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Disclosure Regulation and Corporate Acquisitions

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Abstract

This paper examines the effect of disclosure regulation on the takeover market. We study the implementation of a recent European regulation that imposes tighter disclosure requirements regarding the financial and ownership information on public firms. We find a substantial drop in the number of control acquisitions after the implementation of the regulation, a decrease that is concentrated in countries with more dynamic takeover markets. Consistent with the idea that the disclosure requirements increased acquisition costs, we also observe that, under the new disclosure regime, target (acquirer) stock returns around the acquisition announcement are higher (lower), and toeholds are substantially smaller. Overall, our evidence suggests that tighter disclosure requirements can impose significant acquisition costs on bidders and thus slow down takeover activity.

Keywords: disclosure regulation, takeover market, takeover laws, mergers and acquisitions

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Disclosure Regulation and Corporate Acquisitions

Abstract

This paper examines the effect of disclosure regulation on the takeover market. We study the implementation of a recent European regulation that imposes tighter disclosure requirements regarding the financial and ownership information on public firms. We find a substantial drop in the number of control acquisitions after the implementation of the regulation, a decrease that is concentrated in countries with more dynamic takeover markets. Consistent with the idea that the disclosure requirements increased acquisition costs, we also observe that, under the new disclosure regime, target (acquirer) stock returns around the acquisition announcement are higher (lower), and toeholds are substantially smaller. Overall, our evidence suggests that tighter disclosure requirements can impose significant acquisition costs on bidders and thus slow down takeover activity.

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1. Introduction

Disclosure regulation is often viewed as critical in promoting capital formation and the well-functioning of capital markets. Consistent with this idea, prior research documents substantial economic benefits of disclosure mandates (see Leuz and Wysocki, 2016, for a review). However, recent theoretical literature points out that tightening disclosure rules has important tradeoffs; for example, more disclosure can crowd out private information production, and destroy risk-sharing or trading opportunities (Goldstein and Yang, 2017). Yet, there is scant empirical evidence on these tradeoffs.

The tradeoffs of disclosure regulation are especially pronounced and yet barely studied in the case of the takeover market. Bidders invest on proprietary knowledge about the best use of the target resources, and conduct takeovers as efficient means to appropriate the gains from this knowledge (Jarrell and Bradley, 1980). While an enhanced information environment could facilitate deals by providing bidders more precise information about potential targets, tighter disclosure requirements on potential bidders could freely provide to market participants the returns on this proprietary information, adding to the costs faced by potential bidders and thus deterring some otherwise marginally profitable takeovers. In light of this countervailing effect, this paper examines whether mandatory disclosure can introduce costs that outweigh bidders' benefits from transparency to the point of slowing down takeover activity.

To address this question, we study the takeover market consequences of a major regulatory development in the European Union (E.U.): Directive 2004/109/EC, also known as "The Transparency Directive" ("TPD", hereafter). This legislation was approved in 2004, implemented across E.U. countries at different points in time (between 2007 and 2009), and further extended in recent years. The TPD aims to provide greater transparency for investors

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in European public firms by imposing disclosure requirements on both issuers and shareholders. Importantly, the TPD tightened disclosure rules regarding major ownership stakes, thereby imposing a cost on potential acquirers. Disclosing an increase in ownership in the target firm signals that the acquirer may intend to take over the firm, and thus could induce a defensive strategy from the managers of the target firm, attract competing bidders, and make more expensive building a toehold stake in the target firm.

Our setting offers unique empirical advantages. First, the TPD was introduced separately from the rules governing the takeover process (i.e., Takeover Directive 2004/25/EC) and thus provides a clean setting to study the effect of disclosure regulation on takeover activity. Second, as European countries implemented the directive at different points in time for relatively exogenous reasons, this setting helps address identification challenges faced by prior research (Christensen et al., 2016).[1] Third, the cross-country variation offered by our setting allows us to examine how the effect of disclosure regulation on takeover activity depends on institutional features.

Beyond its empirical advantages, our setting is economically important. The takeover market plays a crucial role in the economy by improving capital allocation, firm- and aggregate-productivity (Dimopolous and Sacchetto, 2017) and by curbing managerial entrenchment (Manne, 1965). Moreover, a cross-country study of the effect of disclosure regulation on the takeover market is especially relevant in the case of Europe given the ongoing effort to integrate the E.U. markets. The overall size of the E.U. economy and takeover markets in particular also highlights the interest of our research question.[2]

[1] The country-specific entry into force or implementation dates in each country result from the requirement that member states implement E.U.-wide directives within a given period. The timing of the implementation is mainly determined by the country's legislative process.

[2] At the aggregate level, the E.U. economy is third in the world in terms of number and market capitalization of public companies (See World Federation of Exchanges, 2018. Accessed at https://www.world-exchanges.org/our-work/statistics). The proportion of worldwide M&A transactions during our sample period in the E.U. and in the US is 40 percent and 49 percent (in average market value, respectively) and 39 percent and 30 percent, (in average number of transactions,

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Our hypothesis that tightening ownership disclosure rules can slow down takeover activity is grounded on Grossman and Hart (1980a)'s seminal work. They show theoretically that mandatory disclosure of ownership information can lower the expected return from acquisition activity because the disclosure of ownership information forces the bidder to reveal that she may intend to take over the target firm, providing to market participants the possibility to free ride on the returns of this proprietary information. In our setting, the ownership disclosure requirements introduced by the TPD could increase the cost (i.e., lower the expected return) of a takeover for at least three reasons. First, the ownership information released by the acquirer could alert managers of the target firm about the potential takeover and prompt them to prepare a defense. Second, the ownership information released by the acquirer could alert potential bidders about the potential takeover and elicit competing bids. Third, the information released under the ownership disclosure rules signals to the target firm shareholders and other market participants that the acquirer may intend to acquire the target firm. In anticipation of the synergies from the acquisition, the stock price of the target firm can increase and subsequent share purchases by the acquirer become more expensive, making it more costly to build a toehold.[3]

Our analyses exploit a comprehensive sample of E.U. control acquisitions of public firms from 2001 to 2011. Using a difference-in-differences design that exploits the staggered implementation of the TPD, we examine whether the new disclosure requirements affect takeover activity in European countries. We observe an abrupt *decrease* in the number of control acquisitions after the implementation of the TPD. Moreover, we show that the decrease in takeover activity comes into effect right after the implementation of the TPD,

respectively), which suggests that the E.U. takeover market is comparable in size to the US takeover market. See data collected by the Institute for Mergers, Acquisitions and Alliances (IMAA). Accessed at https://imaa-institute.org/mergers-and-acquisitions-statistics/

[3] As explained by Shleifer and Vishny (1986), pre-takeover toehold acquisitions are a common way to mitigate the free-rider problem in takeovers documented by Grossman and Hart (1980b), as the bidders gain on the acquired target shares.

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specifically within the first year, while we do not find evidence of differential trends in takeover activity in the years leading up to the implementation of the TPD.

This pattern is robust to including country and month-year fixed effects, as well as a comprehensive set of controls. Moreover, our inferences are unaffected when we conduct placebo tests that replicate the main analysis by randomizing the country-specific implementation dates, and by relying on a sample of private target firms that are not subject to the TPD. Our inferences also hold when we restrict the sample to a short window (12 months) around the implementation of the disclosure regulation.

We sharpen identification by exploiting cross-sectional variation in the institutional and market characteristics of the sample countries. We find that the decrease in takeover activity is concentrated in countries with higher regulatory quality, stricter enforcement, and fewer antitakeover provisions. Our results are also stronger in countries with lower ownership concentration and higher institutional ownership. Overall, the TPD appears to have led to a higher decrease in takeover activity in countries where the expected effect of the regulation is more pronounced. Such countries exhibit higher levels of takeover activity before the disclosure regulation, which suggests that the slowdown in takeover activity after the implementation of the TPD is concentrated in markets that are more dynamic. As such, under the TPD, E.U. countries converge to a lower level of takeover activity.

In the final battery of tests we more directly examine whether the decrease in takeover activity is driven by higher acquisition costs faced by acquirers and explore the (not mutually exclusive) economic mechanisms through which the TPD drives up acquisition costs.

We first examine target and acquirer stock returns around the acquisition announcement date. The results suggest an increase in acquisition costs after the entry-into-force of the TPD; *target* (*acquiring*) firms exhibit *higher* (*lower*) stock price reactions around

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acquisition announcements made after the regulatory change. In additional tests, we observe that, under the TPD, i) the decrease in the number of acquisitions is stronger in countries in which it is more difficult for the targets' managers to identify the shareholders, ii) competing bidders hold a larger stake in the target firm, and iii) the size of the acquirer's toehold decreases. Consistent with our hypothesis, this evidence suggests that the TPD induces acquisition costs through potential defensive reactions by the management of the target firm, bidding competition, and the implementation of a toehold strategy.

Collectively, our results are hard to reconcile with the notion that the decrease in takeover activity after the implementation of the TPD is driven by a secular trend, by a contemporaneous economic shock, or by confounding regulations. Rather, the bulk of our evidence suggests that the tightening of ownership disclosure rules introduced by the TPD increased bidders' acquisition costs to the point of reducing takeover activity.

Our paper contributes to the existing literature in several ways. First, while prior literature studies firms' *voluntary* disclosure and reporting choices in the context of takeovers, there is scant evidence on the effect of disclosure regulation (i.e., *mandatory* disclosure) on corporate acquisitions. By exploiting the introduction of the TPD, we show that disclosure rules can introduce costs for bidders to the point of slowing down takeover activity. Second, our study adds to prior literature on the tradeoffs of regulations aimed at increasing corporate transparency, tradeoffs for which there is a paucity of empirical evidence. We contribute to this literature by showing that certain disclosure mandates aimed at increasing transparency can impose costs on acquirers in the takeover market. Third, our paper contributes to the ongoing debate around the effects of regulation on the takeover market; prior research provides mixed results on the effects of the laws and rules governing takeover bids and firms' adoption of antitakeover defenses. By showing that ownership

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disclosure rules have first-order effects on the takeover market, we contribute to research exploring the takeover market consequences of regulation not directly focused on takeovers.

2. Prior literature, background, and hypothesis

2.1. Prior literature

While some studies examine firms' *voluntary* disclosure and reporting choices in the context of takeovers, the literature provides scant evidence on the effect of disclosure regulation on corporate acquisitions.[4] The available evidence is limited to the literature examining takeover regulations introduced in the last century, some of which included ownership disclosure requirements. Notably, Jarrell, and Bradley (1980) and Schipper and Thompson (1983) document an increase in takeover premiums after the passage of the US Williams Act of 1968.[5] As explained by Eckbo (2009), however, the potential effect of disclosure requirements embedded in the Williams Act is confounded by the effects of other procedural requirements; a concern compounded with recent empirical evidence suggesting that the Williams Act had little effect on takeover activity (Cain et al., 2017). Eckbo and Langohr (1989) address this identification issue by studying the tender offer regulation of 1970 in France, which focused on mandatory disclosure in takeover bids.

Our study differs from this literature in a number of dimensions. First, unlike these studies, we examine whether disclosure can introduce costs for bidders that outweigh the benefits they derive from enhanced corporate transparency. Second, this literature documents

[4] Some papers study the role of target firms' information quality and transparency. For example, Raman et al. (2013) show that the quality of information in target firms' earnings influences takeover decisions. McNichols and Stubben (2015) show that greater transparency by a target firm allows the acquiring firm to develop more precise estimates of target value, as well as the expected gains from the acquisition. Other papers document strategic reporting and disclosure around acquisitions. For example, Ge and Lennox (2011) document that acquirers disclose good news or withhold bad news when they finance their acquisitions using equity, and Kim et al. (2018) show that acquirers strategically disseminate news that can depress the target's stock price. All these studies focus on voluntary disclosure and reporting and thus, unlike our paper, they do not explore the effect of disclosure regulation on the takeover market.

[5] The Williams Act of 1968 introduced ongoing ownership disclosure requirements along with a number of procedural requirements related to tender offers. In particular, acquirers who purchase more than 5 percent of a company have 10 days to issue a 13D filing with the SEC that reports their stake.

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an effect on takeover premiums, but does not explore whether there is an effect on the volume of takeover activity. Third, the disclosure requirements studied by Eckbo and Langohr (1989) relate to bidding rules (for example, the requirement to disclose the rationale behind the offer), and thus are inherently different from the ongoing ownership disclosure requirements we study. Lastly, the evolution of the institutional context –notably the recent use of financial derivatives to build a stealth stake in the target firm– raises the question of whether the inferences of earlier studies are applicable to later periods.

This study also adds to prior literature studying the tradeoffs of regulations aimed at increasing corporate transparency. On the theoretical side, the literature is ambiguous about the effects of disclosure (Leuz and Wysocki, 2016; Goldstein and Yang, 2017).[6] On the empirical side, there is extensive literature on the economic effects of disclosure regulation in the US and in cross-country settings.[7] Yet, recent reviews of this empirical literature call for further research on the costs and benefits of disclosure regulation (Beyer et al., 2010; Leuz and Wysocki, 2016), highlighting in particular a paucity of evidence on the direct and indirect costs associated with disclosure regulation.[8] Moreover, this literature rarely addresses the

[6] On the one hand, by leveling the playing field in financial markets, disclosure regulation could increase market liquidity and market efficiency, and decrease the cost of capital for firms (see Goldstein and Yang, 2017 for a theoretical characterization). However, disclosure regulation could also crowd out private information production (e.g., Verrecchia, 1982; Diamond, 1985), destroy risk-sharing and trading opportunities (Hirshleifer, 1971; Kurlat and Veldkamp, 2015), and generate destabilizing beauty-contest incentives (Morris & Shin, 2002).

[7] The literature on US disclosure regulation examines the introduction of the Securities Act of 1933 and the Exchange Act of 1934, as well as major subsequent changes, including the 1964 Securities Act Amendments, the 1999 Eligibility Rule on the OTC Bulletin Board, the Regulation Fair Disclosure of 2000, and the Sarbanes-Oxley Act of 2002. A more recent strand of the literature documents that greater transparency following a disclosure mandate affects investment and resource allocation (e.g., Badertscher, Shroff, and White, 2013; Breuer, 2019). Other recent papers focus on security regulations introduced by the E.U. They show that these regulations have increased financial integration and business-cycle synchronization (Kalemli-Ozcan et al., 2013), improved liquidity (Christensen et al., 2016), and increased external financing, employment, investments (Meier, 2018), and household equity ownership (Christensen et al., 2019). We extend this literature by documenting that the tightening of disclosure regulation has also affected the market for corporate control, a finding important in itself considering the current efforts to integrate the E.U. economy as well as the international reach of E.U. laws.

[8] The theoretical literature has pointed out that disclosure regulation can impose proprietary costs, although the empirical evidence on such costs remains elusive. Prior work infers the presence of proprietary costs from documenting that firms avoid disclosing certain sensitive information or take actions to avoid a disclosure requirement (e.g., Berger and Hann 2003; Bernard, 2016), but rarely provides direct evidence on the proprietary costs imposed by disclosure regulation. One notable exception is Badia et al. (2019), who study the proprietary costs of mandatory disclosure of oil and gas reserves.

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effect of disclosure regulation on the market for corporate control.[9] Against this backdrop, we contribute to the research on the economic consequences of disclosure regulation by showing that certain disclosure mandates can slow down takeover activity.

Our paper also contributes to the literature on the effect of regulation on the takeover market. This effect is still not well understood, as highlighted by the ongoing debate around the laws and rules that govern takeover bids and firms' adoption of antitakeover defenses (e.g., Betton et al., 2008; Catan and Kahan, 2016; Cain et al., 2017; Karpoff and Wittry, 2018). Prior research has examined these laws finding mixed results (see Eckbo, 2009 and Cain et al., 2017 for recent reviews). By showing that disclosure regulation can have first-order effects on takeover activity, we contribute to recent research exploring the consequences of regulation not directly focused on takeovers.[10]

2.2. Institutional background

In 2004, the E.U. introduced Transparency Directive 2004/109/EC. The TPD passed in the context of the E.U.'s Financial Services Action Plan, a comprehensive program established in 1999 with the goal of improving and integrating financial markets within the E.U. The stated objective of the directive was to provide greater transparency for investors in European public firms and to harmonize the disclosure requirements across E.U. countries.

The TPD tightened disclosure requirements regarding ownership of public E.U. firms. These disclosure requirements are triggered when a party (i.e., a firm, a special purpose vehicle or a physical person) acquiring shares of a listed firm accumulates a percentage of shares larger than a given regulatory threshold. In this case, the acquiring party must file a form with the capital markets authority of the country (the filing is publicly available). The

[9] One notable exception is Chen (2019), who shows that disclosure of the targets' audited financial statements disciplines managers' mergers and acquisitions decisions.

[10] This research includes studies such as Rossi and Volpin (2004), Esrel et al. (2012), and Dessaint et al. (2017), which find that takeover activity is affected by the country's legal shareholder protection, accounting standards, and labor laws. There is also evidence that industrial deregulation over the past decades has fueled industry merger waves (e.g., Ovtchinnikov, 2013).

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form contains ownership information prior and subsequent to the transaction and, as such, informs capital market participants about the identity and the holdings of the acquiring party.[11] While ownership notification requirements already existed before the TPD, the directive tightened these requirements in several ways. First, the new regulation reduced the minimum ownership thresholds triggering public notifications to 5% and increased the number of thresholds triggering disclosure from five to eight (Article 9).[12] Second, the directive reduced the notification and publication deadlines for the investor and issuer to four and three trading days, respectively (Article 12).[13] Finally, and perhaps most crucially, the directive extended these notification requirements to a natural person or legal entity holding financial instruments, such as derivatives with physical settlement that result in an entitlement to acquire shares of a listed firm (Article 13). That is, the regulation mandates to include shares indirectly owned through financial instruments in the computation of the thresholds triggering ownership disclosure requirements. Online Appendix OA includes examples of ownership disclosure before and after the regulation.

Beyond disclosure rules regarding ongoing ownership information, the regulation also contained other provisions. In regards to periodic information, the TPD included provisions

[11] While these disclosures are not the only source of information about a firm's shareholder base, it is unlikely that the other sources subsume the information elicited by the TPD ownership disclosure requirements, especially when it comes to learning that the acquirer is building a stake in the target firm. Specifically, most European countries have rules in place about disclosure of shareholdings to mitigate opacity over a firm shareholder base. The first group of rules requires major shareholders to actively communicate their stake (i.e. *ownership disclosure rules*), while the second group of rules sets the conditions whereby shareholders, regardless of the stake they hold, can be detected by issuers (i.e. *shareholder identification rules*). Regarding the first group of rules (i.e. *ownership disclosure rules*), neither the target firm's management nor other market participants have information about the parties involved in the transactions of the securities of the target firm. As such, shareholdings are not public information unless the holder of the securities accumulates a stake in the firm beyond the regulatory threshold that triggers mandatory disclosure (i.e. *ownership disclosure rules*). Regarding the second group of rules (i.e. *shareholder identification rules*), only target firms can rely on these rules to demand identification of their shareholders (competitors and other market participants do not have access to this information). While most markets provide some mechanisms for issuers to do so, there are significant frictions in these processes (see Online Appendix OC, section OC.2, for details). As a result, the information elicited by shareholder identification rules is limited and untimely, especially in the case of a takeover.

[12] Before the TPD, the thresholds usually were 10%, 20%, 1/3, 50%, and 2/3, but there was cross-country variation. For example, some countries imposed a 25% threshold instead of the 10% and 20% thresholds, and a 75% threshold instead of the 2/3 threshold. Under the TPD, the thresholds are 5%, 10%, 15%, 20%, 25%, 30%, 50%, and 75%. There is still some cross-country variation, as some E.U. countries have introduced additional thresholds.

[13] Before the TPD, the notification and publication deadlines for the investor and issuer were seven and nine calendar days. The deadline was extended to 21 calendar days in some cases.

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for financial reporting disclosures (notably, the filing of annual and semi-annual reports in accordance with International Finance Reporting Standards (IFRS)). These provisions did not elicit any substantial new information about the issuer's financial performance, as a previous E.U. regulation (Regulation No. 1606/2002) already mandated the adoption of IFRS and most stock exchanges already required the filing of interim reports. However, the TPD stipulated major changes to the supervisory regime and the enforcement of corporate reporting and disclosure rules. Specifically, the directive required each member state to designate a competent supervisory authority to be in charge of monitoring compliance with the reporting and disclosure requirements imposed by the directive (Article 24). Finally, the regulation dealt with the mechanisms through which regulated information is disseminated and stored. The directive requires member states to set up an Officially Appointed Mechanism (OAM) in which regulated information would be centrally stored and through which investors could access the information quickly and free of charge (Article 21). As a result, the member states have set up online databases that allow the public to search for all required information, similar to the US Securities and Exchange Commission's EDGAR database. Appendix C.1 includes a summary of the regulatory provisions covered by the TPD.

The E.U. allowed some flexibility in implementing the new directive. This flexibility resulted in some cross-sectional variation in the disclosure requirements (the TPD is a minimum harmonization directive), but most notably in the timing of the implementation; while the UK implemented the directive in 2007, Italy did not do so until 2009.

The impact of the TPD on the functioning of E.U. capital markets has proved to be non-trivial, with observable effects on liquidity, on financing and investment (e.g., Kalemli-Ozcan et al., 2013; Christensen et al., 2016; Meier, 2018). The impact of the TPD on the takeover market, however, remains unexplored.

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2.3. Hypothesis development

From a theoretical perspective, the TPD could have different effects on acquisition costs. On the one hand, several considerations suggest that the TPD could boost takeover activity. To begin, by decreasing information costs (Fishman, 1988) and adverse selection (Christensen et al., 2016), tighter disclosure requirements on firms' periodic financial reports can lower the cost a bidder faces in identifying and assessing potential targets. Prior literature on the effects of the TPD on liquidity supports this possibility (Christensen et al., 2016). The disclosure of ownership information may also have similar effects, as bidders could use such information to better understand how the likelihood of the deal is affected by the target firm's voting structure (La Porta et al., 1999) and free float (Ringe, 2016).[14] Lastly, the harmonization of financial and ownership information across the E.U. could have increased comparability, encouraging cross-border acquisitions (Francis et al., 2016).

