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Does Financial Reporting Regulation Influence the Value of Cash Holdings?

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Abstract

We investigate how the value of cash holdings changes following the mandatory adoption of International Financial Reporting Standards (IFRS), which is viewed as an exogenous shock to information asymmetry between firms and outside investors. Using firm-level data from 47 countries, we find that mandatory IFRS adoption has a negative and significant impact on the value of cash holdings. This result suggests that investors reduce their valuation of cash holdings when firms can have access to external financing at a lower cost under IFRS. The negative effect of IFRS is concentrated among financially constrained firms. Furthermore, we show that the effect is more pronounced in countries with strong legal enforcement. Overall, our evidence highlights that financial reporting regulation can have a significant effect on how outside investors value corporate cash holdings across countries.

Keywords: International Financial Reporting Standards (IFRS), market value of cash holdings, cash holdings

*JEL classifications***:** G31, G32, M41

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I. Introduction

Capital market frictions, which might arise from information asymmetry problems, prevent firms from raising external financing to support valuable projects. Given that external financing is costlier than internal financing in the presence of asymmetric information, managers have incentives to increase cash holdings to finance growth opportunities at a lower cost (Myers and Majluf, 1984). Consistent with this view, Faulkender and Wang (2006) report that the value of cash holdings is significantly higher for financially constrained firms than for unconstrained firms. In this paper, we investigate whether a change in financial reporting regulation influences valuation of cash holdings. In particular, we consider the adoption of a common set of accounting standards across countries – the International Financial Reporting Standards (IFRS) – a mandatory regulatory change in financial reporting. We follow the extant literature and view the IFRS as an exogenous shock to firms' information environment reducing the information asymmetry between managers and outside investors (e.g., Hail et al., 2014).[1]

Prior studies argue that IFRS is likely to reduce information asymmetry by enhancing financial reporting transparency and comparability (e.g., Ashbaugh and Pincus 2001; Daske et al. 2008; De Fond et al. 2011). If outsiders of a firm have access to better quality accounting information about the firm allowing them to provide effective monitoring of managerial behaviour, then managers should have lower likelihood of appropriation of private benefits at the expense of shareholders.[2] Consistent with this view, prior studies report that IFRS adoption leads to a higher level of investment efficiency (Schleicher et al., 2010; Chen et al., 2013; Biddle et al., 2017). One can therefore expect that IFRS can reduce

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[1] In this study, we use 'mandatory IFRS adoption', 'IFRS adoption', and 'IFRS' interchangeably.
[2] For instance, Francis et al. (2009) argue that transparency plays an important governance role as it allows better monitoring by outside investors, which in turn ensures that managers take advantage of valuable growth opportunities and prevent waste of firms' resources.

agency costs mitigating value destruction effects of cash holdings (e.g., Jensen, 1986). Accordingly, outside investors are likely to value corporate cash holdings more under IFRS, leading to a positive impact of the financial reporting regulation on the value of cash holdings. We call this 'lower agency cost' effect of IFRS.

Additionally, extant literature indicates that firms have better access to external capital markets following the IFRS adoption. Naranjo et al. (2020) report that post-IFRS, firms, especially financially constrained firms, are more likely to raise external capital since the IFRS adoption reduces the information asymmetry by increasing accounting disclosure and enhancing comparability across countries. This finding is consistent with the prior studies documenting that mandatory IFRS adopters experience lower cost of equity and higher institutional shareholdings (Li, 2010; Florou and Pope, 2012). Li (2010) argues that mandatory IFRS adoption can reduce the cost of equity through two channels. First, the IFRS adoption requires greater financial disclosure than do many local accounting standards (see, for instance, Ashbaugh and Pincus, 2001) and increased transparency reduces cost of capital (e.g., Lambert et al., 2007). Second, one set of uniform accounting standards under IFRS improves information comparability across firms and this in turn reduces cost of equity (e.g., Armstrong et al., 2010).

Similar to the impact of IFRS on equity markets, there is evidence on favourable effect of IFRS on debt markets. Florou and Kosi (2015) report that IFRS adopters experience an increase in the likelihood of raising debt from the public bond markets and also a decrease in bond yield spreads. Additionally, Beneish et al. (2015) find that mandatory IFRS adoption leads to an increase in total foreign portfolio investment into a country's capital markets. In particular, IFRS adoption has a significantly greater impact on foreign investment into a country's debt market than into its equity market. Further, Bhat et al. (2016) report that credit default swap (CDS) spreads are significantly lower post-IFRS adoption. Similarly, Brown

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(2016) also documents that firms' access to cross-border private debt markets increases after the IFRS adoption.

Given that firms can raise external financing at a lower cost under IFRS, they would not need to maintain high cash reserves to take advantage of their value enhancing growth opportunities. We would therefore predict a decline in the value of cash holdings following the mandatory IFRS adoption. We call this 'lower cost of external financing' effect of IFRS. Overall, the impact of IFRS on the valuation of cash holdings can be either negative or positive depending on which effect dominates, namely, 'lower cost of external financing' effect or 'lower agency cost' effect.

In this study, we use the methodology of Faulkender and Wang (2006) to analyse the effect of the mandatory IFRS adoption on the value of cash holdings. As a robustness test, we also use the methodology of Pinkowitz et al. (2006) and Fama and French (1998), which has been widely employed by prior researchers focusing on the valuation of cash holdings in a cross-country sample. In our empirical analyses we use a difference-in-differences (DID) approach to separate the effect of an information shock from other factors potentially influencing valuation of corporate cash holdings. For a sample of 47 countries, our results show that mandatory adoption of IFRS has a negative and significant effect on the value of cash holdings. Prior to IFRS adoption, the market value of additional $1 of firms' cash holdings is on average $0.69; the IFRS adoption leads to a $0.207 decline in this value. This result is consistent with the view that mandatory IFRS adoption eases firms' access to external financing and hence firms rely less on cash reserves to undertake their future investment opportunities. Outside investors, therefore, place a lower value to firms' cash holdings.

We conduct additional analyses to ensure the robustness of our main results. First, we use a propensity-score matched sample to confirm our baseline test results. Second, we

ensure that there is no difference in pre-treatment trends in the value of cash holdings between the treated group (firm-years with mandatory IFRS adoption) and control group (firm-years that have not adopted IFRS yet or never adopt IFRS during our sample period). Our results show that the significant change in the value of cash holdings between the treated firms and control firms is present only after the IFRS adoption. These additional tests provide further support for our main finding that market participants value cash holdings less after the IFRS adoption. Moreover, we conduct a falsification test by assigning counterfactual event years to benchmark countries. Our results show that the negative and statistically significant effect of IFRS on the value of cash holdings exists only for the firms with the IFRS adoption.

Next, we extend our analysis by conducting several cross-sectional tests. Our baseline results show that the IFRS adoption lowers the valuation of cash holdings as firms can have easier access to external financing under IFRS. To strengthen this result, we examine whether the negative impact of IFRS adoption on the value of cash holdings is more pronounced for financially constrained firms. Given that these firms are likely to face difficulties in their access to external capital markets, we expect that they benefit more from the improvement in information environment under IFRS. Naranjo et al. (2020) show that financially constrained firms obtain more external financing after the mandatory IFRS adoption since they benefit relatively more from the enhanced information transparency and comparability. Consistent with Naranjo et al. (2020)'s findings, our results show that the negative impact of IFRS on the value of cash holdings is concentrated among financially constrained firms. In contrast, we do not observe any significant impact of enhanced financial reporting on the valuation of cash holdings for financially unconstrained firms.

We also examine whether the negative impact of the mandatory IFRS adoption on the market value of cash holdings is more pronounced for the firms in countries with strong legal enforcement. Extant literature documents that strict legal environment provides strong

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reporting incentives for the firms and this, in turn, reduces the cost of capital. For instance, Daske et al. (2008) document that after the mandatory IFRS adoption, firms in countries with strong legal enforcement experience a decrease in the cost of capital and an increase in market liquidity. Similarly, Li (2010) provides evidence that cost of equity declines for firms in European countries with strong legal enforcement. Following Daske et al. (2008) and Li (2010), we expect that the value of cash holdings after the IFRS declines more in countries with strict legal enforcement since the enforcement creates strong reporting incentives and this, in turn, reduces the cost of external financing. Firms, therefore, need to maintain relatively lower cash reserves and hence investors place a lower value to cash holdings. Consistent with this prediction, our results show that following the mandatory IFRS adoption, cash holdings of firms in countries with strong legal enforcement are valued significantly less than those in countries with weak legal enforcement.

