

# Financial Reporting Regulation, Information Asymmetry and Financing Decisions around the World

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## Abstract

We study the influence of a major reform in financial reporting regulation – the adoption of the International Financial Reporting Standards (IFRS) – on financial decisions around the world. We find that post-IFRS: (i) firms are more likely to raise external financing and (ii) firms increase their use of equity capital if they experience a decrease in information asymmetry, operate in a high growth industry, or have high financial distress. Our findings highlight the importance of financial reporting regulation in explaining financing policies around the world.

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We study the influence of a major reform in financial reporting regulation on financial decisions around the world. Specifically, we use the adoption of a common set of accounting standards across countries – the International Financial Reporting Standards (IFRS) – as a mandatory regulatory change in financial reporting. Since its establishment in 2001, IFRS has been adopted by over 100 countries with the purpose of improving reporting quality, reducing information processing costs, and ultimately reducing information asymmetry among capital market participants within and across countries. Despite decades of research on capital structure, little is known about the extent to which financial reporting regulation affects financing decisions (see, e.g., a recent study by Graham, Leary, and Roberts (2013)). Even less is known about the effect of such reforms around the world (Myers (2003), for example, calls for more research in this area).

We fill this gap in the literature by providing two main findings: First, using several benchmark samples and a difference-in-difference research design (DID henceforth), we show that post-IFRS firms increase their use of external financing, which suggests that the new regulation reduces adverse selection costs and allows firms to tap into external capital markets. Second, we explore cross-sectional variation within our sample and find that firms that experience a decrease in information asymmetry, that operate in high growth industries, or that have high financial distress increase their use of equity financing post IFRS. Overall, our findings suggest that the new regulation increases firms' financing capacity and allows certain firms to rebalance their capital structure.

There are (at least) two reasons why financial reporting regulation, and IFRS in particular, can affect financing decisions. First, the purpose of introducing new accounting regulation is to improve transparency and reduce information asymmetry among capital market participants (e.g., Leuz and Wysocki (2008)). To the extent that information asymmetry influences financing decisions (Myers and Majluf (1984), Myers (1984)), one would expect a new regulation to influence financing choices. Second, in the context of IFRS, the regulation establishes a *convergence* in accounting standards across countries with the intent of reducing information processing costs (primarily for foreign investors who are familiar with IFRS) and facilitating cross-border capital flows. Thus, by reducing information processing costs, IFRS can also have an impact on the supply of (foreign) capital. As a result, IFRS can facilitate risk sharing and allow firms better access to financing.

From an empirical standpoint, the adoption of IFRS has several desirable features. First, prior research has shown a significant reduction in information asymmetry around IFRS (we review this literature in Section I). Further, there is no evidence that IFRS affected other determinants of capital structure decisions such as tax rates and/or the costs of financial distress. This reduces the set of confounding sources that affect financing and allows us to frame our predictions based on the pecking order theory. Second, because IFRS adoption is determined at the country level, it is less likely to reflect the endogenous preferences of a single firm. In addition, IFRS has been adopted by a large number of countries over time, providing us with different benchmark samples to perform a DID research design. Last, while the adoption affects all firms in the economy, it can have a heterogeneous impact on firms within each country. We

take advantage of this characteristic by conducting a within-treatment sample cross-sectional DID research design.

Relying on a key assumption that IFRS reduces information asymmetry – we develop the following testable predictions.<sup>1</sup> First, in the post-IFRS adoption period, firms will be more likely to raise external funds. This likelihood occurs because, as shown in Myers and Majluf (1984), a reduction in information asymmetry reduces adverse selection costs, which in turn allows firms to raise more external capital. Second, conditional on raising external funds, in the post-IFRS adoption period firms will be relatively more likely to issue equity than debt. This occurs because the reduction in adverse selection costs disproportionately affects equity vis-à-vis debt financing, as equity is a more information sensitive security.

We test our predictions on a sample of 34,560 firm-year observations between 2001 and 2008 from 34 countries (IFRS-adopting countries between 2003 and 2006). We limit our sample period to the five years around IFRS adoption to mitigate the likelihood of other systematic changes that affect financing (e.g., changes to tax rates or costs of financial distress) and to avoid the influence of the financial crisis.<sup>2</sup> To control for macroeconomic shocks affecting our treatment sample, we use a DID methodology and benchmark our results to three different control samples (based on firms from non-IFRS-adopting countries, from developed countries, and from a propensity score matched sample). In addition, we include a series of control

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<sup>1</sup> We validate this assumption empirically in our sample by showing that IFRS is associated with a reduction of several proxies of information asymmetry (and more broadly illiquidity of a stock) such as Amihud's price impact, bid-ask spreads, zero returns, and the measure of trading costs used in Lesmond (2005).

<sup>2</sup> While we use a narrow window around the new regulation in our main tests, to mitigate the influence of confounding events, we show that our results are similar if we extend the sample from 2001 to 2010.

variables to capture firm characteristics affecting financing decisions (e.g., growth opportunities, tangibility, profitability), country factors affecting the supply of capital (e.g., interest rates, economic growth), and country and year fixed-effects to control for time-invariant differences across countries and macroeconomic shocks affecting the sample.

We show that IFRS significantly affects firms' financing decisions. Specifically, in a similar vein as Leary and Roberts (2010) and Malmendier, Tate, and Yan (2010), we use a hierarchy financing model and test whether the probability of raising external capital, and subsequently the choice of debt versus equity capital, changed post IFRS. Our evidence suggests that, relative to the benchmark samples, post-IFRS firms are 4 to 5% more likely to raise external capital. The effect on the choice of debt versus equity financing for the full sample is statistically insignificant, suggesting that while some firms increase external financing via equity, other firms raise external financing via debt.

We then perform three cross-sectional tests following the predictions in Myers (1984). Our empirical identification strategy for these tests is a within-treatment sample DID estimation to supplement the cross-country (i.e., adopters vs. non-adopters) DID evidence above. We first partition the sample based on firm-specific changes in information asymmetry. While IFRS became a requirement for all public firms in adopting countries, the extent to which IFRS affected a firm's reporting quality varies cross-sectionally depending on several factors, such as a country's reporting requirements prior to IFRS and a firm's pre-IFRS reporting practices (Daske et al., 2013). Thus, we expect that only firms that exhibit *decreases* in information asymmetry and adverse selection post IFRS will exhibit changes in financing decisions after IFRS. We show

that the changes in external financing and in equity financing around IFRS only occur for firms experiencing a reduction in information asymmetry. Next, we study the financing implications for firms operating in high growth industries, as these firms should benefit more from lower adverse selection costs given their larger investment opportunity set. We follow Bekaert et al. (2007) and partition the sample by exogenous growth opportunities (proxied by global PE ratios at the industry level). We find that firms operating in high growth environments experience stronger changes in external financing and equity issuances relative to firms operating in low growth environments. Finally, we test whether firms with a higher risk of financial distress are those issuing more equity in the post-IFRS adoption period. Our results are consistent with this prediction. While both firms with high and low financial distress increase their likelihood of raising external capital post IFRS, only firms with higher financial distress increase their external financing mix towards equity. Finally, we confirm our findings using traditional leverage regressions (Rajan and Zingales (1995)). We find that firms with the largest reductions in information asymmetry and the highest level of financial distress are those that reduce leverage ratios post-IFRS adoption.

Two potential sources of endogeneity could affect our results: (i) other concurrent changes could occur around IFRS that also affected financing and (ii) our findings could capture a gradual change towards market integration, not the effects of the harmonization in financial reporting due to IFRS adoption. To address the first concern, we perform two additional tests. First, we exclude five EU countries (Luxembourg, Finland, Germany, Netherlands, and the U.K.) that tightened their enforcement standards around 2005 (Christensen, Hail, and Leuz (2012)). We

continue to find significant results for our predictions. Second, we analyze whether changes in financing decisions are a function of the “distance” of the change in financial regulation (as proxied by Bae, Tan, and Welker’s (2008) measure of accounting changes with the switch from local regulation to IFRS). We find consistent, albeit weak, evidence that our findings increase in countries with larger “distance” in accounting standards. To address the second concern, we follow Bertrand and Mullainathan (2003) and Giroud and Mueller (2010) and allow for a non-linear (yearly) effect of IFRS around the mandate. Using different sample periods, we find no evidence of changes in financing decisions in the years before the mandate. Rather, the effect starts in the first year after IFRS adoption and tends to become stronger in the second year. Overall, these results are consistent with our interpretation that financing decisions were influenced by the new regulation.

Our paper makes two primary contributions. First, we provide evidence that financial reporting regulation can have an important effect on financing decisions around the world. To date, the international literature that studies the implications of major reforms around the world on financing decisions has mostly centered around creditor control rights (e.g., La Porta et al. (1997, 1998), Vig (2013)) or market liberalization (see Henry (2000), Baekert and Harvey (2000)). In contrast, we focus on a major regulatory reform in financial reporting, whose primary purpose is to reduce information asymmetry among market participants. Our results add to the

literature by suggesting that financial reporting reforms can have a significant influence on financing decisions.<sup>3</sup>

Second, we contribute to the capital structure literature by highlighting the importance of information asymmetry. To date, evidence on the extent to which information asymmetry explains financing decisions is still mixed (see, e.g., Shyam-Sunder and Myers (1999), Bharath, Pasquariello, and Wu (2009) and Leary and Roberts (2010) for recent evidence). The IFRS adoption allows us to contribute to this literature by exploiting a setting with substantial changes in information asymmetry and by studying its impact on financing decisions. Moreover, by testing this hypothesis in an international setting, we also contribute to the literature on the determinants of capital structures across countries (Rajan and Zingales (1995), Booth et al. (2001), Huizinga, Laeven, and Nicodeme (2008)). As discussed in Myers (2003), this is still a largely undeveloped literature. Our paper adds to this growing field by providing evidence that accounting reforms can have an economically important impact on financing policies around the world.

The remainder of the paper is organized as follows: Section I provides a brief overview of the adoption of IFRS and how it relates to the previous reforms studied in the literature. Section II presents the research design used to test our predictions. Section III presents and discusses the results, and Section IV concludes.

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<sup>3</sup> In the U.S. context, a few studies exploit regulation changes but do not focus on financing decisions (e.g., Greenstone, Oyer, and Vissing-Jorgensen (2006), Bushee and Leuz (2005)). Petacchi (2012) focuses on financing decisions but uses a different proxy for regulation. Specifically, she uses Regulation Fair Disclosure (Reg-FD) which, in contrast to IFRS, focuses on selective disclosure and caters to equity investors.



## **I. The Adoption of the International Financial Reporting Standards (IFRS)**

### *A. Background*

The introduction of the International Financial Reporting Standards (IFRS) for listed companies around the world is one of the most significant regulatory changes in accounting history. Since its establishment in 2001, over 100 countries have switched to IFRS reporting.<sup>4</sup> Conceptually, IFRS involves replacing national accounting standards with a single set of rules that firms have to follow when preparing financial reports. For instance, compared to previous national accounting standards in certain countries, IFRS adoption can lead to substantial increases in accounting disclosures (Bae, Tan, and Welker (2008)). A specific example illustrates the intuition: with the adoption of IFRS, firms operating in Greece were required to report related party transactions, discontinued operations, segment reporting, and cash flows statements (GAAP, 2001). This information can be valuable to external investors, both national and foreign, who are considering an investment in a particular Greek company. In addition, by establishing a common set of rules, IFRS was intended to increase financial statement comparability and to ultimately reduce information asymmetry among capital market participants. For example, Tweedie (2006) asserts that IFRS “will enable investors to compare the financial results of companies operating in different jurisdictions more easily and provide more opportunity for investment and diversification.”