On the other hand, the ownership disclosure requirements introduced by the TPD could increase bidders' acquisition costs to the point of slowing down takeover activity. We identify three mechanisms through which an acquirer can be worse-off by disclosing the purchase of a stake in the target firm before the takeover announcement.

First, prior literature shows that incumbent managers of a target firm have the means to increase the cost of an acquisition to the extent of making it unfeasible for the acquirer (e.g., Walkling and Long, 1984; Cotter and Zenner, 1994). Managers often oppose takeovers out of concerns about losing their jobs or losing private benefits after the takeover. Consistent with this, Dimopoulos and Sacchetto (2014) estimate that, in 74 percent of single-bidder contests, the acquisition price is determined by target resistance. The information released

[14] The following anecdote illustrates the importance of information related to the free float. In 2008, Porsche disclosed its 30 percent hidden stake in Volkswagen. As short sellers had estimated a free float of 13 percent while the actual free float was 6 percent, the disclosure allegedly led to a "short squeeze" (i.e., a sharp increase in the stock price that forces short sellers to close out their positions, thus adding to the upward price pressure) (Ringe, 2016).

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under the ownership disclosure rules signals to incumbent target managers that the acquirer may intend to take over the target firm (managers do not have timely information about these intentions unless there are ownership mandatory disclosure rules). Once alerted, incumbent managers could take actions to make the acquisition more difficult (e.g., adopt control-enhancing mechanisms, or prepare a takeover defense, such as the search for a competitor of the acquirer willing to make a competing bid). Even if the defensive actions do not succeed, the target's resistance will likely result in higher acquisition costs. We refer to this mechanism as *"target resistance"*.

Second, prior work also suggests that changes in bidding competition have a significant effect on acquisition costs (Fishman, 1988). For example, Aktas et al. (2010) document that bids are higher when there are more potential competing bidders. The information released under the ownership disclosure rules signals to potential bidders that the acquirer may intend to take over the target firm. Once alerted, competitors could make competing bids in an attempt to deter the acquisition. Even if these competing bids do not succeed or are not publicly announced, bidding competition will likely result in higher acquisition costs due to acquirer's preemptive bidding (Fishman, 1988). We refer to this mechanism as *"bidding competition"*.

Third, prior work suggests that building a toehold is one possible solution to mitigate the free-rider problem (Grossman and Hart, 1980a).[15] Holding a toehold in the target firm also mitigates the impact on the stock price due to target managers' and competitors' reaction (e.g., Shleifer and Vishny, 1986; Betton et al., 2008). In our setting, the information released

[15] The free-rider problem entails each shareholder being better-off not tendering his own shares unless the premium paid is equal or higher to the value added by the acquirer. This is because each shareholder fails to take into account his own impact on the likelihood of a takeover, and instead free rides on the willingness of other shareholders to submit shares and enable the bidder to take over the firm. In this situation, a rational bidder would not expect to make a profit from the takeover. Building up a toehold can mitigate the free-rider problem because the acquirer can make a profit on the minority stake, even when they offer a control premium (Shleifer and Vishny, 1986). A toehold position may also help win a takeover contest. Ex ante, a toehold can deter rival bidders; ex post, toehold-owners are more likely to win and pay a lower control premium when competitive bidding starts (Eckbo and Langohr, 1989; Betton and Eckbo, 2000).

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under the ownership disclosure rules signals that the acquirer may intend to take over the target firm. In anticipation of the synergies from the acquisition, the stock price of the target firm increases. This stock price increase can be costly for the bidder to the extent that, due to market frictions, building a toehold requires several large purchases. If one of the earlier large purchases triggers the disclosure requirement, the target's stock price will increase and the remaining transactions will become more expensive. Thus, the ownership disclosure makes it more costly to build a toehold. We refer to this mechanism as *"toehold strategy"*.

These mechanisms are not mutually exclusive. It is possible that the target's stock market reaction to the acquisition announcement reflects anticipation not only of the potential synergies generated by the takeover, but also of the higher acquisition price induced by the target resistance, the bidding competition, and the difficulty in building a toehold.

The ongoing debate about the so-called "hidden ownership" acquisition strategy (also referred to as "stealth stake-building" or "creeping acquisitions") illustrates how ownership disclosure can be costly for bidders through the above-mentioned mechanisms. Hidden ownership consists of building a stake in the target firm through financial instruments that are not subject to ownership disclosure requirements (Hu and Black, 2007). Enriques and Gatti (2015) propose several examples that reflect anecdotally the occurrence and importance of these mechanisms in Europe, such as:

> Lactalis/Parmalat. On March 18, 2011, French dairy company Lactalis disclosed a five percent stake in post-bankruptcy and widely held Italian dairy company Parmalat, together with an equity swap contract for an additional seven percent of Parmalat shares. In the next few days, Lactalis bought the blocks held by three activist funds that were planning to engage in a proxy contest for the board election, thereby increasing its direct stake to 13.96%. It also secured an additional eight percent via equity swaps, thereby getting close to the Italian threshold for the mandatory bid (thirty percent) [*i.e., toehold strategy mechanism*]. In the same period, backed by the Italian government and Parmalat's management [*i.e., target resistance mechanism*], one of Italy's two main banks (Banca Intesa) was trying to organize a pool of Italian investors to secure control of Parmalat into Italian hands [*i.e., bidding competition mechanism*]. However, the 29 percent stake built by Lactalis basically put an end to

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Banca Intesa's takeover plan, which could only have succeeded by launching a much more expensive competing tender offer for 100% of the shares. Instead, a few weeks later, Lactalis launched a voluntary tender offer on 100% of the shares.

Other prominent cases from the period when the TPD had still not entered into force confirm the pervasiveness of the hidden ownership acquisition strategy. For example, in 2001, SAI successfully parked Fondiaria shares with banks to avoid Italy's mandatory bid rule, retaining call options on the shares. In 2005, Banco Popolare di Lodi acquired a 46% stake in Antonveneta via direct purchases (29.3%) and undisclosed call options (16.9%). Also in 2005, Victory Industriebeteiligung AG and Renova disclosed a 42% stake in Unaxis, which they had secretly acquired through call options.

Hidden ownership is also highly debated in the US (e.g., Hu and Black, 2007; Bebchuk et al., 2013).[16] Two recent examples of the debate spurred by this acquisition strategy in the US are the court ruling in the case of *CSX Corporation v. The Children's Investment Fund Management (*July 2011), and the Brokaw Act proposal (March 2016).[17] Also, Brav et al. (2008) document that approximately 16.1% of their sampled cases (Schedule 13D filings from 2001 to 2006) involve hedge funds reporting derivative positions in their target firms. Given that certain types of derivative investments (e.g., OTC derivatives and

[16] The main concern about creeping acquisitions is that firms run the risk of being taken over not by investors willing to create long-term value but by predatory investors that "agitate for some corporate change—for example, a sale of the company or recapitalization—that may be expected to have a short-term, positive effect on a company's stock price" (Emmerich et al., 2013), but that effectively force firms to cripple their long-term growth prospects. Once these investors leave, the short- term effect is followed by a stronger reversal. Moreover, to the extent that hidden ownership allows the acquirer to delay or avoid the tender offer process, creeping acquisitions could generate uninformed selling decisions (target shareholders have no guarantee they are selling at the highest price paid by the acquirer). In contrast to these concerns, some commentators argue that this acquisition strategy lowers transaction costs, makes the takeover market more dynamic, and thereby curb managerial entrenchment (Manne, 2005; Bebchuk et al., 2010; Bebchuk and Jackson, 2012).

[17] The appeals court decision in *CSX Corp. v. Children's Investment Fund Management (UK) LLP* explored the issue of whether the long party to a cash-settled equity total return swap is subject to the disclosure requirements of Sections 13(d) and (g) of the Exchange Act by reason of "beneficial ownership". Contemporaneously, the law firm Wachtell, Lipton, Rosen & Katz issued a rulemaking petition urging the SEC to tighten the disclosure rules applicable to blockholders (Wachtell, Lipton, Rosen & Katz, 2011) and triggered a regulatory proposal in 2016: the Brokaw Act. This proposal is named after a town in the US that went bankrupt after the closure of the paper mill employing a large part of the population. The case was controversial, among other reasons, because it was claimed that the closure was related to the takeover of the firm by a hedge fund. The bill sought to "increase transparency and strengthen oversight of activist hedge funds" and spurred a vigorous public debate (e.g., Bebchuk and Jackson, 2012; Emmerich et al., 2013; Brav et al., 2018).

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short positions) might not need full public disclosure, Brav et al. (2008) consider this figure a lower bound.

3. Data, sample, and descriptive evidence

3.1. Data and sample composition

We collect data from the SDC Platinum Worldwide Mergers and Acquisitions Database on corporate acquisitions over the period from January 2001 to December 2011. Stock price data come from Datastream. Our sample includes all European countries that were members of the E.U. in 2004 (i.e., when the TPD was introduced). We collect entry into force dates of the TPD across European countries from publications by the European Commission.

Appendix A presents the details of our sample selection procedure. We focus on completed control acquisitions where the target is a listed firm incorporated in the European countries included in Appendix D (i.e., we exclude transactions where the target's listing status is not public). Following prior literature (e.g., Faccio and Masulis 2005; Faccio et al., 2006; Edmans et al., 2012; Dessaint et al., 2017), we define a "control acquisition" as a completed transaction where the acquirer ends up with more than 50% of the target's shares.[18] Because in some cases the acquirer can gain effective control of the firm with less than 50% of the shares, our tests also present results defining "control acquisition" as a transaction where the acquirer ends up with more than 30% of the target's shares (we use 30% because this is the regulatory ownership threshold to launch a tender offer). To avoid cases where the acquirer already had control of the firm before the transaction, we exclude

[18] It is difficult to determine whether an announced deal classified as "uncompleted" meets the definition of "control acquisition". The definition of "control acquisition" relies on data on the acquirer's final stake in the target, namely data that only exist for completed deals. SDC provides some data on the acquirer's intended stake, but this information is patchy and subject to potential disclosure bias (the data is based on acquirers' voluntary disclosures). Including transactions classified as "pending" by SDC is also problematic because a number of these observations are collected from information that is "unconfirmed" (i.e., the information source is not completely reliable).

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deals in which the acquirer owns more than 50% of shares before the announcement (correspondingly in the second definition of "control acquisition", we exclude deals in which the acquirer owns more than 30% of shares before the announcement). We also apply other filters common in the takeover literature and required by our hypothesis (see Appendix A for details).[19] These requirements yield a final sample of 1,838 unique transactions using the first definition of "control acquisitions" (i.e., the acquirer ends up with more than 50% of shares) and 1,961 unique transactions using the second definition of "control acquisitions" (i.e., the acquirer ends up with more than 30% of shares). For our main tests, we aggregate these data by country-month-year and obtain a sample 1,980 country-month-year observations from January 2001 to December 2011 across 15 countries.

3.2. Descriptive evidence

Volume of notifications

Figure 1 reports patterns in the number of ownership notifications around the implementation of the TPD. Analyzing the temporal patterns in the number of ownership notifications can shed light on whether the TPD elicited more ownership disclosure. We obtain information about ownership disclosure filings from the SDC Platinum database (ownership filings contain notifications about changes of three percent or more in the ownership of listed firms). We compute the number of ownership disclosure filings per month relative to the implementation dates. Figure 1 reveals an increase in the number of ownership disclosure filings in the months after the TPD implementation dates, which suggests that the regulation led to the release of more information about firms' ownership structure.

[19] In particular, we exclude from the sample acquisitions where the target firm is listed on unregulated stock exchanges, as the TPD does not apply to these firms. We also exclude transactions in which the target is a financial firm (SIC code 6000-6999) or a utility firm (SIC code 4000-4949), as takeovers are highly regulated in these industries. In addition, we exclude deals related to bankruptcies, debt restructurings, going private transactions, privatizations, etc. Finally, we exclude transactions coded by SDC as not completed (pending, withdrawn, etc.).

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Volume of takeovers

Figure 2 explores the temporal patterns in takeover activity around the implementation of the TPD. Specifically, Figure 2 plots the number of completed control acquisitions (where the acquirer ends up with more than 50% of the target's shares) around the implementation of the disclosure rules. The vertical axis reports the monthly average number of control acquisitions. We superimpose on the graph estimates from a non-linear regression of the number of control acquisitions. The graph shows that the number of control acquisitions exhibits a sharp decrease after the implementation month, with no clear pattern in the months before the implementation dates.

4. Corporate acquisition activity

4.1. Average effect of the TPD on takeover activity

We conduct a multivariate analysis of the effect of the TPD on takeover activity by estimating the following OLS model in the spirit of Rossi and Volpin (2004):

$$Takeover_Activity_{iym} = \alpha_0 + \alpha_1 \times Transparency_Directive_{iym} + \Phi_1 \times Country_Controls_{iym} + \Phi_2 \times Regulation_Controls_{iym} + Fixed\ Effects + \varepsilon \qquad (1)$$

The dependent variable, *Takeover_Activity*, is the logarithm of one plus the number of control acquisitions in country *i*, year *y*, and month *m* (e.g., the number of control acquisitions in Germany in May 2010). For country *i*, year *y*, month *m*, *Transparency_Directive* is an indicator variable that equals one for the months after the entry-into-force of the TPD in that country, and zero otherwise. We conduct the analysis at the monthly level to fully exploit granularity in the available information on the entry into force of the TPD.

Country_Controls includes a set of country-level variables to control for factors that may affect takeover activity. *Stock_Market_Size* is the logarithm of the market capitalization of the main stock exchange in a country-month-year (in millions of euros). *GDP_Capita* is

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the logarithm of the country's annual gross domestic product per capita (in euros). *Gov_Bond_10yr* is the 10-year yield on government bonds in a country-month-year (in percentage). *Returns_Volatility* is the standard deviation of the daily stock market returns of each country-month-year (in percentage). *Listed_Firms* is the number of listed firms in a given country-month-year. *Consumption* is the final consumption expenditures (seasonally and calendar adjusted) in a country-quarter-year, in constant prices (2010 as reference year). *Investment* is the gross fixed capital formation (seasonally and calendar adjusted) in a country-quarter-year, in constant prices (2010 as reference year). We collect this data from Eurostat. *Regulation_Controls* includes a vector of controls for potentially confounding regulations: *Takeover Directive*, *Market_Abuse Directive*, and *Shareholder_Rights Directive* (see Appendix E for a summary of each of these regulations). These variables are measured using the country-specific implementation date of each regulation (see Appendix D).[20]

To further control for country characteristics as well as trends and shocks common to the sample countries in a given month, we include country and month-year fixed effects (Christensen et al., 2016). The purpose of the month-year fixed effects is to absorb trends and shocks common to all E.U. member states in a given month. As a result, the identification of the effect of the TPD on takeover activity stems from within-E.U. variation in the entry into force dates of the directive. We cluster standard errors at the country level.

Table 1, panel B, reports the results from the estimation of equation (1) for the two definitions of "control acquisitions" (i.e., in the first definition the acquirer ends up with more

[20] In addition to these regulations, we examine whether our inferences are affected by the adoption of the International Financial Reporting Standards (IFRS), by the Markets in Financial Instruments Directive 2004/39/EC (MiFID), and by changes in the E.U. antitrust merger regulation. Regarding IFRS, the adoption date of the new standards is the same for all countries in our sample and thus its potential effect is controlled for by the month-year fixed effect structure. Regarding MiFID, the effect of this regulation on takeover activity is unclear, as the directive mostly focuses on order handling. In addition, there is little variation in the implementation dates across the sample countries (i.e., 12 out of 15 of the sample countries have the same implementation date). This implies that the fixed effects capture most of the potential effect of the MiFID. To corroborate that the MiFID does not affect our inferences, we include an indicator variable for the MiFID as an additional control. The coefficient on *Transparency_Directive* remains negative and significant. Regarding changes in E.U. antitrust merger regulation, Appendix OC documents that it is unlikely that the antitrust regulation drives our results.

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than 50% of shares and in the second definition the acquirer ends up with more than 30% of shares). The coefficient on *Transparency_Directive* is negative and statistically significant across the model specifications. This result confirms the pattern documented in Figure 2, and suggests that the implementation of the TPD induces a significant decrease in takeover activity. Table 1, panel C, repeats the analysis using two alternative measures of takeover activity. First, for each country we scale the monthly number of takeovers by the average number of public firms in the country previous the implementation of the TPD. Second, we take the logarithm of the value (in euros) of takeovers aggregated at the country-year-month level. Using these alternative dependent variables allows us to explore the robustness of our inferences, and to gauge in different ways the economic magnitude of the effect of the TPD. The magnitude of the coefficient on *Transparency_Directive* estimated in Table 1, panels B and C, suggests that the estimated effect of the TPD is economically significant. The results indicate i) a decrease of 17-18% in the number of takeovers (panel B), ii) a decrease of 0.1-0.2% in the probability that a firm is taken over in the country (the unconditional probability of takeover is 3.1%) (panel C, columns 1-2), ii) a decrease of 8.5-10% in the aggregated euro value of the takeovers (panel C, columns 3-4).[21]

4.2. Dynamic analysis

We next perform a dynamic analysis around the implementation of the TPD. In particular, we re-estimate Eq. (1), replacing *Transparency_Directive* with separate indicator variables, D_t, marking the quarters around the implementation of the TPD, over a fixed window of +/– 12 quarters around the implementation of the TPD. In particular, t=0 indicates the quarter of the TPD implementation, t=–s indicates s quarters before t=0, and t=+s indicates s quarters after t=0 (s=1, 2, ..., 11). We omit D_{-1} (i.e., the indicator for quarter t=–1),

[21] Appendix OC explores acquirers' actions to mitigate the effect of the TPD. Taken together, our battery of tests provides weak evidence that acquirers avoid the additional acquisition costs imposed by the TPD by modifying the terms of the transaction or by pursuing alternative investment avenues (see Tables OC2 to OC4).

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which serves as a benchmark. The rest of the specification (dependent variable, control variables, and fixed effects) is as in Model 1 of Table 1, panel B.

This analysis serves two purposes. First, the test sheds light on whether the effect of the TPD is immediate or delayed. Second, the test serves to sharpen identification. Observing that the effect is most pronounced in the quarters immediately after the implementation would suggest that the pattern we document is attributable to the TPD. Figure 3 presents the estimated coefficients from this analysis. The figure plots the coefficient estimates on D_t together with their 95% confidence intervals. Because quarter t=–1 serves as the benchmark, the coefficient on D_{-1} is zero, with no confidence interval. Figure 3 reveals that the decrease in takeover activity comes into effect right after the implementation of the TPD and that the effect does not reverse over time.[22]

4.3. Falsification tests

The main concern about drawing the inference that the implementation of the TPD is associated with a decrease in takeover activity is that the pattern documented in Table 1 could merely reflect a secular trend in the number of control acquisitions. The decrease in the number of control acquisitions could also be driven by concurrent regulations or by macroeconomic shocks, such as the credit shortages that occurred around the time of the financial crisis.

Our empirical design accounts for the potential confounding trends in takeover activity and E.U.-wide economic shocks by including month-year fixed effects. Indeed, given the staggered implementation of the TPD across E.U. countries and our fixed effect structure, trends and confounding shocks cannot affect our estimates unless they correlate with the

[22] The coefficients exhibit larger negative values in later quarters. However, the average coefficient from quarter 0 to 5 is not statistically different from the average coefficient from quarter 6 to 11.

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country-specific implementation dates. Yet, we further check that our results are indeed attributable to the TPD by conducting two placebo tests.

First, we replicate the analysis in Table 1 by randomizing the dates of the implementation of the TPD over the sample period. If our inferences were the result of a secular trend, then the pattern in Table 1 would not be unique to the TPD implementation dates. Operationally, we randomly draw a date over the sample period for each country. We then re-estimate equation (1) using these random implementation dates. We iterate this procedure 100 times and retain coefficient estimates and standard errors from each of the iterations. Table 2, columns 1-2, reports the average of these coefficients and standard errors. The results indicate that these placebo coefficients are close to zero and not statistically significant, suggesting that we are not simply picking up a secular trend in takeover activity. When we benchmark the coefficients on the treatment effects from Table 1, panel B, with the placebo coefficients obtained through the randomization exercise we find that the latter are statistically different from the former (p-value < 0.001). This result corroborates that the decrease in takeover activity we document is related to the implementation of the TPD.

Second, we replicate the analysis in Table 1 for control acquisitions where the target is not a public firm. Since the TPD applies only to public firms, if our findings were the result of a confounding economic trend or shock, then we would observe a similar pattern for control acquisitions of private firms. Table 2, columns 3-4, shows that the coefficient on *Transparency_Directive* is small and not statistically significant, which suggests that our findings in Table 1 are unlikely to be confounded by time trends unrelated to the TPD.

4.4. Short-window analysis

To further tighten identification and assess whether our results are confounded by the financial crisis, we conduct a short-window analysis around the TPD implementation dates.

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Specifically, we limit the sample to 12 months before and after the entry into force dates of the TPD. Consistent with the results of the main analysis, we find that the coefficient on the *Transparency_Directive* is negative and significant, and the magnitude is slightly larger (Table 3, columns 1-2). We also explore whether such a pattern is driven by short-term time trends by randomizing the entry into force dates of the TPD within the −12/+12 month short-term window around the true implementation dates. Table 3, columns 3-4, reports the results. None of the placebo coefficients are significant, suggesting that the patterns we document are specific to the entry into force dates of the TPD, and do not merely reflect a time trend in takeover activity. Lastly, we replicate the analysis in Table 3 models 1-2 for acquisitions where the target firm is not listed in a stock exchange. Table 3, columns 5-6, reports the results, showing that the coefficient on *Transparency_Directive* is economically small and not statistically significant, which further corroborates the inferences that our findings are not confounded by time trends or shocks that correlate with the implementation to the TPD.

