Uniform Accounting Regimes and Managerial Learning from Stock Prices

Abstract

We investigate whether the introduction of IFRS and associated enforcement changes influence managerial learning from stock prices (proxied by revelatory price efficiency (RPE)), particularly for high-growth firms. The introduction of IFRS creates a more uniform accounting regime across different countries. Uniform accounting regimes reduce the ability of managers of high-growth firms to provide more precise information to investors. This in turn lowers the ability of informed investors to incorporate private information about growth opportunities into the stock price. As a result, managers of high-growth firms learn less from stock prices after the introduction of IFRS. Furthermore, we expect that a strong enforcement enhances this effect, as it improves compliance with IFRS, resulting in even lower precision of financial information for high-growth firms. Our findings are consistent with these predictions.

I INTRODUCTION

The majority of the literature investigating the effects of accounting regulation changes studies the effects such changes have on the information flow from managers to capital markets. These effects include changes in stock liquidity and firms' cost of capital (Barth, Landsman, Lang, & Williams, 2018; Christensen, Hail, & Leuz, 2013; Daske, Hail, Leuz, & Verdi, 2008; Li, 2010). Only few studies examine the effects on the information flow from capital markets to firms (Chen, Goldstein, & Jiang, 2007; Foucault & Fresard, 2014; Goldstein, Yang, & Zuo, 2020; Loureiro & Taboada, 2015). In this paper, we investigate how a change to a more uniform (tighter) accounting regime affects the information flow from investors to managers and thereby managerial learning from stock prices. Specifically, we study cross-sectional differences in the impact of a more uniform (tighter) accounting regime on managerial learning from stock prices.

Accounting regimes limit managers' discretion when it comes to the preparation of annual financial reports. Chen, Lewis, Schipper, and Zhang (2017) distinguish between a "uniform" and a "discretionary" accounting regime. Under a discretionary regime, managers can decide how and with what level of precision to account for items on the firm's balance sheet and income statement. Allowing more discretion comes with the advantage that managers can provide information to investors that is more closely related to the underlying economic value of the firm and in addition managers can signal their private information (Ewert & Wagenhofer, 2005, 2019; Sankar & Subramanyam, 2001). The disadvantage however is that more precise information crowds out less sophisticated investors and decreases comparability across firms. This in turn, increases information asymmetry between investors and leads to lower liquidity of the underlying stock (Chen et al., 2017; Hans B. Christensen, Luzi Hail, & Christian Leuz, 2013; Gao & Liang, 2013). Under a uniform regime, managers cannot choose the level of precision of the information and it is more difficult for them to signal their private information through earnings (Chen et al., 2017; Ewert & Wagenhofer,

2005, 2019). A uniform accounting regime enables investors to better compare accounting numbers across firms and increase coordination among investors. This in turn decreases information asymmetry and increases stock liquidity. Hence, standard setters face a trade-off between limiting managers' discretion and thereby increasing coordination among investors, and allowing managers to provide more firm specific information and signal their private information to investors. This trade-off is important not only for potential capital market effects (i.e., stock liquidity, cost of capital) but also for managerial learning from stock prices.

Managers can learn from new information embedded into stock prices. The assumption is, that investors provide incremental information to managers and signal this information through stock prices (Bond, Edmans, & Goldstein, 2012; Hayek, 1945). New Information embedded in market prices allows managers to learn from stock prices and use this information in their decision-making (Bond et al., 2012; Chen et al., 2007). The financial disclosures managers provide to the market affect the type of information investors incorporate into stock prices (Gao & Liang, 2013).

If managers disclose information that they know more about than investors, investors spend their resources to gather information about areas managers know less about than investors. If managers do not disclose information about areas they know more about than investors, investors can gain a competitive advantage over other investors by gathering more detailed information about these areas. This information is not new to managers and hence they cannot learn from stock prices. If managers disclose more information about areas they do not know more about than investors, investors base their assessment of the information on the disclosed information by managers. Hence, managers cannot learn from information incorporated in stock prices. As managers are bound by the accounting regime, a change in the accounting regulation affects managerial learning from stock prices by changing the precision of the information that is provided to investors by managers and hence the type of information incorporated by investors into stock prices.

Based on Chen et al. (2017) and Ewert and Wagenhofer (2019), we predict that the introduction of a uniform accounting regime involves different trade-offs for high-growth versus low-growth firms. Learning from stock prices is particularly important for high-growth firms because their value depends more on future growth opportunities than on assets-in-place. Under a discretionary accounting regime, high-growth firms may have incentives to choose reporting methods that produce disclosures that may be interpreted and understood by only a subset of investors (Chen et al. 2017). In turn, these investors gather and incorporate new information about firms' growth opportunities into stock prices improving managers' ability to learn from stock prices. However, this comes at the cost of higher information asymmetry among investors. While the introduction of a uniform regime can reduce information asymmetry, it would also mitigate managers' ability to signal future earnings (e.g., through income smoothing) and market participants' incorporation of new information about future growth opportunities in stock prices. As assets-in-place play a minor role for the value of a high-growth firm, they would be worse off under an uniform accounting regime due to reduced managerial learning from stock prices.

In contrast the value of low-growth firms depends mostly of their assets-in-place. Under a discretionary regime, low-growth firms would opt for less precise information because decreasing information asymmetry and thereby increasing stock liquidity is more important for low-growth firms than learning from stock prices. More public information about areas managers of low-growth firms know more about than investors, in turn, allows investors in low-growth firms to spend more resources on gathering information about areas investors know more about than managers. In line with these arguments, Loureiro and Taboada (2015) find that the introduction of IFRS (i.e., a change to a more uniform accounting regime) increases managerial learning from stock prices. Our theory however predicts that the effect of a more uniform accounting regime is not uniformly distributed but varies with the type of firm (low-growth versus high-growth firms).

In addition, we investigate the effect of the enforcement regime on managerial learning from stock prices after the change of the accounting regime. Following the argument from Ewert and Wagenhofer (2019), accounting numbers of high-growth firms are more likely to be understated. Strengthening the enforcement regime limits managers of high-growth firms to correct for the understatement and limits their ability to signal their private information (Ewert & Wagenhofer, 2019). Low-growth firms on the other hand have incentives to opportunistically manage their earnings. In this case, strengthening the enforcement regime increases the informational of earnings for investors (Ewert & Wagenhofer, 2019). Furthermore, we expect that informed investors will put more weight on the disclosed information if the information is more credible. This credibility is higher when enforcement is strong. Therefore, we expect that stronger enforcement regimes amplify the effects of a change towards a more uniform accounting regime for both low- and high-growth firms.

Similar to Loureiro and Taboada (2015), we use the introduction of IFRS in the EU in 2005 as an exogenous shock and change towards a more uniform accounting regime. Previous literature provides evidence that the introduction of IFRS increased comparability and reduced earnings management on average (Barth et al., 2018; Hans B. Christensen et al., 2013; Daske et al., 2008). This evidence suggests that IFRS is a more uniform accounting regime than the respective domestic accounting regimes of the different member states in the EU.

To test these predictions, we use a sample of European firms from 2000 to 2018. All countries in our sample adopted IFRS in 2005. In line with previous literature, we use the investment-to-q sensitivity as a proxy for managerial learning from stock prices. With regards to the level of enforcement, we use the "World Governance Indicators" (WGI) from the World Bank. Based on the median enforcement level in our sample we assign countries to the low (below median) and high (above median) enforcement group. We further exploit the delayed IFRS-related enforcement change in Austria as a cleaner setting to test the

effect of enforcement of managerial learning from stock prices (holding accounting standards constant).

Consistent with our predictions, high-growth (low-growth) firms indeed learn less (more) from stock prices after the introduction of IFRS. These results are robust to the alternative explanation that managers substitute learning from their own stock price with learning from peer stock prices and various model specifications. In terms of enforcement, our results show that the enforcement regime alone has no effect on the investment-to-q sensitivity, but in combination with IFRS strong enforcement reduces investment-to-q sensitivity. This reduction offsets the positive effect of IFRS adoption on investment-to-q- sensitivity for low-growth firms. Moreover, the results from the Austrian enforcement change confirm that the negative effect of stricter enforcement is stronger for high-growth firms.