We contribute to the literature in several ways. First, we show that financial reporting regulation can influence investors' valuation of cash holdings through reducing information asymmetry between outside investors and managers, and therefore facilitates firms' access to external financing. Our study complements the findings from prior studies (e.g., Hail et al., 2014; Gao et al., 2016) that view mandatory adoption of IFRS as a shock to the information environment of firms. Hail et al. (2014) show that mandatory IFRS adoption reduces outside investors' demand for dividends as a commitment device and information signal. Gao et al. (2016) find that firms decrease their cash holdings and save less from their cash flows under IFRS.

Second, we show that the impact of financial reporting regulation on valuation of cash holdings depends on legal enforcement. This finding adds to the extant literature, which shows that firms have access to less costly external funds only in countries with strong legal enforcement rules under IFRS (Daske et al. 2008; Li, 2010). Third, we extend the literature

on value of cash holdings using international data. Pinkowitz et al. (2006) investigate whether the value of liquid assets is lower for minority shareholders in countries where investor protection is poorer. They use a sample of 35 countries and show that in countries with high investor protection, a dollar of liquid assets is worth roughly a dollar to minority investors, while in countries with poor investor protection, a dollar of liquid assets is worth much less.[3] We add to this strand of literature on value of cash holdings by providing evidence that financial reporting regulations, in addition to investor protection, have an effect on how shareholders value firms' cash holdings.

The rest of the paper is organized as follows. Section 2 reviews the related literature and develops our hypotheses. Section 3 describes our empirical model. Section 4 presents our data and descriptive statistics. In sections 5, we report and discuss our empirical results. Section 6 concludes.

2. Related literature

Previous researchers report that IFRS influences reporting quality and comparability, which in turn can lead to lower information asymmetry among market participants. Bae et al. (2008) suggest that differences in accounting standards can involve high costs on the part of foreign financial analysts, who follow firms from countries with accounting standards different from the standards in their home countries. They report that harmonization in accounting rules leads to higher analyst forecast accuracy. Thus, foreign analysts can reduce their information processing costs when they follow firms from different countries with a harmonized accounting regime.

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[3] Additionally, Drobetz et al. (2010) and Fresard and Salva (2010) examine valuation of cash holdings using international data. Drobetz et al. (2010) employ the dispersion of analysts' earnings per share forecasts as a measure of firm-specific information asymmetry and show that value of cash holdings is lower when there is a higher dispersion in analysts' forecasts for an international sample over the period from 1995 to 2005. Fresard and Salva (2010) document that value outside investors attach to excess cash holdings is substantially higher for foreign firms listed on US exchanges suggesting that a US listing can constrain insiders' inefficient allocation of corporate cash holdings significantly.

Advocates of mandatory IFRS adoption argue that IFRS increases financial statement comparability, which in turn expands cross-border investment in countries under IFRS (e.g., Securities and Exchange Commission (SEC), 2008). De Fond et al. (2011) examine whether the EU's mandatory adoption of IFRS in 2005 results in improved comparability that leads to increased investment by foreign mutual funds. They investigate different mechanisms through which IFRS attracts foreign investors and document that uniformity plays an important role in improving comparability. Their empirical analysis shows that the improved comparability associated with mandatory IFRS adoption does not increase domestic mutual fund ownership, consistent with domestic investors being more familiar with local accounting standards.

Tan et al. (2011) report that IFRS adoption leads to an increase in the number of foreign and local analysts following firms and there is an improvement in the forecasts of foreign analysts. Their results show that firms located in countries where local GAAP differed more from IFRS prior to IFRS adoption gain more foreign analysts than those firms that are located in countries with local GAAP more similar to IFRS. These findings suggest that IFRS can increase comparability and help financial analysts to provide more accurate forecasts enhancing the information environment for firms and investors. Horton et al. (2013) provide further evidence that IFRS improves information quality and comparability. They show that there is an increase in analyst forecast accuracy under IFRS as managers have less discretion to manipulate earnings and thereby meet analysts' forecasts.

Hail et al. (2014) consider the mandatory adoption IFRS as an exogenous shock to firms' information environment. Previous studies document capital market benefits, improvements of accounting characteristics, and positive effects on financial analysts' ability to forecast future performance around the time of mandatory IFRS adoption (e.g., Daske et

al., 2008; Byard et al., 2011; Landsman et al., 2012). Firms can raise financing from both debt markets and equity markets at a lower cost under IFRS.[4]

We use the IFRS adaption as an exogenous shock to firms' information environment and investigate how value of corporate cash holdings is influenced by this regulatory change. Consistent with the literature, we argue that firms' need for cash holdings to undertake investment opportunities would be lower since firms can raise external financing at a lower cost under IFRS. We would therefore predict that markets place a lower value to corporate cash holdings post-IFRS. Faulkender and Wang (2006) show that the market value of cash holdings declines when firms have a better access to external finance. Given that firms' access to external financing improves under IFRS, cash is likely to be valued at a discount following the IFRS adoption. Thus, we would expect a negative relation between IFRS adoption and valuation of cash holdings.

Jensen (1986) argues that free cash flows can have a negative impact on the efficiency of investment decisions. Managers can use excess cash in a wasteful way by, for instance, investing in a negative-NPV project without experiencing pressure from the scrutiny of external capital markets. Thus, excess cash can be associated with shareholder wealth destruction. Based on the agency theory, one can expect the value of cash holdings to increase to the extent that lower information asymmetry under IFRS allows outside investors to monitor managerial decisions reducing wasteful allocation of cash holdings. Previous studies show that IFRS improved firm transparency (Ashbaugh and Pincus, 2001; Barth et al., 2008) through improving earnings quality and reducing information asymmetry (Daske et al., 2013). Given that lower information asymmetry under IFRS allows outside investors to monitor managerial decisions reducing wasteful allocation of cash holdings, cash is likely to

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[4] In their robustness test, Mclean and Zhao (2018) also use mandatory IFRS adoption as an exogenous shock to corporate transparency and show that firms save more cash from the increased equity issues after the IFRS adoption.

be valued at a premium following the IFRS adoption. Thus, one would expect a positive relation between IFRS adoption and valuation of cash holdings. Overall, financial reporting regulation can have a positive or negative effect on how outside investors value corporate cash holdings, depending on which channel—i.e., 'lower agency cost' or 'lower cost of external financing'—dominates.

3. Empirical model

We use the methodology of Faulkender and Wang (2006) to examine how IFRS influences the value of cash holdings. This model shows how much the market value of the equity increases when an additional one dollar is added to cash holdings. The equity value is measured as a firm's excess stock return. Following Faulkender and Wang (2006), we use excess stock returns to estimate how the relation between market value and cash holdings changes after the mandatory IFRS adoption. Our regression model is as follows:

$$r_{i,t} - R_{i,t}^B = \alpha + \beta_1 dE_{i,t} + \beta_2 dNA_{i,t} + \beta_3 dR\&D_{i,t} + \beta_4 dInt_{i,t} + \beta_5 dDiv_{i,t} + \beta_6 Cash_{i,t-1}$$

$$+ \beta_7 Lev_{i,t} + \beta_8 NF_{i,t} + \beta_9 (dCash_{i,t} * Cash_{i,t-1}) + \beta_{10} (dCash_{i,t} * Lev_{i,t})$$

$$+ \beta_{11} dCash_{i,t} + \boldsymbol{\beta_{12}} (\boldsymbol{dCash_{i,t} * IFRS}) + \beta_{13} IFRS + f_i + s_t + d_t + \varepsilon_{i,t} \quad (1)$$

where dX_t is the change in the level of X from year $t - 1$ to year t, $X_t - X_{t-1}$. The dependent variable $(r_{i,t} - R_{i,t}^B)$ is the excess stock return for firm i in fiscal year t, where $r_{i,t}$ is the stock return for firm i at year t, and $R_{i,t}^B$ is the benchmark return for stock i at year t. The benchmark return is the Fama and French (1993) size and book-to-market matched portfolio return (see Faulkender and Wang, 2006; Dittmar and Mahrt-Smith, 2007; Harford et al., 2107, for more details).[5] E is earnings, NA is net assets, $R\&D$ is research and development investments, Int is

