

**TAKEOVER LAW TO PROTECT SHAREHOLDERS: INCREASING  
EFFICIENCY OR MERELY REDISTRIBUTING GAINS?**

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## **Abstract**

We construct a dynamic takeover law index using hand-collected data on legal provisions and empirically examine the effect of takeover regulation to protect shareholders on shareholder wealth for bidders and targets in a multi-country setting. We find that a stricter takeover law increases combined wealth for bidders and targets, which suggests that stronger shareholder protection in the takeover bid process increases the efficiency of the takeover market. Contrary to our hypothesis, results show that stricter takeover law does not hurt bidders. Its effect on target announcement returns and takeover premiums is significantly positive and economically large. Our findings suggest that the mandatory bid rule and ownership disclosure increase synergistic gains in takeovers, whilst the fair-price rule and squeeze-out rights may reduce combined gains. Further results show that increased overall gains can be explained by greater competition in the market for corporate control and a shorter time to successful completion of a takeover under stricter takeover law.

## **Keywords**

Takeover laws, Mergers and acquisitions, Shareholder protection, Announcement returns, EU takeover directive

## **JEL classification**

G32, G34, G38, K22, O16

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## 1. Introduction

Since the US and the UK introduced their first national takeover regulation in the late 1960s, policymakers and regulators have aimed to provide a takeover law that protects shareholders in a takeover bid whilst facilitating the market for corporate control and maintaining the integrity of financial markets. The development and implementation of the EU takeover directive<sup>1</sup>, which was intended to promote the integration of European capital markets and harmonize takeover regulation in Europe, has highlighted the ongoing struggle in takeover regulation to find an optimal takeover law that addresses the concerns of member states and provides for an efficient market for corporate control (Enriques et al., 2014; Humphery-Jenner, 2012; Clerc et al., 2012). In this paper, we explore the convergence of takeover regulation in Europe towards greater protection of minority shareholders and test whether it has improved the efficiency of takeovers or has increased the potential for value destruction through greater deal complexity or entrenched managers and possibly shifted the allocation of wealth generation from bidder shareholders to increasingly protected target shareholders. We further investigate which of the main takeover law provisions contribute to these effects.

The optimality of takeover regulations has been explored from a theoretical perspective as well as through empirical studies using broad shareholder protection indices or time fixed effects. Taking a theoretical approach, Bergström and Högfeldt (1997) model the impact of individual takeover regulations, such as the mandatory bid rule and the equal bid rule, on the efficiency of capital markets. Martynova and Renneboog (2011a) and Goergen et al. (2005) document how in the period 1990–2005 countries across Europe have caught up with the UK towards the Anglo-American system of corporate governance when improving the legal position of shareholders. In their empirical examination of cross-border takeovers in the period 1993–2001, Martynova and Renneboog (2008b) find some evidence of a positive effect of shareholder protection on targets and an insignificant one on bidders. They obtain these results from broad indices of shareholder rights (e.g., appointment rights, decision rights, transparency) and minority shareholder protection (voting and other decision rights, trusteeship rights and rights in the event of a takeover). By contrast, Humphery-Jenner (2012) focuses specifically on takeover regulation and finds a negative effect on bidder returns when using a more recent sample to estimate the impact of the EU takeover directive. He attributes this to increased managerial entrenchment in bidders and greater legal uncertainty created by the directive.

To the best of our knowledge, there are no studies that try to assess the effects of takeover law on total shareholder wealth in targets and bidders combined as well as separately, estimate the impact of individual legal provisions or control for time and country heterogeneity. The aim of this paper is to fill these gaps by empirically evaluating the efficiency of takeover regulation as a whole and the effects of individual provisions governing takeover bids on the distribution of wealth in takeovers. The heterogeneous capital markets in Europe provide an opportunity to explore the effects of takeover regulation in a set of countries over time and during a critical phase of the development of their capital markets. The available sample of takeovers spans the most active period of legal developments in takeover regulation and covers all critical sub-periods over the past few decades. Specifically, we aim to answer the following questions by identifying whether takeover regulation creates or reduces shareholder wealth: (1) Does stricter takeover law reduce the combined synergistic gains to shareholders involved in takeovers? (2) Does stricter takeover law hurt bidding firms and lead to wealth losses for bidders? (3) Does stricter takeover law protect minority shareholders and generate a higher return for target shareholders? (4) Which legal provisions matter most in explaining the variation of takeover gains to targets and bidders?

To answer these questions, we construct a dynamic takeover law index using hand-collected data on legal provisions that reflect the evolution and quality of takeover laws in EU economies over the period 1986–2010. The index, which focuses on key takeover law provisions that affect the process and the (re-)distribution of wealth in takeovers, includes six provisions: ownership disclosure, mandatory bid, fair price for the minority shareholders, squeeze-out rights, sell-out rights, and management neutrality. A higher index score represents a more stringent takeover regulation in a given country, in other words, a market for corporate control more favorable to target shareholders. This is the first study to create a comprehensive and dynamic takeover law index, which enables a straightforward comparison and analysis between countries in terms of their market regulations for corporate control transfers. To measure wealth effects, we use announcement returns as a proxy for expected wealth generation and wealth transfer in takeovers and compare them to takeover premiums as a measure of the bidder's willingness to pay.

Results show that stricter takeover regulation increases the total wealth for the combined companies. Combined announcement returns for bidders and targets increase by 4.5 percentage points when transitioning from weak shareholder protection to a high-protection environment. This indicates an improved efficiency in mergers and acquisitions under a stricter takeover law. Our empirical investigation of which takeover law provisions matter most for this wealth effect shows that the

ownership disclosure rule and the mandatory bid rule are of crucial importance in achieving higher combined announcement returns. To further explore the total wealth effects of takeover law, we exclude UK targets from the analyses. The evidence suggests a statistically positive and economically stronger effect of our takeover law index, the ownership disclosure rule and the mandatory bid rule on the combined announcement returns for non-UK targets. Interestingly, the fair price rule and the squeeze-out rights rule tend to reduce the total wealth of the combined companies when we exclude UK targets.

We find that a stricter takeover regulation does not hurt bidders but balances the trade-off between bidders and targets. Results show that a stricter takeover law does not reduce bidders' returns where previous research that did not control for time heterogeneity finds a detrimental effect on acquirers' performance when studying the EU takeover directive (Humphery-Jenner, 2012). Stringent takeover regulation provides better protection for minority shareholders of target firms in a takeover bid. Changing takeover regulation from the weakest to the strongest, *ceteris paribus*, is associated with a 25 percent higher announcement return for target shareholders and a 44 percentage points increase in the takeover premium. This impact is primarily driven by the ownership disclosure rule and the mandatory bid rule. Contrary to our expectation, the evidence does not support the view that these positive gains for target shareholders come at the expense of bidders. Announcement returns to bidders are not significantly lower under a stricter takeover law. Furthermore, a mediation test that considers alternative paths from stricter takeover law to higher announcement returns suggests that a stricter takeover law may even directly increase announcement returns for bidders.

To further investigate the sources of efficiency gains in the takeover process, we examine the likelihood of competing offers being launched, toeholds, and time to completion. Our empirical findings suggest that strict takeover law to protect shareholders reduces legal uncertainty and generally improves the efficiency of the takeover process. We find that ownership disclosure encourages competition in the takeover market, but bidders take precautions by increasing the toehold before attempting to acquire a target. The mandatory bid rule reduces the time to successful completion of a deal. Interestingly, the management neutrality rule significantly shortens the time to completion.

Our paper contributes to the literature by constructing a dynamic takeover law index and testing the effects of takeover regulation as a whole and individual provisions governing the takeover process. Most importantly, the multi-country structure of our original takeover law index measures the convergence of takeover regulation in

Europe and allows us for the first time to control for unobserved heterogeneity in both country and time dimensions. By exploiting differences in takeover regulation across countries and through time, we examine the effects of takeover law where previous studies were not able to control for country effects due to a lack of a time variation in their legal variables of interest (Bris and Cabolis, 2008; Rossi and Volpin, 2004; Nenova, 2003).

The findings presented in this paper have implications for a range of previous studies. Our paper is most closely related to work by Humphery-Jenner (2012), Martynova and Renneboog (2011a, 2008b), Bris and Cabolis (2008), Rossi and Volpin (2004) and Nenova (2003). In contrast to Humphery-Jenner (2012), who uses the EU directive as a natural experiment, our results show that there is no evidence of a negative effect of takeover regulation on bidder announcement returns despite our research design including more legislative changes. Focusing on the international convergence of corporate governance and cross-border transactions, Martynova and Renneboog's (2011a, 2008b) minority shareholder protection index includes some of the provisions we use in this paper. We contribute to this line of research by providing empirical evidence that takeover law as measured by our index matters more to shareholder wealth in a takeover bid than a broad corporate governance index, by estimating combined wealth effects and by answering the question which individual provisions matter most in takeover regulation. Our study also goes beyond the results provided by Bris and Cabolis (2008), Rossi and Volpin (2004) and Nenova (2003). We construct a dynamic and focused takeover law index (rather than using a static index or the broad cross-sectional index by La Porta et al. (1998)), examine individual provisions, and estimate their effects on combined-firm announcement returns. Our closer examination of the combined wealth effects is particularly important because takeovers may redistribute rather than create value (McCahery et al., 2004; Burkart, 1999). Combined with an estimation of the sources of efficiency gains in the takeover process, our analyses offer insights into the redistributive effects of takeovers and the implications and impact of takeover regulation in practice.

Our study further contributes to the literature by examining takeover regulation outside the United States and has practical implications for takeover policy in non-EU countries, in particular for country-level rules on ownership disclosure and mandatory bids. While US antitakeover law is mainly concerned with hostile takeovers (e.g., takeover defenses)<sup>2</sup>, European takeover regulation emphasizes the protection of minority shareholders (e.g., through the mandatory bid rule, see Magnuson, 2009). Although we use heterogeneity among countries in Europe to identify the effect of takeover law provisions, our findings provide insights into

similar provisions in the US. For example, the Williams Act in the US requires the disclosure of a bidder's identity and the extent of the bidder's holdings in the target, among other things, once the bidder obtains more than a specified percentage of shares. Since this is a regulation at the federal level, any effect of the Williams Act would be difficult to distinguish from unobserved time effects. Our study of European disclosure rules adds a country dimension, which enables us to isolate the effect of disclosure requirements from unobserved country and time effects. While the US does not have a mandatory bid rule, "control share cash-out" provisions at the state level require the bidder to purchase the minority shareholders' shares at a fair price if a bidder gains voting power of a certain percentage of a company, which is similar to the sell-out rule studied in this paper. Another type of statutes related to this paper are "fair price" statutes, which require takeovers to be approved by a supermajority of shareholders unless a "best price" offered by the bidder is paid to all of them.

The remainder of this paper is organized as follows. Section 2 develops our main hypotheses. Section 4 outlines the construction of the takeover law index and discusses the evolution of takeover law in the EU. Section 3 introduces our sample and identification strategy. Section 4 presents the empirical results on synergistic gains to bidders and targets and explores the sources of such gains in the takeover process. Robustness analyses are reported in Section 6. Section 7 concludes.

## **2. Literature Review and Hypothesis Development**

Takeover regulation has attracted the attention of policymakers, managers, investors and academics alike since the early 1980s (e.g., Souther, 2015; Straska and Waller, 2014; Cuñat et al., 2012; Bris and Cabolis, 2008; Martynova and Renneboog, 2008a; Rossi and Volpin, 2004; Nenova, 2003; DeAngelo and Rice, 1983; Grossman and Hart, 1980). Takeover law regulates the market for corporate control and – because of the potential of takeovers to generate synergistic gains and redistribute wealth in society – it defines the rights and obligations of the acquiring and target firm such as the requirements of information disclosure, the orderly process of the offer, the terms of the bid, and the defensive measures available to target managers.

The aim of an appropriate takeover law is to design an optimal set of rules that balances the trade-off between promoting an efficient market for corporate control and protecting the minority shareholders in a takeover bid from being taken advantage of by bidders, majority shareholders or their own management (McCahery et al., 2004; Berglöf and Burkart, 2003). Strict takeover law to protect shareholders may lead to overall efficiency losses due to higher transaction costs (e.g., more legal barriers) or result in greater agency costs and overbidding because of the increased competition among bidders. On the other hand, shareholder protection may be a zero-sum game in which increased protection benefits target shareholders at the expense of bidders, transferring gains from bidders to targets and leaving total synergies unchanged, or increase overall gains from improved deal execution with efficient takeover regulation.

Prior theoretical and empirical work has focused heavily on the mandatory bid rule as the key provision in takeover law (Rossi and Volpin, 2004; Burkart and Panunzi, 2003; Nenova, 2003; Bebchuk, 1994), while others study the impact of ownership disclosure, squeeze-out rights, sell-out rights, and management neutrality in takeover regulation (Armour et al., 2007; Bebchuk, 2002; Burkart, 1999; Yarrow, 1985). Recognizing the importance of these provisions, European policymakers aimed to harmonize the European takeover market by including them in the EU Directive 2004/25/EC on takeovers. In the following sections, we review the prior literature on these key provisions and develop hypotheses on the impact of takeover law and relevant provisions on shareholder wealth and the distribution of synergistic gains in takeovers.



## **2.1 Shareholder protection in takeovers**

An objective of takeover regulation is to protect minority shareholder interests in the event of an attempted takeover. While a strict takeover law that is strongly in favor of target shareholder can increase takeover barriers for bidders, an insufficient shareholder protection might impose losses on minority shareholder in a takeover bid. Therefore, rational investors will demand a larger discount when they invest in a legal system that offers lower takeover protection or will abandon the stock market as a whole (Burkart, 1999).

Strict takeover law provides more opportunities for minority shareholders to participate in a takeover process. Among the key provisions in takeover law, ownership disclosure requires an early disclosure of the toehold that potential buyers have acquired in target firms. Where a lax disclosure standard allocates more takeover gains to bidders through pre-takeover shareholdings, it comes at the expense of target shareholders. A strict disclosure requirement improves the bargaining power of shareholders and managers in target firms at the early stage of a takeover because, with the relevant information, they can evaluate the bid properly and time the bid to extract a higher premium (Schouten and Siems, 2010; Armour et al., 2007). Better information disclosure is also likely to increase the competitions among potential bidders and generate higher takeover premiums paid to target shareholders.

Equal opportunities for all investors and the fair treatment of minority shareholders are the most important elements for any takeover law (Goergen et al., 2005). As a key component of a takeover law that offers minority shareholders a greater chance to participate in the takeover process, the mandatory bid rule requires a bidder to make a tender offer to all outstanding shares once the direct or indirect holdings cross a certain threshold of voting rights, which is typically set at 30%. This rule protects minority shareholders by providing them with an opportunity to exit the company, especially when combined with a fair price rule, which normally requires acquirers to pay an average historical share price (Ferrarini and Miller, 2010; Goergen et al., 2005; Berglöf and Burkart, 2003; Burkart and Panunzi, 2003; Skog, 1997; Bergström and Högfeldt, 1997; Bebchuk, 1994). A stringent mandatory bid rule thus offers minority shareholders better protection by forcing majority shareholders to share takeover gains with minority shareholders.