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<sup>4</sup> IFRS (formerly known as International Accounting Standards (IAS)) began as an attempt to harmonize accounting across the European Community in the early 1970s. However, it wasn't until 2001 that the International Accounting Standards Board (IASB) was established to develop International Financial Reporting Standards (IFRS). For a list of adopting countries, see <http://www.iasplus.com/en/jurisdictions>.

An emerging literature has studied the economic consequences around the adoption of IFRS. As discussed in Leuz and Wysocki (2008), there are arguments for and against IFRS, particularly with regard to whether IFRS would translate to material changes in financial reporting behavior and a reduction in information asymmetry. Nonetheless, several studies have documented a reduction in information asymmetry around IFRS. For example, Daske et al. (2008) find that IFRS is associated with higher stock market liquidity (e.g., lower bid-ask spreads and trading costs) among investors. Brochet, Jagolinzer, and Riedl (2012) show that abnormal returns to insider purchases (a measure of information advantage by the insider) decreased post IFRS in the U.K. Tan, Wang, and Welker (2011) find that analysts' forecast accuracy (an inverse measure of information uncertainty among market participants) increased post IFRS. As a result, IFRS has also been shown to facilitate cross-border portfolio investments and increase foreign ownership (DeFond et al. (2011)). Overall, the evidence suggests that IFRS is associated with a reduction in information asymmetry.

Our identification strategy uses the mandatory adoption of IFRS as an exogenous change in information asymmetry. Since IFRS adoption is determined at the country level, it is less likely to reflect the endogenous preferences of a single firm. In addition, the main driver behind IFRS is a reduction in information asymmetry, which is the necessary condition for us to frame our hypothesis based on the pecking order theory. The reduction in information asymmetry occurs for three potential reasons. First, for certain countries, IFRS substantially increases accounting disclosure by providing additional disclosure guidelines such as segment disclosures and pension disclosures (Bae, Tan, and Welker (2008)). Second, IFRS substantially increases

comparability across countries, which facilitates monitoring and benchmarking across firms. For example, Yip and Young (2012) show that IFRS is associated with higher accounting comparability and information transfer between firms, whereas Ozkan, Singer, and You (2012) show that IFRS improves executive compensation contracts by increasing the number of peers firms used in relative performance evaluation. Finally, Christensen, Hail, and Leuz (2012) argue that contemporaneous changes in enforcement contributed to the effects around IFRS adoption.<sup>5</sup>

In addition to reducing information asymmetry, there is no evidence that IFRS systematically affects other determinants of capital structure decisions such as tax rates and/or financial distress. As a result, this setting mitigates the potential confounding factors driving financing decisions and allows us to frame our predictions based on changes in information asymmetry. Specifically, if IFRS helps the investor to better assess the assets in place (e.g., by increasing transparency and required disclosures) or existing investment opportunities (e.g., by increasing comparability and allowing investors to better observe growth opportunity from competitors), the adverse selection costs in Myers and Majluf's (1984) model will be reduced and the predictions of the pecking order theory would apply.

#### *B. IFRS Adoption within the Broader Literature Analyzing Reforms*

Our paper is broadly related to the literature that studies the financing consequences of economic reforms. For instance, La Porta et al. (1998) and the subsequent research link creditor rights to financial development by documenting a positive correlation between an index of

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<sup>5</sup> We explicitly address this concern by excluding countries affected by concurrent regulatory changes (Section III.E).

creditor rights and the size of credit markets.<sup>6</sup> These findings support the view that ownership protection, particularly in credit markets, fosters financial development by lowering the cost of credit.

More closely related to our paper, a broad literature analyzes the effects of reforms enhancing a country's financial integration with the rest of the world on its firms' capital budgeting and financing choices. For instance, Kim and Singal (2000), Bekaert and Harvey (2000), and Henry (2000) show that market liberalization reforms facilitate international capital flows and improve the investment environment in a country. Our study adds to this literature by exploiting a reform in financial reporting regulation intended to reduce information asymmetry among investors. Taking advantage of the mandatory adoption of IFRS around the world, we test whether accounting regulation has material consequences on firms' financing choices.

## **II. Research Design**

In this section, we describe our research design. Similar to Leary and Roberts (2010) and Malmendier, Tate, and Yan (2011), we use a hierarchy financing model to study the probability of raising external capital and the choice of debt versus equity around the adoption of IFRS.

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<sup>6</sup> See, e.g., Levine (1998, 1999), Djankov, McLiesh, and Shleifer (2007), Beck, Demirgüç-Kunt, and Levine (2004), Haselmann, Pistor, and Vig (2010), Visaria (2009).

### A. Regression Specification

To test our first prediction, we model whether, *ceteris paribus*, the probability of raising external financing increased following IFRS adoption. Specifically we estimate the following Probit model:

$$P(Ext\_Fin) = \alpha_c + \alpha_k + \alpha_y + \beta_1 Post_{it} \times IFRS_i + \Sigma \beta_m Control_{mit} + \varepsilon_{it}, \quad (1)$$

where *Ext\_Fin* equals one if a firm issues debt or equity above 5% of beginning period assets in a given year, and zero otherwise.<sup>7</sup>  $\alpha_c$ ,  $\alpha_k$ , and  $\alpha_y$  are country, industry, and year fixed-effects, respectively. *Post* is an indicator variable for the years following the adoption of IFRS (2005 for non-adopting countries).<sup>8</sup> *IFRS* is an indicator variable equal to one if the firm belongs to a country that adopted IFRS. *Control<sub>m</sub>* is a set of control variables (we describe all these variables below and also in Appendix B).<sup>9</sup> We cluster our standard errors at the country level because our identification strategy relies on country-level adoptions of IFRS.

The empirical strategy employed in this paper is a DID methodology. We exploit cross-sectional variation in the adoption of IFRS across countries and estimate equation (1) by benchmarking our treatment sample with various control samples as detailed in Section III. The coefficient of interest  $\beta_1$  is the DID estimator, which captures the incremental probability that an IFRS adopter (relative to a non-adopter) raises external financing after the adoption of IFRS. Our

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<sup>7</sup> The 5% cutoff follows Leary and Roberts (2010) and is intended to reduce measurement error from confounding transactions such as stock option exercises. In untabulated analyses, we use a 2% cutoff and find similar inferences.

<sup>8</sup> We use 2005 for non-adopting countries because it coincides with the majority of IFRS adoptions in our sample.

<sup>9</sup> We do not include firm fixed-effects in the (non-linear) Probit models to avoid biases due to the incidental parameter problem (Lancaster (2000)). When using continuous variables (e.g., in the leverage regressions) we use firm fixed-effects instead of country fixed-effects.

prediction is that in the post-IFRS period, adopting firms are more likely to raise external capital. Hence, we predict that  $\beta_1 > 0$ .

Our second prediction is that IFRS adopters will issue relatively more equity (compared to debt) subsequent to the adoption of IFRS. This occurs because equity is more information sensitive than debt (Myers and Majluf (1984)) and so the reduction in adverse selection costs post IFRS is disproportionately higher for equity financing. To test this prediction, we model whether the probability of raising equity, conditional on raising external financing, increases after IFRS adoption. Specifically we estimate the following regression:<sup>10</sup>

$$P(Eq\_Is) = \alpha_c + \alpha_k + \alpha_y + \gamma_1 Post_{it} \times IFRS_i + \Sigma \beta_m Control_{mit} + \varepsilon_{it}, \quad (2)$$

where *Eq\_Is* equals one if the firm issues equity above 5% of beginning period assets in a given year, and zero otherwise. The other variables are the same as in model (1). Following Leary and Roberts (2010), we classify dual issuances of debt and equity as equity issuances. Further, *Eq\_Is* is only assigned value for firms issuing external financing. In other words, equation (2) models the choice of equity financing conditional on a firm raising external financing.

Similar to equation (1), we estimate equation (2) using a DID methodology where we benchmark our treatment sample with various control samples. The coefficient of interest,  $\gamma_1$ , captures the differential change in the probability of raising equity after the adoption of IFRS for the treatment sample relative to the benchmark samples. Our prediction is that in the

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<sup>10</sup> An alternative procedure is to model the decision to issue external financing and the choice between debt and equity using a Heckman probit selection model. However, this method does not accommodate a difference-in-difference specification, which is why we don't use it in our main analyses. Nonetheless, in a sensitivity analysis, we apply this procedure to our treatment sample and obtain similar results.

post-IFRS adoption period, adopting firms are more likely to raise equity. Hence, we predict that  $\gamma_1 > 0$ .

### *B. Variable Definitions*

We measure debt issuances as the change in long-term debt normalized by lagged total assets. This enables us to include private debt issuances, which represent a significant portion of most firms' debt issuances (Houston and James (1996)). As for equity issuances, we follow Leary and Roberts (2010) and measure equity issuances from changes in the market value of equity. This approach avoids using balance sheet data, which could be mechanically affected by changes in accounting methods (e.g., higher use of fair value estimates) following IFRS.<sup>11</sup>

To obtain equity issuances, we first calculate the daily changes in equity as follows:

$$\Delta Equity Daily_t = MV_t - MV_{t-1}(1 + ret_t), \quad (3)$$

where  $\Delta Equity Daily_t$  is the daily change in equity for day  $t$ ,  $MV_t$  is the market value of equity at day  $t$  and  $ret_t$  is the daily split adjusted price return at day  $t$ . We then obtain equity issuances by adding the daily changes in equity for the fiscal year normalized by lagged total assets.

We include a number of controls from previous literature (Rajan and Zingales (1995), Bharath, Pasquariello, and Wu, (2009), Leary and Roberts (2010)). *BSM-Prob* proxies for the cost of financial distress and is based on the market based probability of bankruptcy derived

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<sup>11</sup> Leary and Roberts (2010) estimate equity issuances either via changes in market capitalization or directly from the statement of cash flow. We use the first method because we are not able to compute equity issuances from the statement of cash flow, as this information is not widely available internationally. However, our results are similar if we measure the change in equity from changes in the balance sheet (instead of from the statement of cash flow).

from the Black-Scholes-Merton (BSM) option-pricing model. Under the BSM model, the probability of bankruptcy (*BSM-Prob*) is the probability that the market value of assets is less than the face value of the liabilities. Appendix A provides a detailed description of the computation of this measure. *Tangibility* corresponds to property, plant, and equipment (PP&E) normalized by total assets. *Q* corresponds to the ratio of the market value of assets to total assets. The market value of assets is defined as the book value of total assets plus market equity minus common equity. Market equity is defined as shares outstanding times the fiscal year closing price. *Profitability* corresponds to operating income normalized by total assets. *Log(Sales)* corresponds to the logarithm of total sales.

We also control for the amount of financing needed by the firm. *Deficit* is defined as the sum of dividends, capital expenditures, and changes in working capital minus operating cash flow, deflated by lagged total assets. Because *Deficit* focuses on cash flow measures (as opposed to the stock of cash), we also control for the amount of cash available at the beginning of the year. *Cash* is defined as cash over total assets. To control for the possibility that firms may time the market when issuing external financing (Baker and Wurgler (2002)), we control for stock market returns. *Returns* is defined as the one year buy-and-hold return for the corresponding fiscal year. All the variables (except financing deficit and returns, which are concurrent) are measured at the beginning of the fiscal year.