4.5. Cross-sectional variation in the effect of the TPD

We next analyze whether the pattern documented in Table 1 exhibits cross-country variation along the following institutional dimensions: regulatory quality, regulatory enforcement, level of anti-takeover protections, ownership concentration, and level of institutional ownership. To the extent that institutional features have been found to be critical determinants of the intensity of the effects of regulation (e.g., Christensen et al., 2016; Karpoff and Wittry, 2018), this analysis allows us to learn about under which institutional and market conditions the disclosure of ownership information can affect takeover activity.

Following Christensen et al. (2016), we start by exploring heterogeneity in the average effect of the TPD along measures of the country's overall regulatory quality and enforcement. *Regulatory_Quality* is the regulatory quality index developed by Kaufmann et

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al. (2009) and *Enforcement_Change* is Christensen et al. (2016)'s measure of enforcement changes (see Appendix B for a more detailed description of these variables). Prior literature documents that the TPD increased liquidity in countries with relatively strong enforcement and high regulatory quality, but had little effect in countries with weak enforcement and low regulatory quality.

We then explore variation in the antitakeover legislation across the sample countries. We collect information on control-enhancing mechanisms (CEMs) available in E.U. countries (EC, 2007). These mechanisms make less likely the success of the deal by allowing incumbent controlling shareholders to maintain control over the firm through deviations from the so-called "proportionality principle" or "one share, one vote" (OECD, 2007; EC, 2007). Accordingly, we construct an index, *Control_Provisions*, defined as the sum of the number of CEMs available in that country (see Online Appendix OB for details).

Next, we examine whether the effect of the TPD varies with the ownership structure prevalent in the country. We analyze two main dimensions of ownership structure that potentially affect the cost of acquiring a company: (i) ownership concentration and (ii) institutional ownership. Regarding (i), the strategy of building a hidden stake to take over a target firm is limited in cases where ownership is concentrated. For example, if the major shareholder owns 51% of the company, a potential acquirer cannot obtain a majority stake without reaching an agreement with the controlling shareholder. Regarding (ii), institutional investors can play a crucial role in facilitating takeovers, as acquirers are more likely to seek support from institutions than from retail investors. Moreover, institutional investors frequently engage in derivative contracts as counterparties, thus making it easier to build a stake in the target firm through financial instruments.

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We measure the ownership concentration prevalent in a country by collecting data on public firms' ownership structure from the Amadeus-Bureau van Dijk discs. Following Claessens and Djankov (1999), we define *Ownership_Concentration* as the country-specific mean of the shares held by the top five shareholders (as % of the total shares outstanding) of the listed firms of the country, measured in the year before the TPD implementation dates. We measure the presence of institutional investors by collecting data on the stakes held by institutional investors from the FactSet/LionShares database. *Institutional_Ownership* is computed as the country-specific mean of the shares held by all institutional investors (in % of market capitalization) in a country in the year before the TPD entry into force dates.

Prior research on the capital market effects of the TPD (e.g., Christensen et al., 2016) finds evidence of hysteresis, namely that the effects are concentrated among countries where the previous regulatory conditions are relatively stronger. In light of this prior research, we explore whether takeover markets converge/diverge under the TPD. To do so, we test whether the effect we document is concentrated among countries where takeover markets were less/more dynamic prior to the regulation. Operationally, we partition the sample into countries with below and above median values of *Prior_Takeover_Activity*, defined as the average yearly number of takeovers during the pre-regulation period (i.e., from 2004 up to the country-specific implementation date) scaled by the median number of public firms in the country during that period.

Table 4 presents results of estimating equation (1) separately for countries with below and above median values of the partitioning variables defined above. For ease of exposition, we only tabulate results defining "control acquisitions" as transactions in which the acquirer ends up with more than 50% of the target's shares. Inferences are unaltered when we define "control acquisitions" as transactions in which the acquirer ends up with more than 30% of

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the target's shares (untabulated). Panels A and B document that the decrease in takeover activity is larger in countries with relatively higher regulatory quality, stricter enforcement, fewer control provisions, lower ownership concentration, and higher institutional ownership. That is, the TPD decreases takeover activity to a greater extent in countries where the effect of the disclosure of ownership information is expected to be more pronounced. The results in panel C reveal that the decrease in takeover activity is more pronounced in countries with higher pre-TPD takeover activity.[23] This pattern implies that the implementation of the TPD is associated with a convergence in takeover activity across European countries, but a convergence to a lower level of activity.

4.6. Amendment of the TPD

To further check that our inferences are not confounded by changes in economic conditions concurrent with the implementation of the TPD (notably, the credit shortages that occurred during the financial crisis), we study the effect of later developments of the directive. In 2013, the E.U. issued Directive 2013/50/EU, which, with a special emphasis on the disclosure of equity derivatives, amended the TPD by further tightening ownership disclosure requirements. Appendix C.2 includes a summary of the regulatory provisions covered by the amendment. We find that this tightening of the TPD is followed by a decrease in the number of control acquisitions (the results of this analysis are presented in Online Appendix OC, section OC.3). This result is robust to the battery of placebos and to the short-window analysis we use in our prior tests.

[23] These results are consistent with Table 4, panels A and B, as the partitioning variables used in those analyses are correlated with the level of prior takeover activity in the country. The correlation between the annual number of takeovers in the country (averaged over the period prior to the TPD and scaled by the number of public firms) and *Regulatory_Quality*, *Enforcement_Change*, *Control_Provisions*, *Ownership_Concentration*, and *Institutional_Ownership* is, respectively, two percent, −19 percent, −48 percent, −30 percent, and 17 percent.

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5. Acquisition costs

In this section, we conduct a series of analyses with two objectives: (i) provide more direct evidence that the decrease in takeover activity around the TPD is driven by higher acquisition costs and (ii) explore the empirical validity of the hypothesized economic mechanisms behind the effect of the TPD.

5.1. Target returns

Following prior literature (e.g., Schwert, 1996), we examine the effect of the TPD on takeover premiums. An increase in takeover premiums after the disclosure mandate relative to the prior period would be consistent with the notion that the decrease in takeover activity under the TPD is driven by higher acquisition costs. We first plot average cumulative abnormal stock returns (CAR) over the days leading up to the acquisition announcement date, separately for the pre- and post-TPD periods. For ease of exposition, we normalize the returns to zero at trading day –41 (the cumulative returns from –41 to day –1 are often referred to as "run-up"). Figure 4 shows that the cumulative returns are higher in the post-TPD period relative to the pre-TPD period.

We next perform a multivariate test on whether takeover premiums increase after the implementation of the TPD. We estimate the following model at the control acquisition level:

$$Target_Returns = \gamma_0 + \gamma_1 \times Transparency_Directive + \vartheta_1 \times Country_Controls + \vartheta_2 \times Regulation_Controls + \vartheta_3 \times Transaction_Controls + Fixed\ Effects + \varepsilon \qquad (2)$$

For each acquisition, the dependent variable, *Target_Returns*, is the target cumulative abnormal returns over the (−42, +1) day window around the acquisition announcement date.[24] Following prior work, we compute abnormal returns based on a one-factor market model

[24] Some prior work uses initial bid prices to compute the takeover premium (Eckbo, 2009 and Betton et al., 2014). We do not use initial bid prices to compute the premium because these data are missing for a number of transactions in our sample. Our inferences are not sensitive to repeating our tests using alternative windows (see Online Appendix OC, section OC.8).

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estimated over the (−253, −127) day window before the announcement date. This proxy is widely used in extant literature to measure the premium paid by the acquirer (Eckbo, 2009).

In addition to the control variables already defined in equation (1), we include *Transaction_Controls*, a vector of controls for transaction-level factors that can affect the premium paid by the acquirer. *Transaction_Value* is the logarithm of the all-in value of the acquisition (in millions of euros) paid by the acquirer. *Cross_Border* is an indicator variable that equals one if the target and the acquirer are from different countries, and zero otherwise. *Tender_Offer* is an indicator variable that equals one if the acquisition involves a tender offer, and zero otherwise. *Toehold* is an indicator variable that equals one if the acquirer owns a stake in the target at the announcement date, and zero otherwise. *Cash* is an indicator variable that equals one if the whole payment is made in cash, and zero otherwise. *Shares* is an indicator variable that equals one if the whole payment is made in equity, and zero otherwise. *Number_Bidders* is the total number of bidders participating in the takeover contest. We include country (target), industry (target), and month-year fixed effects to control for country and industry characteristics, as well as changes in the overall economic conditions. We cluster standard errors at the target firm country-month-year level.

Table 5 presents the results. The sample size is smaller than in Appendix A because the control variables cause some sample attrition. Table 5 shows that takeover premiums increase significantly (by more than 8%) after the implementation of the TPD (columns 1-2). The increase in the run-up after the implementation of the TPD shown in Figure 4 highlights that the disclosure of ownership information can drive the target stock price up before the acquisition announcement. Overall, Table 5, together with Figure 4, suggests that average bid prices are higher under the TPD, which is consistent with the notion that the ownership disclosure requirements introduced by the TPD increase acquisition costs.

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5.2. Acquirers' returns

We next analyze acquirers' returns around the acquisition announcements as an alternative way to gauge whether acquirers are worse off after the TPD. Specifically, we replace *Target_Returns* in equation (2) with *Acquirer_Returns*, computed as the acquirer cumulative abnormal returns over the (−42, +1) day window around the announcement date. In parallel to the previous tests, abnormal returns are computed based on the market model, estimated over the (−253, −127) day window. Also similar to our previous tests, we repeat the analysis replacing public targets with private targets as a placebo.

Table 6 presents the results. The sample size is smaller than in Table 5 because most of the acquirers are private firms. The coefficient on *Transparency_Directive* is negative and significant, indicating that acquirers' returns are significantly lower after the TPD. In addition, the coefficient on *Transparency_Directive* is not significant in the placebo test using private targets, which are not subject to the TPD rules.[25]

5.3. Shareholder identification

We next exploit cross-sectional variation in the transparency of share ownership across European countries. In particular, we measure how difficult it is for the management of a firm to obtain information about its shareholder base under the national laws of the country.[26] These rules affect target managers' access to information about shareholdings but do not directly affect the information in possession of competitors and market participants, and thus provide an opportunity to test the empirical validity of the hypothesized *"target*

[25] We also test the effect of the TPD on the takeover synergies. In particular, we re-estimate equation (2) using as dependent variable a measure of the surplus generated by the takeover. Following prior literature (e.g., Bradley, Desai, and Kim, 1988), we compute the surplus as the equally-weighted and value-weighted average of *Target_Returns* and *Acquirer_Returns*. The sample size for this test is considerably smaller, as the analysis requires that both the target and the acquirer are public firms. Untabulated results reveal that takeover surplus does not change between the pre- and post-TPD periods.

[26] Firms can obtain information about the identity of their shareholders from the Central Security Depositaries (CSD), analogous to the Depository Trust Company in the US. A CSD is a specialist financial organization holding securities for brokers and financial firms at one location where they can be available for clearing and settlement. Firms usually request this information once a year before the annual general meeting, but some countries allow making these requests more often.

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resistance" mechanism (i.e., managers of the target firm prepare a defense against the takeover attempt). We expect the effect of the TPD on takeover activity to be stronger in countries where the national laws make it harder for the management of target firms to obtain information about their shareholders, as ownership information could alert the management about potential acquirers building a stake in the firm. That is, we expect the effect of the ownership disclosures introduced by the TPD to be less strong when there is an alternative source of information that could partially substitute for such disclosures.

Our measure of transparency of share ownership in each E.U. country comes from a survey conducted in 2010 by the T2S Taskforce on Shareholder Transparency sponsored by the European Central Bank. T2S is the European platform for securities settlement. Based on this survey, we construct an index, *Shareholder_Identification*, defined as the sum of three indicator variables: *First_Layer*, *Foreign*, and *Frequency*. *First_Layer* equals one if the Central Security Depositary (CSD) provides information about beneficiaries beyond the "first layer" of holders (e.g., custodians and other intermediaries), and zero if the CSD provides no information or only information about first-layer beneficiaries. *Foreign* equals one if prevailing regulations oblige foreign intermediaries (including Investor CSDs which have accounts with the Issuer CSD) to provide information to the issuer, and zero otherwise. *Frequency* equals one if issuers can ask for shareholder information on a regular basis, and zero if these requests are made once a year (usually at the time of general meetings or corporate actions).

We re-estimate equation (1) by partitioning the sample into countries with above- and below-median values of *Shareholder_Identification*. Table 7 shows that the effect of the TPD is stronger among countries where there is more opacity about share ownership; that is, in countries where it is more difficult for the target's management to obtain information about

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the shareholder base. As such, this evidence is consistent with the notion that the ownership disclosure requirements introduced by the TPD increase acquisition costs by eliciting resistance from target firms (i.e., the *"target resistance"* mechanism).

5.4. Bidding competition

To explore the empirical validity of the second hypothesized mechanism (i.e., "*bidding competition*"), we examine whether the implementation of the TPD is followed by an increase in bidding competition. We re-estimate equation (2) by using as dependent variable the number of bidders per acquisition. As an alternative measure of bidding competition, we compute the average stake held by competing bidders. We use this alternative measure because bidding competition can also come in the form of more aggressive bidding, even if the number of bidders does not increase. Indeed, under the TPD the competing bidders can learn earlier about an acquirer's intention to take over and thus have more time to build a competing stake. Moreover, measuring competition by the number of bidders could result in low-power tests, as most of the acquisitions recorded in SDC have only one bidder (Dimopoulos and Sacchetto, 2014).[27] Table 8 presents the results. While we do not find a significant increase in the number of bidders under the TPD, Table 8 shows that the average size of the stake held by competing bidders increases after the implementation of the TPD. This evidence is consistent with the notion that the TPD increases acquisition costs by increasing bidding competition. That said, this analysis is subject to data limitations, as the bidding process is often conducted privately.[28]

[27] This evidence does not imply that bidding competition is unimportant (e.g., Boone and Mulherin, 2007; Gorbenko and Malenko, 2014). Rather, this evidence reflects that bidding competition is often a private process and thus there is no public record to be collected.

[28] The Online Appendix OC, section OC.6, includes additional tests exploring the importance of the target resistance and bidding competition mechanisms. Specifically, we show that the ratio of frustrated takeovers to the number of completed control acquisitions increases after the implementation of the TPD, and that the effect of the TPD is concentrated in takeovers with higher probability of being hostile (Tables OC8 and OC9). These results are consistent with acquirers finding stronger opposition by the target management and competitors under the TPD.

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5.5. Toehold strategy

Prior literature (e.g., Shleifer and Vishny, 1986; Betton et al., 2008) suggests that building a toehold before the takeover announcement gives the bidder a competitive advantage due to the expected gain from selling the toehold in case of losing the bid (given this expected gain, the acquirer can raise the bid price when competing with rival bidders). Moreover, toeholds can reduce free riding problems by allowing the bidder to internalize some of the synergies that otherwise would be appropriated by the target firm's incumbent shareholders. Consistent with these arguments, prior literature shows that toeholds are associated with a higher probability that the initial bid succeeds and with a lower winning offer premium (Eckbo, 2014).[29]

The TPD could increase the cost of building a toehold for reasons beyond the triggering of target resistance and bidding competition. Due to market frictions, building a substantial toehold requires several large purchases. If one of the earlier large purchases triggers the disclosure requirement, the target's stock price will increase and the remaining transactions will become more expensive. As such, finding that toeholds are smaller under the TPD would further corroborate the inferences that the ownership disclosure requirements increase acquisition costs.

We then re-estimate equation (2) replacing *Target_Returns* with *Toehold_Size*, defined as the percentage of the target firm's shares held by the acquirer at the announcement date using information from SDC.[30] We first observe that in the pre-TPD period, a large part (64%) of the average toehold is disclosed at the acquisition announcement, which is

[29] Toehold bidding is relatively infrequent and has declined over time. However, this does not necessarily speak against the efficacy of toeholds for takeover bidding (Eckbo, 2009). First, the distribution of actual toeholds is bimodal, centered on either zero or large toeholds. Second, toeholds are much more common in hostile takeovers than in friendly takeovers, and there has been a general reduction in hostile takeovers since the 1990s.

[30] We compute the toehold by aggregating all the shares acquired until the announcement date, including blocks of shares disclosed at the takeover announcement date. We distinguish these blocks from other (non-toehold) transactions recorded on the announcement date (e.g., tender offers, mergers) by imposing that the effective date of the transaction falls within five days after the announcement date.

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consistent with the notion that, before the implementation of the TPD, there could be substantial "hidden" ownership in the target (i.e., ownership that was not disclosed until the acquisition announcement). Table 9 reports the estimation results. The coefficient on *Transparency_Directive* is negative and significant. This result suggests that the TPD is associated with a decrease of around 14% in the size of the toehold held at the announcement date and supports the notion that the TPD increases the cost of building a toehold.[31]

To ensure that the results from Table 9 do not simply reflect a temporal trend in shareholder ownership base, we estimate equation (2) before the "run-up" period as a placebo test. In particular, we measure *Toehold_Size* at three months, six months, and twelve months before the announcement date. As shown in Table 9, models 2 through 4, we do not find evidence of a significant change in the size of toehold held by the acquirer in the months further away from the announcement date.

6. Conclusion

We study the effect of the Transparency Directive (TPD) –a major disclosure regulation in the E.U.– on takeover activity. We analyze whether the directive increased acquisition costs by tightening the mandatory disclosure of ownership information. Using comprehensive data on takeover activity in Europe from 2001 to 2011, we find that the TPD leads to a substantial decrease in the number of control acquisitions, a pattern concentrated in countries where the effect of the disclosure regulation is expected to be more pronounced.

In addition, we document five patterns consistent with the TPD increasing acquisition costs by triggering an increase in defensive reactions by the management of the target firms, more bidding competition, and costlier implementation of a toehold strategy. First, target

[31] We corroborate these findings by complementing the analysis in Figure 1 (number of filings) with the amount of the stake (in % of shares) disclosed in those filings. We find that the average size of the disclosed stake decreases under the TPD (untabulated). One interpretation of this evidence is that acquiring large stakes of a target company becomes more costly.

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firms' stock returns around the acquisition announcement are higher under the TPD. Second, acquirers' stock returns around the acquisition announcement are lower under the TPD. Third, the decrease in the number of acquisitions is stronger among the countries in which it is harder for the targets' managers to identify the shareholders. Fourth, competing bidders hold a larger stake in a target firm. Fifth, acquirers' toeholds are smaller under the TPD.

Overall, the results suggest that the TPD increased the cost of acquiring public firms to the point of reducing takeover activity. The effect appears to be driven by the costs introduced by the tightening of ownership disclosure rules, which in this setting outweigh bidders' benefits from enhanced corporate transparency. The results also indicate that, rather than stimulating less active takeover markets, the disclosure regulation appears to have slowed down markets that are more dynamic. However, we call for caution when interpreting these results from a welfare perspective; while a decrease in takeover activity could increase agency costs and/or impair economic productivity; such a decrease could be desirable if it is concentrated in socially suboptimal takeovers.

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References

Aktas, N., Bodt, E., and Roll, R. "Negotiations under the threat of an auction." *Journal of Financial Economics* 98 (2010): 241–255.

Badertscher, B., Shroff, N., and White, H.D. "Externalities of public firm presence: Evidence from private firms' investment decisions." *Journal of Financial Economics* 109 (2013): 682–706.

Badia, M., Duro, M., Jorgensen, B., Ormazabal, G. "Disclosure Regulation and Competitive Interactions: Evidence from the Oil and Gas Industry." Working paper, 2019.

Bebchuk, L., Brav, A., Jackson, R., and Jiang, W. "Pre-Disclosure Accumulations by Activist Investors: Evidence and Policy." *Journal of Corporation Law* 39 (2013): 7–14.

Bebchuk, L., Grinstein, Y., and Peyer, U. "Lucky CEOs and lucky directors." *The Journal of Finance* 65 (2010): 2363–2401.

Bebchuk, L., and Jackson, R. "The law and economics of blockholder disclosure." *Harvard Business Law Review* 2 (2012): 39–78.

Berger, P.G., and Hann, R. "The impact of SFAS No. 131 on information and monitoring." *Journal of Accounting Research* 41 (2003): 163–223.

Bernard, D. "Is the risk of product market predation a cost of disclosure?" *Journal of Accounting and Economics* 62 (2016): 305–325.

Betton, S., and Eckbo, B. "Toeholds, bid jumps, and expected payoffs in takeovers." *The Review of Financial Studies* 13 (2000): 841–882.

Betton, S., Eckbo, B.E., and Thorburn, K.S. Corporate takeovers. Handbook of corporate finance: Empirical corporate finance, Volume 2, chapter 15, 2008.

Betton, S., Eckbo, B.E., and Thorburn, K.S. "Merger negotiations with stock market feedback." *The Journal of Finance* 69 (2014): 1705–1745.

Beyer, A., Cohen, D.A., Lys, T.Z., and Walther, B.R. "The financial reporting environment: Review of the recent literature." *Journal of Accounting and Economics* 50 (2010): 296–343.

Boone, A. and Mulherin, J. "How are firms sold?" *The Journal of Finance* 62 (2007): 847–875.

Bradley, M., Desai, A. and Han Kim, E. "Synergistic gains from corporate acquisitions and their division between the stockholders of target and acquiring firms." *Journal of Financial Economics* 21 (1988): 3–40.

Electronic copy available at: https://ssrn.com/abstract=3506594
Electronic copy available at: https://ssrn.com/abstract=3304818

Brav, A., J., W., Partnoy, F. and Thomas, R. "Hedge fund activism, corporate governance, and firm performance." *The Journal of Finance* 63 (2008): 1729–1775.

Brav, A., Jiang, W., Ma, S., and Tian, X. "How does hedge fund activism reshape corporate innovation?" *Journal of Financial Economics* 130 (2018): 237–264.

Breuer, M. "How does financial-reporting regulation affect market-wide resource allocation?" Working paper, 2019.

Cain, M., McKeon, S., and Solomon S. "Do takeover laws matter? Evidence from five decades of hostile takeovers." *Journal of Financial Economics* 124 (2017): 464–485.

Catan, E.M., and Kahan M. "The law and finance of antitakeover statutes." *Stanford Law Review* 68 (2016): 629–89.