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[5] We use value-weighted portfolio return from Fama & French 25 portfolios for US, 25 portfolios for developed markets, and 6 portfolios for emerging markets. This data including the list of the developed and emerging

interest expense, *Div* is common dividends, *Cash* is the cash holdings, *Lev* is the market leverage, *NF* is net financing. All variables, except *Lev* and excess stock return, are divided by the one-year lagged market value of equity. Since both the dependent and independent variables are divided by the lagged value of equity, the coefficient on the change in cash ($dCash_{i,t}$) can be interpreted as the dollar change in the market value of equity in response to a one dollar change in the cash holdings. *IFRS* is a dummy variable that takes the value of one after a country's mandatory IFRS adoption year and zero otherwise. The detailed variable definitions and data sources are provided in Appendix A. We control for country-specific fixed effects f_i, industry fixed effects s_t, and year fixed effects d_t. Since the mandatory IFRS adaptation is at the country level, we cluster the standard errors at the country level.

As a robustness test, we also use the methodology of Pinkowitz et al., (2006) and Fama and French (1998) to investigate the effect of IFRS on the value of cash holdings. Results from this alternative methodology are reported in Table B of Appendix B, which are consistent with the findings from the estimation method of Faulkender and Wang (2006).

4. Data and descriptive statistics

4.1. Sample construction

We start with 485,928 firm-year observations from 60,741 public firms in 47 countries over 2001-2008 period.[6] We collect the firm-level financial data from the Worldscope database and IFRS adoption years from Daske et al. (2008) see also Hail et al., 2014). After dropping utility (SIC 4900-4999) and financial firms (SIC 6000-6999), we have a sample of 442,800 firm-year observations from 55,350 firms. We apply common data filters used in the literature and drop firm-year observations that have the book value of cash holdings greater than that of

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markets are available on K. R. French's Data Library at:
https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
[6] As in Hail et al. (2014), our sample period ends at 2008, i.e., beginning of the recent financial crisis. Our results still hold when we exclude the year of 2008. For brevity, we do not tabulate these results.

total assets or have the book value of total assets less than $10 million (e.g., Bates et al., 2009; Hail et al., 2014). After this initial screening procedure, the number of firm-year observations and the number of firms drop to 402,519 and 54,589, respectively. Further dropping the observations with missing values for the variables used in Equation (1) leaves us 102,401 firm-year observations from 19,767 firms. Following the literature (e.g., Ozkan et al., 2012; Naranjo et al., 2020), we exclude the years in which countries adopted IFRS since transitional error may affect the results. The final number of firm-year observations and firms are 98,896 and 19,707, respectively. All the ratio variables are winsorized at 1st and 99th percentiles to mitigate the effect of outliers.

4.2. Descriptive statistics

Table 1 shows the number of firms and that of firm-year observations by country, and the respective dates of mandatory IFRS adoption in each country. We observe that the number of firms across countries varies considerably for our sample of 47 countries. The US has the highest number of firms (5,898) followed by Japan (1,848) and United Kingdom (1,624), whereas Czech Republic (12) and Luxembourg (15) have the lowest number of firms. The final column shows the mandatory IFRS adoption year for each country in our sample during the period of 2001-2008 (Daske et al., 2008; Hail et al., 2014). Among the 29 countries in our sample that have adopted IFRS, 24 countries did so in 2005.

[Insert Table 1]

Table 2 reports descriptive statistics for the firm-level variables used in our empirical analyses. We observe that the median (mean) values for change in cash (*dCash*) and excess stock return $(r_{i,t} - R_{i,t}^B)$ are 0.001 (0.023) and -0.074 (0.063), respectively. Using a US sample from 1980 to 2009, Bates et al. (2018) document that median (mean) values for change in cash and excess stock return are 0.002 (0.013) and -0.046 (0.058), respectively.

From a US sample over the 1997-2012 period, Harford et al. (2017) similarly document that

the median (mean) values for the change in cash is 0.005 (0.016). Faulkender and Wang

(2006) also use a US sample from 1971 to 2001 and show that the median values of change in

cash and excess stock return are -0.0005 and -0.0845, respectively. The mean value of excess

stock return from their sample is -0.005 and this value is different than the mean value of

excess stock return from our sample. This difference is expected given that we use an

international data from 47 countries over the period of 2001-2008. To our knowledge, our

study is the first to use Faulkender and Wang (2006)'s estimation method for an international

sample.

[Insert Table 2]

5. Estimation results

5.1. Effect of IFRS on the value of cash holdings

Table 3 presents our main regression results from Equation (1). Although our sample

composition and period differ from those of prior studies, our coefficient estimates are in line

with their findings. For example, our result without the IFRS dummy reported in column (1)

shows that all coefficients are overall comparable to Faulkender and Wang (2006)'s, which is

based on a sample of U.S. firms. In column (1), we report our regression results without

including the IFRS dummy. The coefficient on the change in cash, *dCash,* is 0.91 and

statistically significant at 1% level. The marginal value of cash is a function of the

coefficients on *dCash* and its interactions with the level of cash holdings (*dCash

LaggedCash) and with leverage (*dCash *Lev*). To compute the value of one additional

dollar in cash holdings for an average firm in the sample, we take into account the mean

values of lagged cash (0.261) and leverage (0.292). Therefore, the marginal value of cash

holdings in column (1) without IFRS interaction is $0.67 (=0.91 + (-0.159*0.261) + (-

0.683*0.292)), which is lower than the marginal value of cash for US firms, $0.94, as reported by Faulkender and Wang (2006).

As an alternative estimation method to check the robustness of our findings, we use the methodology of Pinkowitz et al. (2006) in Table B of Appendix B. Consistent with the literature, these results suggest that cash holdings are valued at a discount. That is, an additional dollar of cash is valued less than one dollar by the market participants. The magnitudes of our coefficient estimates are similar to those from the prior studies based on international sample (see, for example, Drobetz et al., 2010, which use Pinkowitz et al. (2006)'s estimation method).

[Insert Table 3]

In column (2) of Table 3, we include an interaction of *IFRS* and *dCash* to analyse the impact of IFRS on the market value of cash holdings. While the coefficient on *dCash* is still positive and statistically significant, its interaction with IFRS is negative and statistically significant, which is consistent with our discussion in section 2. That is, mandatory IFRS adoption reduces the market value of cash holdings, supporting the 'lower cost of external financing' channel. We document that an additional dollar of cash is valued at $0.69 (=0.942 + (-0.161*0.261) + (-0.709*0.292)), but under the IFRS it is valued -$0.207 less, which shows that our finding is also economically significant. Our results from the Pinkowitz et al. (2006)'s estimation method in Appendix B, Table B, are consistent with these findings. These results, together, suggest that market participants place a lower value to cash holdings following the mandatory adoption of IFRS. Faulkender and Wang (2006) argue that the marginal value of cash holdings declines as firms have easier access to external capital markets. Our finding is consistent with the literature documenting that firms' access to external financing improves following the mandatory IFRS adoption. Thus, they would not

need to hold onto high cash reserves to take advantage of their growth opportunities, and this in turn reduces the value of cash holdings.