The squeeze-out rights rule grants bidders the right to purchase the remaining shares after they exceed a certain ownership level. This rule can be used to control the free-rider problem by bidders, thereby making value-increasing takeovers feasible (Yarrow, 1985). The counterpart of the squeeze-out rights rule is the sell-out rights rule, which offers minority shareholders the right to require the majority owner to buy them out at a certain level of shareholdings. Sell-out rights protect minority shareholders and effectively eliminate the pressure-to-tender problem, shift the bargaining power from the bidder to target shareholders and thus prevent all value-decreasing takeovers (Goergen et al., 2005; McCahery et al., 2004; Burkart and Panunzi, 2003; Grossman and Hart, 1980).

## **2.2 Efficiency gains and losses due to takeover law**

Takeover law can affect how synergistic gains generated by takeovers accrue to bidders and targets in different ways. While takeover law is designed to ensure an orderly takeover process, it may reduce the overall synergistic gains in takeovers by protecting shareholders and entrenching the target's managers. The synergistic gains, achieved through increased operational efficiency, combined technology or greater market power, will be reflected in the change in the combined shareholder wealth of acquirers and targets. These gains may be reduced further by uncertainty in the legal framework or increased compliance costs under more complex regulation.

Strict takeover law can increase legal barriers and reduce bidder returns by making takeovers more expensive. For example, a stringent ownership disclosure standard increases chances of competing acquirers launching a bid. This potential competition may lead to overbidding in a takeover contest (Burkart, 1999, 1995; Bebchuk, 1982). While a lower ownership disclosure threshold benefits target shareholders, it limits the bidder's profits, as the initial stake in a target firm is the primary source of profits for the bidder (Burkart, 1999). This may curb the incentive to launch a takeover bid and reduce the frequency of value-enhancing takeovers (Zingales, 2004; La Porta et al., 2000; Burkart, 1995).

Despite its positive effects for minority shareholders, the mandatory bid rule may reduce the efficiency of the market for corporate control, for example by hampering bidders' ability to freely purchase shares because investors can tender their shares to bidders at the increased share price (De La Bruslerie, 2013). It may increase the costs of takeovers and act as an anti-takeover device (Enriques, 2004) because it prevents bidders from using coercive bid structures, such as partial bids and two-tier bids. Other scholars argue that the mandatory bid rule eliminates inefficient control

transfers at the cost of discouraging more efficient control transfers (Enriques et al., 2014; Clerc et al., 2012; Goergen et al., 2005; Berglöf and Burkart, 2003; Burkart and Panunzi, 2003; Bergström and Högfeltdt, 1997; Bergström, Högfeltdt, and Molin, 1997; Bebchuk, 1994). A strict mandatory bid rule – especially in combination with a fair price rule – might benefit entrenched managers by discouraging value-creating bids and reducing economic value (Humphery-Jenner, 2012; Burkart and Panunzi, 2004).

Strict takeover law may directly or indirectly increase transaction costs and agency cost because of increasing complexity in the takeover regulation framework. Humphery-Jenner (2012) argues that the EU directive makes takeovers more difficult and time consuming to acquire targets. Therefore, the directive may entrench managers in the EU and increase the cost of takeovers.<sup>3</sup> The convergence of shareholder protection in European takeover law may have a similar effect, as strict takeover regulation introduces more rules and sets up stringent provisions that may make takeover more expensive and thus reduce the efficiency of takeover market. We thus hypothesize that strict takeover law regulation as a whole increases inefficiencies and thus reduces combined wealth gains to bidders and targets.<sup>4</sup> The alternative hypothesis is that strict takeover law succeeds in its aim to establish a set of rules that balances the conflicts of interests in a takeover bid and increases the expected returns to the combined firm.

*Hypothesis 1 (efficiency hypothesis): Strict takeover law to protect shareholders reduces the combined wealth to bidder and target shareholders in takeovers.*

The ownership disclosure rule, mandatory bid rule, fair price rule, and sell-out rule all directly address potential acquisition strategies that transfer takeover gains from minority shareholders to acquirers. Stringent regulation to protect shareholders in takeovers will often directly reduce the acquirer's return. This is no surprise, as these rules are designed to protect target shareholders from exploitation by bidders. If a country adopts them, we expect bidder returns to decrease. Conversely, we expect bidder returns to increase if a country adopts the squeeze-out rule. Takeover rules may also affect bidder returns more indirectly. Strict ownership disclosure can increase intense competition among bidders and lead bidders to overpay in a transaction. The mandatory bid rule and sell-out rights, for example, may reduce the gains of bidding firms indirectly by shifting the bargaining power from the bidder to target shareholders (Goergen et al., 2005; McCahery et al., 2004). Both mechanisms will result in higher transfer prices. Based on the preceding discussion, we posit that strict takeover law may transfer wealth from bidders to targets:

*Hypothesis 2 (wealth transfer hypothesis): Strict takeover law to protect shareholders reduces the wealth of bidder shareholders.*

Stringent takeover regulation protects target shareholders from expropriation by bidders by increasing information transparency, providing more opportunity for minority shareholders to participate in a takeover process and eradicating the pressure-to-tender problem, as discussed in Section 2.1. We would thus expect strict takeover law to increase the wealth of target shareholders.

However, the target's value may decrease as a result of the increased agency conflicts within the target firm because value is either appropriated by management or lost in suboptimal solutions to agency problems. To minimize agency conflicts in target firms, takeover law governs the use of defensive tactics available to the target management in a takeover bid. Supporters of the board defense school believe that providing boards with the power to defend themselves in takeovers should be beneficial because takeover defenses are used by the target management when they believe the firm has hidden values or when they believe resistance will increase the bidding price (Bebchuk, 2002). With better information in an imperfect capital market, the management negotiating on behalf of the shareholders prevents coercive bids (Berglöf and Burkart, 2003; Bebchuk, 2002). However, with more defensive tactics, target management has more opportunities to pursue objectives other than the interests of the shareholders, which could increase the costs of a takeover bid and consequently lead to fewer takeovers. Because the agency conflict between management and shareholders is particularly pronounced in takeovers, some argue that management should not have defensive power in takeover bids (Sokolyk, 2011; Goergen et al., 2005; McCahery et al., 2004; Bebchuk, 2002).

To reduce the agency problem, strict takeover law tends to limit the anti-takeover measures that target managements might be entitled to use in a takeover bid.<sup>5</sup> For example, the management neutrality rule requires the target management to obtain the explicit authorization from its shareholders before they adopt any defensive actions to frustrate a takeover bid. By reducing defensive measures available to the target management, it makes takeovers less costly and may thus increase the efficiency of the takeover market. The management neutrality rule could effectively reduce agency conflicts in a takeover and increase investor confidence in the acquisition, which may lead to higher returns to target shareholders. Based on our discussion of shareholder protection in the takeover process, we propose that a stricter takeover law will lead to higher target announcement returns.

*Hypothesis 3 (shareholder protection hypothesis): Strict takeover law to protect shareholders increases the wealth of target shareholders.*

Table 1 summarizes our empirical predictions based on our discussion of takeover law and its key provisions.

**Table 1**

Summary of empirical predictions on the effect of strict takeover law and key provisions

	Empirical prediction for announcement return			Main rationale
	Combined	Bidder	Target	
Takeover law index	-	-	+	Increases the protection of target shareholders in the event of a takeover attempt. Targets gain at the expense of bidders, while increasing regulation and managerial entrenchment reduce the overall efficiency of takeovers.
Ownership disclosure	-	-	+	Limits the initial stake in a target firm that is the primary source of profits for bidders. It also increases the transparency of a takeover bid and may increase the likelihood of competing bids, profiting target shareholders. May also entrench target managers, reducing the overall efficiency of the takeover.
Mandatory bid	-	-	+	Protects the minority shareholders by providing them with an opportunity to exit the company in the event of a change of control. May also entrench target managers, reducing the overall efficiency of the takeover.
Fair price for minority	-	-	+	Benefits minority shareholders by guaranteeing a fair price relative to the market value of the target's shares in a takeover bid. Bidders are less likely to exploit target shareholders, but this rule might increase financing costs and make takeovers more expensive when bidders attempt a takeover bid, which may reduce the overall takeover efficiency.
Squeeze-out right	+	+	-	Can be used to control the free-rider problem in takeovers thereby making value-increasing takeovers feasible. Because acquirers can squeeze out the minority shareholders in the target firm, acquirers may benefit at the expense of target shareholders.
Sell-out rights	-	-	+	The pressure to tender the shares is reduced for minority shareholders, as they can sell their shares later, but this may come at a price for bidders.
Management neutrality	+	+	+	Addresses potential agency problems between the target's shareholders and management. This reduces management defenses in a bid, makes it less costly for bidders to reach an agreement with target shareholders, and thus increases takeover efficiency.

### 3. Constructing a takeover law index

We construct a takeover law index to capture country-level regulation that is most relevant in the event of a takeover attempt. Takeover laws vary significantly between countries and over time.<sup>6</sup> In the past three decades, the implementation of the EU takeover directive may be seen as the single most important development in EU takeover law. As discussed in Section 2, we focus our investigation on the main provisions included in the directive when constructing the takeover law index.<sup>7</sup> Focusing on these provisions will also provide direct evidence on the convergence of takeover regulation in Europe in general and as a result of the takeover directive in particular.

To enable a direct and systematic comparison of takeover law through time and across countries, we construct a takeover law index using hand-collected data on legal provisions. Specifically, the index measures whether a country has implemented ownership disclosure requirements<sup>8</sup>, the mandatory bid rule, the fair price rule for minority shareholders, squeeze-out rights for the bidder, sell-out rights for target shareholders, and the management neutrality rule. These six legal provisions, which have been identified in the literature as important for the regulation of takeovers (see Section 2), are critical in a takeover bid because they directly determine the bidder's incentive to make a takeover bid and the target's acceptance of a bid as well as the distribution of any takeover gains. With the exception of Nenova's (2003)<sup>9</sup> static cross-sectional indices for the development of takeover law, no indices exist that comprehensively and specifically capture takeover regulations.<sup>10</sup> We construct the index in a dynamic form, because the dynamic nature of our index is crucial for the identification of economic effects distinct from unobserved cross-sectional country effects.

Another complex issue in coding and weighting any legal rules is to what extent we should code a rule to reflect the diversity and quality of the rules. The six takeover law provisions in the index evolve over time and present great variation. To capture the complexity of takeover law provisions and the effect of the rules in practice, individual takeover law provisions are normalized in the range from zero to one with intermediate values whenever we can distinguish them. For example, following Armour et al. (2007), we set the index component for ownership disclosure equal to one if the shareholders have to disclose ownership when owning at least 3 percent of the company's capital, equal to 0.75 if this threshold is 5 percent, equal to 0.5 for a 10 percent threshold, equal to 0.25 if the threshold is 25 percent and zero otherwise. Table 2 defines the coding of takeover law provisions.

**Table 2**

## Coding of takeover law provisions

This table defines the coding of the components of the takeover law index used in this study.

Variable	Definition
Ownership disclosure	Following Armour et al. (2007), it equals 1 if the shareholders who acquire at least 3% of the company's capital have to disclose it; equals 0.75 if this concerns 5% of the capital; equals 0.5 if this concerns 10%; equals 0.25 if this concerns 25%; otherwise zero.
Mandatory bid	Following Armour et al. (2007), it equals 1 if there is a mandatory public bid for the entirety of shares in case of purchase of 30% or 1/3 of the shares; equals 0.5 if a mandatory bid is triggered at a higher percentage (such as 40% or 50%); equals 0.5 if there is a mandatory bid rule but no specific percentage required; further, it equals 0.5 if there is a mandatory bid rule, but the bidder is only required to buy part of the shares, and equals zero if there is no mandatory bid rule at all.
Fair price for the minority shareholders	Equals 1 if the mandatory offer is restricted by law to offer some measures of a market price (usually an average price paid for the same securities over a period of six to twelve months prior to the offer) and zero otherwise.
Squeeze-out rights	Equals negative 1 if the majority shareholders can squeeze the minority shareholders out at a certain level of ownership (usually 90% or more) and zero otherwise.
Sell-out rights	Equals 1 if the minority shareholders can require the majority owner to buy them out at a certain level of ownership (usually 90% or more) and zero otherwise. We code the sell-out rights rule with a value of one and zero because all sample countries employing a sell-out rule use 90% or more as the threshold to trigger the sell-out rights rule. Among those countries, only Germany, France, Netherland, Belgium, Czech Republic use 95% as the threshold while the other countries use 90% as the threshold. A similar reasoning applies to the coding of the squeeze-out rights rule.
Management neutrality	Equals 1 if there is a strict obligation for the target management to maintain neutrality in a bid, 0.5 if there is a management neutrality rule but subject to the reciprocity rule and zero otherwise.



We hand-collect the raw legal data directly from the primary legislation in a given country (i.e., takeover laws and regulation, companies law, securities laws, stock exchange regulations and decrees). The legal sources are summarized in Appendix B. Following Nenova (2003) and Armour et al. (2007), the takeover law index is calculated as the aggregate of the six takeover law components. The squeeze-out rule is weighted negatively (i.e., negative one if there is a squeeze-out rule in place and zero otherwise), because we expect squeeze-out thresholds defined by law to benefit the bidder, contrary to the other takeover law provisions which aim to protect target shareholders. This gives a theoretical total range of  $[-1, 5]$ . A higher index score represents a stricter takeover law from the bidder's viewpoint and a more favorable legal environment for target shareholders.

Table 3 demonstrates the development of takeover law in the EU. Our index indicates that takeover laws in EU countries have been substantially improved since late 1980s, especially in terms of the protection offered to the minority shareholders. The mean value of the takeover law index for the sixteen major European countries was 0.67 (out of a score of 5) in 1986, but it has reached 3.47 in 2010. In general, there are three big turning points between 1986 and 2010. The first improvement occurred in 1989. Before 1989, only a few countries provided a good protection to the target shareholders in the case of a takeover bid. The average score of the takeover law index was 0.86 out of a score of 5 in 1988, in which the highest level of protection was provided by the UK, Denmark and Sweden.<sup>11</sup> The second improvement happened in the late 1990s. With the trend of globalization and the development of the stock market, more takeover bids occurred after 1996, and the number of takeover bids peaked in 2000 (see Table 4, Panel B). Growing takeover activity might have drawn the attention of regulators to provide an appropriate takeover regulation to facilitate the market for corporate control.<sup>12</sup> Simultaneously, the increased number of takeovers may also have led to a higher demand for an appropriate takeover law to protect the target shareholders.<sup>13</sup> The third improvement took place after 2006 with the introduction of the European Directive 2004/25/EC. Its adoption in member states substantially enhanced the quality of takeover laws in some countries after 2006 (see Table 14). In 2009, the average takeover law index reached its highest level of 3.47 during the sample period. In sum, our takeover law index shows that European takeover law has continued to converge towards greater shareholder protection.

**Table 3**

## Takeover law index for European countries, 1986–2010

This table reports the takeover law index for our sample countries in the period 1986–2010. The takeover law index measures the quality of takeover law in a given country. It takes the value of the accumulation of six variables, as defined in Table 2: (1) ownership disclosure, (2) mandatory bid, (3) fair price for the minority shareholders, (4) squeeze-out rights (negatively coded); (5) sell-out rights; and (6) management neutrality. Theoretically possible index values are in the range [-1, 5]. A higher value indicates a takeover law more favorable for target shareholders. Source: Country's Takeover Law and Regulation, Companies Law, Securities Laws, and Stock Exchange Regulation; own construction.