We extend the managerial learning literature by providing evidence that changes in accounting regulation do not affect firms uniformly and hence that care should be taken when introducing a "one size fits all" approach. Furthermore, our results suggest that enforcement plays an important role for the effectiveness of regulation changes. More specifically, strict enforcement regimes can have adverse effects on the managerial learning of firms. Our results contradict the notion that stricter enforcement only has positive effects and broaden the debate towards a more nuanced discussion.

The structure of this paper is as follows. Section 2 describes the underlying theory and formulates the hypotheses. Section 3 details our empirical strategy. Section 4 describes the sample and Section 5 presents the main results. Section 6 concludes.

II LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Managers are bound by the accounting regulation they have to use to prepare their annual reports. Hence, managers do not have full discretion about the level of precision of the accounting information they disclose. Chen et al. (2017) distinguishes between a "uniform" and "discretionary" accounting regime and Ewert and Wagenhofer (2005) distinguish between tight and less tight accounting regimes . Under a discretionary (less tight) regime, managers have full discretion over the information they disclose and can condition the reporting methods on the level of precision that they deem fit (Chen et al., 2017). The advantage of allowing for more discretion is that accounting numbers represent the underlying economic value of the firm more closely and managers can signal their private information to investors through earnings (Ewert & Wagenhofer, 2005, 2019; Sankar & Subramanyam, 2001). Taking goodwill as an example, under a discretionary regime, managers could decide to capitalize, expense, or not to account for goodwill at all, depending on the firm-specific context (Chen et al., 2017) and the private information managers want to disclose to the market. The disadvantage of allowing for more discretion is that only a sub-set of investors is able to process the disclosed information and information across firms is less comparable. This increase in information asymmetry between investors can lead to lower coordination among them and as a result lowers liquidity (Chen et al., 2017).

Under a uniform (tighter) accounting regime, however, managers' discretion is limited. The advantage of limiting managers' discretion is that more investors can process the information, leading to more coordination among investors and lower information asymmetry. In addition, information across firms is more comparable. As a result, the liquidity of the firm's stock increases and firms can attract a larger investor base. The disadvantage of limiting managers' discretion is that the disclosed accounting numbers are not necessarily representing

the underlying economic value of the firm and managers cannot signal their private information through earnings to correct for erroneous accounting numbers (Ewert & Wagenhofer, 2005, 2019). In summary, standard setters face a trade-off between allowing managers to signal their private information to investors through earnings and to provide more precise firm-specific information, and enabling more investors to process the information and making firms' accounting numbers more comparable. This trade-off is present particularly in the context of managerial learning from stock prices.

In general, managers can learn from stock prices because investors trade stocks based on information they gathered. The assumption behind managerial learning is that managers do not have perfect information and that investors in aggregate provide incremental information through stock prices. Figure 1 shows how the learning process works in general. First, investors incorporate information in stock prices. Then, stock prices are realized, and managers can observe them. Second, managers incorporate the stock price in their decision-making process for investments. Third, the cash-flows from these investments are realized and managers disclose this information to investors. Investors incorporate this information and other (private) information in stock prices and the process repeats (Foucault & Fresard, 2014). The managerial learning theory distinguishes between two types of information that stock prices incorporate: Information about assets-in-place and future growth opportunities of the firm (Bond et al., 2012). Importantly, managers can only learn from stock prices if the prices contain information that is new to managers.

The part of information in stock prices that is new to managers is referred to as revelatory price efficiency (RPE) (Chen et al., 2007; Foucault & Fresard, 2014; Goldstein et al., 2020; Jayaraman & Wu, 2019). Investors gather new information to gain a competitive advantage when trading the underlying stock. The information managers disclose can influence the resources investors spend on gathering information that is new to managers. Gao and Liang (2013) show that less firm disclosure increases the "speculators gross profit" because the

speculator can profit from private information acquisition. However, the authors do not distinguish between disclosure about areas managers know more than investors and areas managers want to learn more about from investors. The more precise the disclosure about information that is already known to the manager is, the more resources investors will spend gathering private information that is also new to the manager. In addition, managers can use earnings numbers to signal their private information to investors (Ewert & Wagenhofer, 2005, 2019; Sankar & Subramanyam, 2001).

In contrast, firms should not disclose information that is less precise than the private information investors have, because investors tend to overreact to public information. This could lead to speculators putting more weight on the information disclosed than on their own private information (Morris & Shin, 2002). As a result, stock prices will reflect less information managers want to learn about. In addition, firm disclosure reduces speculators' uncertainty and encourages them to trade more "aggressively" on their own private information (Bond & Goldstein (2011)). Following this reasoning, to increase revelatory price efficiency of stock prices, managers should provide precise information about areas they have more (private) information about and refrain from disclosing information about areas they want to learn more about from speculators.

Implementing a discretionary regime, standard setters allow firms to decide on the trade-off between providing more precise firm specific information and increasing information asymmetry between investors, and providing less precise firm specific information and limiting managerial learning from stock prices. Implementing a uniform accounting regime, standard setters decide for the firms on the level of precision and limit managers discretion. Tightening the accounting regime lowers managers' ability to signal their private information through earnings (Ewert & Wagenhofer, 2005) and managers' discretion on how to account for assets (e.g., previous goodwill example). As a result, investors spend resources to acquire information that is more likely to overlap with managers' private information and incorporate it in

stock prices. Thus, stock prices contain less information managers want to learn about. Consequently, limiting managers ability to account for assets based on the firm specific context and their ability to signal private information through earnings, increases the information in stock prices managers do not want to learn about and results in less managerial learning from stock prices.

Limiting managers' discretion puts especially high-growth firms at a disadvantage. The value of high-growth firms depends more on future growth opportunities than the firm's assets-in-place. As accounting regimes are generally backward looking, and the value of high-growth firms depends more on future growth opportunities than their assets-in-place, managers of high-growth firms have an incentive to manage earnings to correct for an erroneous understatement (Ewert & Wagenhofer, 2019). Ewert and Wagenhofer (2019) show that "firms that are more likely to generate high output [high-growth firms] make erroneous understatements of accounting signals more frequently [...]". In addition, under a discretionary accounting regime, managers of high-growth firms can not only correct the understatement but also signal their private information to investors (Ewert & Wagenhofer, 2019; Sankar & Subramanyam, 2001). As a result, stock prices convey new information to managers which they can incorporate into their decision-making. The benefits of learning from stock prices for high-growth firms outweigh the costs of higher discretion, i.e., increased information asymmetry among investors. As a uniform accounting regime reduces the ability of high-growth firms to provide precise information and signal managers' private information to their investors, investors incorporate less private information that is new to managers into stock prices. This in turn provides fewer opportunities for managers to learn from stock prices (Goldstein & Yang, 2019).

In contrast, the value of low-growth firms depends more on the firms' assets-in-place than on future growth opportunities. Consequently, under a discretionary accounting regime, low-growth firms would choose to provide less precise information to increase coordination among

investors, resulting in lower information asymmetry. The decrease in information asymmetry increases stock liquidity and attracts a broader investor base. However, lower precision leads to less learning from stock prices for low-growth firms. As a change to a uniform accounting regime increases the precision of information for low-growth firms, investors incorporate more information about growth opportunities into stock prices. Hence, under a uniform accounting regime, low-growth firms can learn more from stock prices, because they provide more precise information about assets-in-place compared to a discretionary regime.

Our theory predicts that the effect of tightening the accounting regime (moving towards a more uniform regime) on RPE is not uniformly distributed but varies with the type of firm (low-growth versus high-growth firms). More specifically, we propose the following hypothesis:

H1: Moving to a uniform accounting regime, RPE increases (decreases) for low-growth (high-growth) firms.