In addition, we control for a set of macroeconomic variables capturing macroeconomic changes in the supply of capital. This is important because our hypothesis attempts to isolate the



effect of financial reporting integration and the change in the supply of capital driven by the reduction in information asymmetry around IFRS. *Trade* is defined as the ratio of the sum of exports and imports to a country's GDP. Baekert and Harvey (2000) show that market liberalization has substantially altered the supply of cross-border capital. We also control for interest rates (*Tbill*) and GDP growth ( $\Delta GDP$ ). *Tbill* is a country's three month Treasury bill rate.  $\Delta GDP$  is the percentage change of real gross domestic product.

Before we proceed, it is important to note that the countries in our sample liberalized their equity markets before the beginning of our sample period (Bekaert and Harvey (2000)). As a result, the *change* in these firms' financing choices post IFRS should not be influenced by liberalization events. Second, our research design uses a short sample period around the IFRS adoption to reduce the likelihood of external events as well as three different benchmark samples to control for concurrent events affecting both the treatment and benchmark firms (we extend the sample in sensitivity tests (Section III.E)). Further, to the extent that liberalization and/or integration efforts take time, the inclusion of country-fixed effects would capture cross-sectional differences across countries. Finally, in Section III.E we use a non-linear estimation technique to test whether IFRS adopters change their financing behavior in the years subsequent to (but not before) the adoption of IFRS.

### III. Results

#### *A. Sample and Descriptive Statistics*

Our treatment sample consists of all firms from countries that mandatorily adopted IFRS between 2003 and 2006 (firms that voluntarily adopted IFRS before the mandate are excluded from the main analysis).<sup>12</sup> IFRS adoption dates by country are obtained from Ramanna and Sletten (2010). We limit our sample period to the five years around the adoption to mitigate the likelihood of other systematic changes that affect financing (e.g., changes to tax rates or the costs of financial distress) during our sample period. In addition, we use a constant sample of firms with data for the two years before and after the IFRS adoption year. This ensures that our findings are not driven by a changing in sample composition over the sample period. Most of the firms in our sample adopted IFRS in 2005. Therefore, for the majority of our treatment firms the sample period ranges from 2002 to 2007, while the total sample period ranges from 2001 to 2008. Finally, we exclude the specific year of adoption to avoid the influence of transitional errors (Loyeung et al. (2011)). In Section III.E, we perform some sensitivity analyses and show that we obtain similar results when we use a longer time period (from 2001 to 2010) that includes the financial crisis and relaxes the constant sample requirement.

To control for macroeconomic shocks and confounding factors affecting our sample, we benchmark our results to three different control samples of firms from countries that did not

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<sup>12</sup> Ideally, we would use the sample of voluntary adopters as our benchmark sample. However, previous research has shown that these firms also experience a reduction in information asymmetry on the mandatory adoption date because they benefit from increased comparability with mandatory adopters (e.g., Daske et al. (2008)).

adopt IFRS during the sample period. Our first benchmark sample, *All*, includes all firms with sufficient data from countries that did not adopt IFRS during the sample period. This benchmark sample allows us to test how IFRS adopters performed compared to the average firm in non-IFRS countries around the world. However, since our treatment sample is largely composed of members of the European Union, we use an alternative sample, *Developed*, that includes developed non-IFRS-adopting countries (Canada, Japan, and the United States). Finally, we construct a third benchmark sample based on a propensity score matching procedure (Rosenbaum and Rubin (1983)). This methodology addresses potential endogeneity concerns by identifying a control sample with similar characteristics to the treatment sample in terms of determinants of financing choices. To create our matched sample, we identify for each firm-year in our treatment sample a matched firm that has the closest probability of issuing external financing based on the following dependent variables: *Tangibility*, *Q*, *Profitability*, *Log(Sales)*, *Cash*, *Returns*, and *Deficit*.

The total sample consists of a set of 34,560 firm-year observations from 34 countries, with 9,992 firm-year observations from 21 IFRS-adopting countries and 24,568 firm-year observations from the full control sample, *All* (13 countries). The developed countries benchmark sample consists of 17,380 firm-year observations, while the matched control sample consists of 9,918 firm-year observations. A country is included if it has an average of at least 10 observations per year. We exclude financial firms and utilities (ICB codes 7000 and 8000), firms that have a book-leverage value greater than 1, and a market value of less than US\$1 million to mitigate the influence of small firms. We winsorize all continuous variables at the 1% and 99%

levels to limit the influence of outliers. Each firm is required to have available price data from Datastream and the necessary financial accounting data from Worldscope. Following Daske et al. (2008), we assume that firms from countries that adopted IFRS in 2005 but that have a non-December fiscal year end actually adopt IFRS in 2006.

Table 1 presents the list of countries in our sample, their respective IFRS adoption dates, and the number of observations in the pre and post periods. The treatment sample includes developed economies (e.g., Australia, France, Germany, the U.K., and Singapore) as well as growing economies (e.g., Hong Kong). As for adoption dates, Singapore adopted IFRS in 2003, Turkey in 2006, and the remaining countries did so in 2005. The control sample is composed of developed economies (e.g., the United States, Canada, and Japan) as well as developing economies (e.g., Brazil, Malaysia, and Taiwan).

Table 2 presents descriptive statistics for the variables used in the analysis. Panel A presents statistics for the full sample. Panel B then presents mean values for each sample (treatment and controls) separately. On average, IFRS-adopting firms raise external capital in 31% of the firm-years in our sample. In contrast, firms in the control sample raise external capital in 28% (*All*), 30% (*Developed*), and 31% (*Matched*) of the firm-years. Furthermore, IFRS-adopting firms issue equity in 58% of the cases. For firms in the control sample, the numbers are: 60% (*All*), 66% (*Developed*), and 60% (*Matched*) of the firm-years. In both cases, the treatment group and the different control groups are not statistically different. Moreover, the treatment and control samples are similar along several other dimensions. For example, they have similar mean values of *Tangibility*, *Leverage*, and *Profitability*. This provides evidence that

treatment and control samples have similar financing policies over the whole sample period. In particular, for the *Matched* sample we do not find statistically significant differences with the treatment sample.

Table 2, Panel C presents correlations among the main variables for our treatment sample. Consistent with an increase in external financing in the post-IFRS period, *Ext\_Fin* is positively related to *Post* (Pearson correlation of 0.06). Consistent with an increase in equity financing post-IFRS adoption, *Post* is positively and significantly related to *Eq\_Is* (Pearson correlation of 0.04). Further, *Leverage* is negatively associated with *Post* (Pearson correlation of -0.03). The negative correlation of *Leverage* and *Post* does not appear to be driven by a systematic increase in share prices, since *Post* and *Returns* are negatively associated (Pearson correlation of -0.17).

#### *B. Validation Tests – IFRS and Information Asymmetry*

The interpretation of our results relies on an important assumption – that IFRS adoption significantly reduces information asymmetry. As discussed in Section I, previous studies in accounting have provided ample evidence of this link (e.g., Daske et al. (2008), Byard, Li, and Yu (2011), DeFond et al. (2011), Tan, Wang, and Welker (2011)). Nevertheless, we confirm these results in our sample. Specifically, we estimate the following model using a difference-in-difference research design:

$$IA_{it} = \alpha_i + \alpha_y + \beta_1 Post_{it} \times IFRS_i + \varepsilon_{it}, \quad (4)$$

where *IA* is a proxy for information asymmetry,  $\alpha_i$  is a firm fixed-effect,  $\alpha_y$  is a year fixed-effect, and the remaining variables are as described above. The specification includes firm fixed-

effects to control for time-invariant firm characteristics and year fixed-effects to control for general economic trends. Our variable of interest is the interaction term  $Post_{it} \times IFRS$ , which captures the post-IFRS reduction in information asymmetry of the adopting firms. In particular,  $\beta_1 < 0$  would provide evidence consistent with this prediction.

To measure information asymmetry, we use the principal component (*IA Factor*) of three different measures of market liquidity (*Amihud*, *Zero Returns*, and *LDV*) which capture, among other things, the extent of adverse selection among market participants. *Amihud* is the price impact measure developed by Amihud (2002). It captures the price response associated with one dollar of trading volume and is motivated by Kyle (1985). We compute *Amihud* as the yearly median of the daily ratio of the absolute stock return to its dollar volume. *Zero Returns* is the proportion of trading days with zero daily stock returns out of all potential trading days in a given year. The zero-return metric commonly serves as a proxy for illiquidity and has been used extensively in international settings (e.g., Lesmond (2005), Bekaert et al. (2007)). One advantage of this metric is its exclusive reliance on price data, which are more frequently available in an international setting than is trading volume data. *LDV* is an estimate of the total round trip transaction costs based on a yearly time-series regression of daily stock returns on the aggregate market returns (Lesmond, Ogden, and Trcinka (1999), Lesmond (2005)). It is based on the logic

that informed investors do not trade when the cost of trading exceeds the value of new information.<sup>13</sup>

Table 3 presents the results for the estimation of equation 4. We benchmark the treatment sample to each of the three benchmark samples described above (i.e., *All*, *Developed*, and *Matched*). Our results are consistent with previous studies in accounting (e.g., Daske et al. (2008)). Across all samples, we find that IFRS adopters experience a significant reduction in information asymmetry after IFRS is adopted.

### *C. Main Results*

We start by providing descriptive evidence on our dependent variables across our sample period. Figure 1, Panel A presents the proportion of firms raising external financing for our treatment sample and each of our three benchmark samples during the sample period. Prior to IFRS adoption, the treatment and the three benchmark samples have similar likelihoods of accessing external sources of financing (i.e., debt and/or equity). However, in the post-IFRS adoption period, we observe a significant increase in external financing for the treatment sample and a slight decrease for the benchmark samples. This provides preliminary evidence of the change in external financing decisions post IFRS for the treatment and benchmark samples.

Panel B presents the proportion of firms raising equity across the different samples. As compared to Panel A, the distinction between the treatment and the benchmark samples is less

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<sup>13</sup> We also conduct tests using the bid-ask spreads and find similar results. While theoretically motivated (Glosten and Harris (1988)), this measure is unavailable for approximately 30% of our sample (especially in the early years), which would lead to substantial data attrition if included in the main tests.

clear than it is for the external financing case, as the benchmark samples show a slight increase in the use of equity financing in the pre-IFRS period. However, the graph also suggests a mild increase in the proportion of equity issuances for the treatment sample after the adoption of IFRS. In contrast, the benchmark samples experience a decrease in the proportion of equity issuances.

We now turn to our main specification – the DID research design in equations 1 and 2. Table 4 reports the results for our first prediction – that IFRS adoption increases the probability of raising external financing. To assess the economic significance of the coefficients, we present marginal effects that measure the change in the predicted probability for a unit change in a given explanatory variable.<sup>14</sup> The first column presents the results for IFRS-adopting firms only (note that for this particular model, because there is no benchmark sample, we include an indicator for the post-IFRS period and remove the year fixed-effects). We find, among the benchmark sample, a 7% increase in the likelihood of raising post-IFRS external financing. This result provides the first evidence of how financing decisions changed after the adoption of IFRS.

Columns two to four present the DID specification results using each of our three control samples. The coefficient of interest is  $Post \times IFRS$ . In all the regressions, the coefficient is positive, significant, and of similar magnitude. In particular, for the sample including all non-adopters (model 2), an estimated coefficient of 0.06 on  $Post \times IFRS$  suggests that the probability of issuing external financing (relative to firms in the “*Non Adopter*” sample) increases by 6%

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<sup>14</sup> For comparability, we standardize all continuous variables to have a unit standard deviation and keep the dummy variables unchanged. Thus the marginal effect captures a one standard deviation change for the continuous variables and a unit change for the dummy variables.



post-IFRS adoption when compared to the treatment sample. The results using the two other benchmark samples (models 3 and 4) yield similar results. Jointly, the data suggests that the external financing result is driven by the treatment firms and the choice of benchmark sample has little impact on our inferences. Overall, the evidence in Table 4 suggests that IFRS-adopting firms rely more on external financing after the adoption of IFRS.