Year	AUT	BEL	CZE	DNK	ESP	FIN	FRA	DEU	GBR	GRC	IRL	ITA	LUX	NLD	PRT	SWE
1986	0	0	0	0.5	0	0	0.5	0.25	5.75	0	5.75	1	0	1	0.5	1.5
1987	0	0	0	2	0	0	0.75	0.25	5.75	0	5.75	1	0	1	0.5	1.5
1988	0	0	0	2	1.25	0	0.75	0.25	5.75	0	5.75	1	0	1	0.5	1.5
1989	0.5	3.25	0	2	1.25	2	2.25	0.25	6	0	6	1	0	1	0.5	1.5
1990	0.5	3.25	0	2	1.25	2	2.25	0.25	6	0	6	1	0	1	0.5	1.5
1991	0.5	3.25	0	2	3.25	2	2.25	0.25	6	0	6	1	0	1	0.5	1.5
1992	0.5	3.25	0	2	3.25	2	4.75	0.25	6	0.5	6	3.5	0.5	1.75	0.5	1.5
1993	0.5	3.25	0	2	3.25	2	4.75	0.25	6	0.5	6	3.5	0.5	1.75	0.5	1.5
1994	0.5	3.25	0	2	3.25	2	4.75	0.75	6	0.5	6	3.5	0.5	1.75	0.5	1.75
1995	0.5	3.25	0	2.25	3.25	2	4.75	0.75	6	0.5	6	3.5	0.5	1.75	2	1.75
1996	0.5	3.25	1	2.25	3.25	2	4.75	0.75	6	0.5	6	3.5	0.5	1.75	2	1.75
1997	0.5	3.25	1	2.25	3.25	4	4.75	0.75	6	0.5	4.75	3.5	0.5	1.75	2	1.75
1998	3.25	3.25	1	2.25	3.25	4	4.75	0.75	6	0.5	3.75	5	0.5	1.75	2	1.75
1999	3.25	3.25	1	2.75	3.25	4.25	4.75	0.75	6	0.5	3.75	5	0.5	1.75	6	3.25
2000	3.25	3.25	1	2.75	3.25	4.25	4.75	0.75	6	0.5	3.75	5	0.5	1.75	6	3.25
2001	3.25	3.25	4.25	2.75	3.25	4.25	4.75	0.75	6	0.5	3.75	5	0.5	1.75	6	3.25
2002	3.25	3.25	4.25	2.75	3.25	4.25	4.75	5.25	6	3	3.75	5	0.5	1.75	6	3.25
2003	3.25	3.25	4.25	2.75	3.25	4.25	4.75	5.25	6	3	3.75	5	0.5	1.75	6	3.75
2004	3.25	3.25	4.25	2.75	3.25	4.25	4.75	5.25	6	3	3.75	5	0.5	1.75	6	3.75
2005	3.25	3.25	4.25	2.75	3.25	4.25	4.75	5.25	6	3	3.75	5	0.5	1.75	6	5.75
2006	4.75	3.25	4.25	3.25	3.25	4.75	5.25	5.25	6	5.5	4.75	5	5.5	3.75	6	5.75
2007	4.75	4.75	4.25	3.25	6	4.75	5.25	5.5	6	5.75	5.75	5.5	5.5	4.75	6	5.75
2008	4.75	4.75	5.75	3.25	6	4.75	5.25	5.5	6	5.75	5.75	5.5	5.75	4.75	6	5.75
2009	4.75	4.75	5.75	5.25	6	4.75	5.25	5.5	6	5.75	6	5.5	5.75	4.75	6	5.75
2010	4.75	4.75	5.75	5.25	6	4.75	5.25	5.5	6	5.75	6	5.5	5.75	4.75	6	5.75

## **4. Data and Method**

### **4.1 Takeover sample**

Our sample of transactions contains all attempted takeovers in EU countries for the period between 1986 and 2010 from Thomson Financial (SDC Platinum). We include all tender offers, mergers and acquisitions, but exclude minority stake purchases, leveraged buyouts, privatizations, spin-offs, recapitalizations, self-tender offers, exchange offers and repurchases. This specific period is selected because takeovers started to be prevalent after the 1986 Single Market Act was signed in the European Union. It also covers the evolution of the takeover regulation in several countries both before and after becoming EU member states.

The sample must meet the following requirements: (1) takeovers, announced between 1986 and 2010, are targeting EU firms; (2) targets are publicly traded firms in an EU country, while bidders can be publicly traded firms in any country; (3) the bidder owns less than 50 percent of the target shares before the deal and intends to own more than 50 percent of the target firm after the transaction; (4) deal value is disclosed and is at least one million US dollars; (5) multiple bids announced within 14 days are excluded from the analysis; (6) bid price is available from Thomson Financial, LexisNexis or the Financial Times; and (7) share prices are available from Datastream. These requirements result in a final sample of 1,273 takeovers involving target firms from the sixteen major European countries. The takeover attempts in our sample are made by 969 unique bidders with a total deal value of US\$2,151 billion and an average of US\$1,690 million.

Firms have most actively acted as the bidders and the targets in the UK, France and Germany. The second largest proportion of bidders is from the US. As shown in panel B of Table 4, the takeover market grew slowly until the mid-1990s, developed rapidly after 1997 and peaked with the dot-com boom in 2000. After a slight rebound in 2005, the number of EU takeovers decreased again following the global economic recession in 2008, back to levels last seen in the late 1990s.

**Table 4**  
Summary statistics

Panel A. Dependent variables and main control variables

This panel reports descriptive statistics for attempted takeovers involving public acquirers and public targets in European countries during 1986–2010. Firm accounting figures are based on the fiscal year data before the takeover announcement. For dummy variables, only the proportion of deals with the relevant attribute is shown in the “mean” column and other summary statistics are omitted. Significance levels for tests whether announcement returns and takeover premiums are zero: \*\*\*, \*\*, \* indicate significance at the 1%, 5% and 10% level, respectively.

Variable	N	Mean	Median	SD	Min.	Max.
<i>Dependent variables</i>						
Weighted CAR [-2, 2] (%)	1240	2.351***	1.657	7.486	-18.675	26.139
Bidder CAR [-2, 2] (%)	1241	-0.563***	-0.524	7.490	-23.759	21.560
Target CAR [-2, 2] (%)	1273	17.295***	12.462	20.913	-25.491	95.779
Takeover premium (%)	1027	30.599***	26.450	34.725	-61.981	157.754
Successful takeover	1267	0.830				
Days to completion	1204	92.761	63.000	108.379	1.000	1427.000
Challenged deal	1273	0.124				
<i>Takeover law variables</i>						
Takeover index	1273	3.308	4.000	1.124	-1.000	4.000
Ownership disclosure	1273	0.884	1.000	0.155	0.000	1.000
Mandatory bid	1273	0.854	1.000	0.317	0.000	1.000
Fair price for minority	1273	0.897				
Squeeze-out right	1273	0.846				
Sell-out rights	1273	0.778				
Management neutrality	1273	0.741	1.000	0.421	0.000	1.000
<i>Deal characteristics</i>						
Deal value (\$m)	1273	1092.629	161.609	2741.729	1.938	15974.420
Toehold (%)	1273	5.409	0.000	12.044	0.000	50.000
Hostile bid	1273	0.104				
Cash-only transaction	1273	0.391				
Cross-border transaction	1273	0.390				
Diversification	1273	0.443				
<i>Target (T) and bidder (A) characteristics</i>						
(T) CAR run-up	1273	0.089	0.053	0.258	-1.169	2.171
(T) Age	1273	13.224	9.465	10.923	0.287	45.881
(T) Total assets (\$m)	1273	1755.096	168.550	7594.475	1.793	176293.111
(T) Tobin's Q	1273	2.006	0.793	4.352	0.162	31.070
(T) Leverage	1273	0.204	0.176	0.171	0.000	0.759
(T) Cash flow	1273	0.094	0.107	0.145	-0.692	0.452
(T) Distressed	1273	0.240				
(A) Age	1273	15.447	13.051	11.100	0.096	45.580
(A) Total assets (\$m)	1273	8977.613	983.93633744	821	0.047	626933.000
(A) Cash flow	1273	0.116	0.118	0.106	-0.342	0.458

(continued on next page)

**Table 4** (continued)**Panel B. Year, country, and sector distribution**

This panel reports the number of transactions by year, country and SIC division. The sample consists of all attempted takeovers involving public acquirers and public targets in European countries during 1986–2010. The following abbreviations of country codes are used: AUT (Austria), BEL (Belgium), CZE (Czech Republic), DNK (Denmark), FIN (Finland), FRA (France), DEU (Germany), GRC (Greece), IRL (Republic of Ireland), ITA (Italy), LUX (Luxembourg), NLD (Netherlands), PRT (Portugal), ESP (Spain), SWE (Sweden), GBR (United Kingdom) for targets and bidders in EU countries and AU (Australia), CA (Canada), JP (Japan), NO (Norway), SZ (Switzerland), US (United States) for bidders in non-EU countries.

Year	Deals		Nation	SIC division								
				Targets		Bidders						
	N	%		N	%	N	%					
1986	6	0.5	AUT	13	1.0	11	0.9	1	123	9.7	118	9.5
1987	11	0.9	BEL	22	1.7	15	1.2	2	215	16.9	236	19.0
1988	21	1.6	CZE	4	0.3	0	0	3	290	22.8	295	23.8
1989	17	1.3	DEU	86	6.8	70	5.6	4	143	11.2	160	12.9
1990	13	1.0	DNK	23	1.8	16	1.3	5	130	10.2	126	10.2
1991	33	2.6	ESP	35	2.7	39	3.1	6	44	3.5	51	4.1
1992	26	2.0	FIN	22	1.7	20	1.6	7	271	21.3	223	18.0
1993	20	1.6	FRA	134	10.5	123	9.9	8	57	4.5	64	5.2
1994	29	2.3	GBR	725	57.0	538	43.4					
1995	44	3.5	GRC	19	1.5	16	1.3					
1996	32	2.5	IRL	9	0.7	14	1.1					
1997	71	5.6	ITA	25	2.0	32	2.6					
1998	96	7.5	LUX	5	0.4	0	0					
1999	128	10.1	NLD	60	4.7	48	3.9					
2000	129	10.1	PRT	6	0.5	0	0					
2001	81	6.4	SWE	85	6.7	61	4.9					
2002	55	4.3	AU	0	0.0	9	0.7					
2003	59	4.6	CA	0	0.0	16	1.3					
2004	59	4.6	JP	0	0.0	8	0.6					
2005	76	6.0	NO	0	0.0	5	0.4					
2006	78	6.1	SZ	0	0.0	26	2.1					
2007	77	6.0	US	0	0.0	171	13.8					
2008	47	3.7	Other	0	0.0	35	2.8					
2009	36	2.8										
2010	29	2.3										

## 4.2 Measure of wealth gains from takeovers

We use cumulative abnormal announcement returns (CARs) as dependent variables to measure expected gains to bidders and target shareholders.<sup>14</sup> In addition to separate announcement returns for bidders and targets, the combined announcement returns for the notional firm consisting of target and bidder are computed by weighting the target's and acquirer's announcement returns according to their market capitalizations. This procedure assumes that social welfare gains are reflected by expected announcement returns to rational, unbiased residual claimants in takeovers, ignoring other potential stakeholders, such as bondholders, or external effects on the public. Descriptive studies reliably find a positive unconditional combined announcement return in takeovers (Andrade et al., 2001).

To estimate returns to shareholders of both firms involved in the takeover, we follow Martynova and Renneboog (2008b) and Faccio et al. (2006) to calculate the CARs over the event window of [-2, +2] days around the takeover announcement, where day 0 is the announcement date. We employ a market model with local market indices as the benchmark to account for the possibility of market fragmentation and because additional factor returns are not available for the majority of the countries in our sample. Results for more sophisticated models used in the literature usually produce similar results.<sup>15</sup> We use main market indices with long time series for each firm in order to maximize data availability (e.g., FTSE All Share in the UK, DAX 30 in Germany, SBF 120 in France). Parameters are estimated over the period of 260 to 43 trading days prior to the takeover announcement. The period between 43 days to 2 days before the announcement is used to calculate run-up excess returns.

To test the combined wealth effects on bidders and targets, we calculate a total CAR weighted by the market capitalizations of targets and bidders two days before the announcement date. Panel A in Table 4 reports a mean value of the announcement returns for the combined entities of 2.4 percent, while targets gain 17.3 percent and acquirers earn -0.59 percent on average.<sup>16</sup> All mean announcement returns are significant at the one percent level.

### **4.3 Identification strategy**

Our main models are estimated by ordinary least squares using heteroskedasticity-robust standard errors.<sup>17</sup> In line with prior studies, we include a battery of deal features<sup>18</sup> and firm characteristics<sup>19</sup> into our models to control for other factors that might affect announcement returns. Summary statistics for these variables are shown in Panel A of Table 4. Notably, cross-border transactions are frequent in our sample (39 percent), which to some extent indicates the integration of the European market and the importance of an internationally compatible takeover law. Firm accounting data are based on the fiscal year before the takeover announcement. To limit the effect of outliers on our estimation results, we winsorize all variables at the 1 percent and 99 percent quantile. Variable definitions and data sources are summarized in Appendix A. Appendix C reports correlations between our variables.

We obtain identification of the effects of takeover law on announcement returns from country-year variation in our key independent variables – the takeover law index and takeover law provisions. Year and country effects are included in the models to control for potentially unobserved year and country effects. These fixed effects ensure that the remaining country-year variation that is not captured by the country and year dummies can be used to estimate the effects of takeover law if we assume that the unique variation in country-years is indeed caused by changes in takeover law. At the same time, country and time effects purge variation unrelated to takeover law – such as macroeconomic trends, economic development, non-company legal frameworks or cultural aspects – which may improve estimation accuracy.<sup>20</sup> Despite the substantial number of control dummies, coefficients are well behaved with variance inflation factors below 5, which shows that there is enough variation in takeover law to be exploited by our models.

## **5. Results**

In this section, we show empirically that takeover law to protect shareholders increases overall shareholder wealth. As expected, target shareholders benefit from greater protection. Contrary to our hypothesis, however, this gain for target shareholders is not a result of a net transfer of wealth from bidders. These results can be explained by takeover regulation that increases the efficiency of the takeover process, which benefits both bidders and targets. We further provide analyses to investigate the sources of efficiency gains for bidders and targets.

## 5.1 Strict takeover law and total gains for the combined firm

According to the efficiency hypothesis (hypothesis 1), we expect that strict takeover law to protect shareholders reduces the combined wealth to bidder and target shareholders in takeovers. Our findings in Table 5 show that the overall wealth effect of a stricter takeover law on the combined announcement returns of bidders and targets is positive and significant. Changing from the weakest protection afforded by takeover law (a takeover index of  $-1$ ) to the strongest one (a takeover index of  $5$ ) increases the combined announcement returns to bidders and targets by 4.5 percentage points. This result is inconsistent with our expectation that a stricter takeover law reduces shareholder wealth for the combined firm. In other words, stricter takeover laws succeed in protecting the welfare of minority shareholders and promoting the efficient allocation of productive resources.