Previous studies investigating the capital market effects of changes in regulation show that the effects are highly dependent on the institutional setting (Hans B. Christensen et al., 2013; Daske et al., 2008; Edmans, Jayaraman, & Schneemeier, 2017; Li, 2010). With regards to RPE, Edmans et al. (2017) show that changes in insider trading laws increase investment-to-q-sensitivity, and hence RPE. In the case of IFRS, Daske et al. (2008) and Hans B. Christensen et al. (2013) for example provide evidence that the positive effects of IFRS are not driven by the implementation of IFRS itself, but rather by concurrent and subsequent changes in the enforcement regime or legal system. In contrast, recent studies provide evidence that stronger enforcement can have adverse capital market effects and that these effects differ in the cross-section (Christensen, Liu, & Maffett, 2020; Annita Florou, Morricone, & Pope, 2020).

Therefore, the effect of moving towards a more uniform accounting regime on RPE could be conditional on enforcement. Under a strong enforcement regime, managerial discretion is restricted even more, since managers must comply with the rules laid out under the accounting regime. Ewert and Wagenhofer (2019) show that stronger enforcement leads to lower financial reporting quality if managers manipulate earnings to correct for a less precise accounting system. For high-growth firms, stronger enforcement makes it more difficult for managers to provide private information to their investors through earnings and correct for the understatement of earnings. Windisch (2021) show that the informativeness of accruals decreased after the introduction of a stronger enforcement regime. In addition, informed investors will put more weight on the disclosed information if the information is more credible, even though the information is erroneous. This credibility is higher when enforcement is strong. For low-growth firms, an increase in enforcement lowers managers ability to manage earnings opportunistically (Ewert & Wagenhofer, 2019). This increases the informativeness of earnings and thus investors can spend resources on gathering information managers want to learn about. This could lead to an additional decrease in RPE. Therefore, we propose the following second hypothesis:

H2: The level of enforcement will amplify the positive (negative) effect of IFRS on RPE for low-growth (high-growth) firms.

III RESEARCH DESIGN

An important change towards a more uniform accounting regime was the implementation of IFRS in the EU in 2005. On average, the change from national accounting standards to IFRS allows less discretion in presenting accounting information (Barth, Landsman, & Lang,

2008; Horton, Serafeim, & Serafeim, 2013). Barth et al. (2008) for instance, finds that under IFRS firms engage less in earnings management. Moreover, Barth et al. (2018) finds that comparability increases after the adoption of IFRS. In line with our theory, increased comparability is consistent with a change from a discretionary to a more uniform accounting regime. This increase in comparability goes hand in hand with a decrease in information asymmetry. Many prior IFRS studies provide evidence that information asymmetry decreased after the adoption of IFRS (H. B. Christensen et al., 2013; Daske et al., 2008; A. Florou & Kosi, 2015).

We use the introduction of IFRS as an exogenous shock that changed the accounting regime to a more uniform one. We build on prior managerial learning literature to analyze the effect of IFRS on RPE (Baker, Stein, & Wurgler, 2003; Chen et al., 2007; Foucault & Fresard, 2014; Goldstein et al., 2020; Jayaraman & Wu, 2019) and use the following model:

$$\begin{aligned} CAPXRND_{i,t} = {} & \beta_1 * Q_{i,t-1} + \beta_2 * IFRS_t + \beta_3 * HighGrowth_{i,t} + \beta_4 * Q_{i,t-1} * IFRS_t \\ & + \beta_5 * Q_{i,t-1} * HighGrowth_{i,t} + \beta_6 * IFRS_t * HighGrowth_{i,t} + \beta_7 \\ & * Q_{i,t-1} * IFRS_t * HighGrowth_{i,t} + Controls + FixedEffects \end{aligned} \tag{1}$$

CAPXRND in year t by firm i is the dependent variable. We measure CAPXRND as capital expenditures plus R&D scaled by beginning-of-the-year total assets. We regress Inv on lagged Tobin's Q (Q_{t-1}), an indicator variable IFRS, and an interaction term between these two variables. Further, we include the indicator variable HighGrowth and interact this variable with IFRS and Q_{t-1}. Tobin's Q is calculated as the market value of assets (book value of liabilities plus market value of equity) divided by book value of total assets. IFRS is an indicator variable that is equal to one from 2005 onwards, and zero otherwise, as all countries in our sample adopted IFRS in 2005. HighGrowth is an indicator variable that is equal to one if a firm is categorized as high-growth, and zero otherwise. We classify a firm as a high-growth firm when its revenue growth is above the median revenue growth in a given year and country.

According to Tobin (1969), Q should be a leading indicator for a firm's investment. In the managerial learning literature, the positive association between lagged Q and current investment indicates that managers learn from the stock price. Consequently, we expect β_1 to be positive. The relevant coefficients to test H1 are β_4 and β_7. If the introduction of IFRS leads to more (less) private information about growth opportunities being incorporated into stock prices of low (high) growth firms, β_4 (β_7) should be positive (negative) and significant. For the direction of β_2 and β_6, the association between IFRS and investment and the interaction with HighGrowth, we have no clear expectation ex ante. Based on our theory, high-growth firms invest more relative to their total assets and learn more from stock prices than low-growth firms, hence we expect β_3 and β_5 to be positive and significant.

To investigate the effect of enforcement changes in IFRS countries on managerial learning (H2), we specify the following model:

$$\begin{aligned} CAPXRND_{i,t} = {} & \gamma_1 * Q_{i,t-1} + \gamma_2 * Enforcement_{c,t} + \gamma_3 * IFRS_t + \gamma_4 * Q_{i,t-1} \\ & * Enforcement_{c,t} + \gamma_5 * Q_{i,t-1} * IFRS_t + \gamma_6 * Q_{i,t-1} \\ & * Enforcement_{c,t} * IFRS_t + Controls + FixedEffects \end{aligned} \tag{2}$$

We define the variable Enforcement in two ways: (1) the level of and (2) the change in enforcement. We use the level of enforcement based on the assumption that countries with a high level of enforcement are more likely to implement enforcement changes after the implementation of IFRS. Measuring the level of enforcement is challenging. Prior literature uses the Worldwide Governance Indicators (WGI) to proxy for the level of enforcement (Christensen et al., 2013; Daske et al., 2008). These WGI are published by the World Bank and reflect responses from public, private, and NGO sector experts. The indices are reported on a scale between minus 2.5 and plus 2.5. As WGI are qualitative measures, they exhibit considerable measurement error (Kaufmann, Kraay, & Mastruzzi, 2011). To address this, we use the median enforcement score to classify countries into high and low enforcement countries, in line with prior literature (Christensen et al., 2013; Daske et al.,

2008). Consequently, Enforcement is an indicator variable equal to one for high enforcement countries and zero otherwise.

Measuring the change of enforcement based on WGI is difficult as year-over-year changes in the enforcement score are relatively small (Kaufmann et al., 2011). Given that our sample consists of European countries, the enforcement level is already relatively high. Consequently, small changes in the enforcement score are less significant compared to countries with lower enforcement levels.

To circumvent these issues, we compare the enforcement change in Germany with the enforcement change in Austria. Both countries are similar in their domestic GAAP and their level of enforcement. However, Germany changed its enforcement in 2005 and Austria in 2013. In addition, the Austrian change of enforcement is modeled based on the German one. The similarity of the two changes allows us to better isolate the effect of the enforcement change, because the treatment is homogenous. To analyze the effect of a change in enforcement we use the following model:

$$\begin{aligned} CAPXRND_{i,t} = {} & \eta_1 * Q_{i,t-1} + \eta_2 * POST + \eta_3 * TREATED + \eta_4 * POST \\ & * TREATED + \eta_5 * Q_{i,t-1} * TREATED + \eta_6 * Q_{i,t-1} * POST \\ & + \eta_7 * Q_{i,t-1} * POST * TREATED + Controls + FixedEffects \end{aligned} \tag{3}$$

In model 3, the variable POST is an indicator variable that is set to one for fiscal years from 2013 onwards, and zero otherwise. The variable TREATED is set to one for Austrian and zero for German firms.

To investigate H2, we create two sub-samples, one consisting of high-growth and one of low-growth firms. In addition, for model 3, we start the sample period after the introduction of IFRS in 2005. Thereby, we compare the effect of the enforcement change after both countries already implemented IFRS.