In column (3), we match the firm-years in the treated group (firm-year observations from countries where IFRS has been adopted) with those in the control group (firm-year observations from countries where IFRS has not been adopted yet or has never been adopted during our sample period). To make sure that our matched sample is reliable, in Panel B of Table 3, we compare the mean differences in the matched variables between the treated and control groups. We first estimate a logit model to find the probability of being treated (propensity score) as a function of firm-level covariates in Equation (1) as well as industry and year fixed effects. We then match each observation in the treated group with that in the control group on their propensity scores calculated. The matching is based on all the firm characteristics in Equation (1). In this procedure, we use one-to-one nearest-neighbour method to match the observations in the treated and control groups. Our t-test results show no presence of statistically significant differences between the treated and control groups in all variables used, confirming that the two groups are very similar after the matching procedure. Estimation result from this matched sample in column (3) of Panel A confirms the negative effect of IFRS on the market value of cash holdings.

5.2. Pre-treatment trends

In this section, we investigate whether there is any difference in pre-treatment trend to address the concern of unobserved heterogeneities. To this end, we use the approach developed by Bertrand and Mullainathan (2003) to investigate the dynamic effect of the IFRS on the value of cash holdings (see, e.g., Hail et al. (2014) for a similar approach). Specifically, in Table 4, we split the sample period and replace the dummy variable *IFRS* with two other dummy variables. The first dummy variable *b2n1* equals one if a firm is observed one or two years *before* the mandatory IFRS adoption year (years *t-2* and *t-1*) and

zero otherwise. The second dummy variable *a2n1* takes the value of 1 if a firm is observed one or two years *after* the mandatory IFRS adoption (years *t+1* and *t+2*) and zero otherwise. We then interact these dummy variables with *dCash.* In column (1), we use the full sample, while in column (2) the matched sample based on the propensity scores as in column (3) of Table 3. If the decline in the value of cash holdings is because of the IFRS adoption, the coefficient on the interaction term *dCash*b2n1* should be insignificant, whereas the coefficient on *dCash*a2n1* should be negative and significant. Consistent with this expectation, in column (1), the coefficient on *dCash* is positive and significant, while that on *dCash*b2n1* is statistically insignificant. The coefficient on *dCash*a2n1*, however, negative and significant. We observe the same pattern in the matched sample in column (2) that the decline in the value of cash holdings takes place *only after* the mandatory IFRS adoption. Overall, these results suggest that our main findings are not driven by reverse causality or unobserved heterogeneities, supporting the casual relationship between IFRS and the market value of cash holdings.

[Insert Table 4]

Bates et al. (2018) use a US sample over the 1980-2009 period and document that in recent decades the value of cash holdings has increased. One potential concern is that a time trend in the value of cash holdings may drive our results. Our findings in Table 4 suggest that such a time trend is unlikely to drive our results. However, to address a potential concern that secular trends in the value of cash holdings might not be fully differenced out, we conduct additional analysis by including the interactions of *dCash* and year dummies and country dummies, respectively. We find that our results (unreported) are robust to this alternative regression model that accounts for potential heterogeneities in the value of cash holdings over time and across countries. For brevity, we do not tabulate these results.

5.3. Falsification test

In this section, we conduct a falsification test by counterfactually assigning event years to the countries that did not adopt IFRS. That is, we create a new dummy variable (*nonIFRS*) as the counterfactual event indicator and set it to the value of 1 for the years after 2005 for firms in countries with no IFRS adoption and zero otherwise (see, e.g., Hail et al. (2014) for the same approach).[7] We then interact *nonIFRS* with *dCash* to investigate whether the value of cash holdings declines also for the firms with no IFRS adoption. We expect that the decline in the value of cash holdings will be present *only* for the firms in countries with the IFRS adoption, not for the firms with no IFRS adoption.

In column (1) of Table 5, the coefficient on the interaction term *dCash*nonIFRS* is close to zero and insignificant. This suggests that there is no decline in the value of cash holdings for the firms with no IFRS adoption. In the second column, we also include the interaction of *dCash* with the *IFRS* dummy *(dCash*IFRS)*. The coefficient on *dCash*nonIFRS* is still insignificant, while that on *dCash*IFRS* is negative and statistically significant. Overall, consistent with our expectation, these results suggest that the decline in the market value of cash holdings takes place *only* for the firms with the mandatory IFRS adoption, providing further support for our main findings.

[Insert Table 5]

5.4. Cross sectional analyses

In this section, we carry out cross sectional tests to investigate if the negative effect of the mandatory IFRS adoption on the value of cash holdings differs across firms. Specifically,

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[7] Here, as in Hail et al. (2014), we use 2005 as the benchmark since it is the year of IFRS adoption for the majority of the IFRS adopted countries (i.e., 24 out of 29).

we analyse the impact of financial constraints and legal enforcement on the relation between the mandatory IFRS adoption and valuation of cash holdings.

5.4.1. Financial constraints and the value of cash holdings under IFRS

Table 6 shows how the negative relation between the mandatory IFRS adoption and the value of cash holdings differs across financially constrained and unconstrained firms. Since financially constrained firms are more likely to suffer from the asymmetric information problems, the benefit of improved information environment thanks to the IFRS adoption should be more pronounced for the constrained firms. In line with this expectation, Naranjo et al. (2020) document that financially constrained firms, relative to unconstrained firms, increase more their financing from external capital markets after the IFRS adoption since the reduction in asymmetric information under IFRS helps relaxing financing constraints for these firms. Following prior studies (e.g., Naranjo et al., 2020; Dierker et al., 2019; Andreou et al., 2018), we use Headlock-Pierce (HP) index, Whited-Wu (WW) index, and firm size as proxies for the level of financial constraints before the mandatory IFRS adoption to split our sample into financially constrained and unconstrained groups. In Table 6, columns (1) to (4), we classify firms into financially constrained (unconstrained) groups if they are in the top (bottom) 30% of HP index or WW index. In columns (5) and (6), we use the natural logarithm of total assets as a proxy for measuring firm size and classify firms into financially constrained (unconstrained) group if they are in the bottom (top) 30%. The results show that across all classification methods used, the coefficient on *dCash* is positive and significant for both types of firms, whereas the coefficient on *dCash*IFRS* is negative and significant for the financially constrained firms only. Consistent with the literature, these results support our argument that the value of cash holdings declines only for financially constrained firms since particularly these firms benefit from the reduction in asymmetric information after the IFRS adoption.

[Insert Table 6]

5.4.2. Legal enforcement and the value of cash holdings under IFRS

In this section, we investigate whether the value of cash holdings declines more for the firms under IFRS in countries with strong legal enforcement. Prior studies document that mandatory IFRS adoption has smaller or no effect on firms in countries with weak legal enforcement regimes (see, for instance, Daske et al., 2008). Specifically, the cost of capital declines *only* for the firms in strict legal enforcement environment that provides strong reporting incentives for managers (Daske et al. 2008; Li, 2010). Daske et al. (2008) use the rule of law measure from Kaufmann et al. (2007) as a proxy for country-level legal enforcement. They document that there are capital market benefits (i.e., increases in market liquidity and reduction in cost of capital) following the mandatory IFRS adoption only in countries with strong legal enforcement. Using a similar approach, Li (2010) shows that the cost of equity after the mandatory IFRS adoption declines only in countries with strong legal enforcement. Given the prior evidence discussed, we posit that the reduction in the market value of cash holdings following the IFRS adoption should be present only for firms in countries with strong legal enforcement as investors place a lower value to cash holdings due to better access to external finance under IFRS.

In Table 7, following Daske et al. (2008) and Li (2010), we use Kaufmann et al. (2007)'s rule of law measure for legal enforcement and classify countries into strong legal enforcement group if the legal enforcement values are above the median, and weak legal enforcement group if below the median. As expected, our results in Table 7 show that cash holdings of firms in countries with strong legal enforcement are valued less by markets after the IFRS adoption. Overall, consistent with the literature, our findings suggest that following the mandatory adoption of IFRS the market value of cash holdings declines only in countries with strict legal enforcement where the capital markets benefit from IFRS adoption the most.