Another question we aim to answer is which legal provisions matter most in explaining the variation of takeover gains to targets and bidders. Among the six takeover law provisions analyzed in Table 5, ownership disclosure is the first single takeover law provision in place in most EU countries, followed by the mandatory bid rule.<sup>21</sup> The general historical trend is that the squeeze-out rule, the sell-out rule and the management neutrality rule are introduced at a relative late stage. More specifically, most nations implement these three provisions during the late 1990s. In order to address potential collinearity among provisions and to provide insights into the historical development of takeover law, we develop our models stepwise by following the general time order of takeover law provisions in which they have been introduced in practice.

The results for individual takeover law provisions are reported in Table 5 (models 2 to 7). We find that increased combined wealth effects to bidders and targets are associated with the ownership disclosure rule and the mandatory bid rule at 6.8 and 5.6 percentage points, respectively. Both coefficients are significant at the five percent level. Regulation that was introduced later in time, such as squeeze-out or sell-out rights, has no detectable effect on total shareholder wealth gains. The positive effect of the ownership disclosure rule on combined wealth gains suggests that potential overbidding (Burkart, 1995, 1999) does not diminish the efficiency of the market for corporate control (see section 5.2.1). Our results further support the positive relationship between investor protection through disclosure and financial market development found in the literature (Jackson and Roe, 2009). In addition, the empirical finding on the mandatory bid rule supports the view that the mandatory bid rule increases the efficiency of the takeover market by generating value-creating bids



(De La Bruslerie, 2013; Burkart and Panunzi, 2003) rather than destroying firm value (Humphery-Jenner, 2012).

**Table 5****Effect of takeover law on weighted total announcement returns**

This table reports coefficients of OLS regressions of weighted announcement returns to target and bidder shareholders, that is, cumulative abnormal returns in a window of [-2, 2] trading days around the takeover announcement, weighted by target and bidder market capitalization two trading days before the announcement. Variable definitions are provided in Appendix A. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Takeover index	0.755 (0.44)*						
Ownership disclosure		6.468 (2.70)**	5.436 (2.73)**	5.964 (2.90)**	6.835 (2.93)**	6.851 (2.94)**	6.800 (2.93)**
Mandatory bid			1.439 (1.22)	2.596 (2.15)	5.336 (2.54)**	5.615 (2.76)**	5.633 (2.77)**
Fair price for minority				-1.310 (2.03)	-2.260 (2.06)	-2.256 (2.07)	-3.047 (2.14)
Squeeze-out right					-2.566 (1.50)*	-2.238 (1.80)	-2.875 (1.86)
Sell-out rights						-0.594 (1.85)	0.050 (1.98)
Management neutrality							2.316 (2.07)
Deal value	-0.202 (0.29)	-0.202 (0.29)	-0.210 (0.30)	-0.220 (0.30)	-0.223 (0.29)	-0.225 (0.29)	-0.213 (0.29)
Toehold	-0.018 (0.02)	-0.020 (0.02)	-0.020 (0.02)	-0.021 (0.02)	-0.020 (0.02)	-0.020 (0.02)	-0.021 (0.02)
Hostile bid	0.371 (0.68)	0.336 (0.68)	0.323 (0.68)	0.303 (0.68)	0.333 (0.68)	0.330 (0.68)	0.287 (0.68)
Cash-only transaction	0.949 (0.51)*	0.910 (0.51)*	0.927 (0.52)*	0.934 (0.51)*	0.884 (0.51)*	0.876 (0.52)*	0.887 (0.52)*
Cross-border transaction	0.575 (0.53)	0.659 (0.54)	0.654 (0.54)	0.677 (0.55)	0.710 (0.54)	0.714 (0.55)	0.707 (0.55)
Diversification	-0.827 (0.49)*	-0.852 (0.49)*	-0.858 (0.49)*	-0.861 (0.49)*	-0.865 (0.49)*	-0.862 (0.49)*	-0.862 (0.49)*
(T) CAR run-up	-0.972 (0.86)	-0.923 (0.86)	-0.961 (0.86)	-0.947 (0.87)	-0.960 (0.86)	-0.968 (0.86)	-0.952 (0.86)
(T) Age	-0.023 (0.02)	-0.022 (0.02)	-0.025 (0.02)	-0.025 (0.02)	-0.026 (0.02)	-0.026 (0.02)	-0.026 (0.02)
(T) Total assets	1.096 (0.31)***	1.062 (0.31)***	1.089 (0.31)***	1.102 (0.31)***	1.099 (0.30)***	1.102 (0.30)***	1.105 (0.31)***
(T) Tobin's Q	-0.216 (0.08)***	-0.219 (0.08)***	-0.217 (0.08)***	-0.215 (0.08)***	-0.224 (0.08)***	-0.224 (0.08)***	-0.218 (0.08)***
(T) Leverage	0.452 (1.32)	0.512 (1.32)	0.492 (1.31)	0.512 (1.32)	0.494 (1.32)	0.493 (1.32)	0.475 (1.32)
(T) Cash flow	3.152 (2.06)	2.980 (2.04)	2.918 (2.05)	2.838 (2.05)	2.914 (2.04)	2.895 (2.04)	2.870 (2.04)
(T) Distressed	-1.277 (0.66)*	-1.306 (0.66)**	-1.315 (0.66)**	-1.340 (0.66)**	-1.364 (0.66)**	-1.372 (0.66)**	-1.354 (0.66)**
(A) Age	0.026 (0.02)	0.029 (0.02)	0.027 (0.02)	0.028 (0.02)	0.027 (0.02)	0.027 (0.02)	0.027 (0.02)
(A) Total assets	-0.775 (0.16)***	-0.772 (0.16)***	-0.771 (0.16)***	-0.773 (0.16)***	-0.769 (0.16)***	-0.770 (0.16)***	-0.777 (0.16)***
(A) Cash flow	4.763 (2.78)*	5.146 (2.77)*	5.037 (2.77)*	5.093 (2.77)*	5.161 (2.74)*	5.182 (2.74)*	5.302 (2.75)*
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1240	1240	1240	1240	1240	1240	1240
R <sup>2</sup> (adj.)	0.084	0.083	0.083	0.083	0.084	0.083	0.084
F-statistic	2.591	2.595	2.581	2.550	2.560	2.525	2.507
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

While the effect of takeover law on combined shareholder wealth is positive and significant in the whole sample of takeovers, Table 3 draws attention to the development of takeover law in the UK: Amongst the sixteen major European countries, the UK provides a relatively high protection for minority shareholders throughout the sample period and – because of its relatively large contribution to our sample of takeovers – may have a large impact on our results. In addition, because our identification strategy relies on country-year variation, one might suspect that the results are driven by takeover law in the UK or by the dominance of UK targets in our dataset. To estimate the contribution to the combined shareholder wealth in other countries that undertake major developments of their takeover regulation in the past three decades, we analyze a takeover sample that excludes UK targets and drop the corresponding UK country effect from the models.

The total wealth effect of a stricter takeover law shown in Table 6 is consistent with the findings in Table 5, but highly statistically significant and economically larger when we exclude UK targets from our analysis. The economic significance of the effect of takeover law increases from 4.5 to 6.9 percentage points for a change from the weakest to the strongest shareholder protection. The ownership disclosure rule and the mandatory bid rule both substantially increase the total wealth of the combined company. Notably, the coefficient of the ownership disclosure rule increases from 6.8 percentage points (in Table 5) to 13.6 percentage points (in Table 6), while the coefficient of the mandatory bid rule rises from 5.6 percentage points (in Table 5) to 8.5 percentage points (in Table 6). Identification of economic effects of our takeover law index and individual provisions for non-UK targets also validates our main findings, providing stronger evidence that strict takeover law improves the efficiency of takeover process and that our takeover law measures capture sufficient country-year variation that is not captured by country or year effects alone.

**Table 6****Effect of takeover law on weighted total announcement returns – excluding UK targets**

This table reports coefficients of OLS regressions of weighted announcement returns to target and bidder shareholders, that is, cumulative abnormal returns in a window of [-2, 2] trading days around the takeover announcement, weighted by target and bidder market capitalization two trading days before the announcement. Variable definitions are provided in Appendix A. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Takeover index	1.151 (0.55)**						
Ownership disclosure		10.534 (4.40)**	10.229 (4.40)**	12.043 (4.65)***	13.157 (4.67)***	13.195 (4.69)***	13.627 (4.70)***
Mandatory bid			2.548 (1.48)*	4.979 (2.53)**	8.135 (2.98)***	8.065 (3.07)***	8.537 (3.08)***
Fair price for minority				-2.578 (2.18)	-3.656 (2.23)	-3.675 (2.25)	-5.136 (2.49)**
Squeeze-out right					-3.083 (1.54)**	-3.190 (1.90)*	-4.178 (2.03)**
Sell-out rights						0.199 (2.05)	1.413 (2.24)
Management neutrality							3.354 (2.47)
Deal value	-0.298 (0.40)	-0.366 (0.40)	-0.354 (0.40)	-0.389 (0.40)	-0.420 (0.40)	-0.419 (0.40)	-0.386 (0.40)
Toehold	-0.039 (0.02)	-0.043 (0.02)*	-0.042 (0.02)*	-0.044 (0.02)*	-0.043 (0.02)*	-0.043 (0.02)*	-0.044 (0.02)*
Hostile bid	-0.997 (1.49)	-1.280 (1.49)	-1.117 (1.49)	-1.233 (1.49)	-1.181 (1.49)	-1.183 (1.49)	-1.470 (1.50)
Cash-only transaction	0.918 (0.81)	0.905 (0.81)	0.787 (0.81)	0.771 (0.81)	0.671 (0.81)	0.675 (0.81)	0.637 (0.81)
Cross-border transaction	-0.401 (0.74)	-0.267 (0.74)	-0.237 (0.74)	-0.155 (0.74)	-0.091 (0.74)	-0.094 (0.74)	-0.119 (0.74)
Diversification	-2.115 (0.78)***	-2.115 (0.78)***	-2.093 (0.78)***	-2.066 (0.78)***	-2.094 (0.77)***	-2.093 (0.77)***	-2.042 (0.77)***
(T) CAR run-up	-2.461 (1.46)*	-2.180 (1.45)	-2.398 (1.45)*	-2.364 (1.45)	-2.384 (1.45)*	-2.380 (1.45)	-2.368 (1.45)
(T) Age	-0.085 (0.05)*	-0.081 (0.05)*	-0.088 (0.05)*	-0.088 (0.05)*	-0.097 (0.05)**	-0.096 (0.05)**	-0.095 (0.05)**
(T) Total assets	1.193 (0.44)***	1.226 (0.44)***	1.220 (0.44)***	1.269 (0.44)***	1.293 (0.44)***	1.292 (0.44)***	1.291 (0.44)***
(T) Tobin's Q	-0.209 (0.07)***	-0.202 (0.07)***	-0.213 (0.07)***	-0.210 (0.07)***	-0.220 (0.07)***	-0.220 (0.07)***	-0.213 (0.07)***
(T) Leverage	-0.709 (2.04)	-0.778 (2.04)	-0.717 (2.03)	-0.652 (2.03)	-0.693 (2.03)	-0.689 (2.03)	-0.663 (2.03)
(T) Cash flow	1.930 (3.26)	1.453 (3.25)	1.436 (3.24)	1.022 (3.26)	1.128 (3.25)	1.139 (3.25)	1.101 (3.25)
(T) Distressed	-0.899 (1.01)	-0.870 (1.01)	-0.997 (1.01)	-1.115 (1.02)	-1.193 (1.01)	-1.191 (1.01)	-1.157 (1.01)
(A) Age	0.058 (0.04)	0.071 (0.04)*	0.065 (0.04)	0.066 (0.04)*	0.064 (0.04)	0.064 (0.04)	0.062 (0.04)
(A) Total assets	-0.653 (0.25)***	-0.695 (0.25)***	-0.683 (0.25)***	-0.688 (0.25)***	-0.675 (0.25)***	-0.674 (0.25)***	-0.687 (0.25)***
(A) Cash flow	2.675 (3.88)	3.442 (3.86)	3.270 (3.86)	3.615 (3.87)	3.824 (3.85)	3.798 (3.87)	4.300 (3.88)
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	533	533	533	533	533	533	533
R <sup>2</sup> (adj.)	0.083	0.087	0.091	0.092	0.097	0.095	0.097
F-statistic	1.695	1.745	1.770	1.766	1.809	1.780	1.784
P-value	0.001	0.001	0.000	0.000	0.000	0.000	0.000

Table 6 further reveals some interesting findings regarding the remaining takeover law provisions. While Table 5 reports insignificant coefficients for the fair price rule and the squeeze-out rights rule, Table 6 shows that when excluding the UK targets the fair price rule and the squeeze-out rights rule significantly reduce the combined wealth gains to bidders and targets. More specifically, the fair price rule reduces the combined returns by 5.1 percentage points, whilst the gain enjoyed by the combined firm decreases by 4.2 percentage points when the local takeover law includes a squeeze-out rule. These findings indicate that strict takeover law could create the opposite of its intended effect in some cases and reduce the overall efficiency of takeovers.

As a substantial part of our results is driven by the ownership disclosure rule, potential sample-related effects deserve further investigation. Eckbo and Langohr (1989) report that after France introduced disclosure rules for public tender offers in 1970, takeover premiums increased substantially. Although this change happened before the start of our sample period, we run a test by excluding French and UK firms from the sample and re-estimate our models. Results for combined bidder-target CARs are qualitatively unchanged and quantitatively very similar. The effect of the takeover law index is slightly stronger (1.342) and more significant ( $p < 0.01$ ). Effects for individual provisions are also very similar to those in the non-UK models. Notably, the squeeze-out rule gains significance ( $p < 0.05$ ) and has a more negative effect (-4.9) on the combined CARs.

## **5.2 Do target shareholders capture takeover gains from bidders?**

### ***5.2.1 Does strict takeover law hurt bidders?***

We hypothesize that stricter takeover law reduces the returns to the bidder in a takeover bid because target shareholders have more opportunities to free-ride on the bidder's takeover gains (e.g., due to low disclosure thresholds) and more bargaining power under stringent takeover regulation (e.g., due to mandatory bid rule). Contrary to our wealth transfer hypothesis (hypothesis 2), the insignificant coefficients in Table 7 suggest that greater shareholder protection does not harm bidders in takeovers. Our result is contrary to findings reported by Humphery-Jenner (2012), who uses the EU directive as a natural experiment and finds that it reduces announcement returns to bidders. An explanation for this finding is that a dynamic takeover law index across multiple countries that captures country-level regulation of the takeover process and enables a design that controls for unobserved time effects.

When we repeat this test for a sample excluding UK targets, we find the same insignificant effect on bidders (in these unreported results, the coefficient for takeover law is 0.76 with a standard error of 0.56).

Since the squeeze-out rights rule gives majority shareholders the right to squeeze out the minority shareholders in order to mitigate the free-rider problem, we expect the returns to bidders in regimes with a squeeze-out right to be higher than in regimes without squeeze-out rights. Interestingly, and contrary to our expectation of a positive relationship between the squeeze-out rights rule and bidders' CARs, the results show a statistically insignificant effect. One may further expect that the mandatory bid rule and the sell-out rights rule make transactions more expensive to acquiring firms by reducing the pressure on minority shareholders to tender and shifting the bargaining power from the bidder to target shareholders. However, we find no effect of these takeover law provisions on bidders' announcement returns.

