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Information Environment around
Stock-Financed Acquisitions”**

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The Impact of Securities Regulation on the Information Environment around Stock-Financed Acquisitions

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The Impact of Securities Regulation on the Information Environment around Stock-Financed Acquisitions

ABSTRACT

We investigate the effects of securities regulation, enacted by the European Union (EU) (namely, the Transparency Directive - TPD) to improve the quality of financial reporting and disclosure, on the information environment around stock-financed acquisition announcements. EU directives comprised in the Financial Services Action Plan aim to improve the information quality that flows to investors, which may help reduce the adverse selection discount when stock is used as the method of payment in Mergers and Acquisitions (M&As). We use a difference-in-differences methodology and document a significant increase in announcement returns of stock-paid acquisitions by European acquirers after the change in regulation. We also find that this result accrues essentially to companies with better firm-specific information quality and companies domiciled in EU countries with better institutional quality and shareholder protection. Our results highlight how the impact of the same regulation may differ depending on country and firm-level attributes associated with the information environment.

JEL Classifications: F30; G15; G30; G34; G38

Keywords: Securities Regulation; Mergers & Acquisitions; Earnings Management; Information Asymmetry, Transparency Directive; European Union

1. Introduction

Prior research has debated whether securities regulation do actually improve the functioning of capital markets. Some studies stand in favor of securities regulation that targets disclosure requirements and transparency, by advocating the beneficial outcomes of those rules, such as market-wide cost savings, discouraging undesirable behavior in capital markets, and a vast array of positive externalities (e.g., Coffee, 1984, 2007; Zingales, 2009; Christensen, Hail, and Leuz, 2016; Leuz and Wysocki, 2016; Fauver, Loureiro, and Taboada, 2017; Watanabe, Imhof, and Tartaroglu, 2019).

More interestingly, a strand of the literature examines how the *ex ante* quality of the institutional environment impacts the enforcement and efficacy of new rules (Djankov *et al.*, 2003). The same or similar regulation applied in countries with weaker legal enforcement is not expected to yield the same outcomes. The EU offers the appropriate setting to study the diverse effects of the same securities regulation applied around the same time, albeit not simultaneously, in a number of countries with different levels of shareholder protection and different institutional quality. Although all countries in the EU belong to the same economic union, there are still significant differences in legal enforcement and the overall quality of their institutions (see, e.g., Christensen *et al.*, 2016; Fauver *et al.*, 2017). The harmonization of EU directives, based on minimal requirements, mutual recognition, and national supervision (Lannoo and Levin, 2004; Enriques and Gatti, 2008), allows for different paces of integration. Nonetheless, the EU's Financial Services Action Plan (FSAP), launched in 1999, made significant progress towards the harmonization of securities regulation among EU member states¹. Such advances contribute to the Europeanization process (see, e.g., Economides and Ker-Lindsay, 2015) and set a standard for accession countries, which may undertake significant regulatory reforms prior to entry the EU to facilitate the integration process.

In this paper, we study the impact of EU directives, particularly the Transparency Directive (TPD), enacted to improve the quality of financial reporting and disclosure, on the wealth

¹ See our Internet Appendix for further details.

outcomes of Mergers and Acquisitions (M&A) involving stock as the main method of payment. Several studies show that acquirers' shareholders earn relatively lower announcement returns in acquisitions of public targets when the payment is based in stocks (e.g., Asquith, Bruner, and Mullins, 1987; Travlos, 1987; Servaes, 1991; Walker, 2000; Fuller, Netter, and Stegemoller, 2002; Ang and Cheng, 2006; Faccio, McConnell, and Stolin, 2006; Moeller, Schlingemann, and Stulz, 2007; Savor and Lu, 2009; Fu, Lin, and Officer, 2013; Golubov, Yawson, and Zhang, 2015; Golubov, Petmezas, and Travlos, 2016)². Similar to the adverse selection effect of issuing equity (Myers and Majluf, 1984), acquirers that use equity in a stock-for-stock acquisition obtain lower announcement returns as stock markets react to correct for the potential overvaluation of the acquirer's stocks (e.g., Rhodes-Kropf, Robinson, and Viswanathan, 2005; Ang and Cheng, 2006; Dong *et al.*, 2006). One possible way of artificially boosting the stock prices prior to a stock-financed acquisition is to engage in accruals-based earnings management by postponing inconvenient news that may hurt the stock prices in the short run. The literature shows that prior to acquisitions paid in stock, acquirers engage in more aggressive earnings management to inflate earnings and current stock prices and, therefore, gain an advantage in the stock swap exchange ratio (the number of acquirer's shares per each target share). In their seminal paper, Erickson and Wang (1999), using a sample of U.S. M&A deals, find that acquiring firms manipulate total accruals, managing earnings upwards, particularly in the quarter immediately preceding the offer. Other studies find similar evidence – e.g., Louis (2004), Botsari and Meeks (2008), Gong, Louis, and Sun (2008a, 2008b), Pungaliya and Vijh (2009), Karim, Sarkar, and Zhang (2016).

Knowing that both the adverse market reaction to potentially overvalued equity and the efficacy of manipulating earnings to boost stock prices is greater when the information environment is weaker, we test whether the adoption of EU securities regulation targeted to increase transparency mitigates these effects. Our empirical tests focus on the Transparency Directive (TPD), comprised in the EU's FSAP, which generically aims to improve the quality of

² In studies involving acquisitions of private targets, there is no discount for acquirers that use stock as the method of payment (e.g., Chang, 1998; Fuller *et al.*, 2002; Draper and Paudyal, 2006; Faccio *et al.*, 2006; Martynova and Renneboog, 2008; Golubov *et al.*, 2015; Alexandridis, Antypas, and Travlos, 2017).

financial reporting and disclosure. First, we investigate the impact of the TPD enactment on bidders' announcement returns of public stock-financed acquisitions for our treatment group of acquirers from EU countries. Second, we analyze the moderating effect of a firm-specific attribute – the bidders' earnings quality – on their announcement returns post-regulation. Third, we examine whether TPD enforcement is stronger in countries with *ex ante* better investor protection rules, higher disclosure requirements, and better quality of their institutions (regarding the regulatory quality and the law enforcement).

We test our predictions using a difference-in-differences (DiD) methodology with a treatment sample of acquirers from 23 EU countries that adopted the regulation and a control sample of acquirers from 31 non-EU countries, covering the period from January of 2000 until December of 2018. We find that post adoption of TPD, EU acquirers earn, on average, about 2.4 percentage points (pp) higher returns over a three-day window around the announcement of a stock-financed public acquisition. This result is robust after controlling for the parallel trend assumption underlying our DiD methodology. We then test the moderating effect of the acquirers' financial information quality on the impact of the regulation in reducing the discount associated with stock-paid acquisitions. We use two alternate proxies for the quality of the acquirers' earnings: (i) an accrual-based earnings management measure estimated from the modified Jones' (1991) model, adjusted for operating performance (see Kothari, Leone, and Wasley, 2005) and sales growth as proposed by Collins, Pungaliya, and Vijh (2017), and (ii) a firm-year measure of accounting conservatism, *C-SCORE*, as in Khan and Watts's (2009). Based on prior evidence (e.g., Francis, Hasan, and Wu, 2013; Lara, Osma, and Penalva, 2020), we expect that bidders with higher accounting conservatism are less prone to withhold unfavorable news and manipulate earnings upward before stock-financed acquisitions. Overall, we find that acquirers with weaker earnings quality, i.e. more aggressive earnings management or less conservative accounting *ex ante*, earn lower announcement returns post TPD than their peers. These results suggest that TPD helped increase transparency in the financial markets, allowing investors to better identify firms with higher or lower quality of their financial reports. Thus, bidders that exhibit lower earnings quality

are more penalized when they acquire public targets in stock-for-stock acquisitions. These results seem to suggest that the new regulation creates the right incentives to achieve significant improvements in firms' information environment, by reducing the asymmetry between managers and outside investors with positive consequences in mitigating adverse selection problems that might affect stock-financed acquisitions of public targets. Finally, in line with Djankov *et al.* (2003), we find that the same rule applied to different countries with different pre institutional conditions yields different outcomes. Our results suggest that the impact of the regulation differs across countries: the benefits of adopting TPD accrue essentially to acquirers domiciled in countries with stronger *ex ante* shareholder protection and better institutional quality. This result raises some interesting policy questions as to whether the efficacy of EU securities regulation can be challenged by the existing differences in countries' institutional quality and compromise the ultimate goal of a deeper integration of EU financial markets.

Our study offers several contributions. First, we contribute to the literature on the effects of securities regulation for capital markets. Leuz and Wysocki (2016) argue that the evidence on the causal effects of disclosure and reporting regulation is still scarce (e.g., Christensen *et al.*, (2016), Fauver *et al.* (2017), and Watanabe *et al.* (2019) are some of the few studies about EU regulation). Establishing a clear causal relation between regulation and improvements in capital markets offers some challenges, as many times the adoption of regulation is part of a broader reform, which effects are difficult to disentangle. An advantage of studying EU securities regulation is that although the entry-into-force of the directives is predetermined, each member state has the flexibility to adopt the regulation at different points in time³. This staggered implementation of EU directives across countries is therefore more likely to create an exogenous shock, which helps isolate their potential causal effects.

³ EU regulation is enacted in the form of EU directives, which will be further transposed to member states' national regulation. Member states have a predetermined period of time to adopt the EU directives, which can vary between 2-3 years. Thus, member states hardly will all pass the EU legislation at the same time – for example, the TPD was adopted in January of 2007 in Germany and in January of 2009 in The Netherlands. The staggered implementation is considered to cause exogenous shocks – see Christensen *et al.* (2016).

This study also contributes to the M&A literature about the acquirer's discount associated with stock payment in acquisitions of public targets (e.g., Asquith *et al.*, 1987; Fuller *et al.*, 2002; Ang and Cheng, 2006; Dong *et al.*, 2006; Faccio *et al.*, 2006; Moeller *et al.*, 2007; Savor and Lu, 2009; Fu *et al.*, 2013; Golubov *et al.*, 2016, among others), by showing that improvements in transparency brought about by the passage of some specific securities regulation can mitigate that discount. Moreover, we also contribute to some recent literature that documents no significant discount for bidders that pay for public targets using stock in continental Europe (Alexandridis, Petmezas, and Travlos., 2010; Mateev and Andonov, 2016), by showing that the passage of EU regulation aimed at improving firm transparency may partially explain that result.

Finally, we add to the literature on the efficacy of securities regulation enforcement in the EU (Christensen *et al.*, 2016; Fauver *et al.*, 2017; Watanabe *et al.*, 2019), and the expected harmonization and integration of EU financial markets, which is the main goal of the EU's FSAP of 1999. Achieving full integration is, however, an ambitious goal, which requires a harmonization process that is comprehensive in scope, mandatory in nature, and maximal in integration, leaving little room for countries' discretion (Enriques and Gatti, 2008). By showing that the benefits of the regulation depend on the *ex ante* levels of investor protection and institutional quality of each member state, our study challenges the idea that these directives *per se* help bring countries together towards a deeper integration of their financial markets and stresses the importance of other reforms that enhance the overall quality of countries' institutions. Some important policy implications can be derived from our study: (i) securities regulation aimed at improving corporate transparency and disclosure help reduce market frictions, (ii) improving the quality of the underlying institutional environment through reforms that enhance regulatory quality, law enforcement, and investor protection, are essential to achieve the full benefits of EU directives and a deeper integration, and (iii) the evidence on the effects of EU securities regulation and its moderating factors sets an example to be followed by other countries seeking a higher integration with EU financial markets.

The remaining of this study is organized as follows. Section 2 provides a review of securities regulation in the EU and their impact on firms' information environment. Section 3 describes our research methodology, the sample and data. Section 4 presents and discusses the empirical results. Section 5 concludes.

2. EU Securities Regulation and Information Environment

As stated in paragraph 21 of the Prospectus Directive⁴ “Information is a key factor in investor protection”. In the spirit of the EU’s Financial Services Action Plan (FSAP), information is the main driver to boost investor confidence (Lamfalussy, 2000). Therefore, the efficiency, transparency, and integration of securities markets contribute to “a genuine single market in the Community (...) by better allocation of capital and by reducing costs”, as the “disclosure of accurate, comprehensive and timely information about security issuers builds sustained investor confidence and allows an informed assessment of their business performance and assets. This enhances both investor protection and market efficiency”⁵ as stated in the Transparency Directive preamble. The FSAP based its strategy in boosting investor protection because it believes that a high level of investor protection throughout the EU countries “would enable barriers to the admission of securities to regulated markets situated or operating within a member state to be removed”⁵. These are the pillars of FSAP, that launched various regulation initiatives intending to reduce adverse selection in capital markets, as is the case of i) Transparency Directive (TPD) that regards corporate reporting and disclosure, ii) Market Abuse Directive (MAD) that concerns insider trading and market manipulation, and iii) Prospectus Directive (PD) that intends to harmonize information and improve firm transparency around securities offerings. We focus our empirical tests on the effects of the TPD due two main reasons: 1) the TPD specifically addresses aspects related to firm transparency and improved financial disclosure, which are the main factors that might moderate the acquirer’s discount in public acquisitions paid in stock; and 2) the scope

⁴ Quoted from the Prospectus Directive (PD) text preamble (directive 2003/71/EC). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32003L0071>.

⁵ Quoted from the Transparency Directive (TPD) text preamble (directive 2004/109/EC). Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004L0109>.

of TPD covers and expands the main objectives released in the case of MAD and PD, which transposition dates to national laws are about two years prior to TPD – 2007-2009 for TPD and 2005-2007 for MAD and PD⁶.

The taxonomy of harmonization⁷ of many EU directives is based on minimal (harmonization) requirements, mutual recognition and national supervision (Lannoo and Levin, 2004). As established by the International Organization of Securities Commissions (IOSCO), the success of regulation consists of enforcement, compliance, and supervision. These aspects can be critical concerning the enactment of EU directives (Steunenberg and Toshkov, 2009) and amplified by the disparity between EU financial regulation and national contract law (Cherednychenko, 2021; Andenas and Della Negra, 2017). Although TPD requires mainly mandatory harmonization, it is yet partial in scope and minimal in integration⁸ in national law (Enriques and Gatti, 2008). Nevertheless, considerable advances towards harmonization in securities regulation have been made by the EU's FSAP of 1999. Despite the lack of EU political legitimacy, having a common ground of rules and regulations⁹ (Toshkov, 2012) helps overcome obstacles to integration. Moreover, the transposition and enforcement of that set of rules, known as the Europeanization process (Economides and Ker-Lindsay, 2015), may lead to fundamental changes in the behavior of accession countries (i.e., states eligible for EU membership), which start implementing reforms before they become members, as a way of assuring that EU legislation will be transposed and enforced.