[Insert Table 7]

5.5. Additional robustness tests

In this section, we conduct several additional analyses. First, following the literature (e.g., Li, 2010; Hail et al. 2014; Florou and Kosi, 2015), we examine whether firms with low (high) transparency benefit more (less) from mandatory adoption of IFRS. Arguably less transparent firms should experience a higher level of improvement in financial reporting quality and comparability when the mandatory IFRS is adopted. For instance, Li (2010) compares the type of IFRS adopters (mandatory versus voluntary) and documents that only non-transparent firms (mandatory IFRS adopters) experience a significant reduction in the cost of equity capital. However, firms that were already transparent before the mandatory IFRS adoption (voluntary adopters that adopted IFRS before it became mandatory) do not experience a change in the cost of equity after the mandatory IFRS adoption. Florou and Kosi (2015) also document that non-transparent firms (non-voluntary adopters and those with large discrepancies between local GAAP and IFRS) benefit more from debt markets after the mandatory adoption of IFRS. Following this literature, we expect that after the mandatory IFRS adoption, the market value of cash holdings for less transparent firms should decline more. The value of cash holdings for firms that were already transparent to begin with, however, should not change since these firms' access to external financing is not affected by the mandatory IFRS adoption (Li 2010; Florou and Kosi, 2015).

In Table 8, we use two different proxies for the transparency of firms. In column (1), following Daske et al. (2008), Li (2010), and Florou and Kosi (2015), we create two dummy variables, namely, *Voluntary* and *NonVoluntary*. The dummy variable *Voluntary* takes the value of 1 after the mandatory IFRS adoption for the firms that already adopted IFRS voluntarily; that is, '*Voluntary*' firms were already transparent before the informational shock (Li, 2010; Hail et al. 2014; Florou and Kosi, 2015). The dummy variable *NonVoluntary*

equals one if the mandatory IFRS adoption occurs to the firms that are not '*Voluntary*'; that is, '*NonVoluntary*' firms were not (or less) transparent before the mandatory IFRS adoption. We identify '*Voluntary*' and '*NonVoluntary*' firms based on the reporting standards from Worldscope item WC07536 and Daske et al. (2013)'s coding (also see Florou and Kosi, 2015).

[Insert Table 8]

Similarly, in column (2) of Table 8, we follow Daske et al. (2008) and Florou and Kosi (2015) to create an alternative proxy of firm transparency, i.e., two dummy variables *LowGAAP* and *HighGAAP*, by collecting summary scores of discrepancies between the local GAAP and IFRS from Bae et al. (2008). A higher score represents a larger discrepancy between domestic accounting standards and IFRS. Arguably, a firm with a large discrepancy should benefit more from mandatory IFRS adoption since comparability and financial reporting quality of this firm should improve more after the mandatory adoption of IFRS. Firms with relatively small discrepancies, however, should benefit less from switching to IFRS since they were already transparent to begin with. As in Florou and Kosi (2015), the dummy variable *LowGAAP* takes the value of 1 following the mandatory IFRS adoption for the firms with low discrepancies (below the median) between the local GAAP and IFRS; that is, the variable identifies firms that were relatively transparent before the mandatory IFRS adoption. The dummy variable *HighGAAP* equals one if the mandatory IFRS adoption occurs to the firms with high discrepancies (above the median) between the local GAAP and IFRS; that is, '*HighGAAP*' firms were not (or less) transparent to begin with.

We interact the variable *dCash* with the dummy variables *Voluntary* and *NonVoluntary* in column (1) and with *LowGAAP* and *HighGAAP* in column (2). As argued by Florou and Kosi (2015), since these dummy variables distinguish between the firms with

high and low transparency, the coefficients on *dCash* Voluntary* and *dCash*NonVoluntary* in column (1) and *dCash*LowGAAP* and *dCash*HighGAAP* in column (2) capture the total effect of mandatory IFRS adoption on the market value of cash holdings. As expected, our results in both columns show that the coefficients on the interaction terms, *dCash*Voluntary* and *dCash*LowGAAP*, are statistically insignificant, whereas those on *dCash*NonVoluntary* and *dCash*HighGAAP* are negative and significant. Consistent with the literature, our findings suggest that firms with low transparency (*NonVoluntary* or *HighGAAP*) benefit more from switching to mandatory IFRS and hence the market value of cash holdings for these firms decline more. Firms with high transparency to begin with (*Voluntary* or *LowGAAP*), however, benefit less from the mandatory adoption of IFRS and hence the market value of cash holdings for these counterfactual firms do not change post IFRS. These findings provide additional support for our main findings that investors place a lower value to cash holdings after the mandatory adoption of IFRS.

Next, as additional robustness tests, in column (1) of Table 9, we estimate Equation (1) by excluding U.S. firms from the sample to ensure that our results are not driven by this particular subsample, which comprises around 30% of the observations in our whole sample. Column (1) shows that the negative and significant effect of the mandatory IFRS adoption on the market value of the cash holdings remains.

In column (2) of Table 9, we re-estimate Equation (1) by using Fama and MacBeth regression (1973). In this method, a cross-sectional regression is estimated for each year. The estimation result from this method in column (2) shows that the coefficient on the interaction term *dCash*IFRS* is still negative and statistically significant, which confirms our main findings that IFRS has a negative and significant effect on the market value of cash holdings.

[Insert Table 9]

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6. Conclusion

In this paper, we examine the impact of mandatory IFRS adoption on the valuation of cash holdings for a sample of firms from 47 countries over the period 2001-2008. We find that mandatory IFRS adoption has a significant and negative impact on the value of corporate cash, suggesting that outside investors reduce their valuation of cash holdings for firms with access to lower cost of external financing under IFRS. Further, we document important cross-sectional heterogeneities in how mandatory IFRS adoption influences valuation of cash holdings. Our results show that the negative and statistically significant effect of IFRS is concentrated among financially constrained firms. This finding is in line with the literature documenting that financially constrained firms benefit from the reduction in asymmetric information under IFRS, and hence increase their financing from external capital markets.

Furthermore, strength of legal enforcement, which is a country-specific characteristic, is important in determining how outside investors value corporate cash holdings under IFRS. We show that the negative effect of IFRS on the value of cash holdings is present only for firms in countries with strong legal enforcement. This finding provides further support for the view that IFRS implementation can be heterogenous across countries. Our evidence highlights that accounting standard can influence how outside investors value corporate cash holdings across different institutional and legal settings. Overall, our findings support the view that mandatory IFRS adoption improved corporate transparency and information comparability across firms, and hence increased their access to external capital markets.

Acknowledgements

Appendix A. Variable Definitions

Firm-level variables (*Source*: DataStream):

$r - R^B$	Excess stock return where r is the stock return for firm i from $t-1$ to t and R^B is the benchmark return for stock i from $t-1$ to t, which is the Fama & French size and book-to-market matched value-weighted portfolio return (see, Faulkender and Wang, 2006; Dittmar and Mahrt-Smith, 2007; Harford, Wang and Zhang, 2107). To create this variable, we use value-weighted portfolio return from Fama & French 25 portfolios for US, 25 portfolios for developed markets, and 6 portfolios for emerging markets. This data including the list of the developed and emerging markets are available on K. R. French's Data Library at: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html
E	Earnings, which is calculated as [earnings before extraordinary items (WC01551) plus interest expenses (WC01251)]/ Lagged market value of equity.
NA	Net assets, which is calculated as [total assets (WC02999) minus cash & short-term investments (WC02005)]/ Lagged market value of equity.
$R\&D$	Research and development expenditure (WC01201)/ Lagged market value of equity. Missing observations are set to zero.
Int	Interest expense (WC01251)/ Lagged market value of equity.
Div	Common dividends (WC05376)/ Lagged market value of equity.
$Cash$	Cash & short-term investments (WC02005)/ Lagged market value of equity.
Lev	Market leverage, which is calculated as debt (WC03255)/ (Debt plus market value of equity)
NF	Net financing, which is calculated as [net new equity issues (WC04251 – WC04751) plus net new debt issues (WC04401 – WC04701)]/ Lagged market value of equity.

Country-level variables

$IFRS$	A dummy variable that takes 1 after a country's mandatory adoption year, 0 otherwise (*Source*: See Daske et al., 2008; Hail, Tahoun, and Wang, 2014).
Legal enforcement	A country-level variable that shows the strictness of enforcement regime. A higher value represents Stricker enforcement regime. (*Source*: Kaufmann et al (2007), which is also used in Daske et al. (2008) and Li (2010)).