Table 5 reports the results for our second prediction – that IFRS adoption increases the probability of raising equity. As in Table 4, the first column presents results for the IFRS-adopting firms only. Columns two to four present the results when we benchmark the control sample to each of our three control samples. The coefficient of interest in our first model is *Post*. We find that it is positive but not statistically significant. For our DID specifications, the coefficient of interest *Post x IFRS* is again positive but insignificant in all models (columns 2 to 4). In economic terms, the evidence suggests an insignificant increase of 1% to 2% in the use of equity financing by the treatment firms subsequent to IFRS. One interpretation for the insignificant result is that, while firms increase their access to external financing post IFRS, the average effect on equity is insignificant because some firms rely on debt whereas others issue equity as a source of external capital. In other words, there could be cross-sectional variation in the financing mix, depending on other factors such as the overall change in information asymmetry, growth opportunities, and the ex-ante level of financial distress. We explore these issues in the next section.

Overall, the results in Tables 4 and 5 provide evidence that post-IFRS adoption, the treatment firms are more likely to rely on external capital but, conditional on raising external capital, they do not systematically switch towards equity financing.

#### *D. Cross-Sectional Tests*

To better understand the mechanisms behind our main results, in this section we perform three cross-sectional tests. Our empirical identification strategy for these tests is a within-sample cross-sectional DID estimation to supplement the cross-country DID evidence used in the prior section. In particular, we estimate the following models:

$$P(Ext\_Fin) = \alpha_c + \alpha_k + \alpha_y + \beta_1 Post_{it} \times Partition_{it} + \beta_2 Partition_{it} + \sum \beta_m Control_{mit} + \varepsilon_{it}, \quad (5)$$

$$P(Eq\_Is) = \alpha_c + \alpha_k + \alpha_y + \gamma_1 Post_{it} \times Partition_{it} + \beta_2 Partition_{it} + \sum \gamma_m Control_{mit} + \varepsilon_{it}, \quad (6)$$

where *Partition* is one of our partitioning variables and the other variables are the same as in models (1) and (2).

We exploit three cross-sectional partitions based on arguments in Myers (1984). We first partition our sample on firm-specific changes in information asymmetry. As discussed in Myers (1984), the pecking order theory's predictions depend on the level of information asymmetry about growth opportunities and assets in place. However, while IFRS became a requirement for all public firms in adopting countries, the extent to which IFRS affected a firm's reporting

quality varies cross-sectionally depending on several factors, such as a country's reporting requirements prior to IFRS, a firm's pre-IFRS reporting practices, and its reporting incentives (Daske et al., 2013). Thus, an important implication of our predictions is that those firms that exhibit *decreases* in information asymmetry post IFRS should also experience a reduction in adverse selection and, will exhibit changes in financing decisions after IFRS. Thus, our first partition ( $Partition = \Delta Asymmetry$ ) is then assigned as '1' for firms that exhibit a decrease in information asymmetry as proxied by the *IA Factor* around IFRS adoption, '0' otherwise.

Our second partition tests whether firms with more growth opportunities change their financing behavior post-IFRS adoption. This prediction is again based on Myers's (1984) argument that firms with high growth opportunities (relative to assets in place) will benefit more from a reduction in adverse selection, given their relatively larger set of investment opportunities. To proxy for exogenous growth opportunities, we follow Bekaert et al. (2007) and use global price to earnings (*PE*) ratios at the industry level (1-digit ICB codes). The idea is that in integrated markets, aggregate industry-level growth opportunities can be used as an exogenous proxy for the growth opportunities of a firm in a given industry (see Rajan and Zingales (1998) for a similar argument regarding external financing dependence). Our second partition ( $Partition = Ind P/E$ ) assigns a firm the value of 1 if its industry's global *P/E* ratios are above the median, 0 otherwise.

Our final partition follows the intuition in Myers (1984) and Lemmon and Zender (2010) and studies financing choices conditional on financial distress. The predictions for this test are more nuanced. Specifically, for external financing, we do not expect an effect of financial

distress because both firms with high and with low financial distress should be able to benefit from the lower adverse selection costs related to accessing external capital markets post-IFRS adoption. The distinction comes in the source of financing. Firms with a high risk of financial distress – or risky debt (Myers (1984)) – will increase their equity issues post-IFRS adoption so that they can take advantage of the reduction in the adverse selection costs of equity issuances to rebalance their capital structure towards less leveraged structures. Firms with low financial distress, in contrast, can take advantage of external financing by issuing more debt. Our third partition ( $Partition = BSM-Score$ ) is then 1 if the  $BSM-Prob$  is greater than zero, and 0 otherwise. We find that 36% of the treatment sample is classified as being financially distressed.

Table 6 presents the cross-sectional results. Columns 1 and 2 present the results for information asymmetry. The coefficient on  $Post \times \Delta Asymmetry$  equals 0.09 and 0.03 for external financing and equity issuance, respectively. This suggests that firms that experience a decrease in information asymmetry are 9% and 3% more likely to issue external financing (relative to firms in the treatment sample that did not experience a decrease in information asymmetry) and equity post IFRS. Columns 3 and 4 present the results for the  $Ind P/E$  partition. In this case, the coefficients on  $Post \times Ind P/E$  of 0.03 and 0.07 indicate that firms in industries with high growth opportunities (relative to firms in industries with low growth opportunities) are 3% and 7% more likely to issue external financing and equity post IFRS, respectively. Columns 5 and 6 present the results for financial distress. For the external financing decision (column 3), the coefficient on  $Post \times BSM-Score$  is statistically insignificant from zero. This suggests that firms with low and high financial distress experience similar increases in external financing post IFRS. In

contrast, when looking at the choice of debt versus equity financing (column 6), the coefficient on  $Post \times BSM-Score$  of 0.08 is positive and statistically significant, suggesting that financially distressed firms are more likely to issue equity relative to firms that are less financially distressed.

To strengthen the inferences from our cross-sectional regressions, we use a different methodology and examine the effect of IFRS adoption on leverage ratios. The results in Table 6 show that firms with decreases in information asymmetry, that are operating in industries with high growth opportunities, and that have high levels of financial distress are those that are increasing the use of equity financing post IFRS. Thus, we would expect that these firms also experience changes in their leverage ratios post IFRS. To test this prediction, we follow previous research (Rajan and Zingales (1995), Bharath, Pasquariello, and Wu, (2009)) and estimate leverage using the specification below.

$$Leverage_{it} = \alpha_i + \alpha_y + \beta_1 Post_{it} \times Partition + \Sigma \beta_c Control_{cit} + \varepsilon_{it}, \quad (8)$$

where *Leverage* corresponds to total debt divided by the market value of assets.<sup>15</sup>  $\alpha_i$  and  $\alpha_y$  are firm and year fixed-effects, and *Partition* is either  $\Delta Asymmetry$ , *Ind P/E*, or *BSM-Score* as defined in Section III.D. The coefficient of interest is  $\beta_1$ , which captures the change in leverage after IFRS adoption. We predict it to be negative across all three partitions.

Table 7 reports results for the leverage regressions. The first column presents results for IFRS-adopting firms only (similar to previous tables, we include an indicator for the post-IFRS

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<sup>15</sup> In sensitivity analyses, we use total debt divided by the book value of assets. Our inferences remain unchanged.

period and remove the year fixed-effects). We find that the coefficient on *Post* is insignificant for the entire treatment sample. This is consistent with the results in Table 5, model 1, suggesting that the average IFRS-adopting firm does not experience an increase in equity issuances post IFRS.

However, when partitioning on information asymmetry (column 2), we find that firms that experience a decrease in information asymmetry significantly reduce their leverage in the post-IFRS period. Column 3 presents the results for the growth opportunities partition. In this case, we do not find that firms in high growth industries experience a significant reduction in leverage. A possible explanation for this result is that these firms move from internal funds to equity issuances (bypassing debt issuances) to fund their investments (Frank and Goyal (2003)). Finally, in column 4 we find that financially distressed firms significantly reduce their leverage in the post-IFRS period. In economic terms, firms experiencing a decrease in information asymmetry experience a decrease in market leverage of 1.22%, whereas firms with high financial distress reduce their leverage by 2.54% after IFRS adoption.

Overall, the results in Tables 6 and 7 suggest that firms with decreases in information asymmetry, high growth opportunities, and high levels of financial distress are the ones whose financing decisions are most affected by IFRS adoption. These findings are consistent with arguments in Myers (1984) about the types of firms that are more likely to benefit from a reduction in adverse selection costs. These results also strengthen our inferences that IFRS adoption can affect financing choices by focusing on cross-sectional variation within our treatment sample. In other words, the cross-sectional tests within our treatment sample presented

in Tables 6 and 7 should reduce concerns that our cross-country DID results in Tables 4 and 5 are driven by an omitted variable. To strengthen our inferences, we conduct additional tests in the next section.

#### *E. Endogeneity Tests*

In this section, we address two potential sources of endogeneity that could affect our results: (i) that there could be other, concurrent changes around IFRS and (ii) that our findings capture a gradual change towards market integration, as opposed to capturing the effects of the harmonization in financial reporting due to IFRS adoption. In our main tests we attempt to mitigate these issues by using a short-window around IFRS, by using different benchmark samples in our cross-country DID specifications, and by developing cross-sectional predictions in a within-treatment sample DID framework. We now perform some additional tests.

With respect to a concurrent change around IFRS, we perform two additional tests. First, Christensen, Hail, and Leuz (2012) show that five countries in the EU (Luxembourg, Finland, Germany, Netherlands, and the U.K.) tightened their enforcement standards around 2005 and that this affected IFRS outcomes. To ensure that these concurrent changes are not affecting our results, we repeat our analyses excluding these five countries from our sample. Table 8, Panels A (external financing) and B (equity issuance) present these results (for comparison, column 1

presents the results for the main sample).<sup>16</sup> In particular, column 2 shows that our results are unchanged once we exclude countries with concurrent changes in enforcement.

Second, we analyze whether changes in financing decisions are conditional on ex-ante GAAP (Generally Accepted Accounting Principles) differences between the prior regulation and IFRS. Our prediction would be that firms from countries with significant “improvements” in accounting standards post IFRS are the ones that will be more affected by IFRS adoption. A key challenge for this test is to measure “improvements” in a particular country’s standard given the wide range and complexity of accounting standards. As an attempt to implement this, we repeat our analysis after partitioning our sample on the number of accounting differences, as measured in Bae, Tan, and Welker (2008). Bae et al. compare local standards to IFRS and categorize 21 differences in accounting rules. We use their measure and split our sample into small, medium, and high differences in accounting standards. In particular,  $IFRS_L$  corresponds to firms in countries with less than five accounting differences,  $IFRS_M$  corresponds to firms operating in countries with five to eleven accounting differences, and  $IFRS_H$  corresponds to firms in countries with more than twelve accounting differences.<sup>17</sup> Table 8, column 3 (Panel A for external financing and Panel B for equity) presents these results. We find that firms in countries with higher accounting differences ( $IFRS_H$ ) have larger coefficients, which is consistent with countries with ex-ante high information asymmetry driving the results. However, we note that

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<sup>16</sup> For parsimony, we present the results for the DID specification using all non-adopters as the benchmark sample. The results are similar if we use either the matched sample or the sample of developed countries as a benchmark. This is consistent with Tables 4 and 5, which show that the choice of benchmark sample does not affect our inferences.

