of International Financial Management & Accounting*, *6*, 43-68.

Griffin, J., & Lemmon, M. (2002). Book-to-market equity, distress risk, and stock returns. *Journal of Finance*, *57*, 2317-2336.

Grossman, S. (1981). The informational role of warranties and private disclosure about product quality. *Journal of Law & Economics*, *24*, 460-483.

Healy, P. M., & Palepu, K. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting & Economics*, *31*, 405-440.

Hillegeist, S., Keating, E., Cram, D., & Lundstedt, K. (2004). Assessing the probability of bankruptcy. *Review of Accounting Studies*, *9*, 5-34.

Hope, O.-K. (2003). Disclosure practices, enforcement of accounting standards, and analysts' forecast accuracy: An international study. *Journal of Accounting Research*, *41*, 235-272.

Horton, J., Serafeim, G., & Serafeim, I. (2013). Does mandatory IFRS adoption improve the information environment? *Contemporary Accounting Research*, *30*, 388-423.

Hung, M., & Subramanyan, K. R. (2007). Financial statement effects of adopting international accounting standards: The case of Germany. *Review of Accounting Studies*, *12*, 623-657.

Jensen, M. J., & Meckling, W. R. (1976). Theory of the firm: Managerial behavior, agency cost, and ownership structure. *Journal of Financial Economics*, *3*, 305-360.

Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, *29*, 193-228.

Jovanovic, B. (1982). Truthful disclosure of information. *Bell Journal of Economics*, *13*, 36-44.

Kadan, O., & Swinkels, J. M. (2008). Stocks or options? Moral hazard, firm viability, and the design of compensation contracts. *Review of Financial Studies*, *21*, 451-482.

Karamanou, I., & Nishiotis, G. (2009). Disclosure and the cost of capital: Evidence from the market's reaction to firm voluntary adoption of IAS. *Journal of Business Finance & Accounting*, *36*, 793-821.

Kim, Y., Li, H., & Li, S. (2011). Does eliminating the form 20-F reconciliation from IFRS to U.S. GAAP have capital market consequences? *Journal of Accounting & Economics*, *53*, 249-273.

Kothari, S. P., Li, X., & Short, J. (2009). The effect of disclosures by management, analysts, and financial press on the equity cost of capital: A study using content analysis. *The Accounting Review*, *84*, 1639-1670.

Kothari, S. P., Ramanna, K., & Skinner, D. J. (2010). Implications for GAAP from an analysis of positive research in accounting. *Journal of Accounting & Economics*, *50*, 246-286.

Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, *45*, 385-420.

Landsman, W. R., Maydew, E. L., & Thornock, J. R. (2012). The information content of annual earnings announcements and mandatory adoption of IFRS. *Journal of Accounting & Economics*, *53*, 34-54.

Lang, M. H., Lins, K. V., & Miller, D. P. (2003). ADRs, analysts, and accuracy: Does cross-listing in the United States improve a firm's information environment and increase market value? *Journal of Accounting Research*, *41*, 317-345.

Lang, M. H., & Lundholm, R. (1993). Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, *31*, 246-271.

Lang, M. H., & Lundholm, R. (1996). Corporate disclosure policy and analyst behavior. *The Accounting Review*, *71*, 467-492.

Lang, M. H., Raedy, J. M., & Wilson, W. M. (2006). Earnings management and cross listing: Are reconciled earnings comparable to US earnings? *Journal of Accounting & Economics*, *42*, 255-283.

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

Leuz, C. (2003). Discussion of ADRs, analysts, and accuracy: Does cross-listing in the United States improve a firm's information environment and increase market value? *Journal of Accounting Research*, *41*, 347-362.

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

Leuz, C., & Verrecchia, R. E. (2000). The economic consequences of increased disclosure. *Journal of Accounting Research*, *38*, 91-124.

Leuz, C., & Wysocki, P. (2008, March). *Economic consequences of financial reporting and disclosure regulation: A review and suggestions for future research* (Unpublished working paper). University of Chicago, IL.

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*, 607-636.

Mansi, S., Maxwell, W., & Miller, D. (2011). Analyst forecast characteristics and the cost of debt. *Review of Accounting Studies*, *16*, 116-142.

Merton, R. C. (1973). Theory of rational option pricing. *Bell Journal of Economics and Management Science*, *4*, 141-183.

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

Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, *42*, 483-510.

Milgrom, P. (1981). Good news and bad news: Representation theorems and applications. *Bell Journal of Economics*, *12*, 380-391.

Myers, S., & Majluf, N. (1984). Corporate financing and investment decision when firms have information that investors do not have. *Journal of Financial Economics*, *13*, 187-222.

Ndubizu, G. A. (1992). Accounting disclosure methods and economic development: A criterion for globalizing capital markets. *The International Journal of Accounting*, *27*, 151-163.

Ozkan, N., Singer, Z., & You, H. (2012). Mandatory IFRS adoption and the contracting usefulness of accounting information. *Journal of Accounting Research*, *50*, 1077-1107.

Pittman, J. A., & Fortin, S. (2004). Auditor choice and the cost of debt capital in newly public firms. *Journal of Accounting & Economics*, *37*, 113-136.

Pownall, G., & Schipper, K. (1999). Implications of accounting research for the SEC's consideration of international accounting standards for U.S. securities offerings. *Accounting Horizons*, *13*, 259-280.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting & Economics*, *42*, 355-370.

Sengupta, P. (1998). Corporate disclosure quality and the cost of debt. *The Accounting Review*, *73*, 459-474.

Shima, K. M., & Gordon, E. A. (2011). IFRS and the regulatory environment: The case of U.S. allocation choice. *Journal of Accounting and Public Policy*, *30*, 481-500.

Skinner, D., & Sloan, R. (2002). Earnings surprises, growth expectations and stock returns or don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies*, *7*, 289-312.

Smith, C. W., & Watts, R. L. (1992). The Investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, *32*, 263-292.

Street, D. L., & Gray, S. J. (2001). *Observance of international accounting standards: Factors explaining non-compliance* (ACCA Research Monograph No. 74). London, England: Association of Chartered Certified Accountants.

Tan, H., Wang, S., & Welker, M. (2011). Analyst following and forecast accuracy after mandated IFRS adoptions. *Journal of Accounting Research*, *49*, 1307-1357.

Teoh, S. H., & Hwang, C. Y. (1991). Nondisclosure and adverse disclosure as signals of firm value. *Review of Financial Studies*, *4*, 283-313.

Vassalou, M., & Xing, Y. (2004). Default risk in equity returns. *Journal of Finance*, *59*, 831-868.

Verrecchia, R. (1983). Discretionary disclosure. *Journal of Accounting & Economics*, *5*, 179-194.

Wang, S., & Welker, M. (2011). Timing equity issuance in response to information asymmetry arising from IFRS adoption in Australia and Europe. *Journal of Accounting Research*, *49*, 257-307.

Watts, R. L., & Zimmerman, J. L. (1990). Positive accounting theory: A ten year perspective. *The Accounting Review*, *65*, 131-156.

Yu, F. (2005). Accounting transparency and the term structure of credit spreads. *Journal of Financial Economics*, *75*, 53-84.

Zhang, J. (2008). The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting & Economics*, *45*, 27-54.