The underlying quality of countries' domestic institutions, such as government and regulatory quality, legal enforcement, and protection of investors' rights are key factors to effectively achieve the goals of EU directives, including securities regulation. TPD deals with transparency

⁶ Section A in the Internet Appendix provides a comprehensive review of the EU directives mentioned in this paper.

⁷ The taxonomy of harmonization⁷ is classified as i) comprehensive or partial in scope, ii) mandatory or optional in nature, and iii) minimal or maximal concerning the integration and relationship with national laws (Enriques and Gatti, 2008).

⁸ Partial means that do not set a uniform disclosure on information related party transactions and it requires minimal integration because it mandates each member state to ensure that their laws apply to persons/entities responsible within the issuer. Moreover, member states can impose stricter rules to issuers with a registered office within its national boundaries, but cannot impose additional requirements on issuers headquartered elsewhere and listed in a domestic market in that member state (see Enriques and Gatti (2008) for a further discussion).

⁹ The set of EU rules and regulations is known as *acquis communautaire* and includes all legal acts (directives, regulations, and decisions) based on EU Treaties (see, e.g., Radaelli, 2003).

and information transmission in the financial markets. Law enforcement and monitoring in these domains require a number of procedures that can be more efficiently implemented by developed institutions that offer greater protection of investors' rights, ensure government effectiveness and accountability, and regulatory quality.

Christensen *et al.* (2016) are one of the few studies to provide causal evidence about the EU directives transposition and explore cross-country differential effects. As argued by the authors, the staggered transposition of the EU directives across countries allows researchers to better isolate the impact of the reforms and understand their causal effects. In addition, the adoption of EU directives offers a unique setting to study cross-country differences and assess how differences in *ex ante* institutional quality and enforcement affect the outcome of the regulation. Most of the previous research focuses on the impact of U.S. regulatory changes (Leuz and Wysocki, 2016), whereas Christensen *et al.* (2016), Fauver *et al.* (2017), and Watanabe *et al.* (2019) provide evidence about the effects of EU regulation on information environment, which contributes to a broader debate about the benefits of regulation and its differential effects across countries.

Christensen *et al.* (2016) find that market liquidity increases post enactment of MAD and PD, after controlling for the adoption of other EU Directives. The authors point out that such improvement in liquidity results from a reduction in adverse selection, thus lowering the cost of capital, increasing the market value of equity, and contributing to more efficient markets; these potential effects meet the FSAP objectives. Their results suggest that the effects are stronger in countries with higher quality of their institutions and better legal enforcement, meaning that countries with weaker enforcement obtain a lower marginal benefit from the regulation (the *hysteresis hypothesis*); the authors also conclude that those countries will benefit more from institutional changes, rather than simply adopt stricter regulation.

Fauver *et al.* (2017) find that the enactment of MAD and PD in EU member states leads to a significant decrease in earnings manipulation prior to equity issues; the authors show that the improvement in information environment quality leads to a positive spillover effect on stock return

performance after an equity offering both in the short- and long-run. Moreover, their results show higher abnormal returns around the equity offer announcement after the adoption of MAD and PD, which indicates that the change in EU securities regulation has the potential benefit of mitigating the typical adverse selection effect around equity issues. However, and consistent with Christensen *et al.* (2016), Fauver *et al.* (2017) also document that the impact of the new regulations depends significantly on the prior quality of institutions and regulatory regimes. This evidence is corroborated by Watanabe *et al.* (2019), who show that stock price informativeness improved post-TPD; however, such improvement was more pronounced in countries with prior strong regulatory environments.

Taken together, one of the most salient features of this literature is that securities regulation aiming to improve transparency in the financial markets has positive effects for firms and investors, but the quality of their enforcement depends significantly on the quality of their domestic environment, such as the strength of investor protection rules, the quality of institutions, and transparency and disclosure standards.

2.1 Stock-Financed Acquisition Discount and the Quality of Firms' Information Environment

An extensive number of previous studies support the hypothesis of a discount in acquirer's announcement returns associated with stock payment in acquisitions of public targets (e.g., Asquith *et al.*, 1987; Travlos, 1987). Consistent with the liquidity discount hypothesis, Fuller *et al.* (2002) find that bidders that make many acquisitions in a short period of time earn positive announcement returns when buying private firms but achieve negative returns when the target is public. This evidence led to a generalized idea pointed out in former studies that overvalued acquirers use a swap stock as the method of payment (e.g., Fu *et al.*, 2013). More recently, Golubov *et al.* (2016) contribute to this debate showing that stock-financed acquisition is a double event because it joins the takeover bid with an equity-issue event; the authors show that the equity issuance event explains the markets' perception about bidders' stock overvaluation. These studies, mainly based in the United States and United Kingdom, generally converge to the idea that the

market is skeptical of bidders that offer stock to pay for public targets. Similar to the adverse selection effect of issuing overvalued equity of Myers and Majluf (1984). The incidence and magnitude of such effect are related to the quality of the firms' information environment. Firms with greater transparency and better earnings quality should observe a smaller discount in stock-for-stock acquisitions. The literature provides examples of firms engaging in more aggressive earnings management to artificially boost stock prices prior to a stock-paid acquisition and being the main reason for a cold market reaction when the deal is announced (e.g., Erickson and Wang, 1999; Louis, 2004; Botsari and Meeks, 2008; Gong *et al.*, 2008a, 2008b; Pungaliya and Vijh, 2009; Karim *et al.*, 2016).

In contrast, some recent evidence using European M&As (excluding the United Kingdom) shows no significant discount for bidders that pay for public targets using stock (Alexandridis *et al.*, 2010; Mateev and Andonov, 2016). These authors argue that in continental Europe the market for corporate control is less competitive, thus bidders end up paying lower bid premia, even in stock-for-stock acquisitions. We offer an alternative explanation, by showing that the passage of TPD and the consequent improvement in firm transparency around main corporate events, such as stock paid M&As, partially explains the lower discount associated with those deals.

Not only the quality of the bidders' earnings, but also the overall quality of the information environment of the bidder's domestic country, may play a role in moderating the discount associated with stock-financed acquisitions. For instance, La Porta *et al.* (1998) and Rossi and Volpin (2004) argue that bidders from Common Law countries benefit from higher investor protection, which increases competition in the market for corporate control and enhances the levels on information quality in the market. Thus, bidders from Common Law countries tend to earn, on average, higher announcement returns. Martynova and Renneboog (2008) and Mateev and Andonov (2016), who focused on European acquisitions, show that announcement returns are higher for acquirers domiciled in countries with a legal system offering better protection of shareholders' rights relative to the targets' countries. Starks and Wei (2013) analyzed the case of foreign bidders acquiring U.S. targets and find that announcement returns to bidders are

significantly related to the quality of acquirers' corporate governance for stock-financed acquisitions; their results suggest that acquirers from countries with better corporate governance are more likely to make stock offers. Moreover, Karim *et al.* (2016), using a worldwide sample excluding the U.S., find that managers' propensity to inflate earnings prior to stock swapping acquisitions decreases in the level of investor protection.

Altogether, prior evidence suggests that differences in firms' information environment quality, either at the firm or the country levels, can moderate the M&As gains to acquirers and targets, and consequently moderate the discount associated with public stock-paid acquisitions.

3. Research Design

3.1 Data

Our sample consists of all M&A deals announced between January of 2000 and December of 2018, collected from Security Data Corporation's (SDC); our final dataset includes a treatment group from 23 EU countries and a control group of 31 non-EU countries. Following prior literature (e.g., Alexandridis, Mavrovitis, and Travlos, 2010, 2012), we exclude leveraged buyouts, spinoffs, recapitalizations, self-tender offers, exchange offers, repurchases, partial equity stake purchases, acquisitions of remaining interest, and privatizations, as well as deals in which the target or the acquirer is owned by the government. The deal status is complete, its value is disclosed and above \$1US Million. The acquirer and target are publicly-traded companies. An acquisition is defined as a target when the percentage owned prior to the announcement is lower than 50% and is higher than 50% after the deal is complete. We also collected quarterly accounting and financial data from Thomson Financial's Datastream and Worldscope. As noted by some former studies (e.g., Christensen *et al.*, 2016; Fauver *et al.*, 2017; and Watanabe *et al.*, 2019), the staggered implementation of EU directives allow us to use quarterly data, which mitigates confounding effects around the entry-into-force dates of those directives. Those confounding effects may arise from, for example, external shocks that are unrelated to the adoption of EU Directives.

We exclude all observations without available information on the market and book value of equity, and on total assets. As in previous research, we also exclude financial acquirers with SIC codes between 6000 and 6999 and acquirers that are utility firms with SIC codes between 4900 and 4949 (Seshadri *et al.*, 2007).

All firm- and country-level variables are lagged one quarter. All continuous variables are winsorized at the 1% and the 99% level to reduce the influence of outliers.

Our final sample includes a treatment sample of 925 deals involving public targets from 23 EU countries, and a control sample of 4329 deals of public target firms from 31 countries outside the EU. Table 1 describes our sample by acquirers' country. Panel A shows our treatment sample formed of EU countries and also the entry-into-force dates of Transparency Directive (TPD) in each EU member state. We also include in our treatment sample non-EU member states as Iceland and Norway because they voluntarily adopt the EU directives as a way to get access to the EU's single market. Panel B of Table 1 reports the number of acquirers and the number of M&A deals for our control sample composed of non-EU countries. The number of observations presented in Table 1 is further reduced in our empirical analysis due to limited data availability for variables' construction and also because of our scheme of fixed effects framework.

[Insert Table 1 here]

In Panel A, Table 1, we observe that acquirers from the United Kingdom (UK), France, Sweden, Germany, The Netherlands, Norway, Poland, and Italy are the most dynamic markets; together, they aggregate more than 80% of the deals, noting that the UK alone counts for about 37% of the market for corporate control. On the other side, we find Malta, Hungary, Cyprus, and the most recent member state – Croatia, display the lowest takeover activity in the EU.

Regarding our control group of non-EU acquirers, the U.S., Canada, Japan, and Australia aggregate almost 85% of public acquisitions, whereas the U.S. concentrates about 48% of M&A deals.

3.2 Information Quality Measures

3.2.1 Earnings quality measures: Discretionary Accruals and Accounting Conservatism

Consistent with previous literature (e.g., Dechow, Sloan, and Sweeney, 1995; Kothari *et al.*, 2005; Fauver *et al.*, 2017; Collins *et al.*, 2017; Persakis and Iatridis, 2017; Lara *et al.*, 2020), we use signed discretionary accruals as a proxy for financial reporting transparency, i.e., a lower level of discretionary accruals is associated with a higher level of disclosure transparency. The value of total accruals is estimated via modified Jones' (1991) Model, as in Dechow *et al.* (1995), adjusted for operating performance using $ROA_{i,t-1}$ (as in Kothari *et al.*, 2005) and for growth opportunities, i.e., the performance and growth ROA&SG-adjusted model as proposed by Collins *et al.* (2017)¹⁰. We run equation (1) separately by year-country-industry¹¹.

$$\frac{ACCRUALS_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \beta_2 \frac{PPE_{i,t}}{TA_{i,t-1}} + \beta_3 ROA_{i,t-1} + \beta_4 SG_{i,t} + \varepsilon_{i,t} \quad (1)$$

where $ACCRUALS_{i,t} = (\Delta CA_{i,t} - \Delta CASH_{i,t}) - (\Delta CL_{i,t} - \Delta STD_{i,t}) - DEP_{i,t}$, $\Delta CA_{i,t}$ is the change in current assets, $\Delta CASH_{i,t}$ is the change in cash and equivalents of cash, $\Delta CL_{i,t}$ is the change in current liabilities, $\Delta STD_{i,t}$ is the change in short-term debt included in current liabilities, and $DEP_{i,t}$ is depreciation and amortization expenses. $\Delta SALES_{i,t}$ is the change in sales, and $PPE_{i,t}$ is property, plant and equipment. All variables are scaled by lagged total assets ($TA_{i,t-1}$). The operating performance measure is $ROA_{i,t-1}$ (the net income before extraordinary items scaled by total assets in quarter $t-1$) and $SG_{i,t}$ is sales growth (measured as the percentage change in sales over quarter $t-1$ to t). Signed discretionary accruals (DISACCR) are then estimated as the difference between current accruals and coefficients' estimates ($\hat{\alpha}_0, \hat{\beta}_1, \hat{\beta}_2, \hat{\beta}_3, \hat{\beta}_4$) from the above equation:

$$DISACCR_{ROA\&SG} = \frac{ACCR_{i,t}}{TA_{i,t-1}} - \left(\hat{\alpha}_0 \frac{1}{TA_{i,t-1}} + \hat{\beta}_1 \frac{\Delta REVENUES_{i,t}}{TA_{i,t-1}} + \hat{\beta}_2 \frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{\beta}_3 ROA_{i,t-1} + \hat{\beta}_4 SG_{i,t} \right),$$

where $\Delta REVENUES_{i,t}$ is computed as the change in sales minus receivables scaled by lagged total assets.

¹⁰ Collins *et al.* (2017) findings suggest that the performance and growth-matched discretionary accruals model is useful in mitigating Type I errors in cases where the partitioning variables such as stock splits, SEOs, stock acquisitions, and stock-based compensation are correlated with firm growth. In our case means that bidders are more likely to use stock to acquire other firms when they are growing rapidly.

¹¹ We assign firms to industries using the Fama and French (1997) 17-industry classification.

As an alternate proxy for earnings quality, we use Khan and Watts's (2009) firm-year measure of earnings conservatism, *C-SCORE*, which is based on the timely recognition of negative events in the firms' accounts. We adopt *C-SCORE* as a proxy for firms' information environment to the extent that numerous authors (e.g., LaFond and Watts, 2008; Francis *et al.*, 2013; Khalilov and Osma, 2020; Lara *et al.*, 2020) have shown that earnings conservatism is negatively related to information asymmetry. According to Francis *et al.* (2013), accounting conservatism is a governance mechanism that reduces information asymmetry, thus mitigating agency costs (Zaher, Mohamed, and Basuony, 2020).