For Model 2, the relevant coefficients to test H2 is γ_6 . If enforcement changes subsequent to the introduction of IFRS amplify the positive (negative) effects of IFRS on low-growth

(high-growth) firms, γ_6 should be positive (negative) and significant for the low (high) growth sample. For the full sample, we expect γ_6 to be positive and significant as this would indicate a positive average effect of enforcement in combination with IFRS adoption. For Model 3, the relevant coefficient to test H2 is η_7. As for γ_6 in Model 2, we expect η_7 to be positive (negative) and significant for the low (high) growth sample and to be positive for the full sample.

In all three models we include cash flow from operations scaled by total assets and the natural logarithm of total assets as control variables. In addition, we include country, industry, and firm fixed effects.

IV DATA AND SAMPLE

We retrieve the financial data for our analysis from COMPUSTAT GLOBAL. Our sample consists of firms from 27 European countries and ranges from 2000 to 2018. In line with prior research, we exclude firms with total assets less than 10 million (Loureiro & Taboada, 2015). Moreover, we delete firms with missing data to calculate the variables. This results in a sample of 46,711 firm-year observations. To control for outliers, we winsorize all continuous variables at the one and 99th percentile. We merge the financial data with enforcement data from the World Bank. Table 1 provides an overview of our sample pre- and post-IFRS by country. Germany, the UK, and France make up 48% of our sample.

[Insert Table 1]

Table 2 presents the descriptive statistics for our sample. Panel A presents the descriptive statistics for the full sample, Panel B for the sub-sample of low-growth firms and Panel C for the sub-sample of high-growth firms. For the full sample, the average firm has total assets of 4.9 billion and spends 7.3% of its total assets on CAPX and R&D. The average low-growth

(high-growth) firm has total assets of 6.1 (3.6) billion and spends 6.4 % (8.3%) of its total assets on CAPX and R&D. The full sample's average Tobin's Q is 1.67 and 1.54 (1.79) for the low-growth (high-growth) sample. In addition, the average enforcement score for the sample is 1.4 and roughly 64% of our observation come from high-enforcement countries.

[Insert Table 2]

V RESULTS

Table 3 presents the results for our first hypothesis. We use three different specifications of model 1. In column 1, we include the full sample and interact Q with IFRS and HighGrowth. In columns 2 and 3, we run the regression on low-growth and high-growth sub-samples, hence excluding the three-way interaction term from column 1.

[Insert Table 3]

Consistent with prior studies, investment is positively related to lagged Tobin's Q (Q_{t-1}) (Chen et al., 2007; Foucault & Fresard, 2014; Loureiro & Taboada, 2015). In all three specifications Q_{t-1} is positive and significant (0.0032; p-value<0.01). In addition, the interaction term $Q_{t-1}{*}HighGrowth$ for the full sample (column 1) is positive and significant (0.076; p-value<0.01). This result is in line with our theory, as high-growth firms learn more from stock prices in general.

The relevant coefficients to investigate H1, the effect of IFRS adoption on managerial learning from stock prices, are the coefficients for $Q_{t-1}{*}IFRS$ and $Q_{t-1}{*}\ IFRS{*}\ HighGrowth$. For the full sample, the results indicate that the introduction of IFRS has a positive effect on managerial learning from stock prices for low-growth firms (0.0033; p-value<0.01) and a negative effect for high-growth firms (-0.0063; p-value<0.01). This result is consistent with the

results of the sub-sample regressions. For low-growth firms, the coefficient for $Q_{t-1} * IFRS$ is positive and significant (0.0028; p-value<0.05). For high-growth firms, the coefficient is negative and significant (-0.0027; p-value<0.1).

It is possible that this result is driven by a mechanical change in Q because of the introduction of IFRS. As we include Q_{t-1} as an independent variable in the regressions, the measure might be flawed in the year of adoption, as it is based on data under local GAAP. To address this issue, we run the same regressions as in Table 3 excluding the adoption year from the sample. The findings (untabulated) are similar to the results from Table 3.

The results from Table 3 are not only statistically but also economically significant. Based on the coefficients from column 1 in Table 3, the introduction of IFRS increases the investment-to-q sensitivity of low-growth firms by 0.0033, an increase of around 100% (0.0033/0.0032). In contrast, for high-growth firms, the introduction of IFRS decreases the investment-to-q sensitivity by 0.003 (0.0033-0.0063), a decrease of around 28% ((0.0033-0.0063)/(0.0032+0.0076)).

The results in Table 3 confirm H1. Our analysis suggests that investment-to-q sensitivity increases for low-growth firms. High-growth firms' investment-to-q-sensitivity decreases after the adoption of IFRS. Consequently, the difference between high- and low-growth firms decreases in terms of managerial learning from stock prices. This convergence of RPE for high- and low-growth firms suggests that the introduction of IFRS increases (decreases) the precision of accounting information for low-growth (high-growth) firms. The change in information precision changes the type of information that is impounded in stock prices and as a result, also managers' ability to learn from stock prices changes.

[Insert Table 4]

As the introduction of IFRS is a major exogenous shock it is possible that managers and investors adjust over time. As a consequence, our results could be transitory and the differences between high and low growth firms because of the IFRS adoption could disappear

over time. To address this concern, we re-run the regressions from Table 3 but include indicator variables and the respective interactions for the years after the IFRS adoption. Thereby, we compare the different years in the post period with the pre period. We include separate indicator variables for the years 2006 to 2008 and one indicator variable for the years from 2009 onwards. Table 4 shows the results for the full, the low-growth and the high-growth sample. The results indicate that the change in investment-to-q sensitivity because of the introduction of IFRS is not transitory. For the full sample, the interaction terms between Q_{t-1}, HighGrowth and the different indicator variables for the different years are all negative and significant. Interestingly, the magnitude of the coefficient decreases from 2006 to 2009 but stays negative and significant.

We do not find the same results for the two sub samples. For the low-growth sample, only the interaction term $Q_{t-1} * 2007$ is positive and significant. For the high-growth sample only the interaction terms $Q_{t-1} * 2006$ and $Q_{t-1} * 2009 onwards$ are negative and significant. Nevertheless, for both sub-samples all interaction terms have the expected sign e.g., positive for the low-growth sample and negative for the high-growth sample. Taken together, the results suggest that the effect of IFRS on the investment-to-q sensitivity is not transitory.

To investigate H2, we run model (2) on the full and the two sub-samples. Table 5 presents the results. Compared to Table 3, we do not include HighGrowth as an indicator variable but rather study the average effect of high enforcement and IFRS for the whole sample and the effect on high- and low-growth firms in separate regressions (columns 2 and 3).

For the Full Sample, the coefficient for Q_{t-1} is positive and significant (0.0044; p-value<0.05). Moreover, the coefficient for the coefficient for $Q_{t-1} * IFRS$ is positive and significant (0.005; p-value<0.05) indicating a positive effect of IFRS adoption on average. This is in line with previous literature (Loureiro & Taboada, 2015). In terms of enforcement, the results suggest that the level of enforcement has no significant effect the investment-to-q sensitivity. The coefficient for $Q_{t-1} * HighEnforcement$ is not significant. However, the three-way interac-

tion $Q_{t-1} * HighEnforcement * IFRS$ is negative and significant (-0.0071, p-value<0.01). This suggests that firms in a high enforcement country learn less from stock prices after the adoption of IFRS compared to firms in low enforcement countries. Note that this effect is independent of firm growth.

For the low-growth sample, Q_{t-1} is not significant. This shows that pre-IFRS low-growth firms in low enforcement countries did not learn from stock prices. As in Table 3, the interaction $Q_{t-1} * IFRS$ is positive and significant (0.0112; p-value<0.01). This shows the positive effect of IFRS adoption on the investment-to-q sensitivity for low-growth firms and provides further evidence for H1. As for the Full Sample, the level of enforcement does not affect the investment-to-q sensitivity. However, the coefficient for $Q_{t-1} * HighEnforcement * IFRS$ is negative and significant (-0.0102; p-value<0.05). In contrast to H2, this result indicates that low-growth firms in high enforcement countries learn less from stock prices after they adopt IFRS.