Appendix B. Alternative Estimation Model

In our main analyses throughout, we have used Faulkender and Wang's (2006) method. In this section, we check the robustness of our results by employing an alternative estimation model developed by Pinkowitz et al. (2006) and Fama and French (1998) that has been widely used in cross-country studies. As in Pinkowitz et al. (2006), we divide the change in assets into its cash and noncash components to estimate how the relation between market value and cash holdings changes after the mandatory IFRS adoption. Our regression model is as follows:

$$V_{i,t} = \alpha + \beta_1 E_{i,t} + \beta_2 dE_{i,t} + \beta_3 dE_{i,t+2} + \beta_4 dNA_{i,t} + \beta_5 dNA_{i,t+2} + \beta_6 R\&D_{i,t} + \beta_7 dR\&D_{i,t}$$

$$+ \beta_8 dR\&D_{i,t+2} + \beta_9 Int_{i,t} + \beta_{10} dInt_{i,t} + \beta_{11} dInt_{i,t+2} + \beta_{12} Div_{i,t}$$

$$+ \beta_{13} dDiv_{i,t} + \beta_{14} dDiv_{i,t+2} + \beta_{15} dV_{i,t+2} + \beta_{16} dCash_{i,t} + \beta_{17} dCash_{i,t+2}$$

$$+ \boldsymbol{\beta_{17}} \big(\boldsymbol{dCash_{i,t} * IFRS}\big) + IFRS + f_i + s_t + d_t + \varepsilon_{i,t} \tag{2}$$

where X_t is the level of variable X in year t divided by the level of assets in year t; as in Fresard and Salva (2010) and Iskandar-Datta and Jia (2012), dX_t is the change in the level of X from year $t-2$ to year t, $X_t - X_{t-2}$, divided by assets in year t, to capture two-year lag changes. Likewise, dX_{t+2} is the change in the level of X from year t to year $t+2$, $X_{t+2} - X_t$, to capture two-year lead changes. V is the market value of the firm, E is earnings, NA is net assets, $R\&D$ is research and development investments, Int is interest expense, Div is common dividends, and $IFRS$ is a dummy variable that takes 1 after a country's mandatory IFRS adoption year, 0 otherwise.

This model, i.e., equation (2), includes change in cash holdings and other control variables in the next period. The Fama and French model introduces next-period variables to incorporate the impact of changes in expectations. However, the contemporaneous change in cash holdings accounts for an increase in cash that contributes to the firm's value in the current period. We control for country-specific fixed effects f_i, industry fixed effects s_t, and year fixed

effects d_t. Since the mandatory IFRS adaptation is at the country level, we cluster the standard errors at the country level.

Table B presents our regression results from equation (2). In column (1), we report our regression results without including the IFRS dummy. The coefficient on the change in cash $dCash_{i,t}$ is 0.63 and statistically significant at 1% level. This finding supports the finding in Table 3 that cash holdings are valued at a discount. In column (2), we interact the dummy variable *IFRS* with the change in cash $dCash_{i,t}$ to analyse the impact of IFRS on the market value of cash holdings. Consistent with our main findings, the coefficient on $dCash_{i,t}$ is still positive and statistically significant and that on the interaction ($dCash_{i,t}$ *IFRS*) is negative and statistically significant. These results are also economically significant: One unit of additional cash holding is valued at 0.666 and this value is decreased by -0.292 after the IFRS adoption. In column (3), we match the firm-years in the treated group (those with mandatory IFRS adoption) with those in the control group (with no mandatory IFRS adoption) based on the firm-level variables in equation (2) and by following the steps in the column (3) of Table 3. Untabulated results comparing the mean differences on the control variables between the treated and control groups confirm that this matched sample is reliable (i.e, the mean differences are statistically insignificant). Results from the matched sample are consistent.

[Insert Table B]

Overall, the findings from the estimation method of Pinkowitz et al. (2006) and Fama and French (1998) confirm the results from the estimation method of Faulkender and Wang (2006) in Table 3 that the mandatory adoption of IFRS reduces the market value of cash holdings.

Table B: IFRS and value of cash holdings results from the Equation (2), the estimation method of Pinkowitz et al. (2006)

This table reports the estimation results of the Equation (2) by employing the model developed by Pinkowitz et al. (2006). The dependent variable is market value of the firm ($V_{i,t}$). Columns (1) and (2) show the results for the full sample. In column (3), treated and control groups are matched on propensity scores based on all the firm-level controls in the Equation (2), and industry and year fixed effects. We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the firm level in column (1), and at the country level in columns (2) and (3). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Full sample	Full sample	Matched-Sample
	(1)	(2)	(3)
$E_{i,t}$	-0.663***	-0.668***	-0.727***
	[0.090]	[0.148]	[0.247]
$dE_{i,t}$	0.257***	0.259***	0.301**
	[0.042]	[0.046]	[0.114]
$dE_{i,t+2}$	0.161***	0.161	0.133
	[0.050]	[0.108]	[0.112]
$dNA_{i,t}$	0.206***	0.205***	0.228***
	[0.015]	[0.061]	[0.046]
$dNA_{i,t+2}$	0.455***	0.455***	0.555***
	[0.014]	[0.039]	[0.047]
$R\&D_{i,t}$	5.643***	5.649***	5.653***
	[0.198]	[0.184]	[0.338]
$dR\&D_{i,t}$	2.895***	2.888***	2.089*
	[0.303]	[0.911]	[1.089]
$dR\&D_{i,t+2}$	5.511***	5.491***	5.993***
	[0.325]	[0.534]	[0.964]
$Int_{i,t}$	2.397***	2.392	3.495**
	[0.395]	[1.577]	[1.385]
$dInt_{i,t}$	-2.146***	-2.141***	-2.846***
	[0.263]	[0.507]	[0.846]
$dInt_{i,t+2}$	-0.024	-0.019	0.931
	[0.367]	[0.872]	[0.934]
$Div_{i,t}$	10.624***	10.611***	11.485***
	[0.383]	[0.968]	[0.989]
$dDiv_{i,t}$	-0.892***	-0.879**	-1.285***
	[0.284]	[0.399]	[0.403]
$dDiv_{i,t+2}$	4.486***	4.493***	5.666***
	[0.236]	[0.610]	[0.563]
$dV_{i,t+2}$	-0.377***	-0.377***	-0.506***
	[0.008]	[0.020]	[0.048]
$dCash_{i,t}$	**0.630***	**0.666***	**0.840***
	[0.038]	**[0.122]**	**[0.177]**
$dCash_{i,t+2}$	0.935***	0.933***	1.079***
	[0.036]	[0.125]	[0.118]
$dCash_{i,t}$*IFRS		**-0.292**	**-0.421**
		[0.144]	**[0.193]**
IFRS		0.013	-0.081
		[0.034]	[0.057]
Year FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Industry FE (2 digit SIC)	Yes	Yes	Yes
N	112,285	112,285	26,902
R^2	0.397	0.397	0.442

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Table 1: Descriptive statistics by country

This table shows the number of firms, number of firm-year observations, percentage of firm-year observations, and also mandatory IFRS adoption year for each of the 47 sample countries over the period 2001-2008. Countries with "n.a." in the last column do not have a mandatory IFRS adoption year in our sample period.