Khan and Watts's (2009) firm-year *C-SCORE* is an extension of Basu's (1997) model¹², as demonstrated in equation (2):

$$\begin{aligned} \frac{NI_{i,t}}{MC_{i,t-1}} = & \alpha_i + \beta_1 D_{i,t} + \beta_2 Return_{i,t} (\mu_1 + \mu_2 SIZE_{i,t-1} + \mu_3 MB_{i,t-1} + \mu_4 LEVERAGE_{i,t-1}) \\ & + \beta_3 D_{i,t} Return_{i,t} (\lambda_1 + \lambda_2 SIZE_{i,t-1} + \lambda_3 MB_{i,t-1} + \lambda_4 LEVERAGE_{i,t-1}) \\ & + (\delta_1 SIZE_{i,t-1} + \delta_2 MB_{i,t-1} + \delta_3 LEVERAGE_{i,t-1} + \delta_4 D_{i,t} SIZE_{i,t-1} \\ & + \delta_5 D_{i,t} MB_{i,t-1} + \delta_6 D_{i,t} LEV_{i,t-1}) + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where firm-year-specific timeliness of good news is expressed as $\beta_2 Return_{i,t} (\mu_1 + \mu_2 SIZE_{i,t-1} + \mu_3 MB_{i,t-1} + \mu_4 LEVERAGE_{i,t-1})$, and timely recognition of bad news is: $\beta_3 D_{i,t} Return_{i,t} (\lambda_1 + \lambda_2 SIZE_{i,t-1} + \lambda_3 MB_{i,t-1} + \lambda_4 LEVERAGE_{i,t-1}) = C - SCORE$.

In equation (2), NI_t is the net income before extraordinary items scaled by the market value of equity in quarter $t-1$. $Return_{i,t}$ is the monthly compounded return over the current quarter. $D_{i,t}$ is an indicator variable that equals one if $Return_{i,t}$ is negative, and zero otherwise. $SIZE_{i,t-1}$ is the natural logarithm of the market value of equity in quarter $t-1$. $MB_{i,t-1}$ is the market value of equity divided by the book value of equity in quarter $t-1$. $LEVERAGE_{i,t-1}$ is the short-term plus long-term (total) debt scaled by the market value of equity in quarter $t-1$.

¹² Basu's (1997) model: $NI_t/MCAP_{t-1} = \alpha_i + \beta_1 D_t + \beta_2 Return_t + \beta_3 D_t \times Return_t + \varepsilon_t$.

Contrary to discretionary accruals, a higher level of accounting conservatism is associated with a higher level of financial reporting transparency.

3.2.2 Country-level Information quality measures

The main focus of the EU securities regulation is to reduce differences between countries at the regulatory and institutional level, creating an equally-leveled field for all participants in capital markets in the EU area. However, the evidence provided by some previous studies, e.g., Christensen *et al.* (2016), supports the opposite view, documenting that prior legal environment can make markets diverge even more. Thus, we predict that the enforcement of the EU directives will be more efficient in countries with prior better regulatory and institutional quality. Hence, we use alternate information proxies that capture legal, institutional and regulatory quality.

Our first proxy is investor protection rights, measured as in Rossi and Volpin (2004), as the product of the rule of law and anti-director rights divided by ten, which ranges between 0 and 3.6. The rule of law is an indicator based on the assessment of law and order tradition in a country produced and disclosed by the International Country Risk Group (ICRG); we use the most recent report of ICRG, dated of July 2016. The anti-director rights is an index proposed by La Porta *et al.* (1998) that measures shareholder's rights. Based on this investor protection measure, we create a dummy variable of high investor protection that equals one if a country's investor protection measure is above the median, and zero otherwise. This indicator will be further used in the empirical analysis.

Our next measures intend to capture the ability of law enforcement - rule of law - and the regulatory quality of institutions - regulatory quality - proposed by Kaufmann *et al.* (2009); these indicators are time-varying, range between 0 and 100%, and are described in detail in Appendix A. As suggested by Maung *et al.* (2019), country-level variables must account for changes across time in each country. We gathered the information for each indicator in the World Bank Database (Worldwide Governance Indicators). For each indicator, we create a binary variable equal to one

if a country's measure is above the median in a specific year, and zero otherwise. Once, countries above the median are included in the group of high legal and institutional quality.

The last measure is the *Disclosure* requirements index proposed by La Porta, Lopez-De-Silanes, and Shleifer (2006) as an alternate proxy that captures the information environment quality, which varies between 0 and 1. Once, we assign countries to high (low) levels of disclosure if they are above (below) the median value¹³.

3.2.3 The Difference-in-Differences methodology

We hypothesize a positive effect post regulation on acquirers' returns due to an improvement in the information environment around the stock-financed M&A announcements. To test this prediction, we estimate cumulative abnormal returns from the market model using a local market index and also including a world market index (see, e.g., Fauver *et al.*, 2017), as shown in equation (3).

$$R_{i,t} = \alpha_{i,c} + \beta_1 R_{c,t} + \beta_2 R_{w,t} + \varepsilon_{i,c,t} \quad (3)$$

where $R_{i,t}$ is firm i 's daily's stock return; $R_{c,t}$ is daily's domestic market index return for country c ; $R_{w,t}$ is daily's return on a world market index; domestic and world market indexes are Datastream indexes, respectively. $\varepsilon_{i,c,t}$ is firm i 's firm-specific daily's return. Our estimation window is (-255, -25) relative to the announcement day (event day 0) to assure that normal performance is not affected by the event itself (see, e.g., MacKinlay, 1997). We estimate cumulative abnormal returns (CAR) for acquirers over a three-day window (-1,+1), and an eleven-day window (-5,+5). Table 2 shows the descriptive statistics of CARs and other variables for the treatment and control samples.

[Insert Table 2 here]

¹³ Table I in the Internet Appendix describes our measures of information quality and the origin of the law per country. The judicial system of most countries included in our sample is Civil Law. Although our sample is majority formed from Civil Law countries (about 72%), comparing this information with Table 1 we conclude that most M&A deals are concentrated in Common Law countries (as is the case of Canada, the United Kingdom, and the United States).

Panel A of Table 2 shows that the mean of abnormal returns for acquirers that make public acquisitions in treatment (control) group ranges between 0.52% (0.20%) and 0.12% (0.49%). However, when we consider only the acquirers' abnormal returns from 100% stock-financed deals, returns are negative; e.g. over a 3-day window, the mean is -0.28% (-0.45%) for treatment (control) sample. In Panel B, we observe that differences in means of CARs are not statistically significant among treat and control groups. We also observe in Panel A that about one fourth of M&A deals are paid in stock in our treatment sample of EU public firms, while in the control sample the fraction of deals paid in stock is about one third.

To analyze the impact of regulation on abnormal returns around stock-financed acquisitions announcements, first, we test the reaction on CARs to the method of payment by estimating equation (4) as follows:

$$CAR_{i,t} = \alpha_{i,c} + \beta_1 M\&A_{i,t}(Stock\ Payment) + \gamma_1 (Firm\ level_{i,t-1}) + \gamma_2 (Deal\ level_{i,t}) + \gamma_3 (Country\ level_{c,t-1}) + \lambda_c + \eta_j + \gamma_t + \varepsilon_{i,c,t} \quad (4)$$

Second, we run different specifications of our generalized difference-in-differences (DiD) model (see, e.g., Atanasov and Black, 2016), as shown in equation (5):

$$CAR_{i,t} = \alpha_{i,c} + \beta_1 Treat_c + \beta_2 Post\ TPD_{c,t} + \beta_3 Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment) + \beta_4 M\&A_{i,t}(Stock\ Payment) + \gamma_1 (Firm\ level_{i,t-1}) + \gamma_2 (Deal\ level_{i,t}) + \gamma_3 (Country\ level_{c,t-1}) + \lambda_c + \eta_j + \gamma_t + \varepsilon_{i,c,t} \quad (5)$$

where $CAR_{i,t}$ is the cumulative abnormal returns estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). $Treat_i$ is an indicator variable that equals one if firm i is included in our treatment group, and zero otherwise. Our treatment group includes all M&A deals involving EU listed acquirers, announced between 2000 and 2018. $Post\ TPD_{c,t}$ is an indicator variable that equals one starting in the quarter after the adoption of TPD in EU countries, and zero otherwise; $M\&A(Stock\ Payment)$ dummy assumes one if M&A deals are 100% stock-financed. Our vector of firm-level variables includes: $Market - Book_{i,t-1}$ is the market value of equity divided by the

book value of equity; $ROA_{i,t-1}$ is the net income before extraordinary items scaled by total assets; $Leverage_{i,t-1}$ is the long-term debt scaled by total assets. All firm-level variables are lagged one quarter. Consistent with prior research (e.g., Alexandridis *et al.*, 2010; Golubov *et al.*, 2016; Mateev and Andonov, 2016), we also include a set of contemporaneous deal-level variables, as follows: *Relative Size* is the deal value divided by the acquirer's total assets lagged one period (i.e., in quarter $t-1$); *Cross-border* that equals one if the target country is different from the acquirer's country, and zero otherwise; *Industry Diversification* is an indicator variable that equals one if the acquirer and target belong to the same 2-digit SIC Code, and zero otherwise. To control for cross-countries differences, we include *GDP per Capita*, measured as the logarithm of GDP *per capita*, reflecting constant 2010 USD prices, and *GDP Growth* is the annual percentage growth rate of real GDP. All variables are defined in Appendix A. We clustered standard errors by country. We also include country (λ_c), industry (η_j), and quarter-year (γ_t) fixed effects to control for unobservable characteristics.

4. Empirical Results

4.1 *The impact of regulation on acquirers' cumulative abnormal returns around stock-financed acquisitions*

To test the reaction of announcement returns for acquirers in stock-for-stock deals, we estimate equation (4). Table 3 shows the results.

[Insert Table 3 here]

The results in Table 3 show negative coefficient estimates of *Stock Payment* variable across models, consistent with, e.g., Asquith *et al.* (1987). albeit not statistically significant in model (1). Indeed, more recent evidence from European countries (e.g., Alexandridis *et al.* (2010), using a sample across the world of public acquirers and targets, and Mateev and Andonov (2016) based on a sample of European firms that acquired public and private targets) concludes that acquirers' abnormal returns in stock-for-stock acquisitions are, at least, not statistically different from zero. We posit that this result in the last decades can, in part, be attributed to the enactment of EU

directives, as it is the case of Transparency Directive. Such rules change the firms' information environment by requiring more stringent financial reporting and disclosure. To test this hypothesis, we estimate our diff-in-diff model (equation (5)). Our main variable of interest, $Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$, captures the impact of the transposition of TPD on EU acquirers' abnormal returns from public acquisitions. Per our hypothesis, the coefficient on this variable is expected to be positive, which is confirmed from our estimation of models (3) and (4) in Table 3. Taking model (3) as an example, our treatment sample of EU acquirers' abnormal (three-day window) returns experienced an economically and statistically significant increase of about 2.4 pp in the post-TPD period relative to a control sample of non-EU acquirers, representing a substantial increase in its mean in the treatment sample (-0.28%).

Our results are consistent with some previous studies that also found positive abnormal returns for acquirers around stock-financed M&A deals; e.g, Alexandridis *et al.* (2010) found cumulative abnormal (five-day window) returns for European acquirers of 1.61 percent (excluding the UK) over the 1990-2007 period.

We also find that acquirers with higher market-to-book ratio earn, on average, about 0.09 pp higher announcement returns. However, a larger target size relative to acquirers' size (*Relative Size*) pushes down about 0.50 pp (1.0 pp) abnormal 3-day window (11-day window) returns for acquirers. Furthermore, our results suggest that cross-border acquisitions result in higher returns for acquirers (on average 0.855 pp higher three-day window returns), but that seems to vanish when the event enlarges from a three to an eleven-day window.

4.1.1 Testing the Identification Strategy

Existing studies that provide evidence on causal effects of securities regulation (e.g., Christensen *et al.*, 2016; Fauver *et al.*, 2017; and Watanabe *et al.*, 2019) point out that the staggered implementation of EU directives on a wide number of countries mitigates concerns about possible confounding events occurring at the same time as the regulation enactment, which is not expected to affect all countries at all exact dates of the transposition of the EU directives. However, to

address possible concerns about confounding shocks associated to the enactment of new regulation and, simultaneously, to validate our identification strategy, we test if the discount in acquirers' returns associated with stock-financed acquisitions, uncovered in the literature, is mitigated only in the period post regulation and not before. In doing so, we extended our DiD model (equation (5)) and include $Pre\ TPD_{c,t}$, a dummy variable that is one before the transposition of TPD to national law in each EU member state, and zero otherwise. Then, we interact $Pre\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$ to compare pre- and post-TPD impact on acquirers' abnormal returns around stock-financed acquisitions announcements in the EU. The exact quarter of the passage of the rule (that corresponds to time zero) is not included in neither indicator pre- or post-TPD. Next, we restrict our pre- and post-TPD dummies to 3 years (or 12 quarters) around the adoption of TPD. Panel A of Table 4 shows the results.

[Insert Table 4 here]

As can be observed in Panel A, the coefficient estimates on the interaction terms $Pre\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$ and $Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$ are only positive and statistically significant for the latter, meaning that the increase in announcement returns experienced by EU acquirers only materializes after the TPD adoption and not before – the estimates of $Pre\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$ are not statically significant across all models.

As an additional check, in Panel B, we run a placebo test where we define that the transposition dates of TPD start one year earlier in each EU member state: for example, for Austria, instead of the date when TPD was enacted (April 2007), we define the passage of the law as of April 2006. The results in Panel B show that the estimates on $Post\ Placebo \times Stock\ Payment$ are not statistically significant, which again suggests that the positive impact on bidders' announcement returns occurs post TPD enactment and not before.

4.2 Does the quality of firms' earnings moderate the impact of regulation on stock based acquisition returns?

Besides the adverse selection effect that surrounds stock-financed acquisitions, which is widely documented in previous literature, researchers find evidence of earnings manipulation upward prior to stock-financed acquisition announcements (e.g., Erickson and Wang, 1999; Louis, 2004; Botsari and Meeks, 2008; Gong *et al.*, 2008a, 2008b; Pungaliya and Vijh, 2009; Karim *et al.*, 2016). In our sample, we confirm the same facts. We estimate a probit model where the dependent variable is one for stock-paid acquisitions and zero otherwise. We run the model on the variable of interest – accrual-based earnings management prior to the deal – and a set of control variables, including *Market-Book*, return-on-assets (ROA), *Leverage*, *Relative Size*, *Cross-border* and *Industry Diversification* dummies, and GDP *per capita* and real GDP growth rate to control for country-level characteristics. Table 5 provides the results.

[Insert Table 5 here]

In line with the literature, our results show that managers engage in more aggressive earnings management prior to announce a public stock-financed acquisition.