For the high-growth sample, Q_{t-1} is positive and significant (0.0075; p-value<0.01). The coefficient for the interaction $Q_{t-1} * IFRS$ is not significant. In contrast to the other two specifications (Full Sample and Low Growth Sample), the level of enforcement has a positive and significant effect on the investment-to-q sensitivity of high-growth firms (0.0043; p-value<0.1). Nevertheless, the coefficient for $Q_{t-1} * HighEnforcement * IFRS$ is negative and significant (-0.0082; p-value<0.01). This indicates that high-growth firms in high enforcement countries pre IFRS learn more from stock prices compared to high growth firms in low enforcement countries but the combination of IFRS adoption and high enforcement decreases the learning from stock prices. These results provide evidence for H2.

[Insert Table 5]

To summarize, the coefficient of interest to investigate H2, $Q_{t-1} * HighEnforcement * IFRS$, is negative and significant across all three samples. Given that the coefficients for $Q_{t-1}*HighEnforcement*IFRS$ are similar for the two sub-samples, we focus on the

effect for the full sample. In contrast to H2, the results indicate that a high enforcement regime affects both low- and high-growth firms uniformly. This suggests that both low and high growth firms in high enforcement countries learn less from stock prices after they adopted IFRS. In contrast to our theory, a strong enforcement regime does not amplify the effects of IFRS on investment-to-q sensitivity for both high and low growth firms. A strict enforcement regime hampers firms' investment-to-q sensitivity on average. For low-growth firms, the negative effect of a strong enforcement regime offsets the positive average effect of IFRS adoption on the investment-to-q sensitivity. For high-growth firms, a strict enforcement in combination with IFRS has a negative effect on the investment-to-q sensitivity. Therefore, the results from Table 5 partially confirm H2.

The negative effect of enforcement after the adoption of IFRS is statistically and economically significant. Based on the coefficients from column 1 in Table 5, high enforcement of IFRS leads to a decrease in investment-to-q-sensitivity of 0.01, a decrease of approximately 76% compared to low enforcement of IFRS (-0.0071/(0.0044+0.005)). The negative effect of stricter enforcement in combination with IFRS offsets the positive average effect of IFRS on managerial learning.

Next, we exploit the IFRS enforcement change in Austria to isolate the effect of enforcement changes on managerial learning from stock prices. Our control group for the difference-in-difference design is Germany, as the Austrian enforcement change is based on the German one. Table 7 presents the results for the full sample, and the two subsamples. On average there is no significant difference of the investment-to-q sensitivity between Austrian and German firms ($Q_{t-1}*TREATED$ is not significant in column 1). However, the regressions for the two sub-samples show a different result. For low-growth firms (column 2), Austrian firms learn less from stock prices than their German counterparts ($Q_{t-1}*TREATED$; p-value<0.01) before the enforcement change (pre-period). For high-growth firms (column 3), Austrian firms learn more from stock prices than their German

counterparts (Q_{t-1}*TREATED; p-value<0.01) before the enforcement change (pre-period). The coefficient for Q_{t-1}*POST suggests that the investment-to-q sensitivity is higher in the post-period for all three samples (p-value<0.01).

The relevant coefficient to investigate the effect of an enforcement change subsequent to the introduction of IFRS on managerial learning from stock prices is the coefficient for $Q_{t-1}*POST*TREATED$. For the full sample (column 1) the coefficient is negative and significant (-0.02; p-value<0.05). This result is in line with the previous results using the level of enforcement in Table 5. Interestingly, the results for the two sub-samples show a different result. For the low-growth sample, the coefficient on $Q_{t-1}*POST*TREATED$ is close to zero and not significant (0.0006; p-value>0.1). For the high growth-sample, however, the coefficient is negative and significant (-0.03; p-value<0.1). Therefore, the negative coefficient for the whole sample is driven by the negative effect of the enforcement change for high-growth firms. Compared to the results from Table 5, the results from Table 7 show that an enforcement change after the adoption of IFRS leads to less learning from stock prices for high-growth firms and has no effect on low-growth firms.

[Insert Table 7]

As for the previous results, the effect of the enforcement change is not only statistically but also economically significant. Using the coefficient for the full sample, the enforcement change decreases the investment-to-q sensitivity by 0.0205, a decrease of approximately 37% (-0.0205/(0.0175+0.0381)).

Table 5 and Table 7 provide evidence that partially supports H2. For the level of enforcement, the results do not show a difference for high- and low-growth firms but indicate a negative effect of a stronger enforcement regime in general. However, the findings based on the cleaner setting of the Austrian enforcement change provide evidence that supports H2. The overall negative effect is driven by the high-growth firms in the sample and there is no significant effect for low-growth firms. In combination with the findings for H1, the results

suggest that the effect of IFRS on managerial learning from stock prices is not uniformly distributed. Furthermore, high-growth firms that rely more heavily on information in stock prices, have a disadvantage compared to their low-growth competitors. In addition, changes in enforcement are not generally beneficial and can cause adverse effects for certain market participants.

Additional Analyses

An alternative explanation of the decrease of the investment-to-q sensitivity for high-growth firms after the introduction of IFRS could be that managers rely less on their own stock price but learn more from peers' stock prices. The average positive effect of the introduction of IFRS on the investment-to-q sensitivity indicates that the information precision increases for the average firm. Consequently, firms can learn more from their peers' stock prices.

Foucault and Fresard (2014) show empirically that a firm's investment is associated with its peer valuations (i.e., Tobin's Q). Furthermore, the authors provide evidence that the sources of information (firms' and peers' stock prices) act as substitutes for managers. The introduction of IFRS could cause a substitution effect and shift managers' attention away from their own stock price and towards their peers' stock prices. This shift would cause the investment-to-q sensitivity to decrease and at the same time the investment-to-peer-q sensitivity to increase. To test for this substitution effect, we build on the empirical model from Foucault and Fresard (2014) and include interaction terms of IFRS and HIGHGROWTH with PEERQ. We specify the following model:

$$\begin{aligned} CAPXRND_{i,t} = {} & \beta_1 * Q_{i,t-1} + \beta_2 * IFRS_t + \beta_3 * HighGrowth_{i,t} + \beta_4 * PEERQ_{j,t-1} + \beta_5 * Q_{i,t-1} \\ & * IFRS_t + \beta_6 * Q_{i,t-1} * HighGrowth_{i,t} + \beta_7 * Q_{i,t-1} * IFRS_t * HighGrowth_{i,t} \\ & + \beta_8 * PEERQ_{j,t-1} * IFRS_t + \beta_9 * PEERQ_{i,t-1} * HighGrowth_{i,t} + \beta_{10} \\ & * PEERQ_{i,t-1} * IFRS_t * HighGrowth_{i,t} + Controls + FixedEffects \end{aligned} \tag{4}$$

The variable PEERQ is the average Tobin's Q of a firm's industry peers. As the Hoberg and Phillips industry classification is not available for European firms, we use 3-digit SIC

codes to classify industry peers. In addition, we restrict the sample to industries with at least 10 firms. Finally, we add log(PEERTOTALASSETS) and PEERCF as control variables.

[Insert Table 8]

Table 8 presents the results of the regression with (column 1) and without (column 2) the PEERQ variable and the corresponding interactions included. The results in column 2 show that our findings from the main analyses hold after controlling for potential substitution effects. Moreover, the coefficients for $PEERQ_{t-1}$ and the corresponding interactions are not significant. Consequently, we can rule out that the introduction of IFRS creates a substitution effect of learning from information from firm stock prices to learning from peer stock prices.

VI CONCLUSION

In this paper, we examine the cross-sectional differences in the economic consequences of the introduction of IFRS and subsequent enforcement changes on managerial learning from stock prices. Loureiro and Taboada (2015) show that on average IFRS has a positive effect on managerial learning from stock prices. We argue that the information precision affects managerial learning from stock prices and that IFRS influences the information precision of firms differently. According to our theory, IFRS increases (decreases) the information precision for low-growth (high-growth) firms. Furthermore, we investigate the effect of the enforcement regime. Stronger enforcement regimes ensure a higher compliance with IFRS and hence should amplify the effects of IFRS on managerial learning.