Country	Number of firms	Number of firm-year obs.	Percentage of firm-year obs.	Mandatory IFRS adoption year
Argentina	38	216	0.22	n.a.
Australia	879	3,275	3.31	2005
Austria	54	176	0.18	2005
Belgium	79	307	0.31	2005
Brazil	222	1,110	1.12	n.a.
Canada	899	3,957	4	n.a.
Chile	83	594	0.6	n.a.
China	310	1,650	1.67	n.a.
Colombia	23	124	0.13	n.a.
Czech Republic	12	37	0.04	2005
Denmark	90	409	0.41	2005
Finland	109	510	0.52	2005
France	507	2,091	2.11	2005
Germany	440	1,788	1.81	2005
Greece	87	221	0.22	2005
Hong Kong	124	859	0.87	2005
Hungary	21	93	0.09	2005
India	1288	3822	3.86	n.a.
Indonesia	249	1,688	1.71	n.a.
Ireland	66	319	0.32	2005
Israel	94	316	0.32	2008
Italy	180	765	0.77	2005
Japan	1,848	1,3112	13.26	n.a.
South Korea	823	4,582	4.63	n.a.
Luxembourg	15	53	0.05	2005
Malaysia	696	4,745	4.8	n.a.
Mexico	95	551	0.56	n.a.
Netherlands	156	753	0.76	2005
New Zealand	56	310	0.31	2007
Norway	107	432	0.44	2005
Pakistan	62	304	0.31	2007
Peru	46	278	0.28	n.a.
Philippines	125	705	0.71	2005
Poland	83	329	0.33	2005
Portugal	36	189	0.19	2005
Russia	47	151	0.15	n.a.
Singapore	433	2,387	2.41	2003
South Africa	197	1,012	1.02	2005
Spain	89	312	0.32	2005
Sri Lanka	24	118	0.12	n.a.
Sweden	146	605	0.61	2005
Switzerland	162	658	0.67	2005
Taiwan	581	3,833	3.88	n.a.
Thailand	373	2,312	2.34	n.a.
Turkey	131	323	0.33	2006
United Kingdom	1,624	6,890	6.97	2005
United States	5,898	29,625	29.96	n.a.
Total	**19,707**	**98,896**	**100**	

Table 2: Descriptive statistics

This table shows the mean, median, standard deviation (SD), and the number of firm-year observations for the variables in equation (1).

	Mean	**Median**	**SD**	**N**
$r - R^B$	0.063	-0.074	0.741	98,896
dE	0.024	0.004	0.308	98,896
dNA	0.113	0.027	0.723	98,896
$dR\&D$	0.001	0.000	0.012	98,896
$dInt$	-0.001	0.000	0.043	98,896
$dDiv$	0.003	0.000	0.022	98,896
$LaggedCash$	0.261	0.122	0.426	98,896
Lev	0.292	0.230	0.264	98,896
NF	0.044	0.000	0.333	98,896
$dCash$	0.023	0.001	0.212	98,896

Table 3: IFRS and the value of cash holdings

Panel A of this table reports the estimation results of Equation (1) while Panel B presents test results for the mean value differences between the matched treated and control groups to confirm that our matching sample is reliable. In Panel A, the dependent variable is the excess stock return of the firm, $(r - R^B)$. Column (1) and (2) show the results for the full sample. In column (3), treated and control groups are matched on propensity scores based on all the firm-level controls in the in equation (1). We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the firm level in column (1), and at the country level in column (2) and (3). ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Coefficient estimates for Equation (1)

	Full sample	Full sample	Matched-Sample
	(1)	(2)	(3)
dE	0.008	0.008	-0.033
	[0.038]	[0.038]	[0.043]
dNA	0.161***	0.161***	0.197***
	[0.017]	[0.017]	[0.015]
$dR\&D$	3.986***	3.966***	3.655***
	[1.332]	[1.339]	[0.737]
$dInt$	-0.818***	-0.806***	-0.124
	[0.147]	[0.147]	[0.356]
$dDiv$	3.123***	3.122***	2.918***
	[0.417]	[0.414]	[0.394]
$LaggedCash$	0.389***	0.388***	0.360***
	[0.066]	[0.066]	[0.050]
Lev	-0.637***	-0.638***	-0.660***
	[0.042]	[0.042]	[0.047]
NF	0.136***	0.136***	0.251***
	[0.020]	[0.020]	[0.043]
$LaggedCash * dCash$	-0.159**	-0.161**	-0.190***
	[0.061]	[0.061]	[0.046]
$Lev * dCash$	-0.683***	-0.709***	-0.654***
	[0.078]	[0.076]	[0.146]
$dCash$	**0.910*****	**0.942*****	**0.932*****
	[0.128]	**[0.129]**	**[0.101]**
$dCash * IFRS$		**-0.207****	**-0.283*****
		[0.096]	**[0.101]**
$IFRS$		0.057	0.03
		[0.052]	[0.060]
Year FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes	Yes
N	98,896	98,896	22,870
R^2	0.311	0.311	0.319

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Table 3 (*continues*)
Panel B: Mean differences between the matched treated and control groups

	Treated (obs.=11,435)	Control (obs.=11,435)	Differences	t-stats
Propensity scores	0.146	0.146	0.000	-0.05
dE	0.016	0.018	-0.002	-0.52
dNA	0.153	0.148	0.004	0.53
dR&D	0.000	0.000	0.000	1.08
dInt	0.003	0.003	0.000	-0.85
dDiv	0.005	0.005	0.000	0.18
LaggedCash	0.182	0.182	0.000	-0.11
Lev	0.223	0.223	0.000	0.00
NF	0.072	0.075	-0.003	-0.81
*LaggedCash * dCash*	0.006	0.007	0.000	-0.13
*Lev * dCash*	0.007	0.008	-0.001	-0.55
dCash	0.027	0.026	0.001	0.26

Table 4: Pre-treatment trends

This table reports the estimation results of Equation (1). The dependent variable is the excess stock return of the firm, $(r - R^B)$. In column (1) the full sample is used, while in column (2) treated and control groups are matched on propensity scores based on all the firm-level controls in equation (1). *b2n1* is a dummy variable that takes 1 if year is 1 or 2-years *before* the IFRS adoption year. *a2n1* is also a dummy variable that takes 1 if year is 1 or 2 years *after* the IFRS adoption year. We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Full sample	Matched-Sample
	(1)	(3)
dE	0.009	-0.034
	[0.038]	[0.042]
dNA	0.160***	0.196***
	[0.017]	[0.015]
$dR\&D$	3.984***	3.678***
	[1.332]	[0.763]
$dInt$	-0.803***	-0.135
	[0.149]	[0.357]
$dDiv$	3.114***	2.945***
	[0.418]	[0.408]
$LaggedCash$	0.389***	0.362***
	[0.066]	[0.050]
Lev	-0.635***	-0.662***
	[0.042]	[0.047]
NF	0.136***	0.257***
	[0.020]	[0.042]
$LaggedCash * dCash$	-0.159**	-0.187***
	[0.060]	[0.046]
$Lev * dCash$	-0.716***	-0.633***
	[0.073]	[0.152]
$dCash$	**0.952***	**0.941***
	[0.123]	**[0.079]**
$dCash * b2n1$	**-0.12**	**-0.352**
	[0.101]	**[0.260]**
$dCash * a2n1$	**-0.359***	**-0.447***
	[0.083]	**[0.078]**
Year FE	Yes	Yes
Country FE	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes
N	98,896	22.870
R^2	0.313	0.321

Table 5: Falsification test

This table reports the estimation results of Equation (1). The dependent variable is the excess stock return of the firm, $(r - R^B)$. *NonIFRS* is a dummy variable that takes 1 if year is 2005 or later for the countries with no mandatory IFRS adoption, otherwise 0. We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
dE	0.008	0.008
	[0.038]	[0.038]
dNA	0.160***	0.161***
	[0.017]	[0.017]
$dR\&D$	3.984***	3.966***
	[1.346]	[1.340]
$dInt$	-0.808***	-0.803***
	[0.147]	[0.146]
$dDiv$	3.117***	3.122***
	[0.417]	[0.414]
$LaggedCash$	0.388***	0.388***
	[0.066]	[0.066]
Lev	-0.639***	-0.638***
	[0.042]	[0.042]
NF	0.136***	0.136***
	[0.020]	[0.020]
$LaggedCash * dCash$	-0.159**	-0.163**
	[0.062]	[0.062]
$Lev * dCash$	-0.682***	-0.712***
	[0.078]	[0.077]
dCash	**0.909***	**0.949***
	[0.132]	**[0.134]**
$IFRS$	-0.074	-0.069
	[0.101]	[0.101]
$NonIFRS$	-0.135	-0.135
	[0.107]	[0.107]
dCash * nonIFRS	**-0.004**	**-0.068**
	[0.098]	**[0.096]**
dCash * IFRS		**-0.212***
		[0.099]
Year FE	Yes	Yes
Country FE	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes
N	98,896	98,896
R^2	0.311	0.312