Consistent with prior evidence, we expect that the ability of managers to manipulate earnings prior to stock-financed acquisitions is inversely related to the level of investor protection (e.g., Leuz, Nanda, and Wysocki, 2003; Karim *et al.*, 2016; Maung *et al.*, 2019). In this section, we examine the impact of adopting TPD on acquirers' returns in stock-paid acquisitions conditional of the quality of the acquirers' financial reporting. The expected improved transparency around M&As brought about by the enactment of TPD helps investors identify firms with better or worse quality of their earnings. Acquirers with poor earnings quality are expected to be more penalized in stock-for-stock acquisitions post TPD. For this analysis, we use two proxies for earnings quality¹⁴: (i) signed discretionary accruals based on the performance and growth, ROA&SG-adjusted model (as proposed by Collins *et al.*, 2017), and (ii) Khan and Watts's (2009) firm-year

¹⁴ Additionally, we will also use real earnings management as measures of financial reporting transparency, as explained in detail in Section B in the Internet Appendix. We estimate two proxies that capture real earnings management widely used in prior studies (e.g., Roychowdury, 2006; Cohen, Dey, and Lys, 2008; Cohen and Zarowin, 2010), such as i) abnormal cash flows from operations, and ii) abnormal production costs.

accounting conservatism measure, *C-SCORE*. Measures of discretionary accruals and accounting conservatism have been used in the literature as proxies for financial reporting quality (e.g., Leuz *et al.*, 2003; Ball and Shivakumar, 2005; Hutton, Marcus, and Tehranian, 2009; Francis *et al.*, 2013; Khalilov and Osma, 2020; Lara *et al.*, 2020; Zaher *et al.*, 2020). Higher (lower) values of discretionary accruals (accounting conservatism) are associated with poorer quality of the firms' financial information. Using these two measures, we split the sample into *high* versus *low* earnings quality, taking the country median as the cut-off point. Then, for each subsample, we re-estimate our DiD model. Table 6¹⁵ shows the results.

[Insert Table 6 here]

In models (1)-(4), we use signed discretionary accruals adjusted for performance and growth to separate the groups of firms with *high* from *low* earnings quality, and, in models (5) to (8), we use *C-SCORE* to separate the two groups. Our results indicate that, in the groups of acquirers with better earnings quality the variable of interest, $Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$, is positive and statistically significant, indicating that post regulation this was the group of acquirers that performed better in stock-paid acquisitions. Using the model (1) as an example, the results show that acquirers from countries with below-median discretionary accruals (*high* earnings quality group) earn, on average, more 3.1 pp post-TPD relative to our control sample (formed of non-EU acquirers). Although the coefficient of interest is also statistically significant in model (4) (*low* earnings quality group), the economic magnitude is considerably smaller than that of the high group (0.064 for the *high* versus 0.05 for the *low* group).

Moreover, the coefficients are statistically different between groups among models (5)-(8), i.e., the *z*-test for the equality of β_3 , our variable of interest, is statistically significant meaning that acquirers from countries with above-median accounting conservatism captured by *C-SCORE* (*high* earnings quality group) gain higher abnormal returns post-TPD relative to the *low* earnings quality group.

¹⁵ We replicate results in Tables 5 and 6 using two proxies for real earnings management. Results are not tabulate for brevity, but they are available in the Internet Appendix, Tables II and III, respectively.

Taken together, the evidence provided in Table 6 suggests that after the TPD enactment, which claims for improvements in firm transparency, the discount associated with stock-financed acquisitions is lower for acquirers with better earnings quality when compared to the control sample that was not subject to the passage of the rule.

4.3 *The different impact of TPD across EU countries*

In this section, we study whether the impact of TPD on mitigating the discount associated with stock-paid acquisitions varies across EU countries. Specifically, we examine whether the *ex ante* level of shareholder protection and the quality of the countries' institutions moderates the impact of the regulation. Previous studies conducted by, e.g., Djankov *et al.* (2003), Christensen *et al.* (2016), Fauver *et al.* (2017), highlight some interesting facts: the same regulation applied to different countries yields different outcomes, depending on some pre-existing conditions, such as the level of shareholder protection, the quality of the legal enforcement, or the general quality of the countries' institutions. Based upon those studies, we posit that countries with *ex ante* stronger regulatory conditions and better quality of their institutions benefit more from the adoption of TPD. To investigate this hypothesis, we estimate our DiD equation (5) separately on different samples of acquirers from countries with *high* versus *low* levels of investor protection and institutional quality. We use four proxies to assign countries to the high and low groups, as follows: (i) investor protection used by Rossi and Volpin (2004) that assesses the minority shareholders' rights measured as the product of the rule of law (disclosed by ICRG) and anti-director rights (La Porta *et al.*, 1998) divided by ten, (ii) the rule of law, which captures the enforcement of the law as proposed by Kaufmann *et al.* (2009), (iii) the regulatory quality of institutions also suggested by Kaufmann *et al.* (2009), and (iv) disclosure requirements index of La Porta *et al.* (2006) as an indicator of corporate information environment quality; all indicators are described in detail in subsection 3.2.2. Hence, we create indicator variables that equal one if a country's information quality measure is above the median, and zero otherwise. We report the results in Table 7.

[Insert Table 7 here]

In Panel A (Panel B) of Table 7, our main variable of interest is $Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$ that captures the impact of the TPD enactment on acquirers' announcement returns for stock-financed M&A deals over a three-day window (an eleven-day window), and for *high* versus *low* groups based on information environment proxies described above. The evidence provided in Table 7 is consistent across estimations; there is a positive impact on acquirers' returns (our treatment group) in the post-regulation period for the *high* information environment quality group. Therefore, our findings suggest that EU acquirers from countries with better *ex ante* quality of their regulatory environment benefit more from the TPD enactment and enforcement; the estimates of our variable of interest are significant across models for the *high* group. Taking, in Panel A, the coefficients of models for the *high* information environment group – models (1), (3), (5), and (7) – the change in acquirers' CARs ranges between 3.17 pp in model (3) and 4.25 pp in model (1). The economic magnitude of acquirers' returns (over a three-day window) increases, on average, about 4 pp for the high information environment quality group. We also find similar results in Panel B, where acquirers from better information environment earn, on average, more 4.6 pp estimated over an eleven-day window¹⁶.

Our results echo the findings of Christensen *et al.* (2016) and Fauver *et al.* (2017); the efficacy of regulation may depend on the pre-existing quality of the countries' institutions, which can compromise what might (perhaps) be the major objective of the EU Financial Services Action Plan: to create an equally-leveled field for all member states.

4.4 Robustness tests

In this section, we test whether the impact attributed to TPD that documented throughout this study can be subsumed by the adoption of earlier EU Directives – Prospectus Directive (PD) and Market Abuse Directive (MAD). Although these directives are not considered to be concurrent

¹⁶ We construct an alternative information quality measure - financial development - using country-level variables from Cihak *et al.* (2012) Global Financial Development Database, available in the World Bank's World Development Indicators (WDI). This measure is described in detail in Appendix A. Then, we create an indicator variable equal to one if a country's measure is above the yearly median, and zero otherwise. Table IV in the Internet Appendix reports the results, which are consistent and qualitatively similar to the ones shown in Table 7.

but complementary to TPD, all intend to reduce capital markets inefficiencies and may have an impact on reducing adverse selection problems. This raises the concern that our main results presented in Tables 3-6 may not be attributed to the enactment of TPD, but to former directives. To check the robustness of our results, we re-estimate our DiD specification (equation (5)) controlling for the transposition of both PD and MAD to analyze the impact of these directives on acquirers' returns around stock-paid acquisitions. Table 8 exhibits the results.

[Insert Table 8 here]

In models (1)-(2), Panel A, we add to our DiD model in equation (5) the control variables *Post-PD* and *Post-MAD* that equal one starting the quarter after the transposition of each directive - Prospectus Directive (PD) and Market Abuse Directive (MAD) - and zero otherwise. The high correlation between the enactment dates of PD and MAD¹⁷ may anticipate some contamination in our main results. Therefore, in Panel A, models (3)-(4) show results controlling for the passage of PD, and in models (5)-(6) we control for the transposition of MAD.

The results in Table 8 show that our variable of interest ($Post\ TPD_{c,t} \times M\&A_{i,t}(Stock\ Payment)$) exhibits coefficients of similar magnitude to the ones presented in Table 3; EU acquirers' abnormal returns over a three-day window (an eleven-day window) experienced an economically and statistically significant increase of about 2.4 pp (3.0 pp) in the post-TPD period relative to a control sample of non-EU acquirers.

The coefficients of control variables *Post-PD* and *Post-MAD* are, on average, insignificant across estimations.

Taken together, our results suggest that the TPD effects on acquirers' returns are not absorbed by the PD or MAD. Nonetheless, evidence provided by Fauver *et al.* (2017) find that the enactment of MAD and PD in EU member states leads to significant higher abnormal returns around announcements of seasoned equity offerings after the adoption of those directives; hence, the most plausible explanation is that the TPD enactment has absorbed the effects that emerged following the passage of the PD and MAD.

¹⁷ See entry-into-force dates described in Table V in Section D of the Internet Appendix.

We replicate our prior analysis on the impact of earnings quality and information environment quality (Tables 6 and 7, respectively) controlling for the passage of PD (MAD). Panels B-D of Table 8 show the results. Again, this further evidence does not harm our previous findings and gives support to our conclusion that the effects caused by the transposition of TPD overlapped the effects of the passage of PD or MAD.

Additionally, we addressed the concern about the presence of accession countries¹⁸ in the control sample due to the so-called Europeanization process that these countries undergo prior to joining the EU, which involves the pre-adoption of a set of EU rules to increase their chances of a successful integration (Steunenberg and Toshkov, 2009; Scholten and Ottow, 2014; Economides and Ker-Lindsay, 2015). The fact that such countries pre-commit to the EU regulation may question their role as a control in our study. The only EU candidate included in our control sample is Turkey, with only nine stock-for-stock acquisitions. We re-estimated all models in our tables excluding Turkey and, as expected, found identical results. Finally, to mitigate concerns that the duration of EU membership might distort our results, as it could in case the pressure to comply with regulation is related to membership duration, we excluded all countries that accessed EU after 2000 – Croatia (EU member since July/2013), Cyprus, Hungary, Malta, Poland (since May/2004), and Romania (since Jan/2007). Again the number of observations dropped was minimal (about 3.89% of treatment group observations); we then re-estimate all models in all tables and found similar estimates on all coefficients of interest¹⁹.

5. Main Conclusions

In this study, we examine whether the passage of the EU Transparency Directive, aiming at improving the information quality of public firms in the EU, helped mitigate the acquirer discount in stock-financed public acquisitions, which is partially caused by information asymmetry problems. The enactment of regulation that improves firm transparency is expected to reduce

¹⁸ Current EU candidate countries are Albania, the Republic of North Macedonia, Montenegro, Serbia, and Turkey. Potential candidates for pre-accession are Bosnia and Herzegovina and Kosovo.

¹⁹ For brevity, these results are not tabulated, but can be provided upon request.

adverse selection problems about the market value of firm equity, thus reducing the typical negative acquirer's stock price reaction surrounding the announcement of stock-for-stock acquisitions of public targets.

We test our hypotheses using a difference-in-differences model with a treatment sample of 925 public acquisitions from 23 EU countries and a control sample of 4329 public acquisitions from 31 non-EU countries, over the 2000-2018 period. Our findings suggest that, post TPD, acquirers that engage in stock-for-stock acquisitions of public targets earn higher announcement returns than their peers from the control group. We test our identification strategy and observe that the increase in acquirers' returns only materializes after the TPD adoption and not before.

Additionally, we find that the impact of TPD in mitigating acquirers' discount of stock-financed acquisitions is greater for acquirers with better earnings quality, suggesting that TPD helped clear the water and allowed investors to better distinguish firms with better or worse earnings quality. Finally, we also document that the impact of TPD in reducing the discount associated with stock-paid acquisitions accrues essentially to acquirers located in EU countries with better shareholder protection and institutional quality. This result echoes the findings of Christensen *et al.* (2016) and Fauver *et al.* (2017), showing that the pre-existing quality of the countries' institutions are essential to the success of EU securities regulation, which ultimate goal is to achieve a deeper integration of capital markets and create an equally-leveled field for all member states.

Overall, our study offers some interesting policy implications. First, EU securities regulation that promote a timely reporting of financial information and increase corporate transparency helps reduce adverse selection problems, mitigating costs derived from market frictions and enhancing the value of corporate activities that are more sensitive to be hurt by information asymmetry problems. Second, our evidence suggests that improving the quality of the underlying national institutions of EU member states in a broader sense is essential to achieve the full benefits of some more specific securities regulation. For instance, advances in regulatory quality, law enforcement, and investor protection will favor the harmonization process and contribute to a deeper integration

of EU financial markets. The Shareholder Rights Directive enacted by European Commission is one step on that direction²⁰. Third, the evidence on the effects of EU securities regulation, and particularly the importance of the moderating factors, suggests areas of potential reforms in domestic institutions to be followed by other accession countries seeking their integration in the EU area to ensure a smoother harmonization process.

²⁰ To dissipate differences in legislation on investor protection rights, the European Commission enacted the Shareholder Rights Directive (SRD), which requires companies to implement mandatory transparency procedures that ensure protection of shareholder rights and promote shareholding voting.