We test our hypothesis with a sample of European firms for the time period from 2000 to 2018. We analyze the effect of IFRS and the enforcement regime in two ways. First, we use the whole sample and include variables for firm growth, IFRS adoption and strength of the enforcement regime. Second, we exploit the IFRS related enforcement change in Austria in 2013 and design a difference-in-difference regression with Germany as the control group.

Consistent with our theory, we find that the introduction of IFRS affects firms managerial learning differently. Our results show that the average positive effect is driven by the positive effect on low-growth firms. In contrast, high-growth firms learn less from their stock prices after the introduction of IFRS. We also test for an alternative explanation that managers shift from learning from their own stock prices to learning from their peer's stock prices. The results suggest that IFRS does increase the learning from peer stock prices but the overall effect for high-growth firms is negative.

The analyses about the effect of the enforcement regime partially confirm the second hypothesis. For the whole sample, stricter enforcement regimes have an adverse effect on managerial learning from stock prices. However, this effect is independent of the type of the firm (low-growth versus high-growth). The results from the difference-in-difference design indicate that enforcement changes have an adverse effect on high-growth firms but no effect on low-growth firms.

We extend the managerial learning literature by providing evidence that changes in accounting regulation do not affect firms uniformly. The "one size fits all" approach of policy makers does not always work. Furthermore, our results suggest that enforcement plays an important role for the effectiveness of regulation changes. Strict enforcement regimes can have adverse effects on the managerial learning of certain firms. Our results contradict the notion, that stricter enforcement only has positive effects and broaden the debate towards a more nuanced discussion.

References

Baker, M., Stein, J. C., and Wurgler, J. (2003). When does the market matter? stock prices and the investment of equity-dependent firms. *The Quarterly Journal of Economics*, 118(3):969–1005.

Barth, M. E., Landsman, W. R., and Lang, M. H. (2008). International accounting standards and accounting quality. *Journal of accounting research*, 46(3):467–498.

Barth, M. E., Landsman, W. R., Lang, M. H., and Williams, C. D. (2018). Effects on comparability and capital market benefits of voluntary ifrs adoption. *Journal of Financial Reporting*, 3(1):1–22.

Bond, P., Edmans, A., and Goldstein, I. (2012). The real effects of financial markets. *Annual Review of Financial Economics*, 4(1):339–360.

Chen, Q., Goldstein, I., and Jiang, W. (2007). Price informativeness and investment sensitivity to stock price. *The Review of Financial Studies*, 20(3):619–650.

Chen, Q., Lewis, T. R., Schipper, K., and Zhang, Y. (2017). Uniform versus discretionary regimes in reporting information with unverifiable precision and a coordination role. *Journal of Accounting Research*, 55(1):153–196.

Christensen, H. B., Hail, L., and Leuz, C. (2013). Mandatory ifrs reporting and changes in enforcement. *Journal of Accounting Economics*, 56(2-3):147–177.

Christensen, H. B., Liu, L. Y., and Maffett, M. (2020). Proactive financial reporting enforcement and shareholder wealth. *Journal of Accounting and Economics*, 69(2-3):101267.

Daske, H., Hail, L., Leuz, C., and Verdi, R. (2008). Mandatory ifrs reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research*, 46(5):1085–1142.

Edmans, A., Jayaraman, S., and Schneemeier, J. (2017). The source of information in prices and investment-price sensitivity. *Journal of Financial Economics*, 126(1):74–96.

Ewert, R. and Wagenhofer, A. (2005). Economic effects of tightening accounting standards to restrict earnings management. *The Accounting Review*, 80(4):1101–1124.

Ewert, R. and Wagenhofer, A. (2019). Effects of increasing enforcement on financial reporting quality and audit quality. *Journal of accounting research*, 57(1):121–168.

Florou, A. and Kosi, U. (2015). Does mandatory ifrs adoption facilitate debt financing? *Review of Accounting Studies*, 20(4):1407–1456.

Florou, A., Morricone, S., and Pope, P. F. (2020). Proactive financial reporting enforcement: Audit fees and financial reporting quality effects. *The Accounting Review*, 95(2):167–197.

Foucault, T. and Fresard, L. (2014). Learning from peers' stock prices and corporate investment. *Journal of Financial Economics*, 111(3):554–577.

Gao, P. and Liang, P. J. (2013). Informational feedback, adverse selection, and optimal disclosure policy. *Journal of Accounting Research*, 51(5):1133–1158.

Goldstein, I. and Yang, L. (2019). Good disclosure, bad disclosure. *Journal of Financial Economics*, 131(1):118–138.

Goldstein, I., Yang, S., and Zuo, L. (2020). The real effects of modern information technologies. Report 0898-2937, National Bureau of Economic Research.

Hayek, F. A. (1945). The use of knowledge in society. *The American economic review*, 35(4):519–530.

Horton, J., Serafeim, G., and Serafeim, I. (2013). Does mandatory ifrs adoption improve the information environment? *Contemporary accounting research*, 30(1):388–423.

Jayaraman, S. and Wu, J. S. (2019). Is silence golden? real effects of mandatory disclosure. *The Review of Financial Studies*, 32(6):2225–2259.

Kaufmann, D., Kraay, A., and Mastruzzi, M. (2011). The worldwide governance indicators: Methodology and analytical issues1. *Hague journal on the rule of law*, 3(2):220–246.

Li, S. (2010). Does mandatory adoption of international financial reporting standards in the european union reduce the cost of equity capital? *The Accounting Review*, 85(2):607–636.

Loureiro, G. and Taboada, A. G. (2015). Do improvements in the information environment enhance insiders' ability to learn from outsiders? *Journal of Accounting Research*, 53(4):863–905.

Morris, S. and Shin, H. S. (2002). Social value of public information. *american economic review*, 92(5):1521–1534.

Sankar, M. R. and Subramanyam, K. (2001). Reporting discretion and private information communication through earnings. *Journal of Accounting Research*, 39(2):365–386.

Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of money, credit and banking*, 1(1):15–29.

Windisch, D. (2021). Enforcement, managerial discretion, and the informativeness of accruals. *European Accounting Review*, 30(4):705–732.

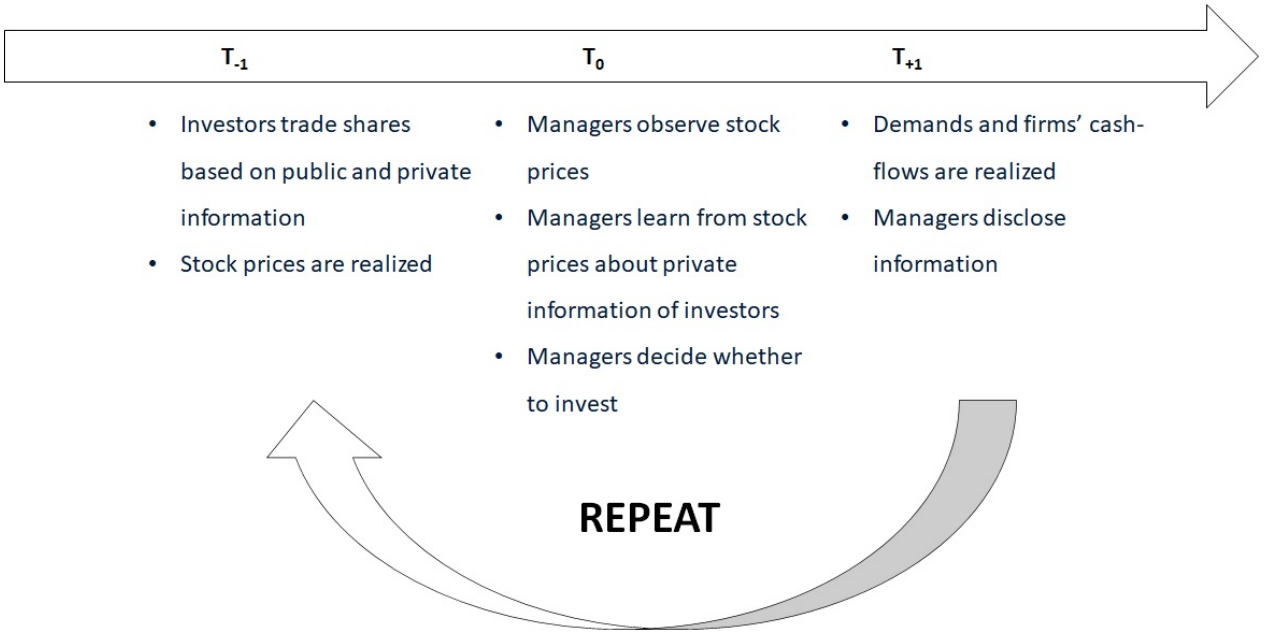

Figure 1: Process chart of Managerial Leanring from Stock prices. Adapted from Foucault & Fresard, 2014