Chen, C. "The disciplinary role of financial statements: evidence from mergers and acquisitions of privately held targets." *Journal of Accounting Research* 57 (2019): 391–430.

Christensen, H.B., Hail, L., and Leuz, C. "Capital-market effects of securities regulation: prior conditions, implementation, and enforcement." *The Review of Financial Studies* 29 (2016): 2885–2924.

Christensen, H.B., Maffett, M.G. and Vollon, L. "Securities regulation, household equity ownership, and trust in the stock market." *Review of Accounting Studies* 24 (2019): 824–859.

Claessens, S., and Djankov, S. "Ownership concentration and corporate performance in the Czech Republic." *Journal of Comparative Economics* 27 (1999): 498–513.

Cotter, J., and Zenner, M. "How managerial wealth affects the tender offer process." *Journal of Financial Economics* 35 (1994): 63–97.

Dessaint, O., Golubov A., and Volpin P. "Employment protection and takeovers." *Journal of Financial Economics* 125 (2017): 369–388.

Diamond, D.W. "Optimal release of information by firms". *The Journal of Finance* 40 (1985): 1071–1094.

Dimopoulos, T., and S. Sacchetto. "Preemptive bidding, target resistance, and takeover premiums." *Journal of Financial Economics* 114 (2014): 444–470.

Eckbo, B.E. "Bidding strategies and takeover premiums: a review." *Journal of Corporate Finance* 15 (2009): 149–178.

Electronic copy available at: https://ssrn.com/abstract=3506594
Electronic copy available at: https://ssrn.com/abstract=3304818

Eckbo, B.E. “Corporate takeovers and economic efficiency.” *Annual Review of Financial Economics* 6 (2014): 51–74.

Eckbo, B.E., and Langohr, H. “Information disclosure, method of payment, and takeover premiums.” *Journal of Financial Economics* 24 (1989): 363–403.

Edmans, A., Goldstein I., and Jiang, W. “The real effects of financial markets: The impact of prices and takeovers.” *The Journal of Finance* 67 (2012): 933–971.

Emmerich, A. O., Mirvis, T. N., Robinson, E. S., and Savitt, W. “Fair markets and fair disclosure: some thoughts on the law and economics of blockholder disclosure, and the use and abuse of shareholder power.” *Harvard Business Law Review* 3 (2013): 135–156.

Enriques, L., and Gatti, M. “Creeping acquisitions in Europe: Enabling companies to be better safe than sorry.” *Journal of Corporate Law Studies* 15 (2015): 55–101.

Esrel, I, Liao RC, and Weisbach M. “Determinants of cross-border mergers and acquisitions.” *The Journal of Finance* 67 (2012): 1045–82.

European Commission (EC). Proportionality between ownership and control in E.U. listed companies: comparative legal study. External study commissioned by the European Commission, 2007.

Faccio, M., and Masulis W.R. “The choice of payment method in European mergers and acquisitions.” *The Journal of Finance* 60 (2005): 1345–1388.

Faccio, M., McConnell, J.J., and Stolin, D. “Returns to acquirers of listed and unlisted targets.” *Journal of Financial and Quantitative Analysis* 41 (2006): 197–220.

Fishman, M. “A theory of preemptive takeover bidding.” *The Rand Journal of Economics* 19 (1988): 88–101.

Francis, J.R., Huang, S.X., and Khurana, I.K. “The role of similar accounting standards in cross-border mergers and acquisitions.” *Contemporary Accounting Research* 33 (2016): 1298–1330.

Ge, R. and Lennox, C. “Do acquirers disclose good news or withhold bad news when they finance their acquisitions using equity?” *Review of Accounting Studies* 16 (2011): 183–217.

Goldstein, I., and L. Yang. “Information disclosure in financial markets.” *Annual Review of Financial Economics* 9 (2017): 101–125.

Gorbenko, A.S., and Malenko, A. “Strategic and financial bidders in takeover auctions.” *The Journal of Finance* 69 (2014): 2513–2555.

Electronic copy available at: https://ssrn.com/abstract=3506594
Electronic copy available at: https://ssrn.com/abstract=3304818

Grossman, S.J., and Hart, O.D. “Disclosure laws and takeover bids.” *The Journal of Finance* 35 (1980a): 323–334.

Grossman, S.J., and Hart, O.D. “Takeover bids, the free-rider problem, and the theory of the corporation.” *The Bell Journal of Economics* 11 (1980b): 42–64.

Hirshleifer, J. “The private and social value of information and the reward to inventive activity.” *American Economic Review* 61 (1971): 561–574.

Hu, H.T.C., and Black, B. “Hedge funds, insiders, and the decoupling of economic and voting ownership: Empty voting and hidden (morphable) ownership.” *Journal of Corporate Finance* 13 (2007): 343–367.

Jarrell, G., and Bradley M. “The economic effects of federal and state regulations of cash tender offers.” *Journal of Law and Economics* 2 (1980): 371–407.

Kalemli-Ozcan, S., Papaioannou E., and Peydró J. “Financial regulation, financial globalization, and the synchronization of economic activity.” *The Journal of Finance* 68 (2013): 1179–228.

Karpoff, J.M., and Wittry M. “Institutional and legal context in natural experiments: The case of state antitakeover laws.” *The Journal of Finance* 73 (2018): 657–714.

Kaufmann, D., A. Kraay, and Mastruzzi, M. “Governance matters VIII: Governance indicators for 1996–2008.” World Bank Policy Research, Washington, D.C, 2009.

Kim, J., Verdi, R.S. and Yost, B. “The feedback effect of disclosure externalities.” Working paper, 2018.

Kurlat, P. and Veldkamp, L. “Should we regulate financial information?” *Journal of Economic Theory* 158 (2015): 697–720.

La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. “Corporate ownership around the world.” *The Journal of Finance* 54 (1999): 471–517.

Leuz, C., and Wysocki, P.D. “The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research.” *Journal of Accounting Research* 54 (2016): 525–622.

Manne, H.G. “Mergers and the market for corporate control.” *Journal of Political Economy* 73 (1965): 110–120.

Manne, Henry G. “The follies of regulation.” The Wall Street Journal, A18. (Sept. 27, 2005).

McNichols, M.F. and Stubben, S.R. “The effect of target-firm accounting quality on valuation in acquisitions.” *Review of Accounting Studies* 20 (2015): 110–140.

Electronic copy available at: https://ssrn.com/abstract=3506594
Electronic copy available at: https://ssrn.com/abstract=3304818

Meier, J.A. “Regulatory integration of international capital markets.” Working paper, 2018.

Moloney, N. E.U. securities and financial markets regulation. Oxford E.U. Law Library. (Third Edition), United Kingdom, 2014.

Morris, S. and Shin, H.S. “Social value of public information.” *American Economic Review* 92 (2002): 1521–1534.

OECD Steering Group on Corporate Governance (OECD). Lack of proportionality between ownership and control: Overview and issues for discussion, 2007.

Ovtchinnikov, A. “Merger waves following industry deregulation.” *Journal of Corporate Finance* 21 (2013): 51–76.

Raman, K., Shivakumar, L. and Tamayo, A. 2013. “Target’s earnings quality and bidders’ takeover decisions.” *Review of Accounting Studies* 18 (2013): 1050–1087.

Ringe, W. G. The deconstruction of equity: activist shareholders, decoupled risk, and corporate governance. Oxford University Press (First Edition), United Kingdom, 2016.

Rossi S., and Volpin F.P. “Cross-country determinants of mergers and acquisitions.” *Journal of Financial Economics* 74 (2004): 277–304.

Schipper, K., and Thompson, R. “Evidence on the capitalized value of merger activity for acquiring firms.” *Journal of Financial Economics* 11 (1983): 85–119.

Schwert, W. “Markup pricing in mergers and acquisitions.” *Journal of Financial Economics* 41 (1996): 153–192.

Shleifer, A., and Vishny R. “Large shareholders and corporate control.” *Journal of Political Economy* 94 (1986): 461–488.

Verrecchia, R.E. “Information acquisition in a noisy rational expectations economy.” *Econometrica: Journal of the Econometric Society* 50 (1982): 1415–1430.

Wachtell, Lipton, Rosen & Katz. Petition for rulemaking under section 13 of the Securities Exchange Act of 1934. (March, 7th 2011).

Walkling, R., and Long, M. “Agency theory, managerial welfare, and takeover bid resistance.” *The Rand Journal of Economics* 15 (1984): 54–68.

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Appendix A. Sample construction and composition

Panel A presents the process of constructing our sample of control transactions. Panel B presents the distribution of the sample control transactions by country. Control transactions are defined as those where the acquirer ends up with more than 50% (30%) of the shares.

Panel A. Sample construction:

Number of transactions recorded by SDC in the 15 sample E.U.-countries from 01-Jan-2001 to 31-Dec-2011	**118,697**	**118,697**
Minus transactions where the Target is a private firm	−108,435	−108,435
Minus transactions not coded as "Completed" by SDC	−3,579	−3,579
Minus not-relevant transactions*	−564	−564
Minus transactions where the Target is listed in unregulated stock-exchanges	−74	−74
Minus transactions where the Target is in the financial or utility industry**	−1,725	−1,725
Minus non-control (< 50%) acquisition transactions	−2,482	
Number of sample transactions (Acquirer stake ≥ 50%)	**1,838**	
Minus non-control (< 30%) acquisition transactions		−2,359
Number of sample transactions (Acquirer stake ≥ 30%)		**1,961**

* Transactions for which the *Acquisition_Technique* variable in SDC is equal to any of these labels: "Bankruptcy", "Debt Restructuring", "Going Private", "Privatization", "Restructuring", and others ("Liquidation", "Internal Restructuring", etc.).
** Financial industry is defined by SIC codes between 6000 and 6999. Utility industry is defined by SIC codes between 4000 and 4949.

Panel B. Country composition:

Country	*# transactions* (Acquirer stake ≥ 50%)	*# transactions* (Acquirer stake ≥ 30%)
Austria	26	27
Belgium	38	39
Denmark	43	50
Finland	39	43
France	334	356
Germany	229	240
Greece	37	51
Ireland	12	12
Italy	81	90
Netherlands	44	48
Poland	58	83
Portugal	19	19
Spain	36	43
Sweden	148	159
United Kingdom	694	701
Total	**1,838**	**1,961**

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Appendix B. Variable definitions

Country-level variables:

Takeover_Activity	Logarithm of one plus the number of completed control acquisitions in a country-month-year.
Number of takeovers / Average number of listed firms in the pre TPD by country	Number of completed control acquisitions in a country-month-year over the average number of listed firms in the pre-TPD period by country.
Log (€ value of deals aggregated by country-year-month)	Logarithm of the all-in value of the transaction paid by the acquirer, in millions of euros, by country-month-year.
Stock_Market_Size	Logarithm of the main stock exchange's market capitalization in a country-month-year, in millions of euros.
GDP_capita	Logarithm of the country-year GDP (gross domestic product) per capita, in euros.
Gov_Bond_10yr	10-year yield on government bonds in a country-month-year, in percentage.
Returns_Volatility	Standard deviation of the daily stock market returns of the main stock exchange in a country-month-year, in percentage.
Listed_Firms	Number of listed firms in the main stock exchange in a country-month-year.
Consumption	Final consumption expenditures (seasonally and calendar adjusted) in a country-quarter-year, in constant prices (2010 reference year). This measure is a chained volume series.
Investment	Gross fixed capital formation (seasonally and calendar adjusted) in a country-quarter-year, in constant prices (2010 reference year). This measure is a chained volume series.

Transaction-level variables:

Target_Returns	Target firm's abnormal stock returns cumulated over the (−42, +1) trading day window around the acquisition announcement.
Acquirer_Returns	Acquirer firm's abnormal stock returns cumulated over the (−42, +1) trading day window around the acquisition announcement.
Toehold_Size	Size of the toehold held by the bidder at the acquisition announcement date (in percentage of total shares).
Transaction_Value	Logarithm of the all-in value of the transaction paid by the acquirer firm, in millions of euros.
Cross_Border	Indicator variable that equals one if the target and the acquirer are from different countries, and zero otherwise.
Tender_Offer	Indicator variable that equals one if the acquisition is made through a tender offer, and zero otherwise.
Toehold	Indicator variable that equals one if the acquirer owns a stake in the target firm at the announcement date, and zero otherwise.
Cash	Indicator variable that equals one if the acquisition is paid for only with cash, and zero otherwise.
Shares	Indicator variable that equals one if the acquisition is paid for only with shares, and zero otherwise.

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Number_Bidders	Number of bidders in the takeover contest.
Stake of Competing Bidders	Average stake held by the non-winning bidders (in percentage of total shares).

Regulation variables:

Transparency_Directive	Indicator variable that equals one for the months after the Transparency Directive country's implementation date, and zero otherwise.
TPD_Amendment	Indicator variable that equals one for the period when the disclosure of cash-settled derivatives is in force in that country, and zero otherwise.
Takeover_Directive	Indicator variable that equals one for the months after the Takeover Directive country's implementation date, and zero otherwise.
Market_Abuse_Directive	Indicator variable that equals one for the months after the Market Abuse Directive country's implementation date, and zero otherwise.
Shareholder_Rights_Directive	Indicator variable that equals one for the months after the Shareholder rights Directive country's implementation date, and zero otherwise.

Country-level partitioning variables:

Regulatory_Quality	Country-specific *Regulatory Quality* index as of 2003 from Kaufmann et al. (2009). This metric captures the "ability of the government to formulate and implement sound policies and regulations" (Kaufmann et al., 2009). The metric aggregates survey responses from regulators and firms.
Enforcement_Change	Indicator variable that equals one if a country increased the level of enforcement at the time of the implementation of the TPD, and zero otherwise (Christensen et al., 2016). This variable has been constructed based on a survey sent to the authority in charge of supervising compliance with accounting standards and the technical departments of PricewaterhouseCoopers, an international audit firm, in each E.U. country (see Christensen et al., 2016 for further details).
Control_Provisions	Sum of the number of control-enhancing mechanisms (CEMs) available in a country (see Online Appendix OB for details).
Ownership_Concentration	Country-specific mean of the shares held by the top five shareholders (as % of the total shares outstanding) of the listed firms of the country, measured in the year before the TPD implementation date.
Institutional_Ownership	Country-specific mean of the shares held by institutional investors (in % of market capitalization) in a country listed firms in the year before the TPD implementation date.
Prior_Takeover_Activity	Average yearly number of takeovers during the pre-disclosure regulation period scaled by the median number of public firms in the country during that period.
Shareholder_Identification	Sum of the following indicator variables extracted from the survey conducted in 2010 by the T2S Taskforce on Shareholder Transparency. *First_Layer*: indicator variable that equals one if the Central Security Depositary (CSD) provides information to the issuer about beneficiaries beyond the "first layer" of holders (e.g., custodians and other intermediaries), and zero if the CSD provides no information or only information about first-layer beneficiaries. *Foreign*: indicator variable that equals one if prevailing regulations oblige foreign intermediaries (including Investor CSDs which have accounts with the Issuer CSD) to provide information to the issuer. *Frequency*: indicator variable that equals one if issuers can ask for shareholder information on a regular basis and zero if these requests are made once a year (usually at the time of general meetings or corporate actions).

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Appendix C. Content of the Transparency Directive

Appendix C.1. Summary of the disclosure provisions of Directive 2004/109/EC

This table presents a summary of the disclosure-related provisions introduced by Directive 2004/109/EC (i.e., the "Transparency Directive" or TPD). Sources: EUR-Lex and Moloney (2014).

Issuers' disclosure (periodic information)	
Annual financial reports	The issuer shall make public its annual financial report at the latest four months after the end of each financial year and shall ensure that it remains publicly available for at least five years (Article 4).
Half-yearly financial reports	The deadline for publishing half-yearly financial reports is extended to three months after the end of the reporting period (Article 5).
Interim management statements	The publishing of "quarterly" (the reports need not be strictly issued on quarter end date) interim management statements is required (Article 6).
Ownership disclosure (ongoing information)	
Information about major holdings	The home member state shall ensure that, where a shareholder acquires or disposes of shares of an issuer whose shares are admitted to trading on a regulated market and to which voting rights are attached, such shareholder notifies the issuer of the proportion of voting rights of the issuer held by the shareholder because of the acquisition or disposal where that proportion reaches, exceeds or falls below the thresholds of 5 percent, 10 percent, 15 percent, 20 percent, 25 percent, 30 percent, 50 percent, and 75 percent (Article 9).[32,33] The notification requirements also apply to a person or legal entity which holds, directly or indirectly, *financial instruments* that result in an entitlement to acquire *[physically-settled]* shares. (Article 13).
Dissemination and storage of regulated information	
	The notification and publication deadlines for the investor and issuer are shortened to four and three trading days. The directive mandates European-wide dissemination as well as public storage of notification (Article 12).
Supervisory regime, enforcement of reporting, and disclosure rules	
	Designate a competent supervisory authority in charge of monitoring compliance with the reporting and disclosure requirements set out in the directive (Article 24). Give appropriate powers to this supervisory authority to enforce these requirements, such as the power to suspend and prohibit trading on the issuers' securities, etc. Member states shall ensure that at least the appropriate administrative measures will be taken or civil and/or administrative penalties will be imposed in the event of a breach, and that those measures are effective, proportionate, and dissuasive (Article 28).

[32] Unlike in the US, in most European countries there is no requirement to make a declaration of intent. France, Germany, and Poland are exceptions; in these countries, an investor accumulating a 10 percent ownership stake is required to disclose whether she intends to acquire more shares in the forthcoming 6 (12) months and whether she intends to acquire the firm.

[33] For example, when a shareholder's stake reaches the five percent threshold, the shareholder is required to disclose her ownership. If, subsequently, the shareholder keeps accumulating ownership, reaching the 10 percent threshold, it would trigger a further disclosure requirement. Falling below the threshold would also trigger a disclosure requirement. Before the TPD, these thresholds were 10 percent, 20 percent, 25 percent, 50 percent, and 75 percent (see 2001/34/EC).

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Appendix C.2. Summary of the disclosure provisions of Directive 2013/50/EU

This table presents a summary of the disclosure-related provisions introduced by Directive 2013/50/EU, which amended the TPD. Sources: EUR-Lex and Moloney (2014).

Issuers' disclosure (periodic information)	
Extractive annual reports	Issuers who have activities in the extractive or logging of primary forest industries should disclose in a separate report, on an annual basis, payments made to governments in the countries in which they operate (Article 5).
Interim management statements	Issuers are no longer obliged to publish interim reports (unless a member state chooses to still impose it as an obligation) (Article 5).
Ownership disclosure (ongoing information)	
Information about major holdings	Notification of major holdings of voting rights should include *cash-settlement financial instruments* with similar economic effect to holding shares and entitlements to acquire shares (Article 9).
	Financial instruments with similar economic effects to holding shares and entitlements to acquire shares which provide for cash settlement should be calculated on a delta-adjusted basis (i.e., by multiplying the notional number of underlying shares by the delta of the instrument). Delta indicates how much a financial instrument's theoretical value would move in the event of variation in the underlying instrument's price and provides an accurate picture of the exposure of the holder to the underlying instrument (Article 9).
	The notification requirements shall also apply to a natural person or a legal entity when the number of voting rights held directly or indirectly by such person or entity, *aggregated* with the number of voting rights relating to financial instruments held directly or indirectly, reaches, exceeds, or falls below the required thresholds (Article 10).
Dissemination and storage of regulated information	
	ESMA should develop and operate a web portal serving as a European electronic access point (EEAP) for regulated information (Article 14).
	Dissemination of all annual financial reports in the European single electronic reporting format (ESEF) starting in January 2020 (Article 3).
Supervisory regime, enforcement of reporting, and disclosure rules	
	Without prejudice to the right of member states to provide for and impose criminal sanctions in the event of a breach, competent authorities are now entitled to impose heavier administrative fines on both individuals and legal entities. The fines can even be levied on members of the management, the board of managers, or the supervisory board in the case of a legal entity. Along with the heavier fines, the supervisors now explicitly have the power to publish their decisions regarding failures to comply with the transparency regime (Articles 20-23).

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Appendix D. Implementation dates

This table reports the implementation dates of the main securities regulations over the sample period.

Country	*Transparency Directive*	*TPD Amendment*	*Takeover Directive*	*Market Abuse Directive*	*Shareholder Rights Directive*
Austria	04/20/07	01/01/13	05/20/06	01/01/05	08/01/09
Belgium	09/02/08	10/01/16	04/01/07	09/01/05	01/01/12
Denmark	06/20/07	11/26/15	05/20/06	04/01/05	02/16/10
Finland	02/15/07	11/26/15	07/01/06	07/01/05	08/03/09
France	12/19/07	11/01/09	01/10/06	07/01/05	01/01/11
Germany	01/20/07	02/01/12	07/14/06	10/01/04	07/30/09
Greece	07/01/07	04/08/16	05/30/06	07/01/05	09/24/10
Ireland	06/13/07	11/26/15	05/20/06	07/01/05	08/06/09
Italy	04/24/09	10/10/11	12/28/07	05/01/05	10/31/10
Netherlands	01/01/09	01/01/12	10/10/07	10/01/05	06/30/10
Poland	03/24/09	06/23/16	10/24/05	10/01/05	08/03/09
Portugal	11/01/07	09/09/15	11/02/06	09/01/06	05/19/10
Spain	12/20/07	11/27/15	08/13/07	11/01/05	10/02/11
Sweden	07/01/07	02/01/16	07/01/06	07/01/05	11/01/10
United Kingdom	01/02/07	06/01/09	05/20/06	07/01/07	08/03/09

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Appendix E. Summary of the other major E.U. securities regulations

This table presents a brief summary of other major securities regulations around our sample period.