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Appendix A - Definitions and Sources of the variables

Variable	Definition	Source
<u>Firm-level</u>		
Discretionary Accruals (DISACCR)	Performance and growth (ROA & SG)-adjusted model (see Collins <i>et al.</i> , 2017) estimated via modified Jones' (1991) model, as in Dechow <i>et al.</i> (1995). $\frac{ACCR_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \beta_2 \frac{PPE_{i,t}}{TA_{i,t-1}} + \beta_3 ROA_{i,t-1} + \beta_4 SG_{i,t} + \varepsilon_{i,t}$ <p>where $ACCR_{i,t} = (\Delta CA_{i,t} - \Delta CASH_{i,t}) - (\Delta CL_{i,t} - \Delta STD_{i,t}) - DEP_{i,t}$, $\Delta CA_{i,t}$ is the change in current assets, $\Delta CASH_{i,t}$ is the change in cash and equivalents of cash, $\Delta CL_{i,t}$ is the change in current liabilities, $\Delta STD_{i,t}$ is the change in short-term debt included in current liabilities, and $DEP_{i,t}$ is depreciation and amortization expenses; $\Delta SALES_{i,t}$ is the change in sales in quarter t; $PPE_{i,t}$ is property, plant and equipment. All variables are scaled by lagged total assets ($TA_{i,t-1}$). $ROA_{i,t-1}$ is the net income before extraordinary items scaled by lagged total assets. SG is the percentage change in sales over quarter $t-1$ to t. Signed discretionary accruals are then estimated as:</p> $DISACCR = \frac{ACCR_{i,t}}{TA_{i,t-1}} - \left(\hat{\alpha}_0 \frac{1}{TA_{i,t-1}} + \hat{\beta}_1 \frac{\Delta REVENUES_{i,t}}{TA_{i,t-1}} + \hat{\beta}_2 \frac{PPE_{i,t}}{TA_{i,t-1}} + \hat{\beta}_3 ROA_{i,t-1} + \hat{\beta}_4 SG_{i,t} \right)$ <p>where $\Delta REVENUES_{i,t}$ is computed as the change in sales minus receivables scaled by lagged total assets.</p>	Worldscope
C-SCORE	Khan and Watts's (2009) firm-year conservatism measure: $C_SCORE = \beta_3 D_{i,t} Return_{i,t} (\lambda_1 + \lambda_2 SIZE_{i,t-1} + \lambda_3 MB_{i,t-1} + \lambda_4 LEVERAGE_{i,t-1})$, where $Return_{i,t}$ is the monthly compounded return over the current quarter. $D_{i,t}$ is an indicator variable that equals one if $Return_{i,t}$ is negative, and zero otherwise. $SIZE_{i,t-1}$ is the natural logarithm of the market value of equity; $MB_{i,t-1}$ is the market value of equity divided by the book value of equity; $LEVERAGE_{i,t-1}$ is the short-term plus long-term debt scaled by the market value of equity.	Khan and Watts (2009), Datastream and Worldscope
Cumulative abnormal returns (CARs)	Absolute value of cumulative abnormal returns over a three-day window (-1,+1), and an eleven-day window (-5,+5).	Datastream
Leverage	Long-term debt divided by total assets.	Worldscope
Market Capitalization	The value of market cap measured at current prices of 2010.	Worldscope
Market-Book Ratio	The market value of equity divided by the book value of equity.	Worldscope
ROA	Net income before extraordinary items divided by total assets.	Worldscope
Total Assets	Total assets measured at current prices of 2010.	Worldscope
<u>Deal-Level</u>		
Stock Payment	Indicator variable that equals one for 100% stock-financed M&A deals, and zero otherwise	SDC

Variable	Definition	Source
Cash Payment	Indicator variable that equals one for 100% cash-financed M&A deals, and zero otherwise.	SDC
Cross-border	Dummy variable that equals one if the target country differs from the acquirer's country, and zero otherwise	SDC
Industry Diversification	Dummy variable that equals one if the acquirer and target belong to the same 2-digit SIC Code, and zero otherwise.	SDC
Relative Size	The M&A deal value divided by the acquirer's total assets measured in the quarter before the acquisition announcement.	SDC and Worldscope
<u>Industry-Level</u>		
Industry	Classification scheme proposed by Fama and French (1997), based on 17 Industry Portfolios.	Fama and French (1997)
2-SIC Code	2-digit Standard Industrial Classification (SIC) Code.	Datastream
<u>Country-Level</u>		
Disclosure	Disclosure requirements index proposed by La Porta, Lopez-De-Silanes and Shleifer (2006).	La Porta, Lopez-De-Silanes and Shleifer (2006)
Financial Development	Proxy that captures the size of financial institutions and markets; it includes the stock market capitalization, stock market total value traded, and private and public debt securities, all expressed in % of GDP, and stock market turnover ratio (in %). This index is a weighted average of these variables, where the weights are given by their principal components.	Cihak <i>et al.</i> (2012) Global Financial Development Database Worldbank (Development Indicators)
GDP Growth	Annual percentage growth rate of real gross domestic product (GDP).	Worldbank (Development Indicators)
GDP <i>per Capita</i>	Logarithm of gross GDP <i>per capita</i> , measured at constant 2010 U.S. dollar prices.	Worldbank (Development Indicators)
Investor Protection	Proxy for minority shareholders' rights, measured as the product of the rule of law (ICRG) and anti-director rights (La Porta <i>et al.</i> (1998)) divided by ten. Rule of Law is a measure based on the assessment of law and order tradition in a country produced and disclosed by the International Country Risk Group (ICRG). Anti-director rights is an index proposed by La Porta <i>et al.</i> (1998) that assesses the effective rights of minority shareholders.	La Porta <i>et al.</i> (1998) International Country Risk Group
Regulatory Quality	Proxy for institutional quality based on the ability of governments to formulate and adopt policies and regulations that promote private sector development.	Kaufmann <i>et al.</i> (2009) Worldbank (Worldwide Governance Indicators)
Rule of law	Proxy that captures the enforcement of the law measured by the quality of contract enforcement, property rights, confidence in law forces and courts.	Kaufmann <i>et al.</i> (2009) Worldbank (Worldwide Governance Indicators)

Table 1: Sample Description by Country

Table 1 describes our sample of M&A deals in EU (treatment) and non-EU (control) countries announced between 2000 and 2018. This Table shows the number of acquirers (“No. Acquirers”) and the number of M&A deals (“No. Deals”) per country. Panel A (Panel B) describes the treatment (control) sample formed of EU firms (non-EU firms) that made public acquisitions, and also shows the entry-into-force dates of Transparency Directive (TPD).

Panel A: Description of treatment sample by country

<i>Country:</i>	No. Acquirers	No. Deals	TPD
Austria	10	10	Apr-07
Belgium	14	19	Sep-08
Croatia	1	1	Jul-13
Cyprus	1	1	Mar-08
Denmark	15	20	Jun-07
Finland	19	24	Feb-07
France	94	146	Dec-07
Germany	48	60	Jan-07
Greece	15	17	Jul-07
Hungary	1	1	Dec-07
Iceland	3	3	Nov-07
Ireland	17	26	Jun-07
Italy	25	33	Nov-07
Luxembourg	5	8	Jan-08
Malta	1	1	Oct-07
Netherlands	31	41	Jan-09
Norway	30	38	Jan-08
Poland	27	30	Mar-09
Portugal	2	2	Nov-07
Romania	2	2	Jan-07
Spain	16	25	Dec-07
Sweden	56	78	Jul-07
United Kingdom	250	339	Jan-07
All Countries	683	925	

Panel B: Description of control sample by country

<i>Country:</i>	No. Acquirers	No. Deals
Argentina	2	2
Australia	223	286
Brazil	23	32
Canada	547	826
Chile	5	7
China	50	53
Colombia	4	4
Egypt	2	2
Hong Kong	21	25
India	76	99
Indonesia	7	8
Israel	27	36
Japan	338	468
Jordan	1	1
Malaysia	11	11
Mexico	17	17
New Zealand	8	9
Pakistan	3	3
Peru	4	5
Philippines	8	8
Russia	12	16
Singapore	24	28
South Africa	20	27
South Korea	112	127
Sri Lanka	4	4

Switzerland	36	57
Taiwan	48	62
Thailand	19	21
Turkey	8	9
United States	1240	2074
Uruguay	1	2
All Countries	2901	4329

Table 2: Descriptive Statistics

Table 2 describes our sample of M&A deals in EU (treatment group) and non-EU (control group) countries announced between 2000 and 2018 and collected from Thomson Financial's SDC. Panel A reports the descriptive statistics for the main variables. The full sample is divided into treatment (EU public acquirers) and control (non-EU public acquirers). For each variable, we report the number of observations ("N"), the mean, the median, and the standard deviation. Cumulative abnormal returns (CAR) are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). *Total Assets (Market Capitalization)* are expressed in US\$ thousand million (reflecting 2010 Consumer Price Index). *Market-book* is the market value of equity divided by the book value of equity. *Leverage* is the ratio of long-term debt to total assets. *ROA* is net income before extraordinary items divided by total assets. *Dis. Accruals* is the signed discretionary accruals adjusted for performance and growth ROA&SG (see Collins *et al.*, 2017), in year *t-1*. *C-SCORE* is Khan and Watts's (2009) firm-year earnings conservatism measure. *Stock (Cash) Payment* is an indicator variable that equals one for 100% stock-financed (cash-financed) acquisitions, and zero otherwise. *Relative Size* is the deal value divided by the acquirer's total assets measured in the quarter prior to the acquisition announcement. *Cross-border* is a dummy variable that equals one if the target country is different from the acquirer's country, and zero otherwise. *Industry Diversification* is an indicator variable that equals one if the acquirer and target belong to the same 2-digit SIC Code, and zero otherwise. *GDP per Capita* is measured as a logarithm at constant 2010 USD prices. *GDP Growth* is the annual percentage growth rate of real GDP. All variables are defined in Appendix A. Panel B reports the differences in means of CARs between treatment and control groups. Differences in means are tested using *t*-statistic test. *P*-value of *t*-statistic test reported.

<i>Panel A – Descriptive Statistics</i>								
	Treatment				Control			
	N	Mean	Median	SD	N	Mean	Median	SD
<u>Ab. Returns</u>								
CAR (-1,+1)	834	0.0052	0.0030	0.0703	3792	0.0020	-0.0010	0.0870
CAR (-5,+5)	834	0.0012	-0.0013	0.0996	3792	0.0049	-0.0009	0.1287
<u>100% Stock-</u>								
CAR (-1,+1)	177	-0.0028	-0.0047	0.0835	1211	-0.0045	-0.0099	0.1097
CAR (-5,+5)	177	-0.0127	-0.0124	0.1112	1211	0.0007	-0.0093	0.1642
<u>Firm-level</u>								
Total Assets	925	8.5	1.5	15.9	4329	6.7	1.2	13.7
Market Cap	925	8.7	1.4	18.3	4329	8.2	1.2	18.5
Market-Book	925	2.8423	2.1160	3.4798	4329	3.0001	2.0305	4.3332
Leverage	922	0.1646	0.1479	0.1400	4285	0.1680	0.1341	0.1689
ROA	925	0.0066	0.0394	0.2428	4329	-0.0284	0.0323	0.2926
Disc. Accruals	681	-0.0105	-0.0072	0.0624	3771	-0.0101	-0.0071	0.0581
C-SCORE	865	-0.0349	-0.0340	0.5375	4034	0.003	-0.0092	0.5785
<u>Deal-level</u>								
Stock Payment	795	0.2566	0.0000	0.4370	3956	0.3496	0.0000	0.4769
Cash Payment	795	0.5195	1.0000	0.4999	3956	0.3911	0.0000	0.4880
Relative Size	925	0.3752	0.1376	1.1390	4329	0.4440	0.1540	1.1239
Cross-border	925	0.5686	1.0000	0.4955	4329	0.2315	0.0000	0.4218
Industry Diversification	925	0.5146	1.0000	0.5001	4329	0.5320	1.0000	0.4990
<u>Country-level</u>								
GDP per capita	881	10.5890	10.5976	0.3125	4091	10.5697	10.7640	0.7236
GDP growth(%)	880	2.1855	2.4247	1.9644	4091	2.6478	2.5849	2.1969
<i>Panel B - Univariate Comparisons between Treatment and Control Groups</i>								
	Treatment		Control		(Treat-Control)	<i>p</i> value		
	N	Mean	N	Mean				
<u>Ab. Returns</u>								
CAR (-1,+1)	834	0.0052	3792	0.0020	0.0032	0.311		
CAR (-5,+5)	834	0.0012	3792	0.0049	-0.0037	0.428		
<u>100% Stock</u>								
CAR (-1,+1)	177	-0.0028	1211	-0.0045	0.0017	0.843		
CAR (-5,+5)	177	-0.0127	1211	0.0007	-0.0134	0.292		

Table 3: The impact of regulation on abnormal returns around stock-financed acquisitions announcements. Main Results.

This Table reports the coefficients' estimates of equation (4) in models (1)-(2) and of equation (5) in models (3)-(4). Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). *Treat* is a binary variable that equals one if firm *i* is included in our treatment group, i.e., EU public firms that acquired public targets. *Post-TPD* is an indicator variable equal to one starting the quarter after the adoption of the Transparency Directive for countries included in our treatment sample, and zero otherwise. *Stock Payment* is an indicator variable that equals one for 100% stock-financed acquisitions, and zero otherwise. All variables are as described in Table 2 and also in Appendix A. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>	CAR Acquirer			
	<i>Event window:</i>	(-1,+1)	(-5,+5)	(-1,+1)
<i>Model:</i>	(1)	(2)	(3)	(4)
Treat			-0.0620 (-1.22)	-0.0129 (-0.19)
Post-TPD			-0.0076 (-0.97)	0.0027 (0.35)
Post-TPD*Stock Payment			0.0244** (2.44)	0.0302* (1.70)
Stock Payment	-0.0080 (-1.65)	-0.0093* (-1.69)	-0.0095* (-2.01)	-0.0113* (-2.00)
Market-Book	0.0009*** (2.86)	0.0009* (1.78)	0.0009*** (2.86)	0.0009* (1.81)
ROA	-0.0186 (-1.44)	-0.0414*** (-6.37)	-0.0188 (-1.45)	-0.0419*** (-6.65)
Leverage	0.0119 (1.46)	-0.0119 (-1.46)	0.0115 (1.42)	-0.0120 (-1.47)
Relative Size	-0.0049*** (-3.76)	-0.0102*** (-4.56)	-0.0050*** (-3.88)	-0.0103*** (-4.73)
Cross-border	0.0084** (2.61)	0.0076 (1.57)	0.0087*** (2.73)	0.0079 (1.59)
Industry Diversification	-0.0005 (-0.17)	-0.0039 (-0.87)	-0.0005 (-0.17)	-0.0039 (-0.87)
GDP <i>per capita</i>	0.0231 (0.60)	0.0495 (0.82)	0.0238 (0.61)	0.0558 (0.91)
GDP growth	-0.0008 (-0.39)	-0.0005 (-0.19)	-0.0008 (-0.39)	-0.0004 (-0.16)
Constant	-0.1713 (-0.50)	-0.4265 (-0.76)	-0.1779 (-0.51)	-0.4817 (-0.85)
Fixed Effects		Quarter/Country/Industry		
Observations	3,985	3,985	3,985	3,985
R-squared	0.087	0.090	0.073	0.088

Table 4: The impact of regulation on abnormal returns around stock-financed acquisitions announcements. Identification Strategy