**Table 7****Effect of takeover law on bidder announcement returns**

This table reports coefficients of OLS regressions of announcement returns to bidder shareholders, that is, cumulative abnormal returns in a window of [-2, 2] trading days around the takeover announcement. Variable definitions are provided in Appendix A. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Takeover index	0.343 (0.44)						
Ownership disclosure		2.790 (2.91)	1.996 (2.92)	2.253 (3.06)	2.736 (3.13)	2.763 (3.13)	2.814 (3.14)
Mandatory bid			1.104 (1.22)	1.694 (2.18)	3.290 (2.63)	3.921 (2.90)	3.917 (2.90)
Fair price for minority				-0.669 (2.05)	-1.209 (2.11)	-1.195 (2.12)	-0.593 (2.19)
Squeeze-out right					-1.512 (1.48)	-0.759 (2.02)	-0.271 (2.12)
Sell-out rights						-1.356 (2.22)	-1.853 (2.33)
Management neutrality							-1.783 (2.03)
Deal value	-0.915 (0.28)***	-0.923 (0.28)***	-0.929 (0.28)***	-0.933 (0.28)***	-0.934 (0.28)***	-0.938 (0.28)***	-0.947 (0.28)***
Toehold	0.003 (0.02)	0.002 (0.02)	0.002 (0.02)	0.002 (0.02)	0.002 (0.02)	0.002 (0.02)	0.002 (0.02)
Hostile bid	-1.533 (0.66)**	-1.555 (0.67)**	-1.565 (0.67)**	-1.576 (0.67)**	-1.558 (0.67)**	-1.564 (0.67)**	-1.531 (0.67)**
Cash-only transaction	0.563 (0.51)	0.555 (0.51)	0.568 (0.51)	0.573 (0.51)	0.544 (0.51)	0.528 (0.51)	0.519 (0.51)
Cross-border transaction	0.509 (0.54)	0.547 (0.55)	0.543 (0.55)	0.555 (0.55)	0.576 (0.55)	0.584 (0.56)	0.589 (0.56)
Diversification	-0.418 (0.49)	-0.418 (0.49)	-0.423 (0.49)	-0.424 (0.49)	-0.424 (0.49)	-0.418 (0.49)	-0.419 (0.49)
(T) CAR run-up	-0.149 (0.86)	-0.129 (0.85)	-0.159 (0.86)	-0.153 (0.86)	-0.162 (0.86)	-0.181 (0.86)	-0.193 (0.86)
(T) Age	-0.017 (0.02)	-0.016 (0.02)	-0.018 (0.02)	-0.018 (0.02)	-0.019 (0.02)	-0.019 (0.02)	-0.019 (0.02)
(T) Total assets	0.691 (0.29)**	0.688 (0.29)**	0.708 (0.29)**	0.715 (0.29)**	0.712 (0.29)**	0.721 (0.29)**	0.719 (0.29)**
(T) Tobin's Q	-0.166 (0.09)*	-0.167 (0.09)*	-0.166 (0.09)*	-0.164 (0.09)*	-0.170 (0.09)**	-0.170 (0.09)**	-0.174 (0.09)**
(T) Leverage	1.266 (1.32)	1.287 (1.32)	1.271 (1.32)	1.281 (1.32)	1.269 (1.32)	1.267 (1.32)	1.282 (1.32)
(T) Cash flow	2.110 (2.02)	2.088 (2.02)	2.040 (2.01)	1.997 (2.01)	2.038 (2.01)	1.995 (2.01)	2.016 (2.01)
(T) Distressed	-1.040 (0.61)*	-1.054 (0.61)*	-1.061 (0.61)*	-1.074 (0.61)*	-1.088 (0.61)*	-1.108 (0.61)*	-1.122 (0.61)*
(A) Age	0.028 (0.02)	0.030 (0.02)	0.029 (0.02)	0.029 (0.02)	0.029 (0.02)	0.028 (0.02)	0.029 (0.02)
(A) Total assets	0.178 (0.15)	0.174 (0.15)	0.175 (0.15)	0.174 (0.15)	0.176 (0.15)	0.174 (0.15)	0.179 (0.15)
(A) Cash flow	5.872 (2.87)**	5.941 (2.87)**	5.857 (2.87)**	5.885 (2.87)**	5.922 (2.85)**	5.970 (2.85)**	5.879 (2.86)**
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1241	1241	1241	1241	1241	1241	1241
R <sup>2</sup> (adj.)	0.060	0.060	0.060	0.059	0.059	0.059	0.059
F-statistic	2.133	2.133	2.116	2.086	2.072	2.050	2.030
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

### *5.2.2 Does strict takeover law protect target shareholders?*

In this section, we estimate to what extent shareholder protection in takeovers increases the gains enjoyed by target shareholders. Regression results of target announcement returns are shown in Table 8. Consistent with our shareholder protection hypothesis (hypothesis 3), we find that the effect of takeover law on target announcement returns is positive and significant at the one percent level. In terms of economic significance, target shareholder returns would be 25 percentage points higher under the strictest takeover law compared to the weakest protection regime. The results provide strong evidence that takeover law protects the rights of target minority shareholders in a takeover bid.

When investigating the relevance of takeover law, it is instructive to identify the heterogeneous impact of takeover law provisions on target announcement returns. We find that ownership disclosure significantly increases target announcement returns by 17 percentage points when we include all provisions in table 8. This is in contrast to findings for the US by Malatesta and Thompson (1993), who find a reduced effect of the number of acquisition attempts in a given period on stock returns after the Williams Act. This result can be explained by the increased transparency of takeovers due to ownership disclosure, which achieves its intended effect and protects the minority shareholders in a takeover bid. The mandatory bid rule, on the other hand, is significant only in the less than fully specified model 3, which includes only the ownership disclosure rule and the mandatory bid rule but no other provisions.



**Table 8****Effect of takeover law on target announcement returns**

This table reports coefficients of OLS regressions of announcement returns to target shareholders, that is, cumulative abnormal returns in a window of [-2,2] trading days around the takeover announcement. Variable definitions are provided in Appendix A. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Takeover index	4.135 (1.11)***						
Ownership disclosure		22.461 (8.86)**	17.132 (9.14)*	14.805 (9.53)	17.242 (9.57)*	17.260 (9.56)*	17.075 (9.55)*
Mandatory bid			7.369 (3.09)**	2.222 (5.63)	10.176 (7.92)	10.391 (7.76)	10.421 (7.77)
Fair price for minority				5.840 (5.37)	3.202 (5.77)	3.213 (5.83)	0.583 (6.41)
Squeeze-out right					-7.587 (4.26)*	-7.316 (5.57)	-9.465 (5.90)
Sell-out rights						-0.483 (5.35)	1.699 (5.84)
Management neutrality							7.854 (5.78)
Deal value	0.818 (0.77)	0.759 (0.77)	0.729 (0.78)	0.758 (0.78)	0.767 (0.78)	0.765 (0.78)	0.811 (0.78)
Toehold	-0.139 (0.05)***	-0.150 (0.05)***	-0.147 (0.05)***	-0.145 (0.05)***	-0.143 (0.05)***	-0.143 (0.05)***	-0.144 (0.05)***
Hostile bid	6.437 (1.74)***	6.372 (1.76)***	6.289 (1.75)***	6.364 (1.75)***	6.452 (1.75)***	6.451 (1.75)***	6.313 (1.76)***
Cash-only transaction	1.930 (1.36)	1.807 (1.36)	1.909 (1.36)	1.869 (1.36)	1.733 (1.37)	1.728 (1.37)	1.772 (1.37)
Cross-border transaction	3.073 (1.40)**	3.339 (1.41)**	3.326 (1.41)**	3.233 (1.42)**	3.324 (1.42)**	3.326 (1.42)**	3.307 (1.42)**
Diversification	0.101 (1.27)	0.120 (1.27)	0.100 (1.27)	0.091 (1.27)	0.103 (1.27)	0.105 (1.27)	0.117 (1.27)
(T) CAR run-up	-3.426 (3.05)	-3.161 (3.06)	-3.372 (3.07)	-3.443 (3.08)	-3.494 (3.06)	-3.500 (3.08)	-3.439 (3.08)
(T) Age	-0.002 (0.06)	0.008 (0.06)	-0.003 (0.06)	-0.002 (0.06)	-0.006 (0.06)	-0.006 (0.06)	-0.006 (0.06)
(T) Total assets	-2.185 (0.83)***	-2.260 (0.83)***	-2.132 (0.83)**	-2.181 (0.83)***	-2.202 (0.83)***	-2.200 (0.83)***	-2.188 (0.83)***
(T) Tobin's Q	-0.883 (0.17)***	-0.888 (0.17)***	-0.881 (0.17)***	-0.891 (0.17)***	-0.920 (0.17)***	-0.919 (0.17)***	-0.901 (0.17)***
(T) Leverage	-4.134 (3.70)	-3.890 (3.73)	-3.994 (3.71)	-4.112 (3.72)	-4.184 (3.72)	-4.185 (3.72)	-4.209 (3.72)
(T) Cash flow	0.598 (6.53)	0.429 (6.53)	0.126 (6.54)	0.548 (6.54)	0.714 (6.53)	0.702 (6.54)	0.529 (6.53)
(T) Distressed	-0.766 (1.78)	-0.939 (1.79)	-0.975 (1.79)	-0.846 (1.79)	-0.935 (1.79)	-0.942 (1.80)	-0.873 (1.80)
(A) Age	-0.017 (0.06)	-0.001 (0.06)	-0.009 (0.06)	-0.010 (0.06)	-0.012 (0.06)	-0.012 (0.06)	-0.014 (0.06)
(A) Total assets	1.428 (0.46)***	1.409 (0.46)***	1.409 (0.46)***	1.423 (0.46)***	1.434 (0.46)***	1.434 (0.46)***	1.405 (0.46)***
(A) Cash flow	18.474 (6.54)***	19.321 (6.54)***	18.715 (6.54)***	18.490 (6.55)***	18.527 (6.51)***	18.540 (6.53)***	18.985 (6.54)***
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1273	1273	1273	1273	1273	1273	1273
R <sup>2</sup> (adj.)	0.143	0.138	0.141	0.141	0.143	0.142	0.143
F-statistic	4.031	3.899	3.939	3.902	3.908	3.852	3.828
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

We further consider the marginal effect of more takeover law provisions in a legal framework. Government regulation of takeovers may exhibit decreasing returns which become more difficult to detect if more rules are added to an existing regulatory framework. We examine this by adding the square of the takeover law index to our models and find that effects of this squared index on our dependent variables – bidder, target, and combined returns – are all insignificant.<sup>22</sup>

### **5.3 Sources of efficiency gains in the takeover process**

In this section, we explore potential explanations for the observed positive effects of strict takeover regulation grounded in the bargaining power of target shareholders and an overall improved efficiency of the takeover process.

#### **5.3.1 Takeover premiums**

Greater target returns can be a reflection of enhanced bargaining power of targets under legal regimes with stricter ownership disclosure requirements. This enhanced bargaining position could be reflected in larger premiums offered by bidders. If takeover law acts on target returns through higher premiums, we expect to find similar effects of ownership disclosure and mandatory bids on premiums as on target returns. Similar to Rossi and Volpin (2004) and Alexandridis et al. (2013), we calculate takeover premiums as bid price over the share price of the target, using the share price on the day before the announcement minus one.<sup>23</sup> As shown in panel A of Table 4, the mean (median) takeover premium is 31 percent (26 percent) for EU target firms. Similar findings are also reported for European targets by Rossi and Volpin (2004) and Alexandridis et al. (2013).

Empirical results are consistent with the expectation that stricter takeover law is associated with a higher takeover premium paid to the target shareholders. Model 1 in Table 9 reports a significant and positive effect of stricter takeover law on the takeover premium. The economic significance of the effect of takeover law is substantial. Changing from the weakest to the strongest protection generated by a takeover law increases the takeover premium by 46 percentage points, compared with its effect of 25 percent on target announcement returns. This increased economic effect of our takeover law index suggests that a large proportion of the total effect on target announcement returns indirectly results from higher takeover premiums.

**Table 9****Effect of takeover law on takeover premiums**

This table reports coefficients of OLS regressions of takeovers premiums involving public acquirers and public targets in European countries in the period 1986–2010. Takeover premiums are defined as offered share price divided by pre-announcement share price one day prior to the announcement. Variable definitions are provided in Appendix A. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Takeover index	7.654 (2.31)***						
Ownership disclosure		18.076 (24.17)	-3.732 (24.70)	-3.191 (24.86)	1.834 (25.12)	2.719 (25.09)	3.382 (25.11)
Mandatory bid			24.107 (6.40)***	25.947 (11.39)**	37.315 (14.06)***	46.952 (15.03)***	47.930 (15.09)***
Fair price for minority				-2.109 (10.80)	-6.887 (11.34)	-6.343 (11.33)	-10.064 (12.28)
Squeeze-out right					-11.132 (8.09)	-1.388 (9.73)	-4.459 (10.49)
Sell-out rights						-17.938 (9.97)*	-15.471 (10.46)
Management neutrality							9.513 (12.13)
Deal value	6.337 (1.42)***	6.325 (1.43)***	6.256 (1.42)***	6.249 (1.42)***	6.160 (1.42)***	6.129 (1.42)***	6.140 (1.42)***
Toehold	-0.009 (0.10)	-0.037 (0.10)	-0.008 (0.10)	-0.009 (0.10)	-0.008 (0.10)	-0.013 (0.10)	-0.012 (0.10)
Hostile bid	11.329 (3.62)***	10.990 (3.64)***	11.483 (3.62)***	11.468 (3.62)***	11.653 (3.62)***	11.728 (3.62)***	11.636 (3.62)***
Cash-only transaction	2.679 (2.55)	2.839 (2.57)	2.771 (2.55)	2.801 (2.56)	2.579 (2.56)	2.436 (2.56)	2.481 (2.56)
Cross-border transaction	5.059 (2.47)**	5.061 (2.48)**	5.194 (2.47)**	5.210 (2.47)**	5.375 (2.47)**	5.353 (2.47)**	5.240 (2.47)**
Diversification	-4.547 (2.30)**	-4.504 (2.31)*	-4.408 (2.29)*	-4.394 (2.30)*	-4.474 (2.29)*	-4.385 (2.29)*	-4.368 (2.29)*
(T) CAR run-up	16.846 (4.26)***	16.821 (4.28)***	16.802 (4.25)***	16.830 (4.26)***	16.836 (4.26)***	16.337 (4.26)***	16.416 (4.26)***
(T) Age	-0.072 (0.11)	-0.049 (0.11)	-0.084 (0.11)	-0.084 (0.11)	-0.089 (0.11)	-0.097 (0.11)	-0.098 (0.11)
(T) Total assets	-7.190 (1.50)***	-7.368 (1.51)***	-7.007 (1.50)***	-6.991 (1.50)***	-6.994 (1.50)***	-6.891 (1.50)***	-6.838 (1.50)***
(T) Tobin's Q	-1.988 (0.37)***	-1.987 (0.37)***	-1.995 (0.37)***	-1.993 (0.37)***	-2.000 (0.37)***	-2.018 (0.37)***	-1.998 (0.37)***
(T) Leverage	2.889 (6.86)	3.709 (6.90)	3.138 (6.85)	3.168 (6.86)	3.190 (6.85)	3.515 (6.85)	3.357 (6.85)
(T) Cash flow	-3.984 (8.78)	-3.953 (8.84)	-4.787 (8.78)	-4.893 (8.80)	-4.362 (8.81)	-4.764 (8.80)	-4.889 (8.80)
(T) Distressed	2.033 (2.97)	1.862 (2.99)	1.626 (2.97)	1.596 (2.97)	1.496 (2.97)	1.143 (2.98)	1.245 (2.98)
(A) Age	0.001 (0.11)	0.027 (0.11)	-0.008 (0.11)	-0.008 (0.11)	-0.007 (0.11)	-0.012 (0.11)	-0.015 (0.11)
(A) Total assets	0.846 (0.75)	0.839 (0.76)	0.817 (0.75)	0.813 (0.75)	0.875 (0.76)	0.829 (0.75)	0.809 (0.76)
(A) Cash flow	3.785 (10.49)	4.898 (10.55)	3.746 (10.48)	3.818 (10.49)	3.792 (10.49)	4.587 (10.48)	5.016 (10.50)
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1027	1027	1027	1027	1027	1027	1027
R <sup>2</sup> (adj.)	0.148	0.139	0.151	0.150	0.151	0.153	0.152
F-statistic	3.549	3.364	3.562	3.510	3.491	3.495	3.456
P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Table 9 shows that the mandatory bid rule has the strongest effect on premiums among individual takeover provisions while it is significant in only one model of target announcement returns in Table 8. This result is consistent with our expectation, as the mandatory bid rule gives the minority shareholders an opportunity to exit the company in the case of a takeover and thus increases their bargaining power. In terms of its economic significance, the takeover premium paid to the target shareholders is 48 percent higher in country-years with a mandatory bid rule. Our finding is in contrast to the negative effect of the mandatory bid rule on takeover premiums found by Rossi and Volpin (2004), potentially because we use a dynamic indicator for the mandatory bid rule rather than the static variable in their study and for this reason are able to distinguish differences between countries from the reform of takeover law over time. Our results thus provide empirical evidence that the mandatory bid rule protects the minority shareholders in a takeover bid as predicted theoretically by Bergström et al. (1997).