Regulation	*Description*
Takeover Directive	The Takeover Directive (2004/25/EC) intends to harmonize E.U. takeover laws and fosters consolidation among E.U. firms through the adoption of a pan-European takeover code modeled after the U.K. Takeover Code. The Takeover Directive establishes general principles that are common to most takeover systems worldwide: equal treatment of target shareholders, ability of target shareholders to make informed decisions on bids, and prohibition of market manipulation or abuse. It introduced a broad framework that is heavily reliant on the mandatory bid rule, effective involvement by national supervisory authorities, and, in several cases, board passivity/neutrality (see the Takeover Bids Directive Assessment Report, 2012).
Market Abuse Directive	The Market Abuse Directive (2003/6/EC) aims to prevent insider trading and market manipulation. It contains three key elements: (1) disclosure rules designed to reduce the scope of inside information, (2) ex-post sanctions for insider trading or market manipulation, and (3) tightened enforcement of compliance with insider trading and market manipulation rules (see Moloney, 2014).
Shareholder Rights Directive	The Shareholder Right Directive (2007/36/EC) makes a record-date system mandatory and a fixed 30 days as the maximum timespan between the record date and the general meeting (see Moloney, 2014).

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Figure 1. Number of ownership disclosure filings around the TPD implementation

This figure plots the number of ownership disclosure filings (vertical axis) by month and year for our sample of European countries. The horizontal axis indicates the number of months relative to the implementation of the Transparency Directive (TPD) in the country of the target firm. We aggregate the number of filings across our sample of countries by month, relative to the TPD implementation date of the country. The black dashed line display estimates from a non-linear regression (Kernel-weighted local polynomial smoothing).

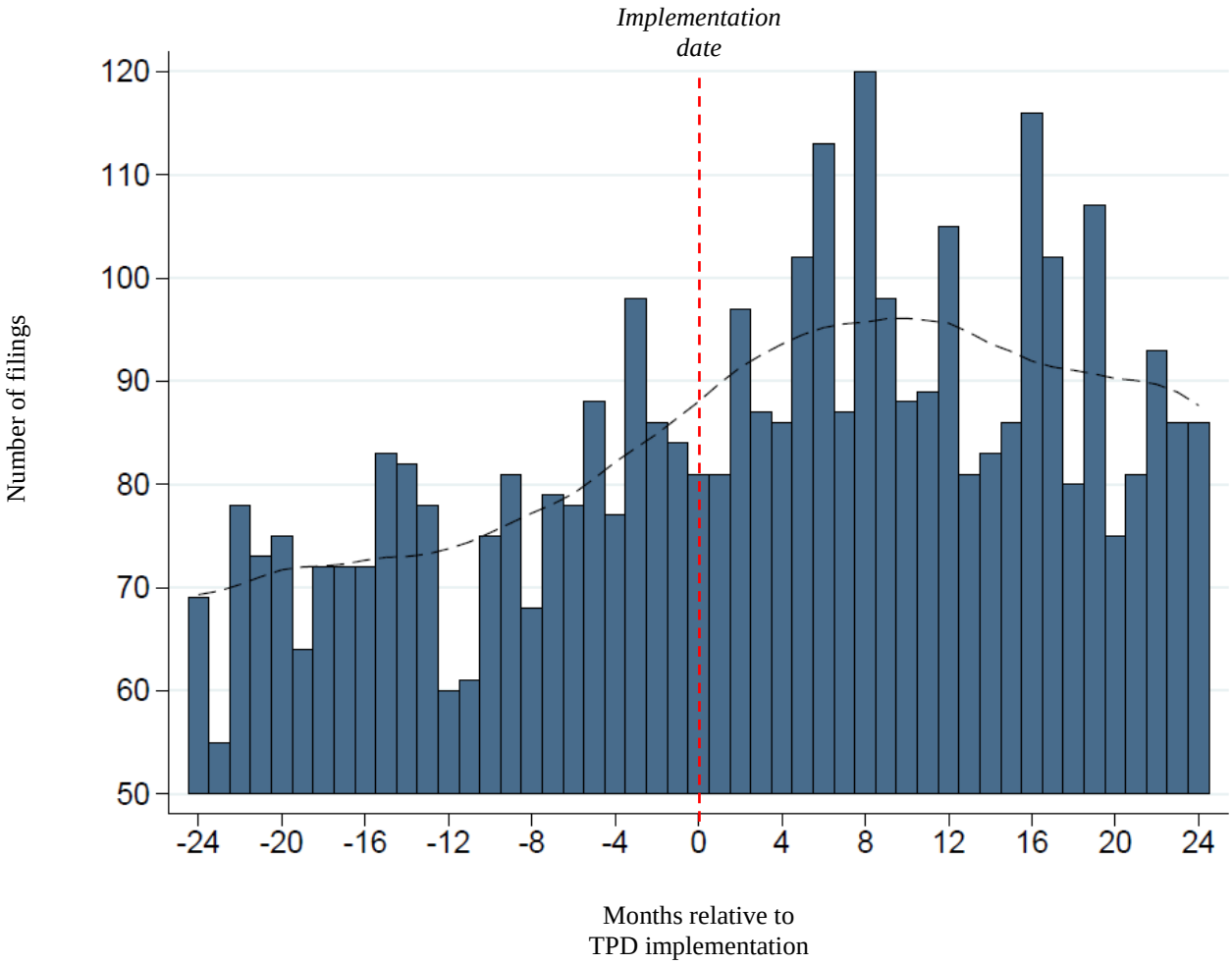

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Figure 2. Takeover activity around the TPD implementation

This figure plots the average number of control acquisitions by month and year (red dots) for our sample of European countries. The grey lines display estimates from non-linear regression (Locally Weighted Scatterplot Smoothing). The dotted vertical red line marks the month of the implementation of the Transparency Directive (TPD) in the country of the target firm. The continuous vertical red line marks the average number of months of the initial approval of the TPD at the European level from the implementation date. Control acquisitions are defined as transactions where the acquirer ends up with more than 50% of the target firm's shares.

Panel A.

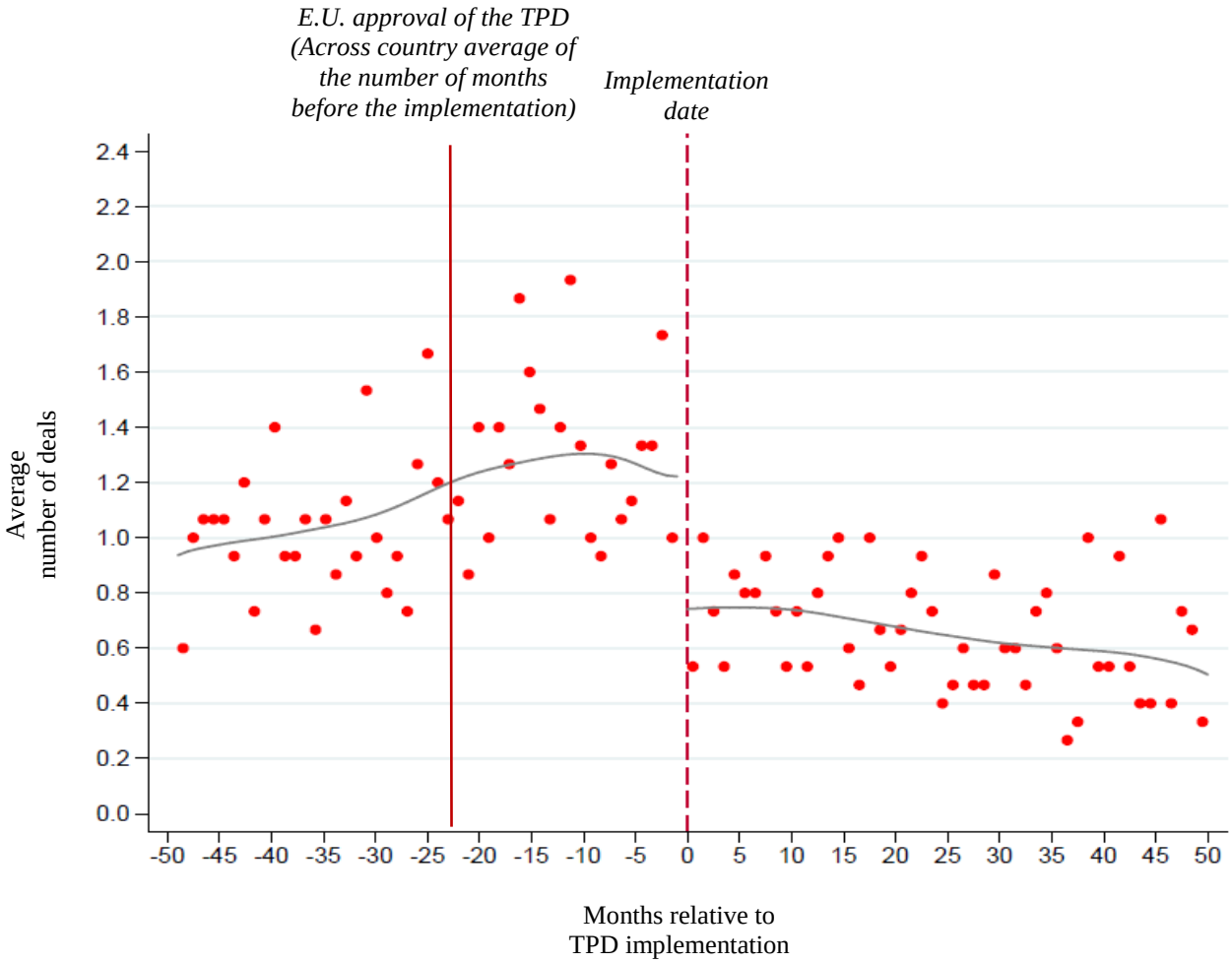

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Figure 3. Takeover activity around the TPD implementation

We estimate Eq. (1) but replace the TPD coefficient with separate indicator variables, each marking one quarter over the *t*–12 to *t*+11 period relative to the quarter of the entry into force of the TPD (*t*=0). We omit the indicator for period *t*–1. It therefore serves as a benchmark, and has a coefficient value of zero (and no confidence interval). The figure plots the coefficient estimates of the 24 quarters together with their 95 percent confidence intervals. We use *Takeover_Activity* as dependent variable, and the sample, control variables and fixed effects correspond to Model 1, Table 1, panel B. Blue dots denote that the coefficient is statistically different from that of the indicator for period t-1 (two-tailed, 5% level). Control acquisitions are defined as transactions where the acquirer ends up with more than 50% of the target firm's shares.

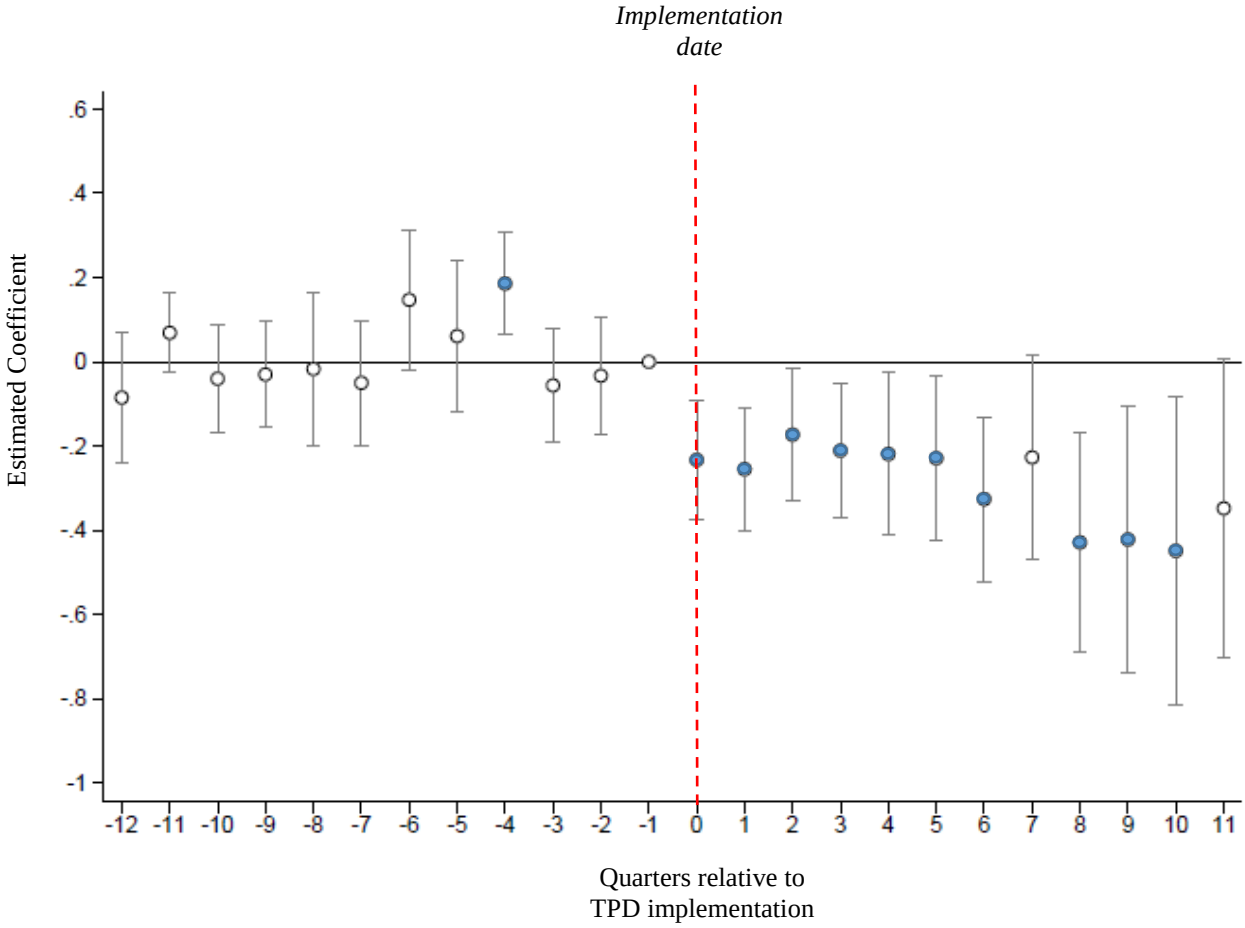

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Figure 4. Target returns up until acquisition announcement

This figure plots cumulated abnormal stock returns (CAR) (vertical axis) over the period prior to the announcement of the control acquisition. The horizontal axis indicates the number of days before the announcement date (day "0"). Continuous (dotted) lines correspond to the average abnormal stock returns of the deals announced after (before) the implementation of the Transparency Directive (TPD). "Run-up" returns (in black) are cumulated returns over the (−42, −1) day window around the announcement. "Mark-up" returns (in red) are cumulated returns over the (0, +1) day window around the announcement. The grey lines present plots of non-linear regressions for each of the two groups. The results are based on our sample of 1,282 control acquisitions where the acquirer ends up with more than 50% of the target firm's shares (Table 5, Panel B, Model 1).

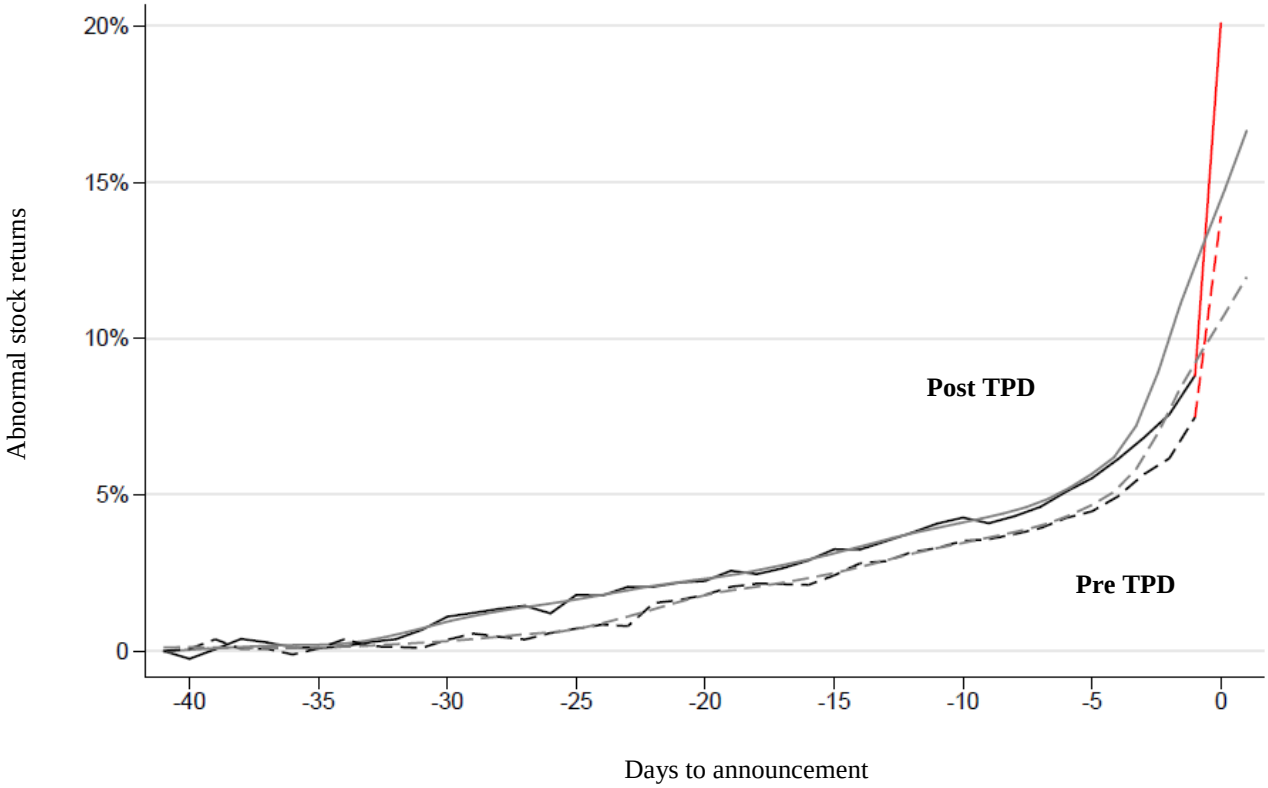

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Table 1. Takeover activity

This table reports OLS coefficients from the estimation of equation (1). The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (Acquirer stake ≥ 50%), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). Panel A presents descriptive statistics of the variables used in the tests using the first definition of control acquisitions (*Acquirer stake ≥ 50%*). Panel B presents multivariate OLS models where the dependent variable is *Takeover_Activity*, defined as the logarithm of one plus the number of control acquisitions in a country-month-year. Panel C replicates the analysis using two alternative dependent variables: (i) number of control acquisitions in a country-month-year over the average number of listed firms in the pre-TPD period by country (columns 1-2), and (ii) the logarithm of the all-in value of the transaction paid by the acquirer, in millions of euros, by country-month-year (columns 3-4). *Transparency_Directive* is an indicator variable that equals one for the months after TPD entry into force date, and zero otherwise. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, ** and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Panel A. Descriptive statistics

	N	*Mean*	*p25*	*p50*	*p75*	*SD*
Takeover_Activity						
Acquirer stake ≥ 50%	1,980	0.428	0.000	0.000	0.693	0.605
Acquirer stake ≥ 30%	1,980	0.456	0.000	0.000	0.693	0.616
Stock_Market_Size (log)	1,980	7.832	7.082	7.534	8.205	1.459
GDP_capita (log)	1,980	10.510	10.369	10.622	10.769	0.416
Gov_Bond_10yr	1,980	4.496	3.760	4.260	4.870	1.539
Returns_Volatility	1,980	1.540	0.390	0.670	1.990	1.690
Listed_Firms	1,980	416.618	142.000	197.000	503.000	511.790
Consumption	1,980	94.421	90.100	96.000	99.500	6.533
Investment	1,980	104.545	95.900	102.950	110.200	17.940

Panel B. Multivariate analysis

Dependent variable: *Takeover_Activity*	*Acquirer stake ≥ 50%* (1)	*Acquirer stake ≥ 30%* (2)
Transparency_Directive	−0.174**	−0.174***
	[0.065]	[0.056]
Country_Controls:		
Stock_Market_Size	0.054*	0.061*
	[0.028]	[0.029]
GDP_capita	−0.015	0.013
	[0.469]	[0.449]
Gov_Bond_10yr	0.000	−0.002
	[0.008]	[0.010]
Returns_Volatility	−0.003***	−0.002***
	[0.001]	[0.000]
Listed_Firms	0.001***	0.001***
	[0.000]	[0.000]
Consumption	0.008*	0.010*
	[0.004]	[0.005]
Investment	−0.003*	−0.003*
	[0.002]	[0.001]
Regulation_Controls:		
Takeover_Directive	0.063	0.057
	[0.049]	[0.048]
Market_Abuse_Directive	0.075	0.017
	[0.064]	[0.057]
Shareholder_Rights_Directive	−0.005	0.000
	[0.057]	[0.069]
Sample	Public	Public
Country Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y

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Observations	1,980	1,980
R-squared	0.618	0.600

Panel C. Alternative dependent variables

Dependent variable:	*Number of takeovers / Average number of listed firms in the pre TPD by country*		*Log (€ value of takeovers aggregated by country-year-month)*	
	Acquirer stake ≥ 50%	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*
	(1)	(2)	(3)	(4)
Transparency_Directive	−0.001***	−0.002***	−0.084**	−0.098**
	[0.000]	[0.000]	[0.041]	[0.041]
Country_Controls:				
Stock_Market_Size	0.000	0.000	0.011	0.001
	[0.000]	[0.000]	[0.017]	[0.017]
GDP_capita	0.005**	0.005*	−0.167	−0.075
	[0.002]	[0.003]	[0.237]	[0.247]
Gov_Bond_10yr	0.000	0.000	0.001	0.000
	[0.000]	[0.000]	[0.004]	[0.005]
Returns_Volatility	0.000	0.000	−0.001**	−0.001*
	[0.000]	[0.000]	[0.000]	[0.000]
Listed_Firms	-	-	0.000	0.000
			[0.000]	[0.000]
Consumption	0.000	0.000	0.002	0.001
	[0.000]	[0.000]	[0.002]	[0.002]
Investment	0.000	0.000	−0.001	−0.001
	[0.000]	[0.000]	[0.001]	[0.001]
Regulation_Controls:				
Takeover_Directive	0.000	0.000	0.040*	0.063**
	[0.000]	[0.000]	[0.021]	[0.024]
Market_Abuse_Directive	0.001	0.000	0.014	0.005
	[0.001]	[0.000]	[0.027]	[0.025]
Shareholder_Rights_Directive	0.000	0.000	0.017	0.019
	[0.000]	[0.000]	[0.026]	[0.023]
Sample	Public	Public	Public	Public
Country Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	1,980	1,980	1,980	1,980
R-squared	0.116	0.114	0.431	0.438