Table 4 reports estimates of different specifications of equation (5). Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). The variables *Treat* and *Post-TPD* are as described before. In Panel A, models (1)-(2), *Pre-TPD* is an indicator variable equal to one before the passage of the Transparency Directive (TPD) in countries included in our treatment sample (i.e., EU public acquirers). In models (3)-(4), *Pre-TPD* (*Post-TPD*) is a binary variable that assumes one in the three years before (after) the adoption of rule for our treatment sample, and zero otherwise. Panel B shows the results of our placebo test. *Post-Placebo* is an indicator variable equal to one starting one year earlier in each EU member state than the true entry-into-force dates of the Transparency Directive adoption for countries included in our treatment sample, and zero otherwise. The coefficients' estimates of the remaining control variables are not reported for brevity. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Panel A: Time event analysis</i>				
<i>Dependent Variable:</i>	CAR Acquirer			
<i>Time window:</i>	Pre- and post- TPD		(-3,3) yrs around TPD	
<i>Event window:</i>	(-1,+1)	(-5,+5)	(-1,+1)	(-5,+5)
<i>Model:</i>	(1)	(2)	(3)	(4)
Treat	-0.0058 (-0.11)	0.0557 (0.82)	-0.0624 (-1.20)	-0.0230 (-0.34)
Post-TPD	-0.0633*** (-3.56)	-0.0649*** (-3.58)	-0.0073 (-0.76)	0.0131 (1.27)
Post-TPD*Stock Payment	0.0248** (2.43)	0.0283 (1.56)	0.0248** (2.44)	0.0298* (1.69)
Pre-TPD	-0.0576*** (-3.66)	-0.0644*** (-4.13)	-0.0039 (-0.50)	0.0214** (2.03)
Pre-TPD* Stock Payment	0.0029 (0.22)	-0.0180 (-1.08)	0.0135 (0.91)	-0.0036 (-0.16)
Stock Payment	-0.0099* (-1.91)	-0.0095 (-1.47)	-0.0101** (-2.13)	-0.0114* (-2.01)
Control Variables	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry			
Observations	3,985	3,985	3,985	3,985
R-squared	0.089	0.075	0.088	0.074
<i>Panel B: Placebo test</i>				
<i>Dependent Variable:</i>	CAR Acquirer			
<i>Event window</i>	(-1,+1)		(-5,+5)	
<i>Model:</i>	(1)	(2)	(1)	(2)
Treat	-0.0643 (-1.26)	-0.0052 (-0.08)	-0.0643 (-1.26)	-0.0052 (-0.08)
Post-Placebo	-0.0054 (-0.48)	-0.0017 (-0.14)	-0.0054 (-0.48)	-0.0017 (-0.14)
Post-Placebo *Stock Payment	0.0138 (1.57)	0.0116 (0.96)	0.0138 (1.57)	0.0116 (0.96)
Stock Payment	-0.0097* (-1.92)	-0.0107* (-1.80)	-0.0097* (-1.92)	-0.0107* (-1.80)
Control Variables	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry			
Observations	3,985	3,985	3,985	3,985
R-squared	0.088	0.073	0.088	0.073

Table 5: The incidence of earnings management prior to stock-financed acquisitions

This Table provides the marginal effects for a probit model that sets *Stock Payment* as dependent variable (that equals one for 100% stock-financed acquisitions, and zero otherwise) and $EM_{i,t}$ as the main explanatory variable (that equals one for firms above median of discretionary accruals in their country, and zero otherwise). Signed discretionary accruals are measured as the performance and growth ROA&SG-adjusted model (see Collins *et al.*, 2017). *Post-TPD* is an indicator variable equal to one starting the quarter after the adoption of the Transparency Directive for countries included in our treatment sample, and zero otherwise. All variables are as described in Appendix A. Robust z-statistics in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>	<i>Stock Payment Dummy</i>	
<i>Earnings Quality Proxy:</i>	Discretionary Accruals (ROA&SG-adjusted model)	
<i>Model:</i>	(1)	(2)
EM _{t-1}	0.0442*** (2.71)	0.0443*** (2.72)
Post-TPD		0.0527 (1.15)
Market-Book	-0.0036* (-1.70)	-0.0036* (-1.70)
ROA	-0.2642*** (-5.24)	-0.2650*** (-5.25)
Leverage	-0.2712*** (-4.97)	-0.2695*** (-4.94)
Relative size	0.0642*** (3.93)	0.0642*** (3.93)
Cross-border	-0.1393*** (-7.64)	-0.1399*** (-7.67)
Industry diversification	0.0281 (1.64)	0.0282* (1.65)
GDP <i>per capita</i>	0.2715* (1.74)	0.2877* (1.84)
GDP growth	0.0034 (0.41)	0.0037 (0.44)
Fixed Effects	Quarter/Country/Industry	
Observations	3,829	3,829
Pseudo R ²	0.171	0.171

Table 6: The impact of earnings quality on abnormal returns around stock-financed acquisitions announcements post-regulation

Table 6 reports regression estimates of equation (5) performed separately for high (low) groups based on the level of earnings quality, proxied by discretionary accruals adjusted for performance and growth ROA&SG (see Collins *et al.*, 2017), and Khan and Watts's (2009) firm-year conservatism measure, *C-SCORE*. We assign firms into high (low) groups if discretionary accruals are below (above) a country's median value (and *C-SCORE* is above (below) its median value). Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). The variables *Treat* and *Post-TPD* are as described before. It is also reported the *p*-value of a *z*-test that evaluates whether the coefficient β_3 (*Post TPD* \times *Stock Payment*) of the high group is equal to the coefficient of the low group. The coefficients' estimates of the remaining control variables are not reported for brevity. All variables are defined in Appendix A. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>	CAR Acquirer							
<i>Earnings Quality proxy:</i>	Discretionary Accruals (ROA&SG-adjusted model)				Earnings conservatism (<i>C-SCORE</i>)			
<i>Event window:</i>	(-1,+1)		(-5,+5)		(-1,+1)		(-5,+5)	
<i>Model:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
<i>Treat</i>	-0.0545**	-0.2383**	0.0135	-0.3903**	-0.0285	-0.0823	-0.0754*	0.0146
	(-2.49)	(-2.35)	(0.39)	(-2.30)	(-1.18)	(-1.36)	(-1.97)	(0.16)
<i>Post-TPD</i>	-0.0063	0.0080	0.0002	0.0236**	-0.0051	-0.0101	0.0008	0.0004
	(-0.58)	(1.13)	(0.02)	(2.18)	(-0.48)	(-1.29)	(0.08)	(0.04)
<i>Post-TPD*Stock Payment</i>	0.0308**	0.0277	0.0644**	0.0501**	0.0615***	0.0110	0.0832**	0.0101
	(2.26)	(1.68)	(2.06)	(2.40)	(2.76)	(0.95)	(2.12)	(1.01)
<i>High=Low (p-value)</i>	(0.885)		(0.704)		(0.044)		(0.053)	
<i>Stock Payment</i>	-0.0140	-0.0090**	-0.0170***	-0.0104	-0.0172***	-0.0020	-0.0176***	-0.0046
	(-1.56)	(-2.62)	(-4.24)	(-1.45)	(-3.72)	(-0.31)	(-4.23)	(-1.12)
<i>Control Variables</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Fixed Effects</i>	Quarter/Country/Industry							
<i>Observations</i>	1,716	1,738	1,716	1,738	1,426	2,347	1,426	2,347
<i>R-squared</i>	0.160	0.147	0.131	0.137	0.163	0.119	0.154	0.108

Table 7: The impact of information environment quality on abnormal returns around stock-financed acquisitions announcements post-regulation

Table 7 shows regression estimates of equation (5) run separately for high (low) groups based on the level of information quality measures: *Investor protection*, *Rule of Law*, *Regulatory Quality*, and *Disclosure*. *High* is a dummy variable that equals one if a country is above the median of each measure, and zero otherwise (the *low* group). Panel A show estimates including as dependent variable CARs estimated over a three-day window (-1,+1), and Panel B use CARs estimated over an eleven-day window (-5,+5). The variables *Treat* and *Post-TPD* are as described before. It is also reported the *p*-value of a *z*-test that evaluates whether the coefficient β_3 (*Post TPD* \times *Stock Payment*) of the high group is equal to the coefficient of the low group. The coefficients' estimates of the remaining control variables are not reported for brevity. All variables are defined in Appendix A. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses.***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

Panel A: CAR estimated over a three-day window (-1,+1)								
Dependent Variable:		CAR Acquirer						
Information environment proxy:	Investor Protection		Rule of Law		Regulatory Quality		Disclosure	
Model:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat	-0.0327 (-2.77)	-0.1394** (-2.65)	0.1015 (0.69)	-0.1516*** (-3.54)	-0.1265 (-0.64)	-0.1312*** (-3.25)	-0.1971 (-1.66)	0.0230 (0.72)
Post-TPD	-0.0057 (-2.65)	0.0151** (2.19)	-0.0058 (-0.93)	-0.0003 (-0.03)	-0.0167** (-2.59)	-0.0041 (-0.53)	-0.0048 (-1.19)	0.0173*** (2.88)
Post-TPD*Stock Pay.	0.0425*** (24.67)	0.0038 (0.21)	0.0317*** (3.12)	0.0090 (0.48)	0.0390*** (4.88)	-0.0002 (-0.01)	0.0420*** (15.35)	0.0035 (0.19)
<i>High=Low</i> (<i>p</i> -value)	(0.033)		(0.287)		(0.014)		(0.039)	
Stock Payment	-0.0178*** (-22.40)	0.0052 (1.12)	-0.0174*** (-4.71)	-0.0016 (-0.26)	-0.0178*** (-3.92)	-0.0038 (-0.82)	-0.0180*** (-13.50)	0.0047 (1.36)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry							
Observations	2,713	1,272	2,400	1,585	2,002	1,983	2,826	1,159
R-squared	0.103	0.200	0.115	0.189	0.133	0.136	0.106	0.205
Panel B: CAR estimated over an eleven-day window (-5,+5)								
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat	-0.0429 (-2.06)	-0.0683 (-0.87)	0.1169 (0.52)	-0.0795 (-1.02)	-0.2556 (-1.16)	-0.0874 (-1.52)	-0.3124 (-1.59)	0.1138** (2.28)
Post-TPD	0.0073* (2.96)	0.0141 (1.38)	0.0043 (0.62)	0.0066 (0.68)	-0.0072 (-1.06)	-0.0001 (-0.00)	0.0064** (2.21)	0.0140 (1.55)
Post-TPD*Stock Pay.	0.0419* (3.70)	0.0036 (0.11)	0.0413* (1.98)	0.0047 (0.20)	0.0579*** (3.67)	-0.0128 (-0.48)	0.0432*** (5.01)	0.0041 (0.12)
<i>High=Low</i> (<i>p</i> -value)	(0.269)		(0.244)		(0.016)		(0.270)	
Stock Payment	-0.0172 (-2.46)	-0.0010 (-0.11)	-0.0142* (-1.89)	-0.0129*** (-3.18)	-0.0148 (-1.42)	-0.0145*** (-5.71)	-0.0176** (-3.07)	0.0001 (0.01)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry							
Observations	2,713	1,272	2,400	1,585	2,002	1,983	2,826	1,159
R-squared	0.087	0.172	0.114	0.154	0.130	0.120	0.086	0.187

Table 8: The impact of regulation on abnormal returns around stock-financed acquisitions announcements. Robustness checks

This Table reports the coefficients' estimates of equation (5) but controlling for the passage of the Prospectus Directive (PD) and Market Abuse Directive (MAD). Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). The variables *Treat* and *Post-TPD* are as described before. The variable *Post- PD (MAD)* equals one starting the quarter after the adoption of the Prospectus Directive (PD) (Market Abuse Directive (MAD)) for countries included in our treatment sample, and zero otherwise. Panel A shows results for the full sample. Panel B reports the coefficients' estimates performed separately for high (low) groups based on the level of earnings quality, proxied by discretionary accruals adjusted for performance and growth ROA&SG (see Collins *et al.*, 2017) and Khan and Watts's (2009) firm-year conservatism measure, *C-SCORE*; firms are assigned into high (low) groups if discretionary accruals is below (above) (*C_SCORE* is above (below)) its median value. Panel C (Panel D) reports the coefficients' estimates run separately for high (low) groups based on the level of information quality measures: *Investor protection*, *Rule of Law*, *Regulatory Quality*, and *Disclosure*; high equals one if a country is above the median of each measure, and zero otherwise (the low group). Panel C (Panel D) shows CARs estimated over a three-day window (-1,+1) (eleven-day window (-5,+5)). The coefficients' estimates of the remaining control variables are not reported for brevity. All variables are as described in Appendix A. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

Panel A: The impact of regulation on abnormal returns around stock-financed acquisitions announcements								
Dependent Variable:	CAR Acquirer							
	(-1,+1)		(-5,+5)		(-1,+1)		(-5,+5)	
Event window	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Treat</i>	-0.0608 (-1.18)	-0.0180 (-0.26)	-0.0610 (-1.18)	-0.0185 (-0.27)	-0.0618 (-1.20)	-0.0192 (-0.28)		
<i>Post-TPD</i>	-0.0064 (-0.96)	-0.0113 (-1.03)	-0.0055 (-0.85)	-0.0081 (-0.82)	-0.0071 (-1.13)	-0.0121 (-1.19)		
<i>Post-TPD*Stock Payment</i>	0.0244** (2.44)	0.0301* (1.69)	0.0244** (2.44)	0.0302* (1.69)	0.0244** (2.44)	0.0301* (1.69)		
<i>Post-PD</i>	-0.0100 (-0.89)	-0.0118 (-0.73)	-0.0029 (-0.26)	0.0153 (0.97)				
<i>Post-MAD</i>	0.0082 (0.70)	0.0309** (2.51)			-0.0007 (-0.06)	0.0205 (1.30)		
<i>Stock Payment</i>	-0.0095* (-2.00)	-0.0113* (-2.00)	-0.0095* (-2.01)	-0.0114* (-2.01)	-0.0095* (-2.01)	-0.0114* (-2.00)		
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects			Quarter/Country/Industry					
Observations	3,985	3,985	3,985	3,985	3,985	3,985	3,985	3,985
R-squared	0.088	0.074	0.088	0.074	0.088	0.074	0.088	0.074