<sup>17</sup> These cutoffs represent the 25<sup>th</sup> and 75<sup>th</sup> percentiles of accounting differences in our sample.



the differences between these coefficients are statistically insignificant, so these results represent only weak evidence that the distance of the accounting standard matters.

With respect to the second endogeneity concern, namely that our findings capture a gradual change towards market integration, we follow Bertrand and Mullainathan (2003) and Giroud and Mueller (2010) and allow for a non-linear (yearly) effect of IFRS around the mandate. This allows us to test whether IFRS-adopting firms change their financing choices prior to IFRS adoption. Second, we use this test as a framework to extend our sample period from 2001 to 2010, allowing for a better estimation of the yearly effects. By doing so, we also gauge the sensitivity of our results to the use of a longer event window and the inclusion of the financial crisis. We also relax the requirement of a constant sample for this longer-window test to avoid imposing a survivorship bias of nine years of data on the sample of firms.

To conduct the test, we replace the IFRS dummy variable with three separate dummy variables (*Post (-1)*, *Post (+1)*, and *Post (+2)*), therefore isolating the effect of the year before and the two years after the mandate (note that year zero is not included in our sample and the year -2 serves as the benchmark). When we use the extended sample period, we add dummies for the extended period (*Post (-2)* and *Post (>+2)*). In this case, years -3 to -5 before the adoption serve as the benchmark. We then re-estimate the regressions in Tables 4 and 5 using this non-linear specification.

Table 8, columns 4 and 5 present these results for the main and extended samples, respectively. We find no evidence of changes in external financing decisions in the year before the mandate for the main sample or, for the extended sample, in the two years prior to the

adoption. Rather, the effect starts in the year subsequent to IFRS adoption and strengthens in the following year. Finally, Panel B presents the results for the equity issuance tests. As in Table 5, we do not find statistical results for equity issuances for any of our robustness tests. Overall, the results in Table 8 support the conclusion that our results are driven by the new regulation and not by a general trend towards market integration.

#### **IV. Conclusion**

We study the influence of a major reform in financial reporting regulation – the adoption of the International Financial Reporting Standards (IFRS) – on financial decisions around the world. IFRS has been the most important change in financial reporting regulation around the world over the last several decades. Further, the regulation was aimed at improving reporting quality and increasing financial statement comparability within and across countries. As a result, it has been shown to reduce information asymmetry among capital market participants, and to facilitate cross-border flows, especially in terms of foreign equity portfolio investment.

We provide two main findings. First, we show that post-IFRS firms increase their use of external financing, suggesting that the new regulation reduced adverse selection costs and allowed firms to tap into external capital markets. Second, we explore cross-sectional variation within our sample and find that firms that experience a decrease in information asymmetry, that operate in high growth industries, and that have high financial distress increase their use of equity financing post IFRS. Overall, our findings suggest that the new regulation increases firms' financing capacity and allows certain firms to rebalance their capital structure.

Our findings contribute to the literature by providing evidence that financial reporting regulation can have an important effect on financing decisions. Prior research studying the implications of major reforms on financing decisions has mostly centered on creditor control rights and market liberalization, whereas evidence on the role of accounting regulation has been scarce. Our results show that accounting reforms can have an economically important impact on financing policies around the world.

## References

- Amihud, Yakov, 2002, Illiquidity and stock returns: Cross-section and time-series effects, *Journal of Financial Markets* 5, 31–56.
- Bae, Kee-Hong, Hongping Tan, and Michael Welker, 2008, International GAAP differences: The impact on foreign analysts, *The Accounting Review* 83, 593–628.
- Baker, Malcolm, and Jeffrey Wurgler, 2002, Market timing and capital structure, *Journal of Finance* 57, 1–32.
- Beck, Thorsten, Asli Demirguc-Kunt, and Ross Levine, 2004, Law and firms' access to finance, Working paper, World Bank.
- Bekaert, Geert, and Campbell R. Harvey, 2000, Foreign speculators and emerging equity markets, *Journal of Finance* 55, 565–613.
- Bekaert, Geert, Campbell R. Harvey, Christian Lundblad, and Stephan Siegel, 2007, Global growth opportunities and market integration, *Journal of Finance* 62, 1081–1137.
- Bertrand, Marianne, and Sendhil Mullainathan, 2003, Enjoying the quiet life? Corporate governance and managerial preferences, *Journal of Political Economy* 111, 1043–1075.
- Bharath, Sreedhar T, Paolo Pasquariello, and Guojun Wu, 2009, Does asymmetric information drive capital structure decisions?, *Review of Financial Studies* 22, 3211–3243.
- Booth, Laurence, Varouj Aivazian, Asli Demirguc-Kunt, and Vojislav Maksimovic, 2001, Capital structures in developing countries, *Journal of Finance* 56, 87–130.
- Brochet, Francois, Alan D. Jagolinzer, and Edward J. Riedl, 2012, Mandatory IFRS adoption and financial statement comparability, Working paper, Harvard University.
- Bushee, Brian J., and Christian Leuz, 2005, Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board, *Journal of Accounting and Economics* 39 (2005) 233–264.
- Byard, Donal, Ying Li, and Yong Yu, 2011, The effect of mandatory IFRS adoption on financial analysts' information environment, *Journal of Accounting Research* 49, 69–96.
- Christensen, Hans B., Luzi Hail, and Christian Leuz, 2012, Mandatory IFRS reporting and changes in enforcement, Working paper, University of Chicago.

- Daske, Holger, Luzi Hail, Christian Leuz, and Rodrigo Verdi, 2008, Mandatory IFRS reporting around the world: Early evidence on the economic consequences, *Journal of Accounting Research* 46, 1085–1142.
- Daske, Holger, Luzi Hail, Christian Leuz, and Rodrigo Verdi, 2013, Adopting a label: Heterogeneity in the economic consequences around IAS/ IFRS adoptions, *Journal of Accounting Research* 51, 495–547.
- DeFond, Mark, Xuesong Hu, Mingyi Hung, and Siqu Li, 2011, The impact of mandatory IFRS adoption on foreign mutual fund ownership: The role of comparability, *Journal of Accounting and Economics* 51, 240–258.
- Djankov, Simeon, Caralee McLiesh, and Andrei Shleifer, 2007, Private credit in 129 countries, *Journal of Financial Economics* 84, 299–329.
- Frank, M.Z., and Goyal, V.K., 2003, Testing the pecking order theory of capital structure. *Journal of Financial Economics* 67, 217–248.
- Frankel, Jeffrey A., and Andrew K. Rose, 1998, The endogeneity of the optimum currency area criteria, *The Economic Journal* 108, 1009–1025.
- GAAP, 2001, A survey of national accounting rules benchmarked against International Accounting Standards, Anderson, BDO, Deloitte Touche Tohmatsu, Ernst & Young, Grant Thornton, KPMG, PricehouseCoopers, Christopher W Nobes, ed.
- Giroud, Xavier and Holger Muller, 2010, Does corporate governance matter in competitive industries? *Journal of Financial Economics* 95, 312-331.
- Glosten, L., and L. Harris, 1988. Estimating the components of the bid–ask spread. *Journal of Financial Economics* 21, 123–142.
- Graham, John, Mark Leary, and Michael Roberts, 2013, A century of capital structure: The leveraging of corporate America, Working paper.
- Greenstone, Michael, Paul Oyer, and Annette Vissing-Jorgensen, 2006, Mandated disclosure, stock returns, and the 1964 Securities Acts Amendments, *The Quarterly Journal of Economics* 121 (2), 399-460.
- Hail, Luzi, Christian Leuz, and Peter Wysocki, 2010, Global accounting convergence and the potential adoption of IFRS by the US (part i): Conceptual underpinnings and economic analysis, *Accounting Horizons* 24, 355–394.

- Hail, Luzi, Christian Leuz, and Peter Wysocki, 2010, Global accounting convergence and the potential adoption of IFRS by the US (part ii): Political factors and future scenarios for us accounting standards, *Accounting Horizons* 24, 567–588.
- Haselmann, Rainer, Katharina Pistor, and Vikrant Vig, 2010, How law affects lending, *Review of Financial Studies* 23, 549–580.
- Henry, Peter Blair, 2000, Do stock market liberalizations cause investment booms?, *Journal of Financial Economics* 58, 301–334.
- Hillegeist, Stephen A., Elizabeth K. Keating, Donald P. Cram, and Kyle G. Lundstedt, 2004, Assessing the probability of bankruptcy, *Review of Accounting Studies* 9, 5–34.
- Houston, Joel, and Christopher James, 1996, Bank information monopolies and the mix of private and public debt claims, *Journal of Finance* 51, 1863–1889.
- Huizinga, Harry, Luc Laeven, and Gaetan Nicodeme, 2008, Capital structure and international debt shifting, *Journal of Financial Economics* 88, 80–118.
- Kim, E. Han, and Vijay Singal, 2000, Stock market openings: Experience of emerging economies, *The Journal of Business* 73, 25–66.
- Kyle, A., 1985, Continuous auctions and insider trading. *Econometrica* 53, 1315–1335.
- La Porta, Rafael, Josef Lakonishok, Andrei Shleifer, and Robert W. Vishny, 1997, Good news for value stocks: Further evidence on market efficiency, *Journal of Finance* 52, 859–874.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert W. Vishny, 1998, Law and finance, *Journal of Political Economy* 106, 1113–1155.
- Lancaster, Tony, 2000, The incidental parameter problem since 1948, *Journal of Econometrics* 95, 391–413.
- Leary, Mark T., and Michael R. Roberts, 2010, The pecking order, debt capacity, and information asymmetry, *Journal of Financial Economics* 95, 332–355.
- Lemmon, Michael L., and Jaime F. Zender, 2010, Debt capacity and tests of capital structure theories, *Journal of Financial and Quantitative Analysis* 45, 1161–1187.
- Lesmond, David A., 2005, Liquidity of emerging markets, *Journal of Financial Economics* 77, 411–452.

- Lesmond, David A., Joseph P. Ogden, and Charles A. Trzcinka, 1999, A new estimate of transaction costs, *Review of Financial Studies* 12, 1113–1141.
- Leuz, Christian, and Peter D. Wysocki, 2008, Economic consequences of financial reporting and disclosure regulation: A review and suggestions for future research, Working paper.
- Levine, Ross, 1998, The legal environment, banks, and long-run economic growth, *Journal of Money, Credit and Banking* 30, 596–613.
- Levine, Ross, 1999, Law, finance, and economic growth, *Journal of Financial Intermediation* 8, 8–35.
- Loyeung, Anna, Zoltan Matolcsy, Joseph Weber and Peter Wells, 2011, An analysis of the accounting errors that arise during the transition to IFRS, Working paper, Massachusetts Institute of Technology.
- Malmendier, Ulrike, Geoffrey Tate, and Jon Yan, 2011, Overconfidence and early-life experiences: The impact of managerial traits on corporate financial policies, *Journal of Finance* 66, 1687–1733.
- Myers, S.C., 1984, Capital structure puzzle, *Journal of Finance* 39, 575–592.
- Myers, Stewart C, and Nicolas S. Majluf, 1984, Corporate financing and investment decisions when firms have information that investors do not have, *Journal of Financial Economics* 13, 187–221.
- Myers, Stewart C., 2003, Financing of corporations, *Corporate Finance* (Elsevier, Amsterdam, The Netherlands).
- Ozkan, Neslihan, Zvi Singer, and Haifeng You, 2012, Mandatory IFRS adoption and the contractual usefulness of accounting information in executive compensation, *Journal of Accounting Research* 50, 1077–1107.
- Petacchi, Reining, 2012, Regulation fair disclosure and capital structure, Working paper, Massachusetts Institute of Technology.
- Rajan, Raghuram G, and Luigi Zingales, 1995, What do we know about capital structure? Some evidence from international data, *Journal of Finance* 50, 1421–1460.
- Rosenbaum, Paul R., and Donald B. Rubin, 1983, The central role of the propensity score in observational studies for causal effects, *Biometrika* 70, 41–55.