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Table 2. Falsification tests

This table presents the results from falsification tests of takeover activity around the implementation of the Transparency Directive (TPD). The first set of tests (columns 1-2) replicates the analysis in Table 1, panel B, randomizing the dates of the implementation of the TPD over the sample period. The second set of tests (columns 3-4) replicates the analysis in Table 1, panel B, for control acquisitions where the target firm is not listed in a stock exchange. Columns 1-2 report the average statistics from repeating 100 times the test in Table 1, panel B, each time using a random draw of dates within the sample period. The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (*Acquirer stake ≥ 50%*), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). Variable definitions are as in Table 1. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. Var.: *Takeover_Activity*	*Random implementation dates*		*Private firms*	
	Acquirer stake ≥ 50%	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*
	(1)	(2)	(3)	(4)
Transparency_Directive	0.002	0. 004	−0.046	−0.055
	[0.040]	[0.040]	[0.038]	[0.034]
Country_Controls	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y
Sample	Public	Public	Private	Private
Country Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	1,980	1,980	1,980	1,980
R-squared	n.a.	n.a.	0.873	0.872

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Table 3. Short window analysis

This table replicates the analysis in Table 1, panel B, restricting the sample to the time window spanning over 12 months before and after the TPD implementation in each country. The first set of tests (columns 1-2) reports results using the actual implementation dates. The second set of tests (columns 3-4) replicates the analysis by randomizing the dates of the implementation of the TPD. The third set of tests (columns 5-6) replicates the analysis in columns 1-2 for control acquisitions where the target firm is not listed in a stock exchange. Columns 3-4 report the average statistics from repeating 100 times the test in columns 1-2, each time using a random draw of dates within the 12-month window around the actual implementation date. The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (*Acquirer stake ≥ 50%*), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). Variable definitions are as in Table 1. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

	Actual implementation dates		*Random implementation dates*		*Private firms*	
Dep. Var.: *Takeover_Activity*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*
	(1)	(2)	(3)	(4)	(5)	(6)
Transparency_Directive	−0.241***	−0.189**	−0.008	−0.009	0.147	0.153
	[0.090]	[0.086]	[0.005]	[0.005]	[0.083]	[0.083]
Country_Controls	Y	Y	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y	Y	Y
Sample	Public	Public	Public	Public	Private	Private
Country Fixed Effects	Y	Y	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y	Y	Y
Observations	360	360	360	360	360	360
R-squared	0.692	0.692	n.a.	n.a.	0.918	0.915

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Table 4. Cross-sectional analyses

This table presents results of analyzing cross-sectional variation in the results of Model 1, Table 1, panel B (*Acquirer stake ≥ 50%*). In panel A, the sample is partitioned based on legal and regulatory characteristics of the country. In panel B, the sample is partitioned based on the ownership structure prevalent in the country. In panel C, the sample is partitioned based on the level of takeover activity in the country prior to the implementation of the TPD. Control acquisitions are defined as transactions where the acquirer ends up with more than 50% of shares. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively. + and ++ indicate significance at the two-tailed 10 percent and 5 percent levels, respectively, for tests of coefficient magnitudes relative to the adjacent column on the left.

Panel A. Partitioning by legal and regulatory characteristics

	Regulatory_Quality		*Enforcement_Change*		*Control_Provisions*	
Dep. var.:*Takeover_Activity*	Low	High	Low	High	Low	High
	(1)	(2)	(3)	(4)	(5)	(6)
Transparency_Directive	−0.156	−0.246**	−0.162*	−0.299**	−0.263***	−0.046++
	[0.101]	[0.099]	[0.086]	[0.122]	[0.074]	[0.065]
Country_Controls	Y	Y	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y	Y	Y
Sample	Public	Public	Public	Public	Public	Public
Country Fixed Effects	Y	Y	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y	Y	Y
Observations	924	1,056	1,188	792	1,188	792
R-squared	0.529	0.700	0.487	0.722	0.497	0.785

Panel B. Partitioning by ownership structure

	Ownership_Concentration		*Institutional_Ownership*	
Dep. var.: *Takeover_Activity*	Low	High	Low	High
	(1)	(2)	(3)	(4)
Transparency_Directive	−0.302***	−0.073++	−0.110	−0.311**, +
	[0.091]	[0.087]	[0.073]	[0.099]
Country_Controls	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y
Sample	Public	Public	Public	Public
Country Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	1,056	924	924	1,056
R-squared	0.681	0.239	0.248	0.679

Panel C. Partitioning by prior takeover activity

	Prior_Takeover_Activity	
Dep. var.: *Takeover_Activity*	Low	High
	(1)	(2)
Transparency_Directive	−0.043	−0.271***, ++
	[0.094]	[0.075]
Country_Controls	Y	Y
Regulation_Controls	Y	Y
Sample	Public	Public
Country Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	924	1,056
R-squared	0.202	0.690

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Table 5. Target returns

This table reports results of analyzing target firms' stock price returns around acquisition announcements. Panel A presents descriptive statistics of the variables used in the tests (sample with Acquirer stake ≥ 50%). Panel B presents multivariate tests where the dependent variable, *Target_Returns*, is defined as the target firm's abnormal returns cumulated over the (−42, +1) day window around the acquisition announcement. *Transparency_Directive* is an indicator variable that equals one for the months after the TPD entry into force date, and zero otherwise. The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (*Acquirer stake ≥ 50%*), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). See Appendix B for other variable definitions. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Panel A. Descriptive statistics (*Acquirer stake ≥ 50%*)

	N	*Mean*	*p25*	*p50*	*p75*	*SD*
Transaction_Value (log)	1,282	2.960	0.170	0.780	2.750	5.660
Cross_Border	1,282	0.332	0.000	0.000	1.000	0.471
Tender_Offer	1,282	0.536	0.000	1.000	1.000	0.499
Toehold	1,282	0.188	0.000	0.000	0.000	0.391
Cash	1,282	0.445	0.000	0.000	1.000	0.497
Shares	1,282	0.099	0.000	0.000	0.000	0.299
Number_Bidders	1,282	1.050	1.000	1.000	1.000	0.263

Panel B. Multivariate analysis

Dep. var.: *Target_Returns*	*Acquirer stake ≥ 50%* (1)	*Acquirer stake ≥ 30%* (2)
Transparency_Directive	0.127***	0.082**
	[0.042]	[0.041]
Country_Controls:		
Stock_Market_Size	0.110	0.111*
	[0.067]	[0.064]
GDP_capita	0.156	−0.349
	[0.576]	[0.563]
Gov_Bond_10yr	0.031	0.025
	[0.022]	[0.019]
Returns_Volatility	−0.001	−0.003
	[0.002]	[0.002]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	0.003	0.009
	[0.006]	[0.006]
Investment	−0.001	0.000
	[0.002]	[0.002]
Transaction_Controls:		
Transaction_Value	−0.034**	−0.025*
	[0.014]	[0.013]
Cross_Border	0.026	0.022
	[0.021]	[0.020]
Tender_Offer	0.041*	0.057***
	[0.022]	[0.021]
Toehold	−0.074***	−0.044*
	[0.023]	[0.023]
Cash	0.074***	0.064***
	[0.020]	[0.020]
Shares	−0.034	−0.045
	[0.041]	[0.042]
Number_Bidders	0.105***	0.089***
	[0.031]	[0.028]
Regulation_Controls:		

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Takeover_Directive	0.071	0.078
	[0.048]	[0.048]
Market_Abuse_Directive	−0.007	−0.033
	[0.060]	[0.066]
Shareholder_Rights_Directive	0.035	0.005
	[0.072]	[0.058]
Country Fixed Effects	Y	Y
Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	1,282	1,357
R-squared	0.236	0.232

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Table 6. Acquirer returns

This table reports results of analyzing acquirer firms' stock price returns around acquisition announcements. The dependent variable, *Acquirer_Returns*, is defined as the acquirers' abnormal returns cumulated over the (−42, +1) day window around the acquisition announcement. Columns 1-2 ("*Public Targets*") include transactions where the target firm is listed in a regulated stock exchange. Columns 3-4 ("*Private Targets*") include transactions where the target is a private firm. *Transparency_Directive* is an indicator variable that equals one for the period when the TPD is in force in that country, and zero otherwise. The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (*Acquirer stake ≥ 50%*), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

	Public targets		*Private targets*	
Dep. var.: *Acquirer_Returns*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*
	(1)	(2)	(3)	(4)
Transparency_Directive	−0.112**	−0.088*	−0.004	−0.004
	[0.055]	[0.050]	[0.012]	[0.012]
Country_Controls:				
Stock_Market_Size	−0.057	0.104	0.010	0.005
	[0.094]	[0.091]	[0.013]	[0.013]
GDP_capita	1.935**	0.443	0.202	0.178
	[0.813]	[0.693]	[0.130]	[0.127]
Gov_Bond_10yr	−0.010	−0.022	−0.003	−0.004
	[0.057]	[0.025]	[0.007]	[0.006]
Returns_Volatility	0.001	0.000	0.000	0.000
	[0.003]	[0.003]	[0.000]	[0.000]
Listed_Firms	0.000	0.000	0.000	0.000
	[0.000]	[0.000]	[0.000]	[0.000]
Consumption	−0.002	0.009	−0.003**	−0.003**
	[0.009]	[0.007]	[0.001]	[0.001]
Investment	−0.012***	−0.010***	−0.001*	−0.001
	[0.004]	[0.003]	[0.000]	[0.000]
Transaction_Controls:				
Transaction_Value	0.022	0.016	0.039***	0.039***
	[0.023]	[0.019]	[0.015]	[0.014]
Cross_Border	−0.070*	−0.060	−0.003	−0.002
	[0.042]	[0.038]	[0.005]	[0.005]
Tender_Offer	−0.010	−0.025	−0.015	0.031
	[0.033]	[0.026]	[0.049]	[0.032]
Toehold	−0.050	0.025	−0.007	0.008
	[0.052]	[0.053]	[0.014]	[0.022]
Cash	0.053	0.026	0.004	0.004
	[0.036]	[0.031]	[0.006]	[0.006]
Shares	−0.002	0.005	0.025	0.030
	[0.040]	[0.036]	[0.033]	[0.033]
Number_Bidders	−0.010	−0.041*	0.051	0.034
	[0.032]	[0.025]	[0.075]	[0.064]
Regulation_Controls:				
Takeover_Directive	−0.038	0.000	0.002	0.001
	[0.063]	[0.055]	[0.010]	[0.010]
Market_Abuse_Directive	−0.214***	−0.282***	−0.003	−0.004
	[0.082]	[0.087]	[0.015]	[0.015]
Shareholder_Rights_Directive	−0.122	0.011	0.002	−0.001
	[0.101]	[0.058]	[0.012]	[0.012]
Country Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	332	359	11,464	11,647
R-squared	0.499	0.469	0.040	0.040

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Table 7. Transparency of share ownership

This table presents results of analyzing cross-sectional variation in the results of Table 1, panel B, based on the transparency of share ownership across European regimes. "Low" ("High") refers to countries with below- (above-) median values of *Shareholder_Identification*, an index constructed as the sum of three indicator variables extracted from the survey conducted in 2010 by the T2S Taskforce on Shareholder Transparency: (i) *First_Layer* equals one if the Central Security Depositary (CSD) provides information about beneficiaries beyond the "first layer" of holders, and zero if the CSD provides no information or only information about first-layer beneficiaries; (ii) *Foreign* equals one if prevailing regulations oblige foreign intermediaries (including investor CSDs which have accounts with the issuer CSD) to provide information to the issuer, and zero otherwise; (iii) *Frequency* equals one if issuers can ask for shareholder information on a regular basis, and zero if these requests are made once a year (usually at the time of general meetings or corporate actions). The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (*Acquirer stake ≥ 50%*), and (ii) transactions where the acquirer ends up with more than 30% of shares (*Acquirer stake ≥ 30%*). See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10%, 5%, and 1% (two-tail) levels, respectively. + and ++ indicate significance at the two-tailed 10% and 5% levels, respectively, for tests of coefficient magnitudes relative to the adjacent column on the left.

	Partitioning variable: *Shareholder_Identification*			
	Acquirer stake ≥ 50%		*Acquirer stake ≥ 30%*	
Dep. var.:*Takeover_Activity*	Low (1)	High (2)	Low (3)	High (4)
Transparency_Directive	-0.283^{***}	-0.095^{++}	-0.288^{***}	-0.096^{++}
	[0.070]	[0.105]	[0.060]	[0.075]
Country_Controls	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y
Sample	Public	Public	Public	Public
Country Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	924	1,056	924	1,056
R-squared	0.436	0.730	0.427	0.707

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Table 8. Competing bidders

This table analyzes the effect of the TPD on the number of competing bidders and on the size of the toehold stake held by competing bidders at the acquisition announcement. In column 1 the dependent variable, *Number of competing bidders*, is the number of bidders per completed control acquisition. In column 2 the dependent variable, *Stake of competing bidders*, is the average stake held by the non-winning bidders per completed control acquisition. Control acquisitions are defined as transactions where the acquirer ends up with more than 50% of shares. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country-industry. *, **, and *** denote statistical significance at the 10%, 5%, and 1% (two-tail) levels, respectively.

Dependent variable:	*Number of competing bidders* (1)	*Stake of competing bidders* (2)
Transparency_Directive	−0.005	4.266***
	[0.030]	[1.119]
Country_Controls:		
Stock_Market_Size	0.005	−2.265
	[0.052]	[1.497]
GDP_capita	−0.167	1.547
	[0.318]	[18.101]
Gov_Bond_10yr	−0.006	−0.050
	[0.012]	[0.419]
Returns_Volatility	−0.001	−0.064*
	[0.001]	[0.039]
Listed_Firms	0.000	-0.005
	[0.000]	[0.004]
Consumption	−0.001	−0.021
	[0.003]	[0.155]
Investment	0.001	0.039
	[0.001]	[0.058]
Transaction_Controls:		
Transaction_Value	0.060	−0.581**
	[0.037]	[0.271]
Cross_Border	−0.002	0.347
	[0.011]	[0.421]
Tender_Offer	0.040**	−0.281
	[0.019]	[0.474]
Toehold	0.025	0.036
	[0.020]	[0.608]
Cash	−0.012	1.046*
	[0.014]	[0.566]
Shares	−0.008	−0.357
	[0.028]	[0.741]
Number_Bidders	−	0.175
		[0.610]
Regulation_Controls:		
Takeover_Directive	−0.071	−3.718*
	[0.046]	[2.241]
Market_Abuse_Directive	0.012	−3.550**
	[0.082]	[1.479]
Shareholder_Rights_Directive	0.087**	−0.571
	[0.035]	[2.011]
Country Fixed Effects	Y	Y
Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	1,282	1,282
R-squared	0.171	0.193

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Table 9. Bidder toeholds

This table analyzes the effect of the TPD on the size of the toehold stake held by the bidder around the acquisition announcement. The dependent variable, *Toehold_Size*, is the percentage of shares held by the bidder at the announcement date (column 1), three months before the announcement date (column 2), six months before the announcement date (column 3), and twelve months before the announcement date (column 4). *Transparency_Directive* is an indicator variable that equals one for the period when the TPD is in force in that country, and zero otherwise. Control acquisitions are defined as transactions where the acquirer ends up with more than 50% of shares. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country-industry. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dependent variable: *Toehold_Size*	*At announcement* (1)	*3 months before announcement* (2)	*6 months before announcement* (3)	*12 months before announcement* (4)
Transparency_Directive	−14.289**	0.126	0.045	0.109
	[7.274]	[1.623]	[1.603]	[1.601]
Country_Controls:				
Stock_Market_Size	−6.074	1.239	2.117	2.194
	[7.873]	[2.060]	[2.135]	[2.111]
GDP_capita	−102.204*	13.712	13.678	18.709
	[60.926]	[22.689]	[22.896]	[21.967]
Gov_Bond_10yr	1.915	−0.339	−0.191	0.254
	[2.753]	[1.038]	[1.032]	[0.893]
Returns_Volatility	−0.132	−0.041	-0.058	−0.070
	[0.226]	[0.048]	[0.046]	[0.045]
Listed_Firms	−0.007	0.006	0.005	0.004
	[0.017]	[0.006]	[0.006]	[0.006]
Consumption	0.885	−0.660**	−0.619**	−0.629**
	[0.721]	[0.264]	[0.264]	[0.265]
Investment	−0.066	0.139	0.131	0.122
	[0.226]	[0.088]	[0.088]	[0.083]
Transaction_Controls:				
Transaction_Value	−2.628	−1.317***	−1.226**	−1.267***
	[2.537]	[0.464]	[0.471]	[0.476]
Cross_Border	−0.120	0.463	0.641	0.783
	[2.005]	[0.775]	[0.752]	[0.719]
Tender_Offer	−12.329***	−1.276*	−1.268*	−0.985
	[2.471]	[0.648]	[0.641]	[0.639]
Cash	−8.010***	1.465**	1.384**	1.323**
	[1.770]	[0.677]	[0.674]	[0.648]
Shares	−21.071***	0.408	0.456	0.512
	[3.337]	[1.176]	[1.180]	[1.164]
Number_Bidders	−4.825	0.011	−0.298	−0.110
	[3.257]	[1.027]	[1.009]	[0.995]
Regulation_Controls:				
Takeover_Directive	−6.414	2.408	2.223	2.263
	[8.550]	[1.546]	[1.551]	[1.552]
Market_Abuse_Directive	−9.084	3.923	3.906	2.043
	[10.460]	[5.095]	[5.096]	[3.830]
Shareholder_Right_Directive	−1.062	−4.011	−3.087	−2.395
	[6.393]	[2.649]	[2.595]	[2.411]
Country Fixed Effects	Y	Y	Y	Y
Industry Fixed Effects	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y
Observations	1,282	1,282	1,282	1,282
R-squared	0.260	0.203	0.198	0.193

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Disclosure Regulation and Corporate Acquisitions
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Appendix OA. Examples of ownership disclosure under different regulatory regimes

This appendix includes examples of regulatory filings containing ownership disclosures in the E.U. in three different periods. Panel A reproduces the content of a form reported before the implementation of Directive 2004/109/EC (TPD). Panel B reproduces the content of a form reported under Directive 2004/109/EC. Panel C reproduces the content of a form reported under Directive 2013/50/EU (amendment of the TPD). The three examples correspond to form TR-1 for notifications of major holdings in the UK. Due to formatting issues, we do not include the actual forms, but we fully reproduce their content (a link to the original forms is included under each example).

Panel A. Example of ownership disclosure before the implementation of Directive 2004/109/EC

1. Name of Company:	Framlington Second Dual Trust PLC
2. Name of shareholder having a major interest:	Credit Lyonnais Securities
3. Name of the registered holder(s) and, if more than one holder, the number of shares held by each of them:	Credit Lyonnais Securities
4. Number of shares acquired:	Not advised
5. Percentage of issued class acquired:	Not advised
6. Number of shares disposed:	Not advised
7. Percentage of issued class disposed:	Not advised
8. Class of security:	Ordinary income shares of 5p each
9. Date of transaction:	Not advised
10. Date company informed:	23 April 2004
11. Total holding following this notification:	3,785,080
12. Total percentage holding of issued class following this notification	7.3%
13. Any additional information:	
14. Name of contact and telephone number for queries	Eleanor Cranmer 020 7330 6680
15. Name of authorized official responsible for making this notification	Eleanor Cranmer
16. Date of notification:	23 April 2004

Source: https://www.investegate.co.uk/ArticlePrint.aspx?id=20040423165841P19E0

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Appendix OA. Examples of ownership disclosure under different regulatory regimes (cont'ed)

Panel B. Example of ownership disclosure under Directive 2004/109/EC

1. Identity of the issuer or the underlying issuer of existing shares to which voting rights are attached:			InterContinental Hotels Group PLC		
2. Reason for the notification (please state Yes/No):					
An acquisition or disposal of voting rights:			Yes		
An acquisition or disposal of financial instruments which may result in the acquisition of shares already issued to which voting rights are attached:			Yes		
An event changing the breakdown of voting rights:			No		
Other (please specify):			No		
3. Full name of person(s) subject to the notification obligation:			Morgan Stanley (Institutional Securities Group and Global Wealth Management)		
4. Full name of shareholder(s) (if different from 3):			N/A		
5. Date of the transaction (and date on which the threshold is crossed or reached, if different):			18 April 2008		
6. Date on which issuer notified:			23 April 2008		
7. Threshold(s) that is/are crossed or reached:			to below 4%		
8. Notified details:					
A: Voting rights attached to shares:					
Situation previous to the triggering transaction					
Class/type of shares	Number of shares	Number of voting rights			
ISIN: GB00B1WQCS47	3,871,945	3,871,945			
Ordinary Shares of 13 29/47 pence each					
Resulting situation after the triggering transaction					
Class/type of shares	Number of shares	Number of voting rights		% of voting rights	
	Direct	Direct	Indirect	Direct	Indirect
ISIN: GB00B1WQCS47	1,954,373	1,954,373		0.66%	
Ordinary Shares of 13 29/47 pence each					
B: Financial instruments:					
Resulting situation after the triggering transaction					
Type of Financial Instrument	Expiration Date	Exercise Period / Conversion Date	Number of voting rights that may be acquired if the instrument is exercised/converted		% of voting rights
Physically settled long call option	18.04.2008		1,359,544		0.46%
Physically settled long call option	16.05.2008		6,356,400		2.17%
Total (A+B): Number of voting rights		**% of voting rights**			
9,670,317		3.29%			
9. Chain of controlled undertakings through which the voting rights and/or the financial instruments are effectively held, if applicable:					
Morgan Stanley Securities Limited			7,224,428		2.46%
Morgan Stanley & Co Incorporated			718		0.00%
Bank Morgan Stanley AG			93,415		0.03%
Morgan Stanley & Co International Plc			2,351,756		0.80%

Source: https://www.investegate.co.uk/ArticlePrint.aspx?id=200804231519419736S

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Appendix OA. Examples of ownership disclosure under different regulatory regimes (cont'ed)

Panel C. Example of ownership disclosure under Directive 2013/50/EC

1. Identity of the issuer or the underlying issuer of existing shares to which voting rights are attached:	Tesco Plc
2. Reason for the notification (please tick the appropriate box or boxes):	
An acquisition or disposal of voting rights:	
An acquisition or disposal of financial instruments which may result in the acquisition of shares already issued to which voting rights are attached:	
An acquisition or disposal of instruments with similar economic effect to qualifying financial instruments	x
An event changing the breakdown of voting rights:	
Other (please specify):	
3. Full name of person(s) subject to the notification obligation:	Berkshire Hathaway Inc.
4. Full name of shareholder(s) (if different from 3):	The following indirect wholly-owned subsidiaries of Berkshire Hathaway Inc. hold voting rights: Government Employees Insurance Company; General Reinsurance Corporation; General Reinsurance AG; National Fire & Marine Insurance Company; National Indemnity Insurance Company; U.S. Underwriters Insurance Company; and Medical Protective Company.
5. Date of the transaction (and date on which the threshold is crossed or reached if different):	16 October 2013
6. Date on which issuer notified:	18 October 2013
7. Threshold(s) that is/are crossed or reached:	4%
8. Notified details:	

A: Voting rights attached to shares:

Class/type of shares	*Situation previous to the triggering transaction*		*Resulting situation after the triggering transaction*				
	Number of Shares	Number of Voting Rights	Number of shares	Number of voting rights:		% of voting rights	
			Direct	Direct	Indirect	Direct	Indirect
GB0008847096	257,443,328	257,443,328	257,443,328	257,443,328	0	3.18	0

B: Qualifying financial instruments:

Resulting situation after the triggering transaction

Type of Financial Instrument	Expiration Date	Exercise Period / Conversion Date	Number of voting rights that may be acquired if the instrument is exercised/converted	% of voting rights

C: Financial instruments with similar economic effects to qualifying financial instruments:

Resulting situation after the triggering transaction

Type of financial instrument	Exercise price	Expiration date	Exercise period	Number of voting rights instrument refers to	% of voting rights	
Cash Settled Equity Swap	$4.5732 (US dollars) per share	16 January 2015	N/A	64,034,283	Nominal	Delta
					0.80	0.80

Total (A+B+C): Number of voting rights		**% of voting rights**		
321,477,611		3.98%		

9. Chain of controlled undertakings through which the voting rights and/or the financial instruments are effectively held:

The following indirect wholly-owned subsidiaries own shares with voting rights:
Government Employees Insurance Company (90,000,000); General Reinsurance Corporation (72,862,000); General Reinsurance AG (30,136,328); National Fire & Marine Insurance Company (30,606,000); National Indemnity Company (22,883,000); US Underwriters Insurance Company (5,807,000) Medical Protective Company (5,149,000). In addition, National Indemnity Company holds financial instruments with similar economic effect to qualifying financial instruments related to 64,034,283 voting rights.