Table 6: Financial constraints and the value of cash holdings under IFRS

This table reports the estimation results of Equation (1). The dependent variable is the excess stock return of the firm, $(r - R^B)$. Firms are classified into financially constrained (unconstrained) groups annually if they are in the top (bottom) 30% of HP and WW indices in columns (1) to (4), and bottom (top) 30% of firm size in columns (5) and (6). We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	HP Index		WW Index		Firm Size	
	Constrained	Unconstrained	Constrained	Unconstrained	Small	Large
	(1)	(2)	(3)	(4)	(5)	(6)
dE	0.064	-0.032	-0.029	0.029	-0.058***	0.035
	[0.042]	[0.044]	[0.021]	[0.078]	[0.020]	[0.078]
dNA	0.152***	0.163***	0.174***	0.148***	0.195***	0.130***
	[0.018]	[0.022]	[0.025]	[0.021]	[0.019]	[0.020]
$dR\&D$	3.405**	4.735***	5.422***	0.81	5.402***	0.747
	[1.357]	[1.408]	[0.664]	[0.892]	[0.556]	[0.843]
$dInt$	-1.129***	-0.580***	-0.540***	-0.960***	-0.604***	-0.870***
	[0.224]	[0.161]	[0.102]	[0.311]	[0.142]	[0.299]
$dDiv$	3.085***	3.047***	2.198***	4.019***	2.207***	4.149***
	[0.473]	[0.432]	[0.320]	[0.434]	[0.331]	[0.448]
$LaggedCash$	0.374***	0.420***	0.536***	0.280***	0.561***	0.278***
	[0.071]	[0.065]	[0.067]	[0.035]	[0.068]	[0.038]
Lev	-0.718***	-0.588***	-0.635***	-0.613***	-0.618***	-0.597***
	[0.059]	[0.040]	[0.024]	[0.086]	[0.025]	[0.087]
NF	0.137***	0.149***	0.161***	0.106**	0.184***	0.106**
	[0.021]	[0.025]	[0.028]	[0.041]	[0.032]	[0.042]
$LaggedCash * dCash$	-0.174***	-0.142**	-0.230***	-0.122***	-0.213**	-0.106***
	[0.059]	[0.067]	[0.085]	[0.035]	[0.084]	[0.031]
$Lev * dCash$	-0.772***	-0.665***	-0.760***	-0.611***	-0.780***	-0.615***
	[0.080]	[0.157]	[0.076]	[0.126]	[0.089]	[0.136]
$dCash$	**1.030***	**0.852***	**1.067***	**0.821***	**1.065***	**0.815***
	[0.099]	**[0.165]**	**[0.160]**	**[0.116]**	**[0.172]**	**[0.117]**
$dCash * IFRS$	**-0.206**	**-0.129**	**-0.257**	**-0.260**	**-0.251**	**-0.195**
	[0.100]	**[0.231]**	**[0.111]**	**[0.212]**	**[0.123]**	**[0.217]**
$IFRS$	0.094*	0.033	0.08	0.092	0.061	0.077
	[0.047]	[0.063]	[0.059]	[0.060]	[0.066]	[0.064]
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes	Yes	Yes	Yes	Yes
N	37,691	34,675	46,975	40,914	38,224	37,235
R^2	0.334	0.293	0.313	0.339	0.316	0.333

Table 7: Legal enforcement and the value of cash holdings under IFRS

This table reports the estimation results of Equation (1). The dependent variable is the excess stock return of the firm, $(r - R^B)$. Countries are classified into strong legal enforcement group if the legal enforcement values are above the median, and weak legal enforcement group if below the median. We control for country, industry, and year fixed effects in the regressions. Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Strong legal enforcement	Weak legal enforcement
	(1)	(2)
dE	-0.016	0.017
	[0.018]	[0.072]
dNA	0.194***	0.132***
	[0.010]	[0.023]
$dR\&D$	5.491***	2.355***
	[0.451]	[0.387]
$dInt$	-0.667***	-0.676***
	[0.095]	[0.190]
$dDiv$	2.015***	3.772***
	[0.347]	[0.350]
$LaggedCash$	0.510***	0.335***
	[0.071]	[0.035]
Lev	-0.653***	-0.669***
	[0.015]	[0.067]
NF	0.130***	0.140***
	[0.017]	[0.035]
$LaggedCash * dCash$	-0.277***	-0.085*
	[0.064]	[0.044]
$Lev * dCash$	-0.679***	-0.572***
	[0.078]	[0.126]
$dCash$	**1.112*****	**0.704*****
	[0.125]	**[0.114]**
$dCash * IFRS$	**-0.314*****	**0.051**
	[0.091]	**[0.138]**
$IFRS$	0.052	0.072
	[0.060]	[0.086]
Year FE	Yes	Yes
Country FE	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes
N	54,018	31,766
R^2	0.304	0.402

Table 8: Transparency and mandatory IFRS adoption

This table reports the estimation results of Equation (1) for the transparent versus non-transparent firms. The dependent variable is the excess stock return of the firm, $(r - R^B)$. In the first column, the dummy variable '*Voluntary*' takes 1 starting from the mandatory IFRS adoption year for the firms that already adopted IFRS voluntarily. The dummy variable '*NonVoluntary*' takes 1 following the mandatory IFRS adoption if firms were not '*Voluntary*'. In column (2), the dummy variable '*LowGAAP*' ('*HighGAAP*') takes 1 starting from the mandatory IFRS adoption year for the firms in the treatment group with low (high) discrepancies (below (above) the median) between the local GAAP and IFRS. We control for country, industry, and year fixed effects. Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)
$dCash$	0.940***	0.918***
	[0.130]	[0.134]
$dCash * Voluntary$	-0.329	
	[0.656]	
$dCash * NonVoluntary$	-0.196**	
	[0.097]	
$dCash * LowGAAP$		-0.091
		[0.308]
$dCash * HighGAAP$		-0.216**
		[0.104]
$Voluntary$	0.081	
	[0.055]	
$NonVoluntary$	0.056	
	[0.053]	
$LowGAAP$		0.016
		[0.055]
$HighGAAP$		0.138***
		[0.043]
Other Controls	Yes	Yes
Year FE	Yes	Yes
Country FE	Yes	Yes
Industry FE (2-digit SIC)	Yes	Yes
N	98,896	98,896
R^2	0.311	0.312

Table 9: IFRS and the value of cash holdings for non-US subsample and Fama-Macbeth

This table reports the estimation results of Equation (1) after excluding US subsample in column (1), and for Fama-Macbeth method using the full sample in column (2). The dependent variable is the excess stock return of the firm, $(r - R^B)$. We control for country, industry, and year fixed effects in column (1). Robust standard errors in parentheses are clustered at the country level. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Non-US sample	Fama-Macbeth
	(1)	(2)
dE	0.005	0.013
	[0.054]	[0.028]
dNA	0.148***	0.173***
	[0.019]	[0.014]
$dR\&D$	1.661*	3.471***
	[0.983]	[0.389]
$dInt$	-0.756***	-0.546
	[0.183]	[0.339]
$dDiv$	3.488***	3.267***
	[0.321]	[0.322]
$LaggedCash$	0.292***	0.318***
	[0.029]	[0.031]
Lev	-0.625***	-0.593***
	[0.056]	[0.076]
NF	0.135***	0.134***
	[0.031]	[0.032]
$LaggedCash * dCash$	-0.162***	-0.271***
	[0.044]	[0.044]
$Lev * dCash$	-0.723***	-0.819***
	[0.122]	[0.102]
$dCash$	**0.776***	**0.926***
	[0.071]	**[0.101]**
$dCash * IFRS$	**-0.245**	**-0.229**
	[0.119]	**[0.093]**
$IFRS$	0.064	-0.037
	[0.058]	[0.043]
Year FE	Yes	-
Country FE	Yes	-
Industry FE (2-digit SIC)	Yes	-
N	69,271	98,896
R^2	0.34	0.162

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