Tan, Hongping, Shiheng Wang, and Michael Welker, 2011, Analyst following and forecast accuracy after mandated IFRS adoptions, *Journal of Accounting Research* 49, 1307–1357.

Tweedie, David, 2006, Prepared statement of Sir David Tweedie, Chairman of the International Accounting Standards Board before the Economic and Monetary Affairs Committee of the European Parliament.

Vig, Vikrant, 2013, Access to collateral and corporate debt structure: Evidence from a natural experiment, *Journal of Finance*, forthcoming.

Visaria, Sujata, 2009, Legal reform and loan repayment: The microeconomic impact of debt recovery tribunals in India, *American Economic Journal: Applied Economics* 1, 59–81.

Yip, Rita W. Y., and Danqing Young, 2012, Does mandatory IFRS adoption improve information comparability?, *The Accounting Review* 87, 1767–1789.



## Appendix A: Measurement of Financial Distress

We proxy for the cost of financial distress by using the market based probability of bankruptcy derived from the Black-Scholes-Merton (BSM) option-pricing model. Under the BSM model, the probability of bankruptcy (*BSM-Prob*) is the probability that the market value of assets is less than the face value of liabilities. Following Hillegeist et al. (2004), we estimate the *BSM-Prob* as follows:

$$BSM - Prob = N \left( - \frac{\ln\left(\frac{V_A}{X}\right) + \left(\mu - \delta - \frac{\sigma_A^2}{2}\right)T}{\sigma_A \sqrt{T}} \right), \quad (A1)$$

where  $N()$  is the standard cumulative normal,  $V_A$  is the market value of assets,  $X$  is the face value of debt,  $\delta$  is the dividend rate,  $\sigma_A$  is the standard deviation of asset returns, and  $\mu$  is the expected return on assets. To empirically estimate the probability of bankruptcy, we first estimate the market value of assets, asset volatility, and the expected return on assets. Next, we estimate equation (A1) (see Hillegeist et al. (2004) for a detailed description and code on the estimation procedure). For each firm, we estimate the BSM score in the year before the adoption of IFRS in the firm's country.

## Appendix B: Variable Definitions

### Financing Variables

- Ext\_Fin:* Indicator variable that equals one if a firm issues debt or equity above 5% of beginning period assets in a given year, and zero otherwise.
- Eq\_Is:* Indicator variable that equals one if the firm issues equity above 5% of beginning period assets in a given year and the firm raised external financing, and zero otherwise.

### Indicator Variables

- Post:* Indicator variable that equals one if the firm or country has adopted IFRS in that year and zero otherwise. IFRS adoption dates by country are obtained from Ramanna and Sletten (2010). For the control sample, the adoption date is assumed to be fiscal year 2005.
- IFRS:* Indicator variable that equals one if the firm or country adopts IFRS and zero otherwise.

### Control Variables

- BSM-Prob:* The transformed bankruptcy probability based on the Black–Scholes–Merton model.
- Leverage:* Total debt divided by the market value of assets.
- Tangibility:* Property, plant, and equipment (PP&E) normalized by total assets.
- Q:* Ratio of the market value of assets to total assets. The market value of assets is defined as the book value of total assets plus market equity minus common equity. Market equity is defined as shares outstanding times the fiscal year closing price.
- Profitability:* Operating income normalized by total assets.
- Log(Sales):* Logarithm of total sales.
- Cash:* Cash normalized by total assets.
- Returns:* One year buy-and-hold for the corresponding fiscal year.
- Deficit:* (dividend payments + capital expenditures + net change in working capital - operating cash flow after interest and taxes)/lag total assets.

*Trade:* Ratio of the sum of exports and imports to a country's GDP.

*Tbill:* Country's three month Treasury bill rate.

*ΔGDP:* Percentage change of real gross domestic product.

#### Information Asymmetry Variables

*Amihud:* The yearly median of the daily ratio of absolute stock return to its dollar volume.

*ZeroRet:* The proportion of trading days with zero daily stock returns out of all potential trading days in a given year.

*LDV:* Estimate of total round trip transaction based on a yearly time-series regression of daily stock returns on the aggregate market returns (Lesmond et al., 1999).

*IA Factor:* Principal component of *Amihud*, *Zero Ret* and *LDV*.

#### Partitioning Variables

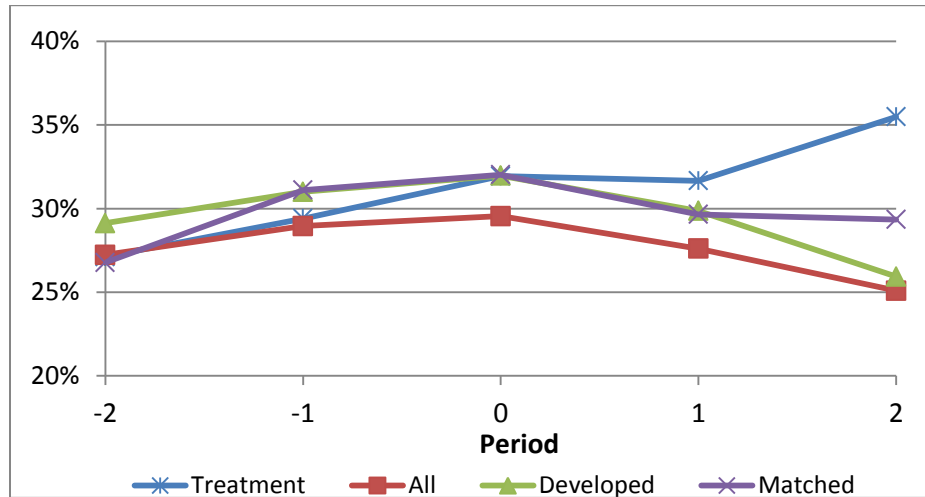
*ΔAsymmetry:* Indicator variable that equals one if the change in the *PC Asymmetry Factor* after the adoption of IFRS is above negative and zero otherwise.

*BSM-Score:* Indicator variable that equals one if the *BSM-Prob* before the adoption of IFRS is positive and zero otherwise.

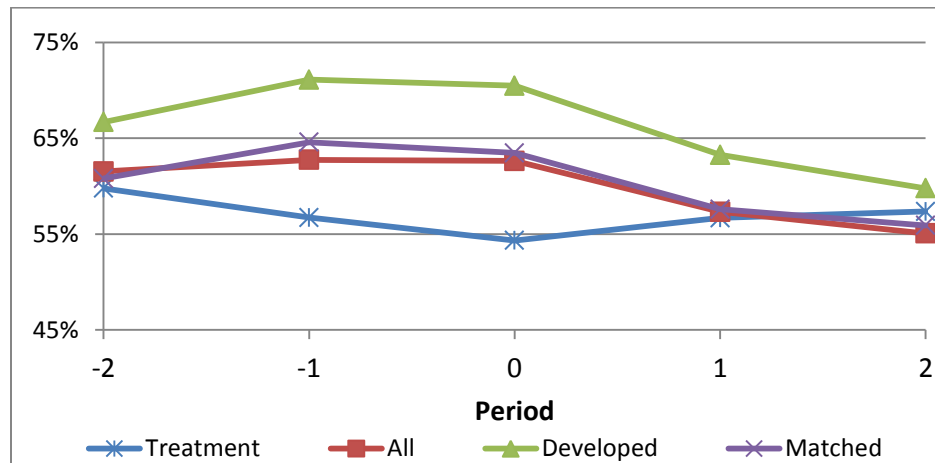
*Ind P/E:* Indicator variable equal to one if the difference between a firm's country industry-weighted global P/E ratio and the world market P/E ratio is above the median of the differences in the sample, zero otherwise.

**Figure 1: Changes in Financing Decisions around IFRS**

*Panel A: Proportion of External Financing around IFRS*



*Panel B: Proportion of Equity Issuances around IFRS*



The figure shows the proportion of external financing and equity issuances around the adoption of IFRS for the treatment sample and the different control samples. *All* corresponds to a control sample that includes all countries and firms, *Developed* corresponds to a control sample including only developed countries, and *Matched* corresponds to a control sample based on a propensity score matching procedure. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than 1 and firms with total assets at the beginning of the year lower than USD\$1 million.

**Table 1**  
*Descriptive Statistics by Country*

<i>Adopters</i>					<i>Non-Adopters</i>			
<i>Country</i>	<i>N</i>	<i>Pre-IFRS</i>	<i>Post-IFRS</i>	<i>Year of Adoption</i>	<i>Country</i>	<i>N</i>	<i>Pre-2005</i>	<i>Post-2005</i>
<i>Australia</i>	1,144	572	572	2005	<i>Argentina</i>	112	56	56
<i>Belgium</i>	116	58	58	2005	<i>Brazil</i>	188	94	94
<i>Denmark</i>	140	70	70	2005	<i>Canada</i>	1,052	526	526
<i>France</i>	1,216	608	608	2005	<i>China</i>	276	138	138
<i>Germany</i>	744	372	372	2005	<i>India</i>	792	396	396
<i>Greece</i>	120	60	60	2005	<i>Japan</i>	7,568	3,784	3,784
<i>Hong Kong</i>	1,436	718	718	2005	<i>Malaysia</i>	1,728	864	864
<i>Ireland</i>	96	48	48	2005	<i>Mexico</i>	180	90	90
<i>Italy</i>	140	70	70	2005	<i>Pakistan</i>	164	82	82
<i>Netherlands</i>	336	168	168	2005	<i>South Korea</i>	696	348	348
<i>Norway</i>	180	90	90	2005	<i>Taiwan</i>	2,380	1,190	1,190
<i>Philippines</i>	140	70	70	2005	<i>Thailand</i>	672	336	336
<i>Poland</i>	68	34	34	2005	<i>United States</i>	8,760	4,380	4,380
<i>Portugal</i>	92	46	46	2005	<i>Total</i>	24,568	12,284	12,284
<i>Singapore</i>	580	290	290	2003				
<i>South Africa</i>	376	188	188	2005				
<i>Spain</i>	216	108	108	2005				
<i>Sweden</i>	468	234	234	2005				
<i>Switzerland</i>	180	90	90	2005				
<i>Turkey</i>	296	148	148	2006				
<i>United Kingdom</i>	1,908	954	954	2005				
<i>Total</i>	9,992	4,996	4,996					

The table reports the number of observations and the year of IFRS adoption for the treatment and control samples by country. The treatment sample consists of a set of 10,012 firm-year observations from 21 countries between 2001 and 2008 that adopted IFRS between 2003 and 2008. The control sample consists of a set of 24,568 firm-year observations from 13 countries between 2003 and 2007. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than 1 and firms with total assets at the beginning of the year lower than USD\$1 million.