Interestingly, ownership disclosure does not increase takeover premiums, although the estimated coefficient is substantial, in line with findings for the US by Nathan and O’Keefe (1989). The insignificant coefficient does not seem to be due to this provision’s coding, as the effect is still insignificant when it is coded as a simple binary indicator for the presence of a disclosure rule regardless of its threshold. All other provisions leave premiums unaffected. Although the squeeze-out and sell-out rules may possibly lead to transfers of wealth between tendering and non-tendering target shareholders, they do not change premiums offered by bidders.

### ***5.3.2 Do higher takeover premiums mean higher returns to shareholders?***

Premiums offered by bidders in takeovers should have a proportional effect on expected wealth gains to target shareholders as measured by excess stock returns around the announcement day. However, in the previous section we show that target returns benefit mainly from ownership disclosure, whereas premiums are mainly driven by the mandatory bid rule. Reasons for the relatively weak link between changes in premiums and changes in announcement returns due to takeover law may be found in the likelihood of successful completion of the transaction. A higher price offered to target shareholders will correspond to a higher gain only if the offer is not withdrawn due to, for example, external factors or anti-takeover action by the target’s managements. Conversely, final gains to target shareholders may be higher than the original offer price if the bidder is forced to enhance the offer during the takeover negotiation process. To examine the relationship between takeover premiums and shareholder wealth gains, we estimate the impact of takeover law on takeover success

and the mediation effect of premiums.

If takeover law that leads to higher premiums does not proportionately increase target announcement returns, a difference in the probability for a successful takeover might be the reason for a differential effect of certain rules on premiums and returns. This theory receives no support in our tests (not reported here but available from the authors). Effects on the likelihood of a successful takeover are insignificant for ownership disclosure and the mandatory bid rule. Therefore, this finding suggests that higher premiums translate directly into wealth gains for target shareholders without takeover provisions moderating the likelihood of a successful takeover. We do find, however, a weakly significant decrease in the likelihood of success for takeovers under the fair price rule, which suggests that this rule makes the takeover process more difficult but at the same time leads to offsetting gains elsewhere such that announcement returns for bidders and targets are unchanged. Because we do not find effects of variables that affect either premiums or target returns, we suspect that the binary nature of our Probit regressions for takeover success leads to estimation uncertainty that makes it challenging to detect small hypothesized effects.

As an alternative, we estimate the mediation effect of takeover premiums on target returns. This allows us to distinguish takeover law provisions that act directly on shareholder wealth from those that affect shareholder wealth indirectly through takeover premiums. Our findings in Table 10 show that takeover law acts on target announcement returns through the takeover premium. The competing hypothesis is that takeover law acts directly on target returns. The takeover law index satisfies the relevance criterion by significantly predicting takeover premiums, and premiums in turn predict announcement returns, with the strongest effect on target returns as expected. Sobel mediation tests are significant for target returns.

In our mediation tests for bidder and total shareholder wealth as outcome variables, we find both direct and indirect effects of takeover law on combined shareholder wealth. Table 10 shows that takeover premiums mediate the effect of takeover law and in turn act on target and combined announcement returns. Interestingly, we also detect direct and positive effects of takeover law on bidder announcement returns and combined wealth. Premiums show weaker effects on bidder returns and combined returns. The Sobel mediation test is significant for combined returns, but not for bidder returns. Despite the reduced sample size compared with our main models due to missing values in the takeover premium, the effect of takeover law on combined returns is significant at the five percent level, and its effect on bidder returns is significant at the ten percent level. When we repeat these mediation tests for individual provisions (unreported separate regressions), we find that ownership

disclosure and the mandatory bid rule have a positive direct effect on combined returns and bidder returns.

**Table 10**  
Mediation tests for takeover premium

This table reports results for Sobel mediation tests on takeover premiums and the takeover law index. The hypothesis tested is whether takeover premiums (as measured by the offer price divided by the share price one day prior to the announcement) mediate the effect of takeover law on target announcement returns, bidder announcement returns or combined target-bidder announcement returns. All models include the full set of covariates shown in Table 8 for targets, bidders and the combined entity, respectively. To conserve space, only coefficients for the variables of interest are shown here. The number of observations in this table is less than the observations in the related tables due to the additional requirement of having complete observations for takeover premiums. Standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	Combined CAR	Target CAR	Bidder CAR
<i>Model regressing dependent variable (in column header) on takeover index</i>			
Takeover index (direct path)	1.183 (0.526)**	3.628 (1.377)***	1.020 (0.530)*
<i>Model regressing mediator on takeover law</i>			
Takeover index (path a)	8.138 (2.328)***	7.658 (2.309)***	8.138 (2.328)***
<i>Model regressing dependent variable on mediator and takeover law</i>			
Takeover premium (path b)	0.035 (0.007)***	0.289 (0.017)***	0.002 (0.007)
Takeover index (direct path)	0.896 (0.524)*	1.411 (1.211)	1.002 (0.533)*
<i>Sobel mediation tests (using the coefficients above)</i>			
Path a coefficient	8.138 (2.328)***	7.658 (2.309)***	8.138 (2.328)***
Path b coefficient	0.035 (0.007)***	0.289 (0.017)***	0.002 (0.007)
Indirect effect (Sobel test; a-b)	0.287 (0.101)***	2.217 (0.681)***	0.018 (0.061)
Direct effect of takeover index	0.896 (0.524)*	1.411 (1.211)	1.002 (0.533)*
Total effect of takeover index	1.183 (0.526)**	3.628 (1.377)***	1.020 (0.530)*
<i>Model statistics for model explaining CAR with mediator and takeover law index (path b &amp; direct path)</i>			
Observations	1002	1027	1002
F-test	2.660	8.490	1.840
F-test p-value	0.000	0.000	0.000
R <sup>2</sup> (adj.)	0.107	0.344	0.057

### 5.3.3 Competing deals, toehold, and time to completion

Our findings suggest that takeover law has effects on combined returns and bidder

gains that cannot be explained solely by takeover premiums. What additional factors could drive the positive effects of strict takeover law on the combined entity and targets? In this section, we investigate whether strict takeover law improves the efficiency of the takeover market through a closer examination on competing deals, toehold, and time to completion.<sup>24</sup>

Stringent ownership disclosure standard can increase competition among bidders and lead bidders to overpay in a transaction. To further examine whether increased target returns are the result of improved deal efficiency under stricter takeover law, we estimate models that predict the likelihood of a proposed deal being challenged by a second bidder. Competing offers usually enhance the target's bargaining position and should be accompanied by greater returns for target shareholders. Supporting our expectation, results in Table 11 show a positive effect of stricter ownership disclosure on the likelihood of a rival bidder challenging the deal. This result is in agreement with our findings of improved combined and target returns in country-years with stringent ownership disclosure in Tables 5, 6, and 8. It suggests that the requirement to disclose the bidder's ownership in the target improves the efficiency of takeovers. In addition, our models uncover a positive effect of the fair price rule on the likelihood of a bidding contest, which is consistent with the negative effect of the fair price rule that we find in our regression of the likelihood of success of takeover attempts under a fair price rule.

**Table 11****Deals more likely to be challenged under stricter ownership disclosure and fair price rule**

The dependent variable is an indicator variable that equals one if the proposed transaction is challenged by a rival bidder and zero otherwise. We use data from Thomson Financial (SDC Platinum) for this variable. The table reports coefficients of Probit regressions of this indicator variable on the takeover law index and takeover law provisions. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	1	2	3	4	5	6	7
Takeover index	0.337 (0.13)***						
Ownership disclosure		3.399 (1.32)**	3.046 (1.45)**	3.117 (1.72)*	3.506 (1.81)*	3.523 (1.86)*	3.582 (1.74)**
Mandatory bid			0.434 (0.34)	-0.792 (0.67)	-0.292 (0.87)	0.013 (0.99)	0.009 (0.95)
Fair price for minority				1.569 (0.67)**	1.281 (0.68)*	1.336 (0.67)**	1.106 (0.64)*
Squeeze-out right					-0.475 (0.57)	-0.242 (0.60)	-0.487 (0.59)
Sell-out rights						-0.505 (0.61)	-0.308 (0.65)
Management neutrality							1.064 (0.73)
Deal value	0.211 (0.07)***	0.216 (0.07)***	0.211 (0.07)***	0.220 (0.07)***	0.224 (0.07)***	0.223 (0.07)***	0.231 (0.07)***
Toehold	-0.013 (0.01)**	-0.015 (0.01)**	-0.015 (0.01)**	-0.014 (0.01)**	-0.014 (0.01)**	-0.015 (0.01)**	-0.015 (0.01)**
Hostile bid	0.726 (0.18)***	0.707 (0.18)***	0.712 (0.18)***	0.723 (0.18)***	0.726 (0.18)***	0.726 (0.18)***	0.715 (0.18)***
Cash-only transaction	0.100 (0.14)	0.097 (0.14)	0.099 (0.14)	0.088 (0.14)	0.081 (0.14)	0.075 (0.14)	0.095 (0.14)
Cross-border transaction	-0.037 (0.13)	-0.019 (0.13)	-0.016 (0.13)	-0.039 (0.13)	-0.035 (0.13)	-0.030 (0.13)	-0.040 (0.13)
Diversification	-0.207 (0.13)	-0.202 (0.13)	-0.207 (0.13)*	-0.214 (0.13)*	-0.213 (0.13)*	-0.210 (0.13)*	-0.211 (0.13)*
(T) CAR run-up	0.975 (0.23)***	0.982 (0.23)***	0.979 (0.23)***	0.982 (0.23)***	0.974 (0.23)***	0.972 (0.23)***	0.968 (0.23)***
(T) Age	0.002 (0.01)	0.003 (0.01)	0.002 (0.01)	0.002 (0.01)	0.002 (0.01)	0.002 (0.01)	0.002 (0.01)
(T) Total assets	-0.078 (0.08)	-0.086 (0.08)	-0.080 (0.08)	-0.090 (0.08)	-0.094 (0.08)	-0.091 (0.08)	-0.088 (0.08)
(T) Tobin's Q	-0.025 (0.02)	-0.025 (0.02)	-0.023 (0.02)	-0.026 (0.02)	-0.029 (0.02)	-0.028 (0.02)	-0.030 (0.02)
(T) Leverage	0.011 (0.39)	0.047 (0.38)	0.041 (0.38)	0.041 (0.39)	0.048 (0.39)	0.052 (0.40)	0.030 (0.40)
(T) Cash flow	0.626 (0.52)	0.557 (0.51)	0.554 (0.51)	0.651 (0.52)	0.680 (0.53)	0.649 (0.52)	0.656 (0.53)
(T) Distressed	-0.060 (0.16)	-0.058 (0.16)	-0.064 (0.16)	-0.049 (0.16)	-0.053 (0.16)	-0.061 (0.16)	-0.048 (0.16)
(A) Age	-0.002 (0.01)	0.000 (0.01)	-0.001 (0.01)	-0.001 (0.01)	-0.001 (0.01)	-0.001 (0.01)	-0.001 (0.01)
(A) Total assets	0.010 (0.04)	0.005 (0.04)	0.006 (0.04)	0.007 (0.04)	0.006 (0.04)	0.005 (0.04)	0.002 (0.04)
(A) Cash flow	0.788 (0.57)	0.906 (0.57)	0.864 (0.57)	0.781 (0.56)	0.798 (0.56)	0.808 (0.56)	0.868 (0.56)
Target country effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1273	1273	1273	1273	1273	1273	1273
McFadden R <sup>2</sup> (adj.)	0.040	0.038	0.038	0.042	0.041	0.040	0.040
AIC	918.926	920.284	920.641	916.874	917.649	918.701	918.347
LR test P-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000



Prior studies suggest that a stringent ownership disclosure limits the bidder's profits, as the initial stake in a target firm is the primary source of profits for bidders (Burkart, 1999). Bidders seem to be aware of the downsides of having to disclose their stake in the target which makes creeping acquisitions more difficult. While ownership disclosure increases the likelihood of a bidding contest, we find in Table 12 that it also increases the bidder's toehold. A larger toehold suggests that bidders try to get into a better bargaining position by holding more target shares in anticipation of rival acquirers once their shareholding in the target becomes public knowledge. Interestingly, the mandatory bid rule does not seem to increase the bidder's toehold, which suggests that bidders do not increase their toehold in anticipation of free-riding target shareholders but rather to protect against other bidders.