Panel B : The impact of earnings quality on abnormal returns around stock-financed acquisitions announcements								
Earnings Quality proxy:	Discretionary Accruals (ROA&SG-adjusted model)				Earnings conservatism (<i>C-SCORE</i>)			
	(-1,+1)		(-5,+5)		(-1,+1)		(-5,+5)	
Event window:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Model:	High	Low	High	Low	High	Low	High	Low
<i>Treat</i>	-0.0823** (-2.70)	-0.2431** (-2.42)	0.0170 (0.37)	-0.3962** (-2.35)	-0.0353 (-1.25)	0.0626 (0.53)	-0.0911** (-2.07)	0.1568 (0.84)
<i>Post-TPD</i>	0.0001 (0.01)	0.0078 (0.88)	-0.0214* (-1.76)	0.0033 (0.21)	-0.0144 (-1.05)	-0.0034 (-0.41)	-0.0210 (-1.08)	-0.0030 (-0.21)
<i>Post-TPD*Stock Payment</i>	0.0311** (2.29)	0.0280 (1.68)	0.0641** (2.06)	0.0501** (2.38)	0.0620*** (2.82)	0.0105 (0.90)	0.0830** (2.12)	0.0094 (0.94)
<i>Post-PD</i>	-0.0174 (-0.59)	0.0362*** (3.37)	-0.0029 (-0.08)	0.0094 (0.65)	0.0866 (1.43)	-0.0500** (-2.45)	0.0763 (1.12)	-0.0638*** (-2.87)
<i>Post-MAD</i>	0.0084 (0.25)	-0.0346** (-2.07)	0.0328 (0.80)	0.0183 (0.96)	-0.0759 (-1.52)	0.0382** (2.13)	-0.0500 (-0.93)	0.0674*** (3.03)
<i>Stock Payment</i>	-0.0141 (-1.56)	-0.0094** (-2.71)	-0.0169*** (-4.22)	-0.0106 (-1.47)	-0.0175*** (-3.87)	-0.0017 (-0.27)	-0.0178*** (-4.31)	-0.0044 (-1.08)

Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry							
Observations	1,716	1,738	1,716	1,738	1,426	2,347	1,426	2,347
R-squared	0.160	0.147	0.132	0.138	0.165	0.121	0.155	0.109

Panel C: The impact of information environment quality on abnormal returns around stock-financed acquisitions announcements.
CAR estimated over a three-day window (-1,+1)

<i>Information environment proxy:</i>	Investor Protection		Rule of Law		Regulatory		Disclosure	
<i>Model:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat	-0.0354 (-2.73)	-0.1451*** (-2.78)	0.1055 (0.71)	-0.1526*** (-3.84)	-0.1158 (-0.58)	-0.1284*** (-3.31)	-0.1961 (-1.64)	0.0226 (0.73)
Post-TPD	-0.0127 (-2.16)	0.0091 (0.81)	-0.0126 (-1.39)	-0.0017 (-0.11)	-0.0127 (-0.70)	0.0010 (0.09)	-0.0078*** (-4.51)	0.0127 (1.18)
Post-TPD*Stock Payment	0.0425*** (24.54)	0.0038 (0.21)	0.0316*** (3.11)	0.0090 (0.48)	0.0389*** (4.79)	-0.0002 (-0.01)	0.0420*** (15.20)	0.0035 (0.19)
Post-PD	-0.0024 (-1.22)	-0.0066 (-0.28)	-0.0056 (-0.60)	0.0031 (0.11)	-0.0279* (-1.83)	-0.0051 (-0.21)	-0.0010 (-0.24)	-0.0096 (-0.45)
Post-MAD	0.0113 (1.08)	0.0163 (0.81)	0.0145 (1.16)	-0.0011 (-0.04)	0.0200 (1.32)	-0.0020 (-0.08)	0.0047 (0.76)	0.0174 (0.89)
Stock Payment	-0.0178*** (-21.93)	0.0052 (1.10)	-0.0174*** (-4.66)	-0.0016 (-0.26)	-0.0177*** (-3.84)	-0.0037 (-0.81)	-0.0180*** (-13.42)	0.0046 (1.32)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry							
Observations	2,713	1,272	2,400	1,585	2,002	1,983	2,826	1,159
R-squared	0.103	0.200	0.116	0.189	0.133	0.137	0.106	0.205

Panel D: The impact of information environment quality on abnormal returns around stock-financed acquisitions announcements.
CAR estimated over an eleven-day window (-5,+5)

<i>Model:</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat	-0.0556 (-2.77)	-0.0712 (-0.90)	0.1227 (0.58)	-0.0841 (-1.07)	-0.2461 (-1.10)	-0.0892 (-1.54)	-0.3046 (-1.62)	0.1147** (2.32)
Post-TPD	-0.0253* (-3.53)	0.0115 (0.72)	-0.0259** (-2.27)	-0.0009 (-0.03)	-0.0086 (-0.43)	-0.0024 (-0.12)	-0.0252*** (-7.67)	0.0178 (1.07)
Post-TPD*Stock Payment	0.0418* (3.68)	0.0037 (0.11)	0.0412* (1.96)	0.0044 (0.18)	0.0578*** (3.60)	-0.0128 (-0.48)	0.0433*** (5.03)	0.0043 (0.12)
Post-PD	-0.0067 (-0.42)	-0.0089 (-0.31)	-0.0078 (-0.53)	0.0262 (0.71)	-0.0225 (-1.04)	-0.0077 (-0.22)	-0.0009 (-0.05)	-0.0153 (-0.54)
Post-MAD	0.0484** (6.91)	0.0135 (0.51)	0.0486*** (3.82)	-0.0167 (-0.58)	0.0217 (1.35)	0.0116 (0.35)	0.0420*** (3.54)	0.0102 (0.36)
Stock Payment	-0.0173 (-2.45)	-0.0011 (-0.11)	-0.0142* (-1.87)	-0.0129*** (-3.18)	-0.0147 (-1.42)	-0.0145*** (-5.58)	-0.0177** (-3.07)	0.0001 (0.01)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry							
Observations	2,713	1,272	2,400	1,585	2,002	1,983	2,826	1,159
R-squared	0.088	0.172	0.116	0.154	0.130	0.120	0.087	0.187

Internet Appendix

The Impact of Securities Regulation on the Information Environment around Stock-Financed Acquisitions

Section A – Review about the Legislative Process in European Union and EU Directives: Transparency, Prospectus, and Market Abuse Directives

The Financial Services Action Plan (FSAP) of 1999, the same year that marks the establishment of the European Monetary Union, intends to enhance the competitiveness of capital markets, reduce market abuse, increase transparency, and improve liquidity (see, e.g., Lamfalussy, 2000). In brief, the FSAP focuses on the harmonization of securities regulation, hence creating an equally-leveled-plan for all Member States.

The Legislative Process in the EU is a direct result of the decision-making process that must be approved by the elected European Parliament²³ and by the European Council²⁴ (until 2018, EU was formed of 28 EU member-states governments), known as “codesision”. The council of the European Union²⁵ also participates in this process. The legislative process includes different acts, as is the case of directives. The EU defines directive as an act that sets an equal objective that all member states must achieve. However, each individual member state must incorporate and adjust it to their own laws and should designate an authority(es) to supervise the enforcement of directives in order to achieve EU legislative process goals.

The EU directives²⁶ start as a proposal draft based on new legislative initiatives triggered by the European Commission²⁷ for different areas (e.g., economic, financial, etc.). To assess the potential benefits and disadvantages of new regulation, the Commission consults different interested parties (e.g., non-governmental organizations, citizens,...). Then, the Parliament and the Council review those legislative proposals and (usually) propose amendments. This process will be repeated if these two organs cannot agree upon amendments. Sometimes it is needed the intervention of a conciliation committee to try to find a solution. When this process is ended, the directive is enacted by the Commission. Each directive contains a deadline by which EU countries must transpose its provisions into their national legislation and inform the Commission. The Commission is responsible to assure that all EU member states properly apply EU directives. If member states fail to properly implement EU directives, the Commission has the power to launch a formal infringement procedure against those countries, and may eventually refer the case to the European Court of Justice.

The European Securities and Markets Authority (ESMA) is the authority that supervises the implementation and enforcement of the FSAP.

²³ The European Parliament is the EU’s legislative organ. Available at: https://europa.eu/european-union/about-eu/institutions-bodies/european-parliament_en.

²⁴ The European Council comprises all EU government leaders. Available at: https://europa.eu/european-union/about-eu/institutions-bodies/european-council_en.

²⁵ The Council of the European Union is composed of ministers from EU member states governments for different areas (e.g., economic, social, etc.). Available at: https://europa.eu/european-union/about-eu/institutions-bodies/council-eu_en.

²⁶ Information available at: https://europa.eu/european-union/law/legal-acts_en.

²⁷ The European Commission is the EU's executive organ. Available at: https://europa.eu/european-union/about-eu/institutions-bodies/european-commission_en.

A.1 Transparency Directive

The Transparency Directive (TPD), regarding corporate reporting and disclosure, was enacted by EU Directive 2004/109/EC²⁸, and according to paragraph 1 of art. 1, “establishes requirements in relation to the disclosure of periodic and ongoing information about issuers whose securities are already admitted to trading on a regulated market situated or operating within a Member State.” Hence, the TPD aims the efficiency, transparency and integration of securities markets, which according to this directive preamble contributes “to a genuine single market in the Community by better allocation of capital and by reducing costs”. Thus, this Directive regards the “disclosure of accurate, comprehensive, and timely information about security issuers builds sustained investor confidence and allows an informed assessment of their business performance and assets”. In the spirit of the FSAP, paragraph 5 of this directive preamble states “Greater harmonization of provisions of national law on periodic and ongoing information requirements for security issuers should lead to a high level of investor protection throughout the Community”, which enhances both investor protection and market efficiency that in accordance with this Directive purpose “upgrade the current transparency requirements for security issuers and investors” as stated in the preamble, paragraph 38.

According to the main objective of the FSAP, i.e., the integration of securities markets, the TPD main purpose is investor protection, which in turn would enhance the admission of securities to regulated markets in the Member States, making markets more dynamics and appealing. Paragraph 7 sets that “Member States other than the home Member State should no longer be allowed to restrict the admission of securities to their regulated markets by imposing more stringent requirements on periodic and ongoing information about issuers whose securities are admitted to trading on a regulated market.”

Regarding investor protection, the disclosure of financial information plays a master role, as highlighted in paragraph 27 of the Directive preamble, which states that “ So as to ensure the effective protection of investors and the proper operation of regulated markets, the rules relating to information to be published by issuers whose securities are admitted to trading on a regulated market should also apply to issuers which do not have a registered office in a Member State (...) It should also be ensured that any additional relevant information about Community issuers or third country issuers, disclosure of which is required in a third country but not in a Member State, is made available to the public in the Community”. And to reinforce this idea, Paragraph 2 (c), art. 4, states that “(...) statements made by the persons responsible within the issuer, whose names and functions shall be clearly indicated, to the effect that, to the best of their knowledge, the financial statements prepared in accordance with the applicable set of accounting standards give a true and fair view of the assets, liabilities, financial position and profit or loss of the issuer and the undertakings included in the consolidation taken as a whole and that the management report includes a fair review of the development and performance of the business and the position of the issuer and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.”

²⁸ Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32004L0109>. The Transparency Directive is in force, however, this act has been changed. Latest consolidated version dated 26th November, 2013. Entry-into-force dates available at: <https://eur-lex.europa.eu/legal-content/EN/NIM/?uri=CELEX:32004L0109>.

A.2 Prospectus Directive

The Prospectus Directive (PD) intends to “ensure investor protection and market efficiency, in accordance with high regulatory standards adopted in the relevant international” institutions, improving the procedures and firm transparency around securities offerings, as stated in paragraph 10 of the EU Directive 2003/71/EC²⁹ preamble. Moreover, the information disclosure in securities prospectus must “take account of the different requirements for protection of the various categories of investors and their level of expertise” as highlighted in paragraph 16, that provides “protection of the interests of actual and potential investors are required in all Member States in order to enable them to make an informed assessment of such risks and thus to take investment decisions in full knowledge of the facts”, as quoted from paragraph 19. Hence, such information disclosure in securities prospectus boosts investor confidence in securities, contributing in this way to the proper functioning and development of securities markets across the EU. According to Lamfalussy (2000), it is of extreme importance the harmonization of securities offerings that enhances the raising on a Community-wide basis and therefore having real access to a large, liquid and integrated financial market. This can be achieved "by granting a single passport to the issuer”, as stated in the preamble of this Directive. This “grant to the issuer of a single passport, valid throughout the Community” is regulated by the member state where the issuer is placed its offer. Therefore, “information must be of easy access, the summary should be written in non-technical language and normally should not exceed 2500 words in the language in which the prospectus was originally drawn up. The prospectus should be filed with the relevant competent authority and be made available to the public by the issuer and relevant information must be updated. A clear time limit should be set for the validity of a prospectus in order to avoid outdated information.”

This Directive also provides the disclosure requirements in the context of admission to trading of securities on a regulated market. The best practices have been adopted at the international level in order to allow cross-border offers of equities to be made using a single set of disclosure standards established by the International Organization of Securities Commissions (IOSCO); the IOSCO disclosure standards will upgrade information available for the markets and investors and at the same time will simplify the procedure for Community issuers wishing to raise capital in third countries. However, this Directive does not prevent a Member State or a competent authority or an exchange through its rule book to impose other particular requirements. Although, and according to paragraph 15 of the preamble: “Such requirements may not directly or indirectly restrict the drawing up, the content and the dissemination of a prospectus approved by a competent authority”.

A.3 Market Abuse Directive³⁰

The Commission Directive 2003/125/EC enacted the Market Abuse Directive (MAD) that concerns insider trading and market manipulation. The MAD preamble establishes in paragraph 1 that “Harmonized standards are necessary for the fair, clear and accurate presentation of information and disclosure of interests and conflicts of interest, to be complied with by persons

²⁹ This content is available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32003L0071>. It is no longer in force. Date of end of validity: July 20, 2019. Latest consolidated version: 21st July 2018.

³⁰ Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32003L0125> (no longer in force, repealed by <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32014R0596>). Date of end of validity: July 2, 2016.

producing or disseminating information recommending or suggesting an investment strategy”, moreover, “market integrity requires high standards of fairness, probity and transparency when information recommending or suggesting an investment strategy is presented” by market participants. To ensure high standards in transparency and information disclosure, the MAD provides that “the identity of the producer of investment recommendations, his conduct of business rules and the identity of his competent authority should be disclosed”. Furthermore, is required the disclosure “of significant financial interests in any financial instrument which is the subject of the information recommending investment strategies, or of any conflicts of interest or control relationship with respect to the issuer to whom the information relates, directly or indirectly” Moreover, the preamble states that “those recommendations should be presented clearly and accurately” as “the meaning of any recommendation made, such as buy, sell or hold, which may include the time horizon of the investment to which the recommendation relates, is adequately explained and any appropriate risk warning, including a sensitivity analysis of the relevant assumptions”.