**Table 2**  
*Descriptive Statistics*

**Panel A: Descriptive Statistics**

<i>Variable</i>	<i>Mean</i>	<i>Median</i>	<i>Stdv</i>	<i>Min</i>	<i>Max</i>
<i>Ext_Fin<sub>t</sub></i>	0.45	0.29	0.00	0.00	1.00
<i>Eq_Is<sub>t</sub></i>	0.59	1.00	0.49	0.00	1.00
<i>IA Factor<sub>t</sub></i>	1.26	-0.05	-0.32	-7.61	12.04
<i>BSM-Prob<sub>t</sub></i>	0.09	0.02	0.00	0.00	1.00
<i>Leverage<sub>t</sub> (%)</i>	16.60	17.37	13.28	0.00	73.94
<i>Tangibility<sub>t-1</sub></i>	0.22	0.30	0.26	0.00	0.91
<i>Q<sub>t-1</sub></i>	1.20	1.56	1.19	0.39	10.58
<i>Profitability<sub>t-1</sub></i>	0.15	0.03	0.05	-1.13	0.36
<i>Log(Sales)<sub>t-1</sub></i>	1.92	11.90	11.88	-0.16	19.63
<i>Cash<sub>t-1</sub></i>	0.17	0.17	0.11	0.00	0.85
<i>Returns<sub>t</sub></i>	0.75	0.27	0.11	-0.93	5.51
<i>Deficit<sub>t</sub></i>	0.24	0.03	0.00	-0.70	1.88
<i>Trade<sub>t</sub></i>	0.89	0.75	0.39	0.22	4.37
<i>Tbill<sub>t</sub></i>	2.67	2.68	2.18	-0.08	19.87
<i>ΔGDP<sub>t-1</sub></i>	2.90	5.25	4.46	-7.32	15.20

**Panel B: Mean Values for Treatment and Control Samples**

<i>Variable</i>	<i>Adopters</i>	<i>All</i>	<i>Developed</i>	<i>Matched</i>
<i>Ext_Fin<sub>t</sub></i>	0.31	0.28	0.30	0.31
<i>Eq_Is<sub>t</sub></i>	0.58	0.60	0.66	0.60
<i>IA Factor<sub>t</sub></i>	0.14	-0.13	-0.19	-0.14
<i>BSM-Prob<sub>t</sub></i>	0.02	0.02	0.02	0.02
<i>Leverage<sub>t</sub> (%)</i>	16.22	17.84	15.88	17.63
<i>Tangibility<sub>t-1</sub></i>	0.28	0.31	0.27	0.31
<i>Q<sub>t-1</sub></i>	1.56	1.56	1.70	1.64
<i>Profitability<sub>t-1</sub></i>	0.02	0.03	0.02	0.02
<i>Log(Sales)<sub>t-1</sub></i>	11.86	11.92	12.12	11.77
<i>Cash<sub>t-1</sub></i>	0.16	0.17	0.19	0.18
<i>Returns<sub>t</sub></i>	0.28	0.26	0.24	0.27
<i>Deficit<sub>t</sub></i>	0.03	0.04	0.04	0.05
<i>Trade<sub>t</sub></i>	1.31	0.52*	0.31**	0.56
<i>Tbill<sub>t</sub></i>	3.85	2.20*	1.62**	2.47
<i>ΔGDP<sub>t-1</sub></i>	4.16	5.70	4.92	5.85

**Table 2 (Continued)**

**Panel C: Pearson/Spearman Correlations**

<i>Variable</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
(1) <i>Post-IFRS</i>		0.06	0.04	-0.13	0.00	-0.03	-0.07	0.14	0.09	0.08	0.00	-0.17	0.02	0.06	0.14	0.13
(2) <i>Ext. Financing<sub>t</sub></i>	0.06		0.70	-0.02	0.00	0.09	0.00	0.15	-0.13	-0.15	-0.01	0.07	0.21	0.03	0.00	0.10
(3) <i>Eq. Issuance<sub>t</sub></i>	0.04	0.70		0.05	0.02	-0.12	-0.09	0.21	-0.21	-0.27	0.10	0.09	0.19	0.04	-0.01	0.14
(4) <i>PC Asymmetry<sub>t</sub></i>	-0.16	-0.01	0.07		0.26	0.04	0.00	-0.13	-0.26	-0.47	0.07	-0.01	0.05	0.17	-0.09	0.07
(5) <i>BSM-Prob<sub>t</sub></i>	0.04	-0.01	0.03	0.38		0.18	0.02	-0.05	-0.18	-0.14	-0.01	-0.07	0.07	0.12	-0.07	0.06
(6) <i>Leverage<sub>t</sub></i>	-0.02	0.10	-0.12	-0.02	0.24		0.34	-0.32	0.01	0.19	-0.41	-0.13	0.07	0.07	-0.07	-0.02
(7) <i>Tangibility<sub>t-1</sub></i>	-0.07	-0.02	-0.12	0.00	0.00	0.35		-0.18	0.08	0.08	-0.34	0.04	0.01	0.08	0.05	0.02
(8) <i>Q<sub>t-1</sub></i>	0.21	0.15	0.18	-0.30	-0.23	-0.37	-0.22		-0.03	-0.12	0.29	-0.14	0.09	-0.12	0.06	-0.01
(9) <i>Profitability<sub>t-1</sub></i>	0.10	-0.06	-0.13	-0.35	-0.37	-0.09	0.04	0.32		0.44	-0.18	-0.03	-0.27	-0.03	0.08	-0.03
(10) <i>Log(Sales)<sub>t-1</sub></i>	0.08	-0.13	-0.26	-0.59	-0.27	0.26	0.14	0.05	0.38		-0.31	-0.06	-0.19	-0.10	-0.02	-0.13
(11) <i>Cash<sub>t-1</sub></i>	0.02	-0.02	0.08	0.05	-0.06	-0.49	-0.34	0.19	-0.01	-0.19		0.03	0.11	0.11	-0.07	0.09
(12) <i>Returns<sub>t-1</sub></i>	-0.20	0.02	0.02	-0.06	-0.35	-0.12	0.06	-0.19	0.08	0.04	0.02		-0.04	0.04	0.00	0.05
(13) <i>Deficit<sub>t</sub></i>	0.02	0.19	0.13	0.06	0.08	0.11	0.05	0.00	-0.13	-0.13	0.04	-0.13		0.04	0.04	0.06
(14) <i>Trade<sub>t</sub></i>	0.20	-0.03	-0.05	0.14	0.11	0.07	0.08	-0.15	-0.07	0.02	0.13	-0.02	-0.01		-0.41	0.56
(15) <i>Tbill<sub>t</sub></i>	0.15	0.05	0.05	-0.10	-0.20	-0.11	-0.01	0.19	0.14	0.00	-0.11	0.04	0.02	-0.57		-0.13
(16) $\Delta GDP_{t-1}$	0.11	0.12	0.16	0.11	0.13	-0.06	0.02	-0.01	-0.03	-0.14	0.09	-0.04	0.06	0.14	-0.13	

The table reports descriptive statistics and correlations. Panel A reports descriptive statistics. Panel B reports mean values for the treatment and control samples. Panel B reports Pearson (above the diagonal) and Spearman (below the diagonal) correlation coefficients for the treatment sample. The treatment sample consists of a set of 9,992 firm-year observations for the treatment sample and 24,568 firm-year observations for the control sample. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 3**  
*Validation Tests*

<i>Variables</i>	<i>All</i>	<i>Developed</i>	<i>Matched</i>
<i>Post x IFRS</i>	<b>-0.34***</b> (-4.89)	<b>-0.30***</b> (-4.56)	<b>-0.38***</b> (-4.06)
<i>Constant</i>	0.26*** (5.72)	0.20*** (8.71)	0.33*** (5.43)
<i>Observations</i>	33,670	26,599	19,366
<i>R-squared</i>	0.8041	0.8203	0.8310
<i>Fixed Effects</i>	Firm, Year	Firm, Year	Firm, Year

The table presents the DID results for a regression model estimating the change in information asymmetry using *IA factor* as the dependent variable. We use three control samples: *All* corresponds to a control sample including all countries and firms, *Developed* corresponds to a control sample including only developed countries, and *Matched* corresponds to control sample based on a propensity score matching procedure. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.



**Table 4**  
*External Financing*

<i>Variables</i>	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>
	<i>Adopters</i>	<i>All</i>	<i>Developed</i>	<i>Matched</i>
<b><i>Post</i></b>	<b>0.07***</b> <b>(4.38)</b>			
<b><i>Post x IFRS</i></b>		<b>0.06***</b> <b>(3.62)</b>	<b>0.05***</b> <b>(2.99)</b>	<b>0.08***</b> <b>(5.57)</b>
<i>BSM-Prob<sub>t</sub></i>	-0.01*** (-4.69)	-0.01* (-1.83)	-0.01 (-1.43)	-0.01*** (-3.37)
<i>Tangibility<sub>t-1</sub></i>	-0.01 (-1.61)	0.00 (1.14)	0.00 (0.04)	-0.00 (-0.19)
<i>Q<sub>t-1</sub></i>	0.08*** (8.38)	0.10*** (9.84)	0.11*** (11.10)	0.09*** (8.63)
<i>Profitability<sub>t-1</sub></i>	-0.04*** (-7.10)	-0.03*** (-4.90)	-0.03*** (-4.68)	-0.03*** (-4.51)
<i>Log(Sales)<sub>t-1</sub></i>	-0.04*** (-4.08)	-0.03*** (-5.10)	-0.04*** (-9.32)	-0.04*** (-5.93)
<i>Cash<sub>t-1</sub></i>	-0.08*** (-11.71)	-0.05*** (-5.97)	-0.05*** (-5.55)	-0.06*** (-5.52)
<i>Returns<sub>t</sub></i>	0.04*** (4.80)	0.04*** (10.31)	0.05*** (15.35)	0.04*** (9.43)
<i>Deficit<sub>t</sub></i>	0.09*** (9.51)	0.10*** (14.79)	0.09*** (13.28)	0.10*** (11.98)
<i>Trade<sub>t</sub></i>	0.01 (0.23)	-0.02 (-0.47)	0.00 (0.01)	-0.02 (-0.78)
<i>Tbill<sub>t</sub></i>	-0.01 (-0.76)	0.01 (1.24)	0.00 (0.37)	0.00 (0.33)
<i>ΔGDP<sub>t-1</sub></i>	0.01 (1.28)	0.00 (0.20)	0.00 (0.29)	0.01 (0.99)
Observations	9,992	34,560	27,372	19,910
Cluster	Country	Country	Country	Country
Country and Ind FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes

The table presents results for a regression model estimating the probability of issuing external financing. Model (1) presents the results for the treatment sample. Models (2) to (4) present results using a difference-in-difference research design for different control samples. Model (2) presents the results using the entire controls sample. Model (3) includes only developed countries as a control sample. Model (4) presents the results for a propensity score matched sample. The model includes country and industry fixed-effects based on the ICB two-digit industry code. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 5**  
*Equity Issuance*