**Table 12****Larger toehold under stricter ownership disclosure**

This table reports coefficients of OLS regressions of the toehold (in percentage points) that the bidder owns in the target on the announcement date. Heteroskedasticity-robust standard errors are in parentheses. Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	1	2	3
Takeover index	-0.294 (0.84)		
Ownership disclosure		12.391 (6.32)*	15.063 (6.70)**
Mandatory bid			4.235 (4.53)
Fair price for minority			-5.680 (3.85)
Squeeze-out right			3.627 (3.79)
Sell-out rights			-4.288 (3.76)
Management neutrality			2.366 (5.12)
Deal value	-2.558 (0.49)***	-2.585 (0.48)***	-2.594 (0.48)***
Hostile bid	1.288 (1.17)	1.067 (1.16)	0.936 (1.17)
Cash-only transaction	2.744 (0.80)***	2.736 (0.80)***	2.723 (0.80)***
Cross-border transaction	-1.763 (0.81)**	-1.563 (0.83)*	-1.457 (0.83)*
Diversification	1.431 (0.78)*	1.390 (0.78)*	1.419 (0.78)*
(T) CAR run-up	-0.883 (1.19)	-0.923 (1.17)	-0.846 (1.18)
(T) Age	0.013 (0.03)	0.008 (0.03)	0.008 (0.03)
(T) Total assets	2.342 (0.47)***	2.361 (0.47)***	2.409 (0.47)***
(T) Tobin's Q	0.112 (0.11)	0.108 (0.11)	0.128 (0.11)
(T) Leverage	-1.673 (2.31)	-1.757 (2.32)	-1.614 (2.34)
(T) Cash flow	2.287 (3.20)	2.089 (3.19)	1.535 (3.19)
(T) Distressed	0.105 (0.95)	0.104 (0.95)	-0.050 (0.96)
(A) Age	-0.056 (0.03)*	-0.052 (0.03)	-0.050 (0.03)
(A) Total assets	0.867 (0.25)***	0.845 (0.25)***	0.810 (0.26)***
(A) Cash flow	-5.442 (3.25)*	-5.469 (3.25)*	-4.852 (3.28)
Target country effects	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes
Observations	1273	1273	1273
R <sup>2</sup> (adj.)	0.124	0.127	0.129
F-statistic	3.563	3.653	3.520
P-value	0.000	0.000	0.000

These results explain why announcement returns may be higher under tight ownership disclosure requirements. The remaining puzzle is why premiums are not directly affected by ownership disclosure. We suspect that the high degree of noise in premium data can offer an explanation. Takeover premiums calculated from offer prices in SDC Platinum usually represent “final” premiums before the transaction is completed or withdrawn. In some cases involving multiple bidders, the final offer price is not recorded for all takeover attempts by competing bidders. In effect, the total premium paid to target shareholders is split into several smaller ones – one for each competing bidder – that are recorded over time. This underestimates final premiums (i.e., the final price paid by the successful bidder relative to the share price

before the first bidder's offer) and may thus reduce the estimated effect of takeover law provision that increase the likelihood of bidding contests.

If strict takeover law creates more competition among bidders, one might expect that it will make takeovers more expensive by increasing the deal completion time. However, the improved legal certainty for the parties involved in the transaction under stringent takeover regulation may compensate for this negative effect of strict takeover law on bidder returns. This prediction is supported by the overall negative effect of our takeover law index on the time to completion (i.e., a positive effect on the hazard rate of successful deal completion) in Table 13. The mandatory bid rule reduces the time to successful completion, while the squeeze-out rule lengthens it. The latter result can be explained by shareholders that anticipate the possibility of being squeezed out of the target firm and draw out the negotiation to secure a favorable outcome. Most importantly, the management neutrality rule, which was hotly debated during the negotiations leading to the EU directive, significantly shortens the time to completion. In sum, our additional results suggest that takeover law to protect shareholders benefits bidders and targets by reducing legal uncertainty and generally improving the efficiency of the takeover process.

**Table 13****Hazard rate models for successful deal completion**

This table shows coefficients for competing risks models (models 1-3) and a Cox proportional hazards model (model 4) for the time to successful completion of an attempted takeover. Time to completion is measured in days from the announcement day. In models 1-3, the competing event is the unsuccessful completion of the deal. The proportional hazards model (4) treats unsuccessful takeover attempts as censored at the withdrawal date. Standard errors are in parentheses. The sample excludes takeover announcements for which the announcement date and effective date are the same, as these observations are not "at risk". Significance levels: \*\*\*, \*\*, \* indicate significance, respectively, at the 1%, 5% and 10% level.

	Competing risks models			Cox proportional hazards model
	(1)	(2)	(3)	(4)
Takeover index	0.134 (0.06)**		0.150 (0.05)***	0.139 (0.07)**
Ownership disclosure		-0.764 (0.67)		
Mandatory bid		0.756 (0.45)*		
Fair price for minority		-0.281 (0.33)		
Squeeze-out right		-0.438 (0.24)*		
Sellout rights		0.061 (0.26)		
Management neutrality		0.560 (0.28)**		
Deal value	-0.117 (0.05)***	-0.121 (0.05)***		-0.114 (0.05)**
Toehold	0.000 (0.00)	0.000 (0.00)		0.000 (0.00)
Hostile bid	-0.869 (0.14)***	-0.880 (0.14)***		-0.879 (0.15)***
Cash-only transaction	0.119 (0.09)	0.120 (0.09)		0.119 (0.08)
Cross-border transaction	-0.114 (0.08)	-0.119 (0.08)		-0.116 (0.08)
Diversification	0.102 (0.08)	0.099 (0.08)		0.106 (0.08)
(T) CAR run-up	-0.055 (0.13)	-0.070 (0.13)		-0.053 (0.13)
(T) Age	0.004 (0.00)	0.004 (0.00)		0.004 (0.00)
(T) Total assets	-0.164 (0.05)***	-0.161 (0.05)***		-0.173 (0.05)***
(T) Tobin's Q	-0.023 (0.01)	-0.022 (0.02)		-0.023 (0.01)
(T) Leverage	0.280 (0.22)	0.271 (0.22)		0.264 (0.22)
(T) Cash flow	0.007 (0.28)	-0.012 (0.28)		-0.007 (0.28)
(T) Distressed	-0.149 (0.10)	-0.156 (0.10)		-0.140 (0.10)
(A) Age	0.009 (0.00)**	0.008 (0.00)**		0.009 (0.00)**
(A) Total assets	0.036 (0.03)	0.040 (0.03)		0.039 (0.03)
(A) Cash flow	0.011 (0.32)	0.087 (0.33)		0.004 (0.33)
Target country effects	Yes	Yes	Yes	Yes
Industry & year effects	Yes	Yes	Yes	Yes
Observations	1204	1204	1204	1204
Log-Likelihood	-5830.440	-5827.602	-5939.221	-5820.866
Pseudo-LR test stat.	440.421	446.097	222.859	447.856
Pseudo-LR test p-value	0.000	0.000	0.000	0.000
McFadden R <sup>2</sup> (adj.)	0.025	0.025	0.010	0.025

## **6. Other robustness tests**

### **6.1 The EU directive as a natural experiment**

To harmonize the EU takeover market and to set up a minimum regulation at EU level, the EU Directive 2004/25/EC entered into force in May 2004. The directive may be seen as an exogenous event that affects the size and distribution of wealth gains in takeovers. In principle, this event may present an opportunity to directly measure the effects of the takeover law index developed in this paper and its constituent legal provisions. The directive required member states to implement it until 2006 and mainly affected the mandatory bid rule, the sell-out rights rule and the management neutrality rule in EU countries. Table 14 reports the implementation effect of the directive on the takeover law index and takeover law provisions. In 12 out of 16 countries, national takeover laws were affected by the directive.

To test the effect of the EU directive on takeover announcement returns and premiums, we construct a dummy variable that equals one if the takeover was announced on the day and in the period after the directive was implemented in a given country. When we add this dummy to our models for target, bidder and combined announcement returns and takeover premiums, the results of our takeover law index are consistent with our main results reported in Section 5. However, the EU directive dummy is never significant at the 5% level or better (results not reported here). It seems to have a weakly significant ( $p < 0.1$ ) negative effect on premiums. Coefficients remain insignificant if we replace the takeover law index with the directive dummy or remove time effects from the regression. In these cases, target announcement returns seem to be positively affected by the directive but are again only weakly significant.

Our finding on bidder returns is different from Humphery-Jenner's (2012). Using a dummy variable that equals one if the acquisition occurs after the implementation deadline for the takeover directive of 20 May 2006, Humphery-Jenner (2012) reports a significant and negative effect of the directive on bidder returns. The major disadvantage of using the EU directive as a natural experiment is that a dummy variable testing the difference in average announcement returns before and after the directive implementation date at the level of the EU (i.e., a time dummy variable using 20 May 2016 as the cut-off date) is indistinguishable from unobservable shocks affecting all countries, which is the design adopted by Humphery-Jenner (2012), and almost indistinguishable from time effects in our robustness test, which uses the

exact implementation date for each country. As a consequence, any time effects that control for such unobserved heterogeneity are highly correlated with the EU directive dummy, making it difficult to disentangle the directive's effect from unobservable heterogeneity. In our robustness test in this section, we use the exact date when the directive was implemented in a country but do not find a significant effect of the directive. Because our main research design in this paper uses a long study period and includes more such exogenous changes in takeover law, it is able to successfully capture the effects of such changes as distinct from random time variation.

**Table 14****Implementation effect of the EU Directive on takeover law provisions**

This table reports the implementation effect of the EU directive on the takeover law index and takeover law provisions for the major European countries in the period 1986–2010. Implementation date is the date when member nations implement the directive into their national takeover law. The effect of the directive on takeover law provisions takes a value of one if that provision in the member nation must be raised to a higher level to satisfy the minimum standard of the directive, and zero if that provision remains unchanged or has a higher level than the directive before the implementation date.

	Implementation date	Effect of the EU takeover directive					
		Ownership disclosure	Mandatory bid	Fair price	Squeeze-out	Sell-out	Management neutrality
Austria	20 May 2006	0	1	0	1	0	0
Belgium	1 April 2007	0	1	0	0	1	0
Czech Rep.	1 April 2008	0	1	0	0	0	1
Denmark	20 May 2006	0	0	0	0	0	1
Finland	8 June 2006	0	1	0	0	0	0
France	20 May 2006	0	0	0	0	0	1
Germany	8 July 2006	0	0	0	0	0	0
Greece	30 May 2006	0	1	0	1	1	0
Ireland	20 May 2006	0	0	0	0	1	0
Italy	19 November 2007	0	0	0	0	1	1
Luxembourg	20 May 2006	0	1	1	1	1	1
Netherlands	24 May 2007	0	0	0	0	1	0
Portugal	2 November 2006	0	0	0	0	0	0
Spain	13 April 2007	1	1	0	1	1	0
Sweden	7 June 2006	0	0	0	0	0	0
UK	20 May 2006	0	0	0	0	0	0

## 6.2 Investor protection

The seminal work of La Porta et al. (1998) has highlighted the importance of investor protection for corporate finance. Recently, the effect of investor protection laws on mergers and acquisitions has been examined (Danbolt and Maciver, 2012; Martynova and Renneboog, 2008b; Bris and Cabolis, 2008; Rossi and Volpin, 2004). Other literature has examined wealth effects in mergers and acquisitions across countries and over time as well as in relation to the acquirer's and target's attributes such as corporate governance (Harford et al., 2012; Bhagat et al., 2005). To verify the contribution of this paper, we test whether existing investor protection indices are able to capture a similar degree of variation in premiums and announcement returns as the takeover law index we construct.

As a robustness test, we employ the shareholder rights index and the creditor rights index from Martynova and Renneboog (2011a). The shareholder rights index measures the level of protection for the shareholders against managerial opportunistic behavior, while the creditor rights index measures the protection given to creditors in the case of bankruptcy. Neither of these two indices is able to explain announcement returns if added to our main models (model 1 in Tables 5, 7, and 8). Both indices are statistically weaker than our takeover law index and only weakly significant ( $p < 0.1$ ) in regressions of takeover premiums. While shareholder protection contributes positively to premiums, higher creditor protection reduces premiums offered by bidders. Hence, the takeover law index may be better able to explain expected returns than broad investor protection indices, as our index reflects takeover provisions that matter more in the actual takeover process.

Higher announcement returns could reflect market expectations of higher net value creation when takeovers are completed in an environment with better investor protection. Our results on target announcement returns are consistent with the positive effect found by Martynova and Renneboog (2008b). However, the effect of our takeover law index is significant at  $p = 0.00022$  (model 1 in Table 8), compared with a significance of  $p = 0.005$  for their minority shareholder protection index (model 5 in Table 9 in their paper). Interestingly, their minority shareholder protection index loses its power to explain target returns when they include a general shareholder protection index. By contrast, a robustness test using the same shareholder protection index shows that our takeover law index significantly increases target returns after controlling for their shareholder protection index (see Section 5.2.2). This finding suggests that our specific takeover law index that incorporates the most relevant provisions that regulate the takeover process better captures the effect of takeover regulation on target announcement returns than a broad corporate governance index such as the minority shareholder protection index and the shareholder protection index.

### **6.3 Alternative model specifications for individual provisions and control variables**

Although our models work well statistically in all regressions, correlations among individual provisions in our sample of country-years are substantial because some provisions, such as the mandatory bid and fair price rules, tend to be introduced at the same time. This degree of multicollinearity may limit the effectiveness of our models in attributing the effects of individual provisions. To safeguard against this concern, we introduce takeover provisions stepwise in our main models for



announcement returns and premiums. These main results show that, for example, the effect of the mandatory bid rule on premiums does not depend on the inclusion or exclusion of other provisions, but results are less clear for provisions introduced later in time.

While the concern of multicollinearity in takeover provisions can be addressed by combining all individual provisions in our takeover law index or in principle by increasing the number of country-year observations, which would go beyond the scope of this paper, we perform an additional test to see which single provision has the largest explanatory power and whether adding other provisions increases the fit of the model. We build our models starting with the takeover provision that has the greatest explanatory power and then adding the next-best provision until the model fit does not improve significantly. Quantitative results (not reported here) are similar to our main results in Section 5. For regressions of combined announcement returns, ownership disclosure contributes the most to the model, in line with the findings in Table 5. Bidder CARs are not affected by any provision, again in line with our previous results. For target announcement returns, the fair price rule has the largest explanatory power when included as the only provision in the model. The mandatory bid rule would also explain a significant part of target CARs, but does not contribute much in addition to the fair price rule. Finally, the two provisions that significantly contribute to the explanation of takeover premiums are the mandatory bid rule and sellout rights. Sellout rights did not explain premiums in Table 9 but help explain premiums when added to a model right after the mandatory bid rule.

## **7. Conclusion**

The potential for large societal and private wealth gains and losses, combined with its rich history and often heterogeneous legal and economic opinions, makes takeover regulation a complex and controversial topic among policymakers, managers, investors and academics alike. This study is the first to investigate the economic effects of regulation that governs the takeover process using a dynamic takeover law index. The time variation in takeover law enables a research design that controls for unobserved heterogeneity in both the time and country dimension. It contributes to the extant literature on takeovers (e.g., Humphery-Jenner, 2012; Martynova and Renneboog, 2011a, 2008b; Bris and Cabolis, 2008; Rossi and Volpin, 2004) by investigating the development of takeover laws in European countries and demonstrating empirically how takeover law plays an important role in determining wealth gains and transfers in acquisitions.

The question we address in this paper is to what extent legislative efforts have produced a takeover law that approaches a social optimum and whether the changes of takeover regulations affect wealth transfers between bidders and targets. We find that stricter takeover law increases the combined expected gains from takeovers for bidders and targets. In contrast to Humphery-Jenner (2012), our results show that stricter takeover law does not reduce the announcement returns to the bidders. Stricter takeover law does not harm bidding firms but balances the trade-off between bidders and targets. It protects the rights of the minority shareholders in target firms in the case of a takeover by substantially increasing target announcement returns and takeover premiums. Higher target returns are not obtained through wealth transfers from bidders but result from higher expected net value creation when deals are completed in a high-protection environment.