Table 1: Sample overview pre/post IFRS by country

	Country	Pre_IFRS	Post_IFRS	Total	percentage_of_obs
1	Austria	191	701	892	1.9
2	Belgium	222	982	1204	2.5
3	Bulgaria	0	340	340	0.7
4	Croatia	21	701	722	1.5
5	Cyprus	0	143	143	0.3
6	Czech Republic	40	126	166	0.3
7	Denmark	363	1187	1550	3.2
8	Estonia	0	153	153	0.3
9	Finland	348	1235	1583	3.3
10	France	1650	6023	7673	16
11	Germany	1676	5593	7269	15.2
12	Greece	250	1257	1507	3.2
13	Hungary	62	214	276	0.6
14	Ireland	97	304	401	0.8
15	Italy	483	2037	2520	5.3
16	Latvia	11	116	127	0.3
17	Lithuania	40	219	259	0.5
18	Luxembourg	43	288	331	0.7
19	Malta	0	85	85	0.2
20	Netherlands	490	1287	1777	3.7
21	Poland	242	3638	3880	8.1
22	Portugal	133	353	486	1
23	Slovak Republic	13	59	72	0.2
24	Slovenia	49	283	332	0.7
25	Spain	18	1211	1229	2.6
26	Sweden	783	3920	4703	9.8
27	United Kingdom	2020	6115	8135	17

Table 2: Descritptive Statistics for the full, low-growth firms and high-growth firms sample

Statistics	N	Mean	St. Dev.	Pctl(25)	Median	Pctl(75)
Panel A: Full Sample						
CAPXRND	46,711	0.0734	0.0817	0.0218	0.0486	0.0921
Q_{t-1}	46,711	1.6688	1.3624	0.9849	1.2566	1.7787
HighGrowth	46,711	0.4913	0.4999	0	0	1
enforcement_score	46,711	1.3994	0.3896	1.0788	1.5242	1.7492
HighEnforcement	46,711	0.6395	0.4802	0	1	1
CF	46,711	0.0748	0.1188	0.0301	0.0785	0.1294
TotalAssets	46,711	4,907	17,491	87	333	1,571
IFRS	46,711	0.8126	0.3902	1	1	1
Panel B: Low-growth firms						
CAPXRND	23,760	0.0644	0.0719	0.0196	0.0438	0.0808
Q_{t-1}	23,760	1.5427	1.2464	0.9497	1.1915	1.6240
HighGrowth	23,760	0.0000	0.0000	0	0	0
HighEnforcement	23,760	0.6420	0.4794	0	1	1
CF	23,760	0.0643	0.1072	0.0249	0.0708	0.1159
TotalAssets	23,760	6,149	19,670	101	410	2,142
IFRS	23,760	0.8149	0.3884	1	1	1
Panel C: High-growth firms						
CAPXRND	22,951	0.0827	0.0897	0.0248	0.0545	0.1048
Q_{t-1}	22,951	1.7994	1.4614	1.0275	1.3361	1.9489
HighGrowth	22,951	1.0000	0.0000	1	1	1
HighEnforcement	22,951	0.6368	0.4809	0	1	1
CF	22,951	0.0857	0.1288	0.0370	0.0881	0.1448
TotalAssets	22,951	3,622	14,796	79	272	1,164
IFRS	22,951	0.8103	0.3921	1	1	1

Table 3: Regressions to investigate the effect of IFRS adoption on the investment-to-q sensitivity

	Dependent variable:		
	CAPXRND		
	Full Sample	Low Growth	High Growth
	(1)	(2)	(3)
Q_{t-1}	.0032***	.0034***	.0110***
	t = 2.9637	t = 2.9226	t = 8.7549
IFRS	−.0009	−.0015	−.0062***
	t = −.7061	t = −1.0925	t = −3.5340
$HighGrowth_{Rev}$	.0152***		
	t = 9.9003		
$IFRS * HighGrowth_{Rev}$	−.0064***		
	t = −3.8528		
$Q_{t-1} * IFRS$	.0033***	.0028**	−.0027**
	t = 2.7060	t = 2.1400	t = −1.9956
$Q_{t-1} * HighGrowth_{Rev}$	.0076***		
	t = 5.2034		
$Q_{t-1} * IFRS * HighGrowth_{Rev}$	−.0063***		
	t = −3.9218		
$Log(TotalAssets_{t-1})$	−.0113***	−.0091***	−.0135***
	t = −13.5962	t = −9.2488	t = −11.5352
CF	.0433***	.0359***	.0498***
	t = 5.8900	t = 3.4203	t = 5.4004
Industry FE (2 digit SIC)	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	46,711	23,760	22,951
R^2	.6394	.7007	.6813

This table presents the results for an OLS regression with fixed effects. Q_{t-1} is measured as market value of total assets scaled by book value of total assets and mean adjusted. $HighGrowth_{Rev}$ is an indicator variable that is set to one if the firm has above median revenue growth for a given year. All continuous variables are winsorized at the first and 99th percentiles. T-statistics are reported below coefficients. *T-statistics are clustered on firm level.* ***; **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail), respectively.

Table 4: Regressions to investigate the effect of IFRS adoption on the investment-to-q sensitivity. Including year dummies to investigate the transitory nature of the effect

	Dependent variable:		
	CAPXRND		
	Full Sample	Low Growth	High Growth
	(1)	(2)	(3)
Q_{t-1}	.0030***	.0034***	.0104***
	t = 2.7154	t = 2.8536	t = 8.0623
$HighGrowth_{Rev}$	.0163***		
	t = 10.3112		
2006	.0041**	.0037*	−.0003
	t = 2.2286	t = 1.9487	t = −.1398
2007	.0097***	.0091***	.0060**
	t = 5.4185	t = 5.0067	t = 2.3174
2008	.0097***	.0093***	.0052*
	t = 5.2050	t = 4.7846	t = 1.9228
$2009onwards$	−.0048***	−.0055***	−.0124***
	t = −3.2101	t = −3.5074	t = −5.9422
$Q_{t-1} * HighGrowth_{Rev}$	.0074***		
	t = 4.9564		
$Q_{t-1} * 2006$	.0037*	.0033	−.0056***
	t = 1.7200	t = 1.3905	t = −3.0911
$Q_{t-1} * 2007$	.0046**	.0044**	−.0027
	t = 2.2797	t = 2.0751	t = −1.3857
$Q_{t-1} * 2008$	.0025	.0030	−.0029
	t = 1.3805	t = 1.4540	t = −1.3223
$Q_{t-1} * 2009onwards$	.0023*	.0016	−.0030**
	t = 1.7423	t = 1.1843	t = −2.0054
$HighGrowth_{Rev} * 2006$	−.0047		
	t = −1.6039		
$HighGrowth_{Rev} * 2007$	−.0036		
	t = −1.2630		
$HighGrowth_{Rev} * 2008$	−.0052*		
	t = −1.8056		
$HighGrowth_{Rev} * 2009onwards$	−.0087***		
	t = −5.0795		
$Q_{t-1} * HighGrowth_{Rev} * 2006$	−.0101***		
	t = −3.6603		
$Q_{t-1} * HighGrowth_{Rev} * 2007$	−.0079***		
	t = −2.8807		
$Q_{t-1} * HighGrowth_{Rev} * 2008$	−.0050*		
	t = −1.8275		
$Q_{t-1} * HighGrowth_{Rev} * 2009onwards$	−.0059***		
	t = −3.5405		
$Log(TotalAssets_{t-1})$	−.0097***	−.0082***	−.0116***
	t = −12.0993	t = −8.6727	t = −9.5922
CF	.0429***	.0336***	.0522***
	t = 5.8530	t = 3.1461	t = 5.6382
Industry FE (2 digit SIC)	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	44,155	22,477	21,678
R^2	.6498	.7127	.6921