<i>Variables</i>	<i>(1)</i> <i>Adopters</i>	<i>(2)</i> <i>All</i>	<i>(3)</i> <i>Developed</i>	<i>(4)</i> <i>Matched</i>
<i>Post</i>	<b>0.02</b> <b>(0.53)</b>			
<i>Post x IFRS</i>		<b>0.01</b> <b>(0.42)</b>	<b>0.02</b> <b>(0.82)</b>	<b>0.02</b> <b>(0.93)</b>
<i>BSM-Prob<sub>t</sub></i>	0.00 (0.32)	-0.00 (-1.46)	-0.00 (-1.36)	-0.00 (-0.95)
<i>Tangibility<sub>t-1</sub></i>	-0.08*** (-6.22)	-0.05*** (-7.20)	-0.06*** (-7.48)	-0.06*** (-6.05)
<i>Q<sub>t-1</sub></i>	0.08*** (4.49)	0.09*** (12.61)	0.08*** (11.21)	0.08*** (10.17)
<i>Profitability<sub>t-1</sub></i>	-0.06*** (-2.71)	-0.05*** (-4.87)	-0.04*** (-4.74)	-0.05*** (-4.18)
<i>Log(Sales)<sub>t-1</sub></i>	-0.14*** (-5.69)	-0.12*** (-10.06)	-0.12*** (-9.81)	-0.12*** (-8.03)
<i>Cash<sub>t-1</sub></i>	0.03** (2.20)	0.05*** (4.81)	0.05*** (4.43)	0.04*** (3.83)
<i>Returns<sub>t</sub></i>	0.04*** (3.80)	0.03*** (6.31)	0.03*** (6.51)	0.03*** (3.85)
<i>Deficit<sub>t</sub></i>	-0.01* (-1.69)	-0.01 (-1.16)	-0.01*** (-3.24)	-0.00 (-0.52)
<i>Trade<sub>t</sub></i>	0.14*** (2.92)	0.17*** (3.33)	0.13** (2.18)	0.09* (1.91)
<i>Tbill<sub>t</sub></i>	-0.04 (-0.93)	0.01 (0.51)	0.02 (0.48)	0.01 (0.45)
<i>ΔGDP<sub>t-1</sub></i>	0.03*** (4.44)	0.05*** (3.46)	0.04*** (3.93)	0.05*** (4.56)
Observations	3,097	9,851	8,262	6,119
Cluster	Country	Country	Country	Country
Country and Ind FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	Yes	Yes

The table presents results for a regression model estimating the probability of issuing equity. Model (1) presents the results for the treatment sample. Models (2) to (4) present results using a difference-in-difference research design for different control samples. Model (2) presents the results using the entire controls sample. Model (3) includes only developed countries as a control sample. Model (4) presents the results for a propensity score matched sample. The model includes country and industry fixed-effects based on the ICB two-digit industry code. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 6**  
*Cross-sectional Analyses*

<i>Variables</i>	<i>ΔAsymmetry</i>		<i>Ind P/E</i>		<i>BSM-Score</i>	
	<i>External Financing</i>	<i>Equity Issuance</i>	<i>External Financing</i>	<i>Equity Issuance</i>	<i>External Financing</i>	<i>Equity Issuance</i>
<b><i>Post x ΔAsymmetry</i></b>	<b>0.09***</b> (3.66)	<b>0.03*</b> (1.73)				
<i>ΔAsymmetry</i>	-0.02 (-1.36)	0.02 (0.54)				
<b><i>Post x Ind P/E</i></b>			<b>0.03**</b> (1.96)	<b>0.07**</b> (2.04)		
<i>Ind P/E</i>			n.a. n.a.	n.a. n.a.		
<b><i>Post x BSM-Score</i></b>					<b>0.01</b> (0.52)	<b>0.08***</b> (3.18)
<i>BSM-Score</i>					0.00 (0.05)	0.01 (0.22)
Observations	9,992	3,097	9,992	3,097	9,992	3,097
Controls	Included	Included	Included	Included	Included	Included
Cluster	Country	Country	Country	Country	Country	Country
Country, Ind, and Year FE	Yes	Yes	Yes	Yes	Yes	Yes

The table reports the probit standardized marginal effects coefficients for the treatment sample for different partitions. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 7**  
*Leverage*

	<i>Adopters</i>	$\Delta$ Asymmetry	<i>Ind P/E</i>	<i>BSM-Score</i>
<i>Post</i>	<b>0.07</b> <b>(0.18)</b>			
<i>Post x <math>\Delta</math>Asymmetry</i>		<b>-1.22**</b> <b>(-2.72)</b>		
<i>Post x Ind P/E</i>			<b>0.61</b> <b>(0.82)</b>	
<i>Post x BSM-Score</i>				<b>-2.54***</b> <b>(-4.62)</b>
<i>BSM-Prob<sub>t</sub></i>	0.68*** (11.32)	0.66*** (10.97)	0.68*** (11.08)	
<i>Tangibility<sub>t-1</sub></i>	8.01** (2.50)	7.85** (2.41)	8.06** (2.54)	8.87** (2.64)
<i>Q<sub>t-1</sub></i>	-1.25*** (-4.24)	-1.19*** (-4.16)	-1.25*** (-4.28)	-1.57*** (-5.27)
<i>Profitability<sub>t-1</sub></i>	-1.49 (-1.07)	-1.23 (-0.90)	-1.61 (-1.18)	-3.49** (-2.24)
<i>Log(Sales)<sub>t-1</sub></i>	1.03** (2.59)	1.08** (2.65)	1.04** (2.59)	1.07** (2.47)
<i>Cash<sub>t-1</sub></i>	-8.93*** (-4.53)	-8.91*** (-4.55)	-8.80*** (-4.60)	-8.76*** (-4.63)
<i>Returns<sub>t</sub></i>	-2.28*** (-7.55)	-2.25*** (-7.31)	-2.28*** (-7.41)	-2.76*** (-11.10)
<i>Deficit<sub>t</sub></i>	4.61*** (8.68)	4.64*** (8.72)	4.61*** (8.70)	4.32*** (8.41)
<i>Trade<sub>t</sub></i>	-3.24 (-1.54)	-3.23 (-1.59)	-3.18 (-1.49)	-0.93 (-0.42)
<i>Tbill<sub>t</sub></i>	0.39 (1.65)	0.41 (1.69)	0.39 (1.64)	0.33 (1.11)
<i><math>\Delta</math>GDP<sub>t-1</sub></i>	-0.01 (-0.19)	-0.01 (-0.09)	-0.01 (-0.23)	0.01 (0.14)
<i>Constant</i>	15.28*** (3.00)	15.42*** (3.18)	14.93*** (3.01)	8.66 (1.67)
Observations	9,992	9,992	9,992	9,992
<i>R-squared</i>	0.8313	0.8316	0.8313	0.8248
Cluster	Country	Country	Country	Country
Firm FE	Yes	Yes	Yes	Yes
Year FE	No	Yes	No	Yes

The table presents regression results of a model predicting leverage for the treatment sample. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than 1 and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 8**  
*Robustness Analyses*

**Panel A: External Financing**

<i>Variables</i>	<i>External Financing</i>				
	<i>(1)</i>	<i>(2)</i>	<i>(3)</i>	<i>(4)</i>	<i>(5)</i>
	<i>Main Sample</i>	<i>Excluding Enforcement</i>	<i>Change in GAAP</i>	<i>Yearly Effects Main Sample</i>	<i>Yearly Effects Extended Sample</i>
<b><i>Post x IFRS</i></b>	<b>0.06***</b> <b>(3.64)</b>	<b>0.05***</b> <b>(2.78)</b>			
<i>Post x IFRS<sub>L</sub></i>			0.06** (2.45)		
<i>Post x IFRS<sub>M</sub></i>			0.05** (2.52)		
<b><i>Post x IFRS<sub>H</sub></i></b>			<b>0.08***</b> <b>(3.49)</b>		
<i>Post (-2)x IFRS</i>					-0.01 (-1.12)
<i>Post (-1)x IFRS</i>				0.02 (1.37)	0.00 (0.38)
<b><i>Post (+1)x IFRS</i></b>				<b>0.04*</b> <b>(1.90)</b>	<b>0.02</b> <b>(1.10)</b>
<b><i>Post (+2)x IFRS</i></b>				<b>0.11***</b> <b>(4.86)</b>	<b>0.07***</b> <b>(3.00)</b>
<b><i>Post (&gt;2)x IFRS</i></b>					<b>0.04*</b> <b>(1.72)</b>
<i>Observations</i>	34,560	31,392	34,560	34,560	89,772
<i>Controls</i>	Included	Included	Included	Included	Included
<i>Cluster</i>	Country	Country	Country	Country	Country
<i>Country, Year and Ind FE</i>	Yes	Yes	Yes	Yes	Yes

**Table 8 (continued)**

**Panel B: Equity Issuance**

<i>Variables</i>	<i>Equity Issuance</i>				
	(1)	(2)	(3)	(4)	(5)
	<i>Main Sample</i>	<i>Excluding Enforcement</i>	<i>Change in GAAP</i>	<i>Yearly Effects Main Sample</i>	<i>Yearly Effects Extended Sample</i>
<b><i>Post x IFRS</i></b>	<b>0.01</b>	<b>0.02</b>			
	<b>(0.43)</b>	<b>(0.99)</b>			
<i>Post x IFRS<sub>L</sub></i>			0.00		
			(0.03)		
<i>Post x IFRS<sub>M</sub></i>			0.01		
			(0.18)		
<b><i>Post x IFRS<sub>H</sub></i></b>			<b>0.05</b>		
			<b>(1.20)</b>		
<i>Post (-2)x IFRS</i>					0.02
					(0.79)
<i>Post (-1)x IFRS</i>				-0.05	-0.02
				(-1.48)	(-0.37)
<b><i>Post (+1)x IFRS</i></b>				<b>-0.05</b>	<b>0.01</b>
				<b>(-1.30)</b>	<b>(0.10)</b>
<b><i>Post (+2)x IFRS</i></b>				<b>0.02</b>	<b>0.07</b>
				<b>(0.48)</b>	<b>(1.59)</b>
<b><i>Post (&gt;2)x IFRS</i></b>					<b>-0.01</b>
					<b>(-0.19)</b>
<i>Observations</i>	9,851	8,914	9,851	9,851	24,656
<i>Controls</i>	Included	Included	Included	Included	Included
<i>Cluster</i>	Country	Country	Country	Country	Country
<i>Country, Year and Ind FE</i>	Yes	Yes	Yes	Yes	Yes

The table reports probit standardized marginal effects coefficients for different samples and specifications. Panel A reports results for *External Financing* as the dependent variables and Panel B report results for *Equity Issuance* as the dependent variable. Model (1) shows results for our main sample. Model (2) shows results for the sample that excludes the U.K., Netherlands, Norway, Germany, and Finland (Christensen et al., 2012). Model (3) presents results for different degrees of change of the accounting standards (*Change in GAAP*) based on the Bae et al. (2008) measurement. *IFRS<sub>L</sub>* corresponds to firms in countries with less than five accounting differences, *IFRS<sub>M</sub>* corresponds to firms operating in countries with five to eleven accounting differences, and *IFRS<sub>H</sub>* corresponds to firms in countries with more than twelve accounting differences. Model (4) shows yearly effects using our main sample. Model (5) presents yearly effects for a sample where we extend the pre and post period, and drop the constant sample restriction. A country is included if it has an average of 10 observations per year in the pre- and post-adoption periods. We exclude observations corresponding to the year of adoption and to voluntary adopters. Each firm is required to have price data available from Datastream and the necessary financial accounting data from Worldscope. Following previous research, we exclude financial firms and utilities (ICB codes 7000 and 8000). We exclude firms that have a book-leverage value greater than one and firms with total assets at the beginning of the year lower than USD\$1 million. Refer to Appendix B for a definition of each variable. All continuous firm-level variables are winsorized at the 1% and 99% levels. t-statistics are presented in parenthesis below the coefficients and are clustered by country. \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.