Table I: Information Quality Measures. Description by Country

This Table presents, by country, the tradition of law (country judicial system) and the proxies for information environment quality: i) *Investor Protection*, the product of the rule of law (disclosed by the ICRG) and anti-director rights (La Porta *et al.*, 1998) divided by ten, that ranges between 0 and 3.6; ii) *Rule of Law* and *Regulatory Quality* proposed by Kaufmann *et al.* (2009), that ranges between 0 and 1; and iii) *Disclosure* index proposed by La Porta, Lopez-De-Silanes and Shleifer (2006) that varies between 0 and 1. All measures are defined in Appendix A of the manuscript. Panel A (Panel B) shows information for our treatment (control) group of EU countries (non-EU countries).

Panel A: Description of treatment sample by country

<i>Country:</i>	Country Judicial System	Investor Protection	Rule of Law	Regulatory Quality	Disclosure
Austria	German origin	1.20	0.98	0.93	0.25
Belgium	French origin	1.165	0.89	0.88	0.42
Croatia	German origin	1.05	0.62	0.67	0.60
Cyprus	French origin	1.165	0.83	0.85	0.45
Denmark	Scandinavian origin	1.20	0.99	0.97	0.58
Finland	Scandinavian origin	1.80	1.00	0.97	0.50
France	French origin	1.50	0.90	0.84	0.75
Germany	German origin	0.50	0.93	0.93	0.42
Greece	French origin	0.90	0.71	0.75	0.33
Hungary	German origin	0.93	0.75	0.83	0.60
Iceland	Scandinavian origin	1.80	0.97	0.92	0.56
Ireland	Common Law	2.40	0.93	0.96	0.67
Italy	French origin	0.40	0.65	0.77	0.67
Luxembourg	French origin	1.40	0.96	0.96	0.45
Malta	French origin	1.165	0.86	0.87	0.45
Netherlands	French origin	1.20	0.97	0.98	0.50
Norway	Scandinavian origin	2.40	0.99	0.90	0.58
Poland	German origin	1.05	0.69	0.78	0.60
Portugal	French origin	1.50	0.84	0.82	0.42
Romania	French origin	0.82	0.55	0.67	0.45
Spain	French origin	2.00	0.85	0.85	0.50
Sweden	Scandinavian origin	1.80	0.98	0.95	0.58
United Kingdom	Common Law	2.50	0.94	0.97	0.83

Panel B: Description of control sample by country

<i>Country:</i>	Country Judicial System	Investor Protection	Rule of Law	Regulatory Quality	Disclosure
Argentina	French origin	0.80	0.32	0.30	0.50
Australia	Common Law	2.20	0.95	0.96	0.75
Brazil	French origin	0.60	0.47	0.54	0.25
Canada	Common Law	2.75	0.96	0.95	0.92
Chile	French origin	2.25	0.87	0.91	0.58
China	German origin	0.82	0.42	0.45	0.60
Colombia	French origin	0.60	0.42	0.62	0.42
Egypt	French origin	0.60	0.44	0.36	0.50
Hong Kong	Common Law	2.50	0.89	0.99	0.92
India	Common Law	2.25	0.55	0.42	0.92
Indonesia	French origin	0.50	0.33	0.41	0.50
Israel	Common Law	1.50	0.79	0.84	0.67
Japan	German origin	2.00	0.88	0.84	0.75
Jordan	French origin	0.40	0.63	0.60	0.67
Malaysia	Common Law	1.60	0.66	0.69	0.92
Mexico	French origin	0.15	0.35	0.63	0.58
New Zealand	Common Law	2.20	0.97	0.98	0.67

Pakistan	Common Law	1.50	0.25	0.28	0.58
Peru	French origin	0.90	0.31	0.66	0.33
Philippines	French origin	0.75	0.38	0.52	0.83
Russia	French origin	0.70	0.22	0.39	0.45
Singapore	Common Law	2.00	0.93	0.99	1.00
South Africa	Common Law	1.00	0.56	0.66	0.83
South Korea	German origin	1.00	0.81	0.79	0.75
Sri Lanka	Common Law	1.05	0.54	0.48	0.75
Switzerland	German origin	1.00	0.98	0.96	0.67
Taiwan	German origin	1.50	0.81	0.85	0.75
Thailand	Common Law	0.50	0.54	0.60	0.92
Turkey	French origin	0.60	0.54	0.61	0.50
United States	Common Law	2.50	0.92	0.92	1.00
Uruguay	French origin	0.50	0.71	0.65	0.00

Section B: Does the quality of firms' financial reporting moderate the impact of regulation on stock based acquisition returns?

Real Earnings Management Measures

We estimate two proxies that capture real earnings management widely used in prior studies (e.g., Roychowdury, 2006; Cohen, Dey, and Lys, 2008; Cohen and Zarowin, 2010). The first proxy is the abnormal level of cash flows from operations (CFO), measured as the difference between actual CFO and the normal level of CFO (estimated via equation (B.1)):

$$\frac{CFO_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{SALES_{i,t}}{TA_{i,t-1}} + \beta_2 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (B.1)$$

where $CFO_{i,t}$ is cash flows from operations of firm i in year t , and $SALES_{i,t}$ are the net sales. All variables are scaled by lagged total assets ($TA_{i,t-1}$).

It is expected that more negative values of abnormal levels of CFO are associated with higher levels of real earnings management. Thus, to harmonize the interpretation of the signs of coefficients across estimations of different earnings management proxies, we multiply abnormal CFO by -1.

Our second measure is based on the level of production costs ($PROD_{i,t}$), measured as the sum of the cost of goods sold plus changes in inventory. The estimated residuals of equation (B.2) corresponds to the abnormal level of production costs.

$$\frac{PROD_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{SALES_{i,t}}{TA_{i,t-1}} + \beta_2 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \beta_3 \frac{\Delta SALES_{i,t-1}}{TA_{i,t-1}} + \varepsilon_{i,t} \quad (B.2)$$

where $PROD_{i,t}$ is the sum of costs of goods sold $\left(\frac{COST_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{SALES_{i,t}}{TA_{i,t-1}}\right)$ and change in inventory $\left(\frac{\Delta INV_{i,t}}{TA_{i,t-1}} = \alpha_0 \frac{1}{TA_{i,t-1}} + \beta_1 \frac{\Delta SALES_{i,t}}{TA_{i,t-1}} + \beta_2 \frac{\Delta SALES_{i,t-1}}{TA_{i,t-1}}\right)$.

Larger values of abnormal production costs provide evidence of a higher level of real earnings management.

<i>Descriptive Statistics</i>								
	Treatment Group				Control Group			
	N	Mean	Median	SD	N	Mean	Median	SD
Abnormal CFO	697	-0.0133	-0.0282	0.1913	4114	-0.0290	-0.0511	0.2086
Abnormal PROD.	682	-0.0495	-0.0560	0.2202	4012	-0.0438	-0.0469	0.2319

Table II: The incidence of real earnings management prior to stock-financed acquisitions

This Table provides the marginal effects for a probit model as described in Table 5 of the manuscript. The dependent variable is *Stock Payment* that equals one for 100% stock-financed acquisitions, and zero otherwise. The $EM_{i,t}$ is an indicator variable that equals one for firms above median of the proxies for real earnings management in their country, and zero otherwise. Real EM proxies are: i) abnormal cash flow from operations (ACFO), and ii) abnormal production costs (APROD). *Post-TPD* is an indicator variable equal to one starting the quarter after the adoption of the Transparency Directive for countries included in our treatment sample, and zero otherwise. All variables are defined in Appendix A of the manuscript. Robust z-statistics in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>	<i>Stock Payment Dummy</i>			
	<i>Earnings Quality Proxy:</i>			
	Abnormal Cash Flow from Operations	Abnormal Production Cost		
<i>Model:</i>	(1)	(2)	(3)	(4)
EM_{t-1}	0.1749*** (9.55)	0.1754*** (9.57)	0.1342*** (7.69)	0.1340*** (7.68)
Post-TPD		0.0511 (1.08)		0.0356 (0.75)
Market-Book	-0.0017 (-0.79)	-0.0017 (-0.79)	-0.0021 (-0.97)	-0.0021 (-0.97)
ROA	-0.2171*** (-4.42)	-0.2175*** (-4.42)	-0.2721*** (-5.22)	-0.2728*** (-5.23)
Leverage	-0.3124*** (-5.55)	-0.3113*** (-5.53)	-0.3300*** (-5.88)	-0.3292*** (-5.87)
Relative Size	0.0575*** (3.46)	0.0575*** (3.46)	0.0599*** (3.59)	0.0598*** (3.59)
Cross-border	-0.1491*** (-7.98)	-0.1495*** (-7.99)	-0.1488*** (-8.01)	-0.1490*** (-8.02)
Industry Diversification	0.0309* (1.78)	0.0309* (1.78)	0.0334* (1.91)	0.0334* (1.91)
GDP per capita	0.3127* (1.84)	0.3289* (1.93)	0.2431 (1.47)	0.2544 (1.54)
GDP growth	-0.0000 (-0.00)	0.0001 (0.01)	-0.0003 (-0.04)	-0.0003 (-0.03)
Fixed Effects		Quarter/Country/Industry		
Observations	4,132	4,132	4,018	4,018
Pseudo R ²	0.212	0.212	0.203	0.203

Table III: The impact of earnings quality on abnormal returns around stock-financed acquisitions announcements post-regulation

This Table reports regression estimates of equation (5) of the manuscript, performed separately for high (low) groups based on the level of real earnings management, which is an indicator variable that equals one for firms below (above) the median in their country, and zero otherwise. Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). *Treat* is a binary variable that equals one if firm *i* is included in our treatment group, i.e., EU public firms that acquired public targets. *Post-TPD* is an indicator variable equal to one starting the quarter after the adoption of the Transparency Directive for countries included in our treatment sample, and zero otherwise. It is also reported the *p*-value of a *z*-test that evaluates whether the coefficient $\beta_3(Post\ TPD_{c,t} \times Stock\ Payment)$ of the high group is equal to the coefficient of low group. The coefficients' estimates of the remaining control variables are not reported for brevity. All variables are defined in Appendix A of the manuscript. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>		CAR Acquirer							
<i>Earnings Quality proxy:</i>		Abnormal Cash Flow from Operations				Abnormal Production Cost			
<i>Event window:</i>		(-1,+1)		(-5,+5)		(-1,+1)		(-5,+5)	
<i>Model:</i>		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat		0.0273 (0.75)	-0.0075 (-0.20)	0.0894 (1.43)	0.0462 (0.59)	0.0380* (1.86)	-0.1497 (-0.69)	0.0916* (1.90)	-0.2289 (-0.53)
Post-TPD		0.0060 (0.65)	-0.0074 (-0.46)	0.0016 (0.14)	0.0174 (0.96)	-0.0093 (-1.45)	0.0034 (0.31)	-0.0188** (-2.57)	0.0411** (2.63)
Post-TPD*Stock Payment		0.0296** (2.12)	0.0237 (1.08)	0.0403* (1.90)	0.0398 (0.94)	0.0507** (2.30)	0.0143 (0.75)	0.0678*** (3.08)	0.0175 (0.48)
<i>High=Low (p-value)</i>		(0.820)		(0.991)		(0.212)		(0.238)	
Stock Payment		-0.0038 (-1.49)	-0.0085 (-1.54)	0.0049 (1.14)	-0.0178*** (-2.94)	-0.0070 (-1.35)	-0.0087** (-2.64)	0.0040 (1.02)	-0.0144* (-2.01)
Control Variables		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects		Quarter/Country/Industry							
Observations		2,222	1,489	2,222	1,489	2,042	1,578	2,042	1,578
R-squared		0.145	0.144	0.120	0.131	0.139	0.148	0.109	0.148

Section C: The different impact of TPD across EU countries

Table IV: The impact of information environment quality on abnormal returns around stock-financed acquisitions announcements post-regulation

This Table reports the coefficients' estimates of equation (5) run separately for high (low) groups based on the level of our measure of financial development, explained in detail in the manuscript, Appendix A. Dependent variables are cumulative abnormal returns (CAR), which are estimated over a three-day window (-1,+1), and an eleven-day window (-5,+5). *Post-TPD* is an indicator variable equal to one starting the quarter after the adoption of the Transparency Directive for countries included in our treatment sample, and zero otherwise. The coefficients' estimates of the remaining control variables are not reported for brevity. All variables are as described in Appendix A of the manuscript. Robust *t*-statistics standard errors clustered at country-level are shown in parentheses. ***, ** and * mean statistical significance at the 1 percent level, 5 percent level and 10 percent level, respectively.

<i>Dependent Variable:</i>	CAR Acquirer			
<i>Information environment proxy:</i>	Financial Development			
<i>Event window:</i>	(-1,+1)		(-5,+5)	
<i>Model:</i>	(1)	(2)	(3)	(4)
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Treat	-0.0149 (-1.09)	-0.0814 (-1.39)	-0.0540** (-2.64)	0.0222 (0.26)
Post-TPD	-0.0120* (-1.72)	0.0210 (1.52)	0.0086 (0.68)	0.0385** (2.48)
Post-TPD*Stock Payment	0.0321*** (3.82)	0.0182 (0.71)	0.0393*** (3.15)	0.0430 (0.94)
Stock Payment	-0.0138*** (-3.68)	-0.0074 (-1.40)	-0.0226*** (-7.41)	-0.0051 (-0.70)
Control Variables	Yes	Yes	Yes	Yes
Fixed Effects	Quarter/Country/Industry			
Observations	2,291	1,694	2,291	1,694
R-squared	0.142	0.139	0.115	0.129

Section D: Robustness checks. Concurrent Directives

Table V: Entry-into-force dates of the Prospectus Directive (PD) and Market Abuse Directive (MAD)

<i>Country:</i>	PD	MAD
Austria	Jul-05	Jan-05
Belgium	Jun-06	Sep-05
Croatia	Jul-13	Jul-13
Cyprus	Sep-05	Sep-05
Denmark	Jul-05	Apr-05
Finland	Jul-05	Jul-05
France	Jul-05	Jul-05
Germany	Jul-05	Oct-04
Greece	Oct-05	Jul-05
Hungary	Jul-05	Jul-05
Iceland	Nov-07	Nov-07
Ireland	Jul-05	Jul-05
Italy	Apr-07	April-05
Luxembourg	Jul-05	May-06
Malta	Nov-05	Apr-05
Netherlands	Oct-05	Oct-05
Norway	Jul-05	Sep-05
Poland	Oct-05	Oct-05
Portugal	Mar-06	Mar-06
Romania	Jan-07	Jan-07
Spain	Nov-05	Nov-05
Sweden	Jul-05	Jul-05
United Kingdom	Jul-05	Jul-05

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