This table presents the results for an OLS regression with fixed effects. Q_{t-1} is measured as market value of total assets scaled by book value of total assets and mean adjusted. $HighGrowth_{Rev}$ is an indicator variable that is set to one if the firm has above median revenue growth for a given year. All continuous variables are winsorized at the first and 99th percentiles. T-statistics are reported below coefficients. *T-statistics are clustered on firm level.* ***; **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail), respectively.

Table 5: Regressions to investigate the effect of enforcement strength after IFRS adoption on the investment-to-q sensitivty

	Dependent variable:		
	CAPXRND		
	Full Sample	Low Growth	High Growth
	(1)	(2)	(3)
Q_{t-1}	.0044**	−.0003	.0075***
	t = 2.1322	t = −.0796	t = 3.5741
IFRS	−.0168	.0009	−.0104***
	t = −.5992	t = .3046	t = −3.3748
HighEnforcement	−.0044*	.0060*	−.0040
	t = −1.6636	t = 1.7909	t = −.9848
$HighEnforcement * IFRS$	.0027	−.0028	.0071**
	t = 1.0518	t = −.8111	t = 1.9729
$Q_{t-1} * HighEnforcement$	.0031	.0045	.0043*
	t = 1.3929	t = 1.1757	t = 1.7992
$Q_{t-1} * IFRS$	.0050**	.0112***	.0037
	t = 2.1584	t = 2.7907	t = 1.4333
$Q_{t-1} * HighEnforcement * IFRS$	−.0071***	−.0102**	−.0082***
	t = −2.7915	t = −2.4286	t = −2.8356
$Log(TotalAssets_{t-1})$	−.0120***	−.0091***	−.0138***
	t = −13.8442	t = −9.2931	t = −11.7197
CF	.0520***	.0365***	.0498***
	t = 7.0755	t = 3.4872	t = 5.4070
Industry FE (2 digit SIC)	Yes	Yes	Yes
Country FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes
Observations	46,711	23,760	22,951
R^2	.6429	.7017	.6819

This table presents the results for an OLS regression with fixed effects. Q_{t-1} is measured as market value of total assets scaled by book value of total assets and mean adjusted. $HighGrowth_{Rev}$ is an indicator variable that is set to one if the firm has above median revenue growth for a given year. All continuous variables are winsorized at the first and 99th percentiles. T-statistics are reported below coefficients. *T-statistics are clustered on firm level.* ***; **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail), respectively.

Table 6: Descriptive Statistics for the Austrian/German sample

Statistic	N	Mean	St. Dev.	Pctl(25)	Median	Pctl(75)
CAPXRND	6,461	0.0841	0.0851	0.0294	0.0600	0.1080
Q	6,429	1.6133	1.2487	1.0309	1.2675	1.7147
HighGrowth	6,461	0.4951	0.5000	0	0	1
CF	6,461	0.0654	0.1243	0.0254	0.0753	0.1209
TotalAssets	6,461	4,475	22,101	50	178	901

Table 7: Regressions to investigate enforcement changes after IFRS adoption based on the Austrian IFRS enforcement change

	Dependent variable:		
	CAPXRND		
	Full Sample	Low Growth	High Growth
	(1)	(2)	(3)
Q_{t-1}	.0175***	.0168***	.0169***
	t = 14.6295	t = 8.7375	t = 10.4229
POST	−.0031	−.0043	−.0032
	t = −1.4597	t = −1.5512	t = −.9801
TREATED	.0315***	.0288***	.0302***
	t = 6.7298	t = 4.1238	t = 4.5161
$POST * TREATED$	−.0095	−.0011	−.0090
	t = −1.2636	t = −.1133	t = −.7287
$Q_{t-1} * TREATED$	−.0018	−.0067***	.0048**
	t = −1.1276	t = −2.8749	t = 2.0762
$Q_{t-1} * POST$	.0381***	.0271***	.0418***
	t = 6.8490	t = 2.9572	t = 5.7300
$Q_{t-1} * POST * TREATED$	−.0205**	.0006	−.0305*
	t = −2.0857	t = .0466	t = −1.8055
$Log(TotalAssets_{t-1})$	−.0020***	−.0004	−.0031***
	t = −3.8345	t = −.5959	t = −3.6614
CF	−.0116	−.0707***	.0240**
	t = −1.3969	t = −6.1920	t = 1.9903
Industry FE (2 digit SIC)	Yes	Yes	Yes
Observations	6,461	3,262	3,199
R^2	.1868	.1960	.2035

This table presents the results for an OLS regression with fixed effects. Q_{t-1} is measured as market value of total assets scaled by book value of total assets and mean adjusted. $TREATED$ is an indicator variable that is set to one if the firm resides in Austria and zero otherwise. $POST$ is an indicator variable that is set to one for years after 2012. All continuous variables are winsorized at the first and 99th percentiles. T-statistics are reported below coefficients. ***; **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail), respectively.

Table 8: Additional Analyses: Regression results for learning from peer valuations

	Dependent variable:	
	CAPXRND	
	(1)	(2)
Q_{t-1}	.0072***	.0074***
	t = 3.6162	t = 3.6701
IFRS	.0011	.0010
	t = .3494	t = .1912
$HighGrowth_{Rev}$	−.0052	−.0010
	t = −1.4208	t = −.1542
$IFRS * HighGrowth_{Rev}$	−.0001	−.0003
	t = −.0574	t = −.1599
$Q_{t-1} * IFRS$	.0067***	.0069***
	t = 2.9491	t = 2.9921
$Q_{t-1} * HighGrowth_{Rev}$	.0106***	.0077
	t = 2.6678	t = 1.1075
$Q_{t-1} * IFRS * HighGrowth_{Rev}$	−.0051**	−.0052**
	t = −2.0947	t = −2.1085
$PEERQ_{t-1}$		−.0014
		t = −.4242
$PEERQ_{t-1} * IFRS$		.0006
		t = .1753
$PEERQ_{t-1} * HighGrowth_{Rev}$		−.0031
		t = −.7052
$PEERQ_{t-1} * IFRS * HighGrowth_{Rev}$		.0022
		t = .4917
$Log(TotalAssets_{t-1})$	−.0166***	−.0166***
	t = −11.6750	t = −11.5027
CF	.0327***	.0325***
	t = 3.5577	t = 3.5395
$Log(PEERTotalAssets_{t-1})$		.0001
		t = .1937
$PEERCF$		.0201*
		t = 1.9258
Country FE	Yes	Yes
Firm FE	Yes	Yes
Industry FE	Yes	Yes
Observations	30,275	30,275
R^2	.6911	.6912

This table presents the results for an OLS regression with fixed effects. Q_{t-1} is measured as market value of total assets scaled by book value of total assets and mean adjusted. $HighGrowth_{Rev}$ is an indicator variable that is set to one if the firm has above median revenue growth for a given year. $PEERQ_{t-1}$ is measured as the average Q of the industry the firm is associated with based on 4-digit NAICS codes. All continuous variables are winsorized at the first and 99th percentiles. T-statistics are reported below coefficients. *T-statistics are clustered on firm level.* ***; **, * denote statistical significance at the 0.01, 0.05, and 0.10 levels (two–tail), respectively.