Source: https://www.investegate.co.uk/ArticlePrint.aspx?id=201310211016469627Q

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Appendix OB. Control enhancing mechanisms

This appendix describes the control enhancing mechanisms (CEMs) available in E.U. countries. The descriptions below (and the corresponding data for each country) are gathered from an external study commissioned by the European Commission in 2007 (the study is titled "Proportionality between ownership and control in E.U. listed companies: comparative legal study").

CEM	*Description*
Multiple voting rights shares	Shares issued by a firm giving different voting rights based on an investment of equal value.
Non-voting shares	Shares with no voting rights that carry no special cash-flow rights to compensate for the absence of voting rights.
Non-voting preference shares	Non-voting stock issued with special cash-flow rights (such as preferential dividends) to compensate for the absence of voting rights.
Pyramid structure	This situation occurs when an entity (such as a family or a company) controls a corporation, which in turn holds a controlling stake in another corporation. This process can be repeated a number of times.
Priority shares	Shares that grant their holders specific powers of decision or veto rights in a company, irrespective of the proportion of their equity stake.
Depositary certificates	Negotiable financial instruments issued by a foundation on a local stock exchange that represents the financial ownership of the shares, but lacks the voting rights of the underlying shares.
Voting right ceilings	A restriction prohibiting shareholders from voting above a certain threshold irrespective of the number of voting shares they hold.
Ownership ceilings	A restriction prohibiting investors from taking a participation in a company above a certain threshold.
Supermajority provisions	Provisions of company bylaws requiring a large majority of shareholders to approve certain important corporate changes.
Partnerships limited by shares	A legal structure where there are two different categories of partners (without having two types of shares): the general partners (unlimited liability partners) who run the company, and the limited sleeping partners (limited liability partners), who contribute equity capital but whose control rights are limited.
Cross shareholdings	A situation where company X holds a stake in company Y which, in turn, holds a stake in company X (direct cross-shareholding) or where company X holds a stake in company Y which holds a stake in company Z, which, in turn, holds a stake in company X (circular cross-shareholding).
Shareholders' agreements	Formal and/or informal shareholders alliances.

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Appendix OC. Additional analyses

This appendix contains analyses addressing specific concerns about the inferences of the paper. These analyses are not included in the main body of the paper due to space limitations. Some of them are based on institutional arguments, and others rely on empirical tests that are not tabulated in the paper.

OC.1. Potential effect of merger regulation

One potential concern regarding the interpretation of our results is that the pattern we document could be driven by antitrust regulatory scrutiny rather than by disclosure regulation. In fact, during our sample period there was a major development in E.U. Merger Regulation 139/2004 which imposed notification to the European Commission of all the mergers with a "community dimension".[34] Several considerations suggest that this regulatory development is unlikely to affect our inferences. Firstly, this regulation entered into force in 2004 for all E.U. countries, and thus its potential effect is controlled for by our fixed effect structure. Moreover, the large majority of transactions investigated by the Commission did not raise competition concerns. Among those that did, around 90 percent were cleared following an initial investigation, and the ones that required further action were usually approved with certain conditions or "remedies".[35] In our sample, only 45 (27) out of the 1,838 deals required notification to antitrust regulators in the period before (after) the implementation of the TPD. Out of these, only 10 (2) were not cleared at the initial phase and required further investigation. While antitrust scrutiny could have a preemptive effect on conducting takeovers, the above statistics suggest that antitrust regulation affects only a marginal number of transactions in our sample, and thus is unlikely to drive our results.

OC.2. Potential effect of shareholder identification rules

Most European countries have rules in place about disclosure of shareholdings to mitigate opacity over a firm shareholder base. The first group of rules requires major shareholders to actively communicate their stake (i.e. *ownership disclosure rules*), while the second group of rules sets the conditions whereby shareholders, regardless of the stake they hold, can be detected by issuers (i.e. *shareholder identification rules*). This subsection focuses on the latter. The discussion is articulated around the potential concern that the ownership disclosure requirements imposed by the TPD are irrelevant because countries allow issuers to obtain information about their share base (i.e., the TPD ownership notifications are not news for the managers of the target firm).

[34] A business combination is considered to have a "community dimension" based on its combined aggregate turnover (see Regulation 139/2004 for the specific criteria). The reviewed cases undergo an initial phase of investigation called "Phase I", with a maximum duration of 25 working days. Failing to clear regulators' concerns would trigger a second phase of investigation called "Phase II" (see article 6(1)b of Regulation 139/2004).

[35] Source: European Commission. (http://ec.europa.eu/competition/mergers/statistics.pdf)

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Firms can obtain information about their shareholder base from Central Security Depositaries (CSD) and proxy solicitors. However, the process of collecting this information is subject to several frictions:

First, obtaining a comprehensive information set is very difficult, if not impossible. For example, obtaining information about foreign shareholders is hampered by serious legal and operational obstacles.

Second, this information is typically collected once a year around the annual shareholder meeting, while a takeover attempt can occur at any time during the year.

Third, the ownership information provided by CSDs and proxy solicitors does not include holdings through financial instruments (see ECB, 2011).

Thus, it is unlikely that, in the case of a takeover attempt, the information provided by CSDs and proxy solicitors to incumbent managers subsumes the information provided by the ownership disclosure requirements of the TPD.

OC.3. Amendment of the TPD

To corroborate that our inferences are not confounded by changes in economic conditions concurrent with the implementation of the TPD (notably, the credit shortages that occurred during the financial crisis), we study the effect of later developments of the TPD. In 2013, the TPD was amended by Directive 2013/50/EU (Appendix C.2 presents a summary of the disclosure requirements addressed by the directive). Critically, the amendment extends the definition of beneficial ownership to cash-settled derivatives (CSD) and imposes the aggregation of beneficial ownership from all contracts considered as such in the computation of the threshold triggering mandatory disclosure.[36] Online Appendix OA presents examples of ownership disclosure under the regulatory amendment.

The CSD disclosure requirement was introduced after substantial controversy regarding the use of these financial instruments. This controversy is often considered the main driver of the regulatory amendment (Nallareddy et al., 2017). The concern was that, after the implementation of the TPD, some bidders had found a way to circumvent the regulation by using cash-settled derivatives.[37, 38] Several examples illustrate this concern. In 2008, Schaeffler AG stealthily built

[36] Equity derivatives can be settled with securities ("physically-settled") or with cash ("cash-settled"). Cash-settled equity derivatives (CSDs) are also known as "total return swaps" in the US or "contracts for differences" in Europe.

[37] While CSDs do not involve a physical transaction of shares, the potential acquirer could purchase the shares from the dealer (see CSER, 2010). The derivatives dealer (i.e., the short party in the derivatives transaction) often holds the underlying securities as a hedge against its short position, as alternative hedging strategies are likely to be limited and more expensive, especially in those instances where the equity swap involves a substantial number of shares of a single firm. Refusing to sell the shares to the long investor upon termination of the contract could compromise a profitable business relationship. As stated by the Code Committee of the United Kingdom's Panel on Takeovers and Mergers, the expectation of a long swap equity holder is that the derivatives dealer would ensure that the shares are available to be voted on by its customer and/or sold to the customer upon termination or expiration of the contractual relationship (FSA, 2008).

[38] Using CSDs in takeovers entails some risks. First, CSDs could antagonize the target's management and reduce the possibility of termination agreements (Betton et al., 2009). Second, CSDs could result in a substantial negative return if the bid fails, because such failure would signal a high level of managerial entrenchment (Goldman and Qian, 2005). Third, regulators can

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a 36 percent stake in Continental AG via direct purchases (2.97%), physically settled equity swaps (4.95%), and various cash-settled equity swap contracts (28%).[39] A second example is Porsche's attempt to acquire Volkswagen. In 2008, Porsche disclosed owning 42% of Volkswagen plus 31.5% in cash-settled financial instruments. Ultimately, the relatively small size of Porsche combined with its insufficient financial muscle due to the financial crisis made both agree on a friendly merge.[40]

To examine the effect of the amendments of the TPD related to ownership disclosure, we repeat the short-window analysis in Table 3, replacing *Transparency_Directive* with *TPD_Amendment*, which is an indicator variable that equals one for the months starting when the country includes CSDs in the definition of beneficial ownership, and zero otherwise. Some of the countries in our sample implemented the CSD disclosure requirement before the issuance of Directive 2013/50/EU. For example, the UK did so in 2009, Italy in 2011, and France and Germany in 2012. In these cases, we code *TPD_Amendment* using these earlier dates. We take a symmetric time window spanning over 12 months before and after the *TPD_Amendment* implementation in each country. We also conduct the same placebo tests as in Table 3. Table OC1 shows that the implementation of the TPD amendment is associated with a decrease in takeover activity.

OC.4. Acquirers' actions to mitigate the effect of the TPD

The evidence that the TPD raised acquisition costs prompts the question of what acquirers can do to mitigate the increase in acquisition costs. One possibility is to change the method of payment. Indeed, the finance literature suggests that acquiring firms can use overvalued equity as a cheap currency to acquire a target (e.g., Shleifer and Vishny, 2003; Rhodes-Kropf and Viswanathan, 2004; Betton et al. 2008 for a review of hypotheses about the choice of payment methods in takeovers). We empirically analyze this possibility. Specifically, we re-estimate Equation (2) using as dependent variable *Payment in stock*, an indicator variable that equals one if equity is used as a currency to acquire the target, and zero otherwise (i.e., if the payment is fully made in cash). As shown in Table OC2, we do not find evidence of a change in payment method after the implementation of the TPD.[41]

Potential acquirers could also switch to other investment opportunities when possible acquisitions within the E.U. become negative NPV projects due to the increased acquisition

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identify the use CSDs and challenge the transaction (Zetzsche, 2010; FSA, 2008). Finally, the dealer might not closeout a cash-settled derivative with the underlying shares (Hu and Black, 2006). An acquirer could also use alternative takeover strategies to circumvent these disclosure rules. For example, a raider could use a shell company that resides beyond European borders and is not subject to European supervision, or the so-called "wolf-pack strategy", which relies on collusion with other investors through gentlemen's agreements (Zetzsche, 2010; Coffee and Palia, 2016). However, these alternative strategies are often costlier or illegal.

[39] Under the TPD, these holdings did not trigger any disclosure requirement. The first two stakes were slightly below the ownership thresholds, triggering disclosure of open purchases and physically settled equity swaps, respectively; while the disclosure of cash-settled equity swaps was not mandatory in Germany at the time. However, under the 2013 TPD amendment, the raider would have had to disclose her stake, as the aggregated voting rights from all the shares and financial instruments (including CSDs) is greater than the five percent disclosure threshold.

[40] See Hu and Black (2006, 2007, and 2008); Schouten (2010); Zetzsche (2010); and Conac (2012) for additional examples.

[41] All the tests in the online appendix are performed defining control acquisitions as deals where the acquirer ends up with more than 50% of the target's shares.

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costs**.** In particular, the potential acquirer could: i) acquire private firms (which are not subject to the TPD), ii) acquire a firm in a non-European country (i.e., a country not subject to the TPD), and iii) pursue a strategy of "organic growth" rather than a strategy of "inorganic growth" (that is, the acquirer could start new businesses, increase activity volume, or insource part of the supply chain, among other things).

We empirically analyze each of these alternatives. Regarding i), the falsification tests presented in Tables 2, 3, and OC1 indicate that, under the TPD and its later amendments, there is no significant change in the number of acquisitions of private firms in our sample countries.

Regarding ii), we conduct two tests to gauge whether E.U.-based firms are more likely to pursue acquisitions in non-E.U. countries. In the first test, we collect data from OECD on Foreign Direct Investment (FDI) outflows and test whether there is a significant increase in FDI outflows after the implementation of the TPD. We can only conduct this analysis for Germany and France, since the rest of the E.U. countries in our sample do not have complete data on FDI outflows over the whole sample period (the rest of E.U. countries started to collect this information in 2012). As shown in Table OC3, column 1, there is a significant increase in FDI outflows from Germany and France after the implementation of the TPD.

This test has several limitations. To begin, the FDI data includes not only control acquisitions but also other investments (e.g., non-control acquisitions and capital expenditures). Moreover, as the test is restricted to two countries, we cannot fully exploit the staggered implementation of the TPD in a relatively wide cross-section of countries. Given these limitations, we conduct a second test. We use SDC data to measure the number of control acquisitions made by E.U. firms outside the E.U. Specifically, we count at the country-month level the number of control acquisitions where the acquirer is headquartered in the E.U. country and the target is a non- E.U. firm, and examine whether the number of control acquisitions made by E.U. firms outside the E.U. changes after the implementation of the TPD. Table OC3, column 2, presents the results. The results suggest that, after the implementation of the TDP, there is no significant change in the number of control acquisitions made by E.U. firms outside the E.U.

Regarding iii), we examine whether the implementation of the TPD is associated with an increase in capital expenditures (which are related to investments such as property, plant and equipment, and unrelated to corporate acquisitions). As dependent variable, we define *CAPEX* as capital expenditures over lagged total assets. We assemble a panel dataset containing firm-year observations from the universe of public E.U. firms during our sample period. Given that firms with higher growth opportunities are more likely to pursue acquisitions (Faccio and Masulis, 2005), we interact *Transparency_Directive* with *High_Growth*, an indicator variable equal to one for firms with an above industry-country median Δ*Sales* in the year before the implementation of the TPD (Δ*Sales* is the percentage change in sales from the prior year). As shown in Table OC4, firms with higher growth opportunities exhibit an increase in *CAPEX* after the implementation of the TPD.

Taken together, this battery of tests provides weak evidence that acquirers avoid the additional acquisition costs induced by the TPD by modifying the terms of the transaction or by pursuing alternative investments. As such, this weak evidence suggests that these alternative

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avenues are likely hampered by the presence of significant frictions. That said, it is also possible that the aforementioned tests do not have enough power to identify these alternative actions.

OC.5. Sensitivity to research design choices

We also explore the sensitivity of our main results to our research design choices by conducting a battery of robustness tests. The results of these analyses do not alter our inferences.

First, we replicate our tests in Table 1 using a more granular level of analysis to further control for potential industry effects (Table OC5). Specifically, we construct a panel of country-industry-month-year observations and include country-industry fixed effects. We compute our dependent variable as the number of control acquisitions in a given country, industry, year, and month. We use the industry classification in Campbell (1996).

Second, we test whether the implementation of the TPD is followed by a decrease in the (firm-specific) probability of being acquired (Table OC6). Specifically, we construct a panel including all listed firms over our sample years and define an indicator variable that equals one if the firm is acquired in that year, and zero otherwise. This analysis explores whether our inferences rely on conducting the analysis at the country-month level.

Third, we test whether our main results are robust to alternative ways of clustering standard errors (Table OC7). Specifically, we cluster standard errors at the country-month-year level, at the month-year level, and at the year level.

Fourth, while not an E.U. member, Norway adopted the TPD. For robustness, we repeat our main analysis including this country in the sample. Inferences are unaffected.

OC.6. Additional tests on the mechanisms driving higher acquisition costs

In this section, we further explore the empirical validity of the (not mutually exclusive) economic mechanisms behind the increase in acquisition costs after the implementation of the TPD; *target resistance*, *bidding competition*, and *toehold strategy*. First, we examine whether announced takeovers are more likely to be frustrated (i.e., fail) after the implementation of the TPD. To the extent that target managers and competitors often frustrate takeover attempts, finding that announced takeovers are more likely to be frustrated under the TPD would be consistent with the presence of *target resistance* and *bidding competition*. We compute the ratio of frustrated takeovers as the number of takeover failures at the country-month level scaled by the number of takeovers completed in that country-month. Based on the SDC database, we identify failed acquisitions as deals where the takeover status is either "Withdrawn" or "Intended", and (i) the acquirer owns less than 50 percent of the target firm shares, and (ii) seeks to obtain more than 50 percent of the target firm shares.[42] We further consider "Completed"

[42] SDC classifies a deal as "Intended" when the bidder has announced that they propose or expect to make an acquisition (generally used for Repurchases). SDC classifies a deal as "Withdrawn" when the target or bidder in the transaction has terminated its agreement, letter of intent, or plans for the acquisition or merger. SDC classifies a deal as "Pending" when the deal was announced (from confirmed or unconfirmed sources) but after many months they do not find any no publicly available sources for the transaction (most of them are private/private deals for which completion announcements are not available).

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takeovers in which the acquirer owns less than 50 percent of the target firm shares and seeks but fails to obtain more than 50 percent of the target firm shares. We then re-estimate equation (1) using this measure of frustrated takeovers. As shown in Table OC8, the coefficient on *Transparency_Directive* is positive and statistically significant, implying that the ratio of frustrated takeovers increases under the TPD. The magnitude of the coefficient indicates that the increase in the frequency of takeover failure is sizable (i.e., about 16 percent).

As an additional attempt to empirically identify the presence of *target resistance* and *bidding competition*, we explore variation in the probability that the takeover is hostile. Exploring such variation is informative about the empirical relevance of these mechanisms, which are mainly triggered in hostile takeovers relative to friendly takeovers. Following Schwert (2000), hostility is measured based on i) the characterization of takeovers by SDC, ii) the use of unnegotiated tender offers or a merger proposal that specifies a price (a "bear hug"). When separating these takeovers from the remaining takeovers in our sample, we use the language "higher and lower probability of being hostile". By using these terms, we acknowledge the difficulty in separating hostile and friendly takeovers and concede that this difference is not clear-cut.

Table OC9 presents the results of replicating equation (1) separating between takeovers with higher and lower probability of being hostile. We find that the effect of the TPD is concentrated in the group with high-probability of being hostile. This result is consistent with the notion that the increase in acquisition costs induced by the TPD is more pronounced among hostile takeovers; in these corporate acquisitions the three hypothesized mechanisms are more likely to be at play, whereas in friendly takeovers the *target resistance* and *bidding competition* mechanisms are less likely to be present.

OC.7. Additional falsification tests

We conduct two additional falsification tests.

First, we replicate the short-window analysis in Table 3 by using pseudo TPD implementation dates obtained by subtracting or adding one quarter from the TPD implementation date in each country. For consistency with Table 3, we also shift the window of the analysis one quarter to obtain a symmetric window of 12 months around the pseudo implementation dates. For example, if the true implementation date is 7/1/2007 and the window in Table 3 expands from 7/1/2006 to 7/1/2008, we set the pseudo implementation date to 4/1/2007 and take a window from 4/1/2006 to 4/1/2008. We then re-define *Transparency_Directive* as an indicator variable that equals one for the months after the TPD pseudo implementation date, and zero otherwise. We repeat this process setting the pseudo implementation date at $t = \pm s$ ($s = -6, -5, -4, \ldots -1, +1, \ldots, +4, +5, +6$ quarters), where $t=0$ is the true implementation date. The coefficient on *Transparency_Directive* is economically small and not statistically significant in these placebo analyses.

Second, we conduct an additional randomization exercise. In each iteration, each country is randomly matched with the implementation date of another country. We repeat this procedure 100 times and compute the average of these coefficients and standard errors. The coefficient on

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Transparency_Directive is economically small and not statistically significant in these placebo analyses.

OC.8. Robustness of the test on target returns

We repeat the analysis of target stock returns (Table 5) including additional control variables measuring target firms' characteristics (Table OC10). Following prior literature (e.g., Betton et al., 2009), we define a vector of controls, *Target_Controls*, including the following variables measured at the start of the year of the acquisition announcement. *Target_Size* is the logarithm of the target firm's total assets. *Target_LEV* is the ratio between total debt and total equity of the target. *Target_CFO* is the cash flow from operations of the target. *Target_CASH* is the cash balance of the target. We do not include these controls in Table 6 to avoid sample attrition (the data necessary to construct these variables is not available for all sample firms).

We compute the takeover premium as the cumulative stock returns of the target over alternative windows around the acquisition announcement date (Table OC11). In particular, we use the day-windows (−42, 0), (−63, 0), and (−63, 1).

We repeat the analysis of target stock returns (Table 5) including month-year-industry fixed effects and country-industry fixed effects (Table OC12). As takeover gains tend to be industry-specific (Eckbo, 2014), this analysis further controls for potential industry re-composition effects over the sample period.

Previous research finds that takeover premiums vary with the target's status as a public or private firm (see Eckbo, 2009 for a review). Thus, we add an indicator variable for public acquirer in equation (2). The (untabulated) coefficient on *Transparency_Directive* remains positive and significant.

Following prior research, we also estimate equation (2), including all public firms with non-missing stock price and accounting data over the sample period. As in prior literature (e.g., Edmans et al., 2012), we set *Target_Returns* to zero if a firm is not acquired in a given calendar year. This alternative research design alleviates the concern that the population of target firms (or the types of transactions) could have changed over time due to confounding factors. The post-TPD increase in acquisition premium is also statistically significant when we include public firms that have not been acquired over a calendar year (Table OC13).

<u>References not included in the paper</u>:

Betton, S., Eckbo, B.E., and Thorburn, K.S. "Merger negotiations and the toehold puzzle." *Journal of Financial Economics* 91 (2009): 158–178.

Coffee, J., and Palia, D. "The wolf at the door: The impact of hedge fund activism on corporate governance." *Annals of Corporate Governance* 1 (2016): 1–96.

Electronic copy available at: https://ssrn.com/abstract=3506594
Electronic copy available at: https://ssrn.com/abstract=3304818

Conac, P.H. The European Financial Market in Transition. Chapter 4: Cash-settled derivatives (CSDS) as a takeover instrument and the reform of the EU Transparency directive. Wolters Kluwer. 2012.

CSER. Proposal to extend major shareholding notifications to instruments of similar economic effect to holding shares and entitlements to acquire shares. Committee of European Securities Regulator. Consultation Report nº CESR/09-1215b, 2010.

European Central Bank (ECB). Market analysis of shareholder transparency regimes in Europe. Prepared by the T2S Taskforce on Shareholder Transparency. Version: 21, 2011.

Financial Services Authority (FSA) CP08/17. Disclosure of contracts for difference, 2008.

Goldman, E., and Qian, J. "Optimal toeholds in takeover contests." *Journal of Financial Economics* 77 (2005): 321–346.

Hu, H.T.C. and Black, B. "The new vote buying: empty voting and hidden ownership." *Southern California Law Review* 79 (2006): 811–908.

Hu, H. T. C. and Black, B. "Equity and debt decoupling and empty voting II: Importance and extensions." *University of Pennsylvania Law Review* 156 (2008): 625–739.

Nallareddy, S., R. Pozen., and Rajgopal S. "Consequences of mandatory quarterly reporting: The U.K. experience." Columbia Business School Research Paper No. 17–33 (2017).

Rhodes-Kropf, M., and Viswanathan, S. "Market valuation and merger waves." *The Journal of Finance* 59 (2004): 2685–2718.

Schouten, M.C. "The case for mandatory ownership disclosure." *Stanford Journal of Law, Business & Finance* 15 (2010): 127–182.

Schwert, G.W. "Hostility in takeovers: in the eyes of the beholder?" *The Journal of Finance* 55 (2000): 2599–2640.

Shleifer, A., and Vishny, R.W. "Stock market driven acquisitions." *Journal of fFinancial Economics* 70 (2003): 295–311.

Zetzsche, D. A. "Against mandatory disclosure of economic-only positions referenced to shares of European issuers - Twenty arguments against the CESR proposal." *European Business Organization Law Review* 11 (2010): 231–252.

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Table OC1. Amendment of the TPD

This table presents results of analyzing takeover activity around the implementation of the TPD amendment. The table reports results of repeating the analysis in Table 3 for the implementation of the TPD amendment (i.e., the analysis includes observations in the time window spanning over 12 months before and after the implementation of the TPD amendment in each country). The first set of tests (columns 1-2) reports results using the actual implementation dates. The second set of tests (columns 3-4) replicates the analysis by randomizing the dates of the implementation of the TPD amendment. The third set of tests (columns 5-6) replicates the analysis in columns 1-2 for control acquisitions where the target firm is not listed in a stock exchange. Columns 3-4 report the average statistics from repeating 100 times the test in columns 1-2, each time using a random draw of dates within the 12-month window around the actual implementation date. The results are presented for two alternative definitions of "control acquisitions": (i) transactions where the acquirer ends up with more than 50% of shares (Acquirer stake ≥ 50%), and (ii) transactions where the acquirer ends up with more than 30% of shares (Acquirer stake ≥ 30%). Variable definitions are as in Table 1. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

	Actual implementation dates		*Random implementation dates*		*Private firms*	
Dep. var.: *Takeover_Activity*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*	*Acquirer stake ≥ 50%*	*Acquirer stake ≥ 30%*
	(1)	(2)	(3)	(4)	(5)	(6)
TPD_Amendment	−0.124	−0.185*	−0.044	−0.047	−0.065	−0.039
	[0.085]	[0.103]	[0.117]	[0.090]	[0.190]	[0.192]
Country_Controls	Y	Y	Y	Y	Y	Y
Regulation_Controls	Y	Y	Y	Y	Y	Y
Sample	Public	Public	Public	Public	Private	Private
Country Fixed Effects	Y	Y	Y	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y	Y	Y	Y
Observations	360	360	360	360	360	360
R-squared	0.711	0.721	n.a.	n.a.	0.856	0.858

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Table OC2. Method of payment

This table analyzes the effect of the TPD on the method of payment for the acquisition (sample with Acquirer stake ≥ 50%). The dependent variable, *Payment in Stock*, equals one if equity is used as a currency to acquire the target, and zero otherwise (i.e., if the payment is fully made in cash). *Transparency_Directive* equals one for the period when the TPD is in force in that country, and zero otherwise. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country-industry. *, ** and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *Payment in Stock*	(1)	(2)
Transparency_Directive	0.041	0.015
	[0.065]	[0.067]
Country_Controls:		
Stock_Market_Size	0.128	0.123
	[0.103]	[0.104]
GDP_capita	−0.580	−0.165
	[0.898]	[0.913]
Gov_Bond_10yr	0.022	0.021
	[0.033]	[0.034]
Returns_Volatility	0.003	0.004
	[0.003]	[0.003]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	−0.028***	−0.028***
	[0.008]	[0.008]
Investment	0.004	0.003
	[0.003]	[0.003]
Transaction_Controls:		
Transaction_Value	0.026	0.025
	[0.036]	[0.036]
Cross_Border	−0.070**	−0.071**
	[0.028]	[0.028]
Tender_Offer	−0.302***	−0.299***
	[0.036]	[0.037]
Toehold	-0.057*	−0.059**
	[0.030]	[0.030]
Number_Bidders	0.028	0.034
	[0.046]	[0.045]
Regulation_Controls:		
Takeover_Directive		0.069
		[0.109]
Market_Abuse_Directive		−0.087
		[0.118]
Shareholder_Rights_Directive		−0.172**
		[0.087]
Country Fixed Effects	Y	Y
Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	1,282	1,282
R-squared	0.258	0.260

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Table OC3. Investment outside the E.U.

This table analyzes the effect of the TPD on investment outside the E.U. In column 1, the dependent variable *Foreign Direct Investment Outflows* is the logarithm of the dollar value of outward cross-border flows related to direct investment. Outward cross-border flows are direct net investments (such as net purchases of equity) made by investors of the reporting country in firms of foreign countries. In column 1, this analysis restricts the sample to investors incorporated in Germany and France, due to incomplete data for the other sample countries. In column 2, the dependent variable *Foreign Takeovers* is the country-month number of completed control acquisitions in which the acquirer is headquartered in a sample country and the target is a non-E.U. firm. *Transparency_Directive* equals one for the period when the TPD is in force in that country, and zero otherwise. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, ** and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dependent variable:	*Foreign Direct Investment Outflows* (1)	*Foreign takeovers* (2)
Transparency_Directive	0.285**	0.002
	[0.022]	[0.007]
Country_Controls:		
Stock_Market_Size	2.252**	−0.008
	[0.131]	[0.007]
GDP_capita	−0.470	0.044
	[1.632]	[0.060]
Gov_Bond_10yr	0.037	0.002
	[0.034]	[0.001]
Returns_Volatility	0.006*	0.000
	[0.001]	[0.000]
Listed_Firms	4.092*	0.000
	[0.354]	[0.000]
Consumption	0.141	0.000
	[0.062]	[0.001]
Investment	0.026*	0.000
	2.252**	[0.000]
Regulation_Controls:		
Takeover_Directive	−0.262	0.004
	[0.222]	[0.014]
Market_Abuse_Directive	0.115	0.005
	[0.049]	[0.024]
Shareholder_Rights_Directive	0.573*	0.008
	[0.053]	[0.007]
Sample	Public	Public
Country Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	168	1,980
R-squared	0.766	0.091

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Table OC4. Organic growth

This table analyzes the effect of the TPD on "organic" growth. The dependent variable *CAPEX* is defined as capital expenditures over lagged total assets. *Transparency_Directive* equals one for the period when the TPD is in force in that country (i.e., after the implementation of the TPD), and zero otherwise. *High_Growth* is an indicator variable equal to one for firms with an above industry-country median Δ*Sales* in the year before the implementation of the TPD (Δ*Sales* is the percentage change in sales from the prior year). See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country-industry. *, ** and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *CAPEX*	(1)	(2)
Transparency_Directive×High_Growth	0.006***	0.006***
	[0.002]	[0.002]
Country_Controls:		
Stock_Market_Size	0.017***	0.018***
	[0.003]	[0.003]
GDP_capita	−0.059**	−0.026
	[0.026]	[0.029]
Gov_Bond_10yr	0.001***	0.001***
	[0.000]	[0.000]
Returns_Volatility	0.000	0.000
	[0.000]	[0.000]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	−0.001*	−0.001**
	[0.000]	[0.000]
Investment	0.000	0.000
	[0.000]	[0.000]
Firm_Controls:		
Size	0.012***	0.012***
	[0.001]	[0.001]
Leverage	0.000	0.000
	[0.000]	[0.000]
ROA	0.001	0.001
	[0.000]	[0.000]
Cash		
Regulation_Controls:		
Takeover_Directive		−0.004
		[0.003]
Market_Abuse_Directive		0.004
		[0.004]
Shareholder_Rights_Directive		−0.010***
		[0.002]
Firm Fixed Effects	Y	Y
Year Fixed Effects	Y	Y
Observations	52,356	52,356
R-squared	0.401	0.402

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Table OC5. Takeover activity – industry level analysis

This table presents results of replicating Table 1, panel B, model 1 (sample with Acquirer stake ≥ 50%) at the country-industry-month level. The sample includes 25,740 country-industry-month-year observations. We use the Campbell (1996) industry classification. Standard errors (in brackets) are clustered by country-industry. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dependent variable: *Takeover_Activity*

	(1)	(2)
Transparency_Directive	−0.004**	−0.004**
	[0.002]	[0.002]
Country_Controls	Y	Y
Regulation_Controls	N	Y
Sample	Public	Public
Country*Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	25,740	25,740
R-squared	0.219	0.219

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Table OC6. Probability of being taken over

This table analyses the effect of the TPD on the firm-specific probability of being acquired. We sample all public firm-year observations in our sample countries. The dependent variable, *Target*, equals one if the firm is taken over in that year, and zero otherwise (sample with Acquirer stake ≥ 50%). *Transparency_Directive* is an indicator variable that equals one for the period when the TPD is in force in that country, and zero otherwise. See Appendix A for other variable definitions. Standard errors (in brackets) are clustered by country-industry. *, **, and *** denote statistical significance at the 10%, 5%, and 1% (two-tail) levels, respectively.

Dependent variable: *Target*	(1)	(2)
Transparency_Directive	−0.009*	−0.009*
	[0.005]	[0.005]
Country_Controls:		
Stock_Market_Size	0.006**	0.006**
	[0.003]	[0.003]
GDP_capita	−0.040*	−0.037
	[0.021]	[0.024]
Gov_Bond_10yr	0.000	0.000
	[0.000]	[0.001]
Returns_Volatility	0.000	0.000
	[0.000]	[0.000]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	0.000	0.000
	[0.000]	[0.000]
Investment	0.000	0.000
	[0.000]	[0.000]
Transaction_Controls:		
Transaction_Value	0.177***	0.177***
	[0.021]	[0.021]
Cross_Border	0.351***	0.351***
	[0.033]	[0.033]
Tender_Offer	0.431***	0.431***
	[0.020]	[0.020]
Toehold	0.310***	0.310***
	[0.032]	[0.032]
Cash	0.388***	0.388***
	[0.031]	[0.031]
Shares	0.597***	0.597***
	[0.029]	[0.029]
Number_Bidders	0.010	0.010
	[0.033]	[0.033]
Regulation_Controls:		
Takeover_Directive		−0.002
		[0.005]
Market_Abuse_Directive		0.002
		[0.004]
Shareholder_Rights_Directive		−0.001
		[0.003]
Country Fixed Effects	Y	Y
Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	40,636	40,636
R-squared	0.743	0.743

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Table OC7. Takeover activity – alternative clustering strategies

This table presents results of replicating the analysis in Table 1, panel B, model 1 (sample with Acquirer stake ≥ 50%) using alternative clustering options. In column 1, standard errors are clustered by country-month-year. In column 2, standard errors are clustered by month-year. In column 3, standard errors are clustered by year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively

	Clustering by		
Dep. var.: *Takeover_Activity*	*country-month-year* (1)	*month-year* (2)	*year* (3)
Transparency_Directive	−0.174***	−0.174***	−0.174**
	[0.051]	[0.054]	[0.067]
Country_Controls	Y	Y	Y
Regulatory_Controls	Y	Y	Y
Sample	Public	Public	Public
Country Fixed Effects	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y

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Table OC8. Frustrated takeovers

This table analyzes the effect of the TPD on frustrated takeovers. The dependent variable, *Frustrated Takeovers*, is the number of failed control acquisitions in a country-month-year over the number of completed control acquisitions in a country-month-year. *Transparency_Directive* is an indicator variable that equals one for the period when the TPD is in force in that country, and zero otherwise. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *Frustrated Takeovers*	(1)	(2)
Transparency_Directive	0.151**	0.159***
	[0.056]	[0.052]
Country_Controls:		
Stock_Market_Size	−0.047	−0.047
	[0.051]	[0.052]
GDP_capita	0.748	0.424
	[0.696]	[0.554]
Gov_Bond_10yr	−0.025	−0.023
	[0.029]	[0.029]
Returns_Volatility	−0.001	−0.001
	[0.001]	[0.001]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	0.010*	0.010*
	[0.005]	[0.005]
Investment	−0.005**	−0.004*
	[0.002]	[0.002]
Regulation_Controls:		
Takeover_Directive		0.044
		[0.076]
Market_Abuse_Directive		0.120*
		[0.065]
Shareholder_Rights_Directive		0.130
		[0.078]
Sample	Public	Public
Country Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	853	853
R-squared	0.238	0.243

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Table OC9. Probability of hostility

This table replicates the analysis in Table 1, panel B, model 1 (sample with Acquirer stake ≥ 50%) separating completed control acquisitions based on the probability of being hostile. Column (1) includes completed control acquisitions with a higher probability of being hostile. Column (2) includes completed control acquisitions with a lower probability of being hostile. Following Schwert (2000), hostility is measured based on i) the characterization of takeovers by SDC, ii) the use of unnegotiated tender offers or a merger proposal that specifies a price (a "bear hug"). *Transparency_Directive* is an indicator variable that equals one for the months after TPD entry in force date, and zero otherwise. See Appendix B for variable definitions. Standard errors (in brackets) are clustered by country. *, ** and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively. + and ++ indicate significance at the two-tailed 10 percent and 5 percent levels, respectively, for tests of coefficient magnitudes relative to the adjacent column on the left.

	Probability of being hostile	
Dep. var.: *Takeover_Activity*	*Higher*	*Lower*
	(1)	(2)
Transparency_Directive	−0.168**	0.011++
	[0.060]	[0.034]
Country_Controls	Y	Y
Regulation_Controls	Y	Y
Sample	Public	Public
Country Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	1,980	1,980
R-squared	0.579	0.343

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Table OC10. Target returns – additional controls

This table presents results of replicating Table 5, panel B, model 1 (sample with Acquirer stake ≥ 50%) including additional control variables. The vector of additional control variables, *Target_Controls*, includes the following variables. *Target_Size* is the logarithm of the target firm's total assets at the fiscal year-end prior to the announcement date. *Target_LEV* is the ratio between total debt and total equity of the target at the fiscal year end prior to the announcement date. *Target_CFO* is the cash flow from operations of the target at the fiscal year-end prior to the announcement date. *Target_CASH* is the cash balance of the target at the fiscal year end prior to the announcement date. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *Target_Returns*	(1)
Transparency_Directive	0.088*
	[0.049]
Target_Controls:	
Target_Size	−0.008
	[0.009]
Target_LEV	0.000
	[0.001]
Target_CFO	−0.045
	[0.037]
Target_CASH	0.080
	[0.065]
Country_Controls	Y
Transaction_Controls	Y
Regulatory_Controls	Y
Country Fixed Effects	Y
Industry Fixed Effects	Y
Month*Year Fixed Effects	Y
Observations	1,070
R-squared	0.271

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Table OC11. Target returns – alternative windows

This table presents results of replicating Table 5, panel B, model 1 (sample with Acquirer stake ≥ 50%) using alternative windows for the computation of the dependent variable, *Target_Returns*. The notation (X, Y) indicates that returns are cumulated from day X to day Y, relative to the acquisition announcement date. For example, (−63, +1) means that returns are cumulated from 63 days before the acquisition announcement date to one day after the acquisition announcement date. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

	Day-window around the announcement date		
Dep. var.: *Target Returns*	(−42, 0)	(−63, +1)	(−63, 0)
	(1)	(2)	(3)
Transparency_Directive	0.109***	0.147***	0.129***
	[0.038]	[0.047]	[0.044]
Country_Controls	Y	Y	Y
Transaction_Controls	Y	Y	Y
Regulation_Controls	Y	Y	Y
Country Fixed Effects	Y	Y	Y
Industry Fixed Effects	Y	Y	Y
Month*Year Fixed Effects	Y	Y	Y
Observations	1,282	1,282	1,282
R-squared	0.221	0.224	0.216

Table OC12. Target returns– additional fixed effects

This table presents results of replicating Table 5, panel B, model 1 (sample with Acquirer stake ≥ 50%) including additional fixed effects. In particular, the specifications include month-year-industry and country-industry fixed effects. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *Target Returns*	
	(1)
Transparency_Directive	0.111*
	[0.059]
Country_Controls	Y
Transaction_Controls	Y
Regulation_Controls	Y
Month*Year*Industry Fixed Effects	Y
Country*Industry Fixed Effects	Y
Observations	1,238
R-squared	0.306

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Table OC13. Target returns– All firms

This table reports results of analyzing firms' stock price returns around acquisition announcements. The sample includes all firms with available data. The dependent variable *Target_Returns*, is defined as the firm's abnormal returns cumulated over the (−42, +1) day window around the acquisition announcement. If a firm is not taken over in a calendar year, *Target_Returns* is set to zero. *Transparency_Directive* is an indicator variable that equals one for the months after the TPD entry into force date, and zero otherwise. See Appendix B for other variable definitions. Standard errors (in brackets) are clustered by country-month-year. *, **, and *** denote statistical significance at the 10 percent, 5 percent, and 1 percent (two-tail) levels, respectively.

Dep. var.: *Target_Returns*	(1)	(2)
Transparency_Directive	0.004***	0.004***
	[0.002]	[0.002]
Country_Controls:		
Stock_Market_Size	0.005**	0.005**
	[0.002]	[0.002]
GDP_capita	−0.017	-0.014
	[0.018]	[0.020]
Gov_Bond_10yr	0.001*	0.001*
	[0.000]	[0.000]
Returns_Volatility	0.000	0.000
	[0.000]	[0.000]
Listed_Firms	0.000	0.000
	[0.000]	[0.000]
Consumption	0.000	0.000
	[0.000]	[0.000]
Investment	0.000	0.000
	[0.000]	[0.000]
Transaction_Controls:		
Transaction_Value	−0.009	−0.009
	[0.010]	[0.010]
Cross_Border	0.077***	0.077***
	[0.016]	[0.016]
Tender_Offer	0.117***	0.117***
	[0.018]	[0.018]
Toehold	−0.044**	−0.044**
	[0.021]	[0.021]
Cash	0.124***	0.124***
	[0.017]	[0.017]
Shares	0.050	0.050
	[0.036]	[0.036]
Number_Bidders	0.086***	0.086***
	[0.026]	[0.026]
Regulation_Controls:		
Takeover_Directive		0.001
		[0.002]
Market_Abuse_Directive		−0.001
		[0.003]
Shareholder_Rights_Directive		−0.001
		[0.002]
Country Fixed Effects	Y	Y
Industry Fixed Effects	Y	Y
Month*Year Fixed Effects	Y	Y
Observations	40,636	40,636
R-squared	0.246	0.246

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