The positive wealth effect of takeover law is primarily driven by the mandatory bid rule and the ownership disclosure rule. They increase the total gain enjoyed by the combined firm, thus confirming the theoretically predicted positive effect of the mandatory bid rule. Disclosure of ownership stakes positively affects announcement returns, which supports the bargaining power argument (Schouten and Siems, 2010; Armour et al., 2007), but does not seem to increase premiums, contrary to the view that bidders under tight disclosure rules need to win target shareholders' support by offering higher premiums (Burkart, 1995, 1999; Bebchuk, 1982). Ownership disclosure facilitates competition among bidders, which in turn is anticipated by bidders who increase their stake in the target prior to the bid. There is some evidence that the fair price rule and the squeeze-out rights rule may reduce the total wealth of the combined companies.

Our findings shed light on the importance of takeover regulation and provide practical implications for takeover policy around the world. For example, the management neutrality rule, which was controversially discussed in the legislative process that led to the EU takeover directive, shortens the time to successful completion of a takeover. This apparent improvement in transactional efficiency does not affect the combined wealth gains or the distribution of gains between targets and bidders. A possible reason for this ambiguous result might be found in a differential impact of management neutrality on firms with concentrated and dispersed ownership (Georgen et al., 2005). Management neutrality may also affect the occurrence of takeovers. Since an estimation of takeover frequency is beyond the scope of this paper, future research may complete the picture and investigate whether a stricter takeover law discourages bids and whether this reduces the overall beneficial effect of takeover regulation that we find.

APPENDIX A-C

## Appendix A: Variable Definitions

Variable	Definition
Age	Age is the number of years on the day of the announcement since the firm was first covered by the stock exchange in a given country. Source: Datastream and Worldscope.
CARs	Bidder and target CARs are the cumulative abnormal announcement returns (CARs) of the bidding and target firms, calculated as the CARs over the event window of [-2, +2] days around the takeover announcement, where day 0 is the announcement date. Combined CARs are calculated as target CAR plus bidder CAR, weighted by their respective currency-adjusted market capitalization two days before the announcement. Target, bidder, and combined CARs are presented in percentage points to obtain reasonably scaled coefficients in our models. Abnormal returns are calculated using the market model, where the market index is a major local index. Parameters of the market model are estimated over the period of 260 to 43 trading days prior to the takeover announcement. Penny stocks whose price is below one main unit of local currency for more than 25 percent of all price observations are excluded, as are stocks with fewer than 30 return observations. Source: Datastream.
CAR run-up	Stock price run-up is calculated as the cumulative abnormal returns (CARs) of the target firm over the window [-42, -3] prior to the takeover announcement, where day 0 is the announcement date and days are measured in trading days relative to the announcement date. This variable is not scaled. See <i>CARs</i> for estimation details.
Cash flow	Cash flow ratio is calculated as the cash flow from operations over the total assets at the end of fiscal year before the takeover announcement. Source: SDC, Datastream, Worldscope.
Cash-only Transaction	This dummy variable takes a value of one if the takeover is fully paid in cash, and is zero otherwise. Source: Thomson Financial, LexisNexis, and Financial Times.
Challenged deal	This dummy takes the value of one if the bidder's takeover attempt was challenged by another bidder. Source: SDC.
Days completion	The number of days between the announcement date of the takeover and the date of its successful completion. Source: SDC.
Deal value	Deal value is measured as the natural logarithm of the transaction value disclosed in SDC in millions of US dollars.

Diversification	This dummy variable takes a value of one if the target and the acquirer operate in different industries (the primary 2-digit SIC codes are different), and is zero otherwise. Source: Thomson Financial, LexisNexis, Financial Times and Worldscope.
Distressed	This dummy variable equals one if net income of the target firm is zero or negative in the year preceding the announcement of the deal, and is zero otherwise. Source: SDC, Datastream, Worldscope.
Hostile	Hostile is a dummy variable that takes a value of one if the target management reacts negatively to the initial takeover offer but the bidder persists with the takeover. Source: Thomson Financial, LexisNexis, and Financial Times.
Leverage	Leverage is calculated as the ratio of total debt (long-term and short-term) to total assets in the fiscal year prior to the takeover announcement. Source: SDC, Datastream, Worldscope.
Successful takeover	This dummy variable takes a value of one if the deal was completed successfully at the end of the sample period at 31 December 2010. It is taken directly from SDC Platinum data; for 28 transactions with missing information about completion, we identify their outcome through internet and news database search. Source: SDC.
Takeover Law Index	The takeover law index measures the quality of takeover law in a given country. It is the sum of six components as defined in Table 2: (1) ownership disclosure, (2) mandatory bid, (3) fair price for the minority shareholders, (4) squeeze-out rights, (5) sell-out rights, and (6) management neutrality, where the squeeze-out rule is negatively coded. The index ranges from minus one to five. A higher value indicates a stricter takeover law, that is, a takeover law more favorable to target shareholders. Source: Countries' Takeover Law and Regulation, Companies Law, Securities Laws, and Stock Exchange Regulation; own construction.
Takeover Premium	The takeover premium is calculated as the ratio of the price paid per share to the target's closing stock price one day prior to the original announcement date, minus one, expressed as a percentage: $(\text{offer price} / \text{share price at } t-1 - 1) \times 100$ . Source: Thomson Financial, LexisNexis, Financial Times, and Datastream.
Tobin's Q	Tobin's Q is calculated as the market value of the total assets divided by the book value of the total assets, where the market value of the total assets is equal to the market value of equity plus the book value of total debt. The market value of equity is the value two months prior to the takeover announcement, book value of total assets and total debt are the values at the fiscal year end prior to the takeover announcement. Source: SDC, Datastream, Worldscope.
Toehold	Toehold is the percentage of the target shares that the bidder owns in the target firms prior to the takeover announcement. Source: Thomson Financial, LexisNexis, and Financial Times.

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## **Appendix B: Sources of the Takeover Law Index for European Countries, 1986–2010**

<b>Country</b>	<b>Sources</b>
Austria	Companies Act 1965; Stock Exchange Act of 1989; Takeover Law 1998; Stock Exchange Act of 1989 as amended on June 26, 2006; Takeover Law 2006. Current regulator: Vienna Stock Exchange, Austrian Financial Market Authority, Takeover Commission.
Belgium	The Law of 2 March 1989; Takeover Decree 1989; Companies Act 1995; Takeover Act 2007; Takeover Decree 2007; Transparency Law 2007. Current regulator: The Belgian Banking, Finance and Insurance Commission (CBFA).
Czech Republic	Civil Code 1963; Commercial Code 1991; Commercial Code 1996; Commercial Code 2000; Capital Market Act 2004; Takeover Law 2008. Current regulator: The Czech National Bank (CNB).
Denmark	Companies Act 1985; Code of Ethics 1987; Securities Trading Act 1995; Securities Trading Act 1999; Order on Takeover Bids 2005; Takeover Act 2006; Companies Act 2006; Securities Trading Act 2008; Companies Act 2009. Current regulator: the Danish Financial Supervisory Authority (FSA).
Finland	Companies Act 1978; Securities Market Act 1989; Securities Market Act 1993; Companies Act 1997; Securities Market Act 1999; Securities Market Act 2006; Companies Act 2006. Current regulator: Finnish Financial Supervision Authority (FSA).
France	Act on Commercial Companies 1966; SEC Decision 1981, Act related to Stock Companies Interests 1985; Act on Commercial Companies 1985; Act on Savings 1987; Financial Market Act 1989; Stock Exchange Order on Takeover Bids 1992; Act on Commercial Companies 2000; Commercial Code 2000; Takeover Act 2006; Order of AMF 2006. Current regulator: Authority of Financial markets (AMF).
Germany	Companies Act 1965; Securities Trading Act 1994; Takeover Code 1995; Takeover Act 2001; Takeover Offer Regulation 2001; Takeover Act 2006; Transparency Directive Implementation Act 2007. Current Regulator: Federal Financial Supervisory Authority (BaFin).
Greece	Companies Act 1920; Decree on Information Disclosure 1992; Stock Exchange Decision 2000; Takeover Decision 2002; Takeover Act 2006; Transparency Law 2007. Current Regulator: The Hellenic Capital Markets Commission (CMC).

Ireland	Companies Act 1963; the UK takeover law index for the period 1986-1996; Companies Act 1990; Takeover Act 1997; Takeover Regulations 2006; Transparency Regulation 2007; Takeover Rules 2007; Transparency Rules 2009. Current regulator: The Irish Takeover Panel.
Italy	Securities Market Law 1974; Public Offer Regulation 1992; Financial Act 1998; Amendment of Consolidated Financial Act 2007. Current regulator: National Commission for Companies and Stock Exchange (CONSOB).
Luxembourg	Companies Act 1915; Companies Act 1987; Law on Information Disclosure in a Listed Company 1992; Takeover Act 2006; Transparency law 2008. Current regulator: Luxembourg Financial Services Authority (CSSF).
Netherlands	Civil Code Book 2 1958; Amendment of regulating the transfer of shares in Civil Code Book 2 1988-1989; Introducing buy-out minority interests in Civil Code Book 2 1984-1985; Disclosure Act 1992; Disclosure Act 1996; Disclosure Act 2006; Financial Supervision Act 2006; Takeover Act 2007. Current regulator: The Netherlands Authority for the Financial Markets (AFM).
Portugal	Commercial Code 1986; Securities Market Code 1991; Securities Market Code 1995; Securities Market Code 1999; Securities Market Code 2006. Current regulator: Portuguese Securities Market Commission (CMVM).
Spain	Takeover Decree 1980; Securities Market Act 1988; Act on Public Bid 1991; Securities Market Act 2007; Takeover Decree 2007, Transparency Act 2007. Current regulator: National Securities Market Commission (CNMV).
Sweden	NBK Recommendations 1971; Act on Acquisitions 1982; Securities Market Act 1985; Securities Council Statement 1986; Financial Instruments Trading Act 1991; NBK Recommendations 1994; NBK Recommendations 1999, NBK Rules 2003; Companies Act 2005; Takeover Rules 2006; Takeover Act 2006. Current regulator: The Swedish Industry and Commerce Stock Exchange Committee (NBK), the Swedish Financial Supervisory Authority (FSA).
United Kingdom	Companies Act 1985; Takeover Code 1985; Companies Act 1989; Takeover Code 2006, Companies Act 2006. Current regulator: The UK Panel on Takeovers and Mergers (the Takeover Panel).

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## Appendix C: Correlation matrix

The coefficients shown are Pearson correlation coefficients for pairwise complete observations. Some coefficients have been omitted for brevity. The full table is available from the authors. Significance levels: \*\*\* p<0.01; \*\* p<0.05; \* p<0.1.

	Combined CAR	Bidder CAR	Target CAR	Takeover premium	Days to completion	Takeover index	Ownership disclosure	Mandatory bid	Fair price for minority	Squeeze- out right	Sellout rights	Manage- ment neutrality
Combined CAR	-	0.80***	0.37***	0.15***	0.00	0.00	-0.02	0.01	0.01	0.00	0.00	0.00
Bidder CAR	0.80***	-	0.10***	0.01	0.03	-0.06**	-0.08***	-0.01	-0.01	-0.03	-0.03	-0.10***
Target CAR	0.37***	0.10***	-	0.51***	-0.02	0.07**	0.09***	0.03	0.04	0.06**	0.04	0.11***
Takeover premium	0.15***	0.01	0.51***	-	-0.08***	0.14***	0.14***	0.11***	0.09***	0.07**	0.09***	0.16***
Days to completion	0.00	0.03	-0.02	-0.08***	-	-0.08***	-0.13***	-0.10***	-0.11***	-0.10***	-0.09***	-0.02
Challenged deal	0.03	-0.03	0.04	0.22***	0.01	0.09***	0.08***	0.07**	0.09***	0.04	0.04	0.08***
Deal value (log)	0.09***	-0.02	0.01	0.01	0.02	-0.09***	-0.05*	-0.11***	-0.06**	-0.06**	-0.09***	-0.04
Toehold	-0.03	0.05*	-0.11***	-0.07**	0.05	-0.10***	-0.11***	-0.09***	-0.07**	-0.10***	-0.12***	-0.08***
Hostile bid	0.05*	-0.07**	0.09***	0.10***	-0.01	0.09***	0.07**	0.06**	0.04	0.06**	0.08***	0.12***
Cash-only transaction	0.03	0.11***	0.05*	0.01	-0.02	-0.15***	-0.19***	-0.09***	-0.05*	-0.09***	-0.13***	-0.17***
Cross-border transaction	0.01	0.05*	0.11***	0.09***	0.01	-0.17***	-0.16***	-0.14***	-0.11***	-0.09***	-0.14***	-0.16***
Diversification	-0.06**	-0.02	0.02	-0.03	-0.01	0.05*	0.06**	0.05*	0.04	0.08***	0.07**	0.06**
(T) CAR run-up	-0.03	0.00	0.01	0.17***	0.00	0.07**	0.08***	0.06**	0.06**	0.04	0.04	0.07**
(T) Age	0.07**	0.01	0.05*	0.02	0.03	0.13***	0.21***	0.13***	0.06**	0.17***	0.15***	0.13***
(T) Total assets	0.12***	0.06*	-0.04	-0.04	0.07***	-0.16***	-0.12***	-0.17***	-0.11***	-0.10***	-0.16***	-0.11***
(T) Tobin's Q	-0.10***	-0.09***	-0.08***	-0.09***	0.03	-0.11***	-0.22***	-0.15***	-0.06**	-0.33***	-0.28***	-0.06**
(T) Leverage	0.05*	0.07***	-0.05*	-0.01	0.01	-0.03	-0.04	-0.03	0.00	-0.05*	-0.05*	-0.04
(T) Cash flow	0.12***	0.05*	0.05*	0.02	0.01	0.04	0.05*	0.01	0.01	0.05*	0.04	0.07**
(T) Distressed	-0.11***	-0.06**	-0.03	0.01	0.03	0.03	0.05*	0.06**	0.01	0.05	0.04	-0.01
(A) Age	0.03	0.06**	0.06**	0.05*	-0.02	0.07**	0.12***	0.08***	0.05*	0.13***	0.09***	0.07**
(A) Total assets	-0.03	0.09***	0.05*	0.02	0.05	-0.18***	-0.15***	-0.14***	-0.10***	-0.07**	-0.12***	-0.17***
(A) Cash flow	0.09***	0.08***	0.14***	0.06*	-0.01	0.02	0.02	0.01	0.02	0.02	0.03	0.01



## Notes

Directive 2004/25/EC of the European Parliament and of the Council of 21 April 2004 on Takeover Bids, O.J. 2004 L 142/12. Member states were required to transpose relevant provisions into local law by May 2006.

2 In the context of this paper, state antitakeover regulation is found to be associated with firm value and operating performance (Giroud and Mueller, 2010; Daines, 2001; Jahera and Pugh, 1991; Karpoff and Malatesta, 1989, 1995; Linn and McConnell, 1983), takeover premiums (Sokolyk, 2011; Comment and Schwert, 1995), announcement returns when a firm is planning to adopt or repeal an antitakeover provision at the firm level such as supermajority provisions or classified boards (Cuñat et al., 2012; Faleye, 2007; DeAngelo and Rice, 1983; Linn and McConnell, 1983), and shareholder wealth in defeated takeover bids (Ryngaert and Scholten, 2010).

3 He uses the EU directive as an external shock to test the hypothesis that bidders make worse acquisitions as a result of entrenchment of the bidder's management caused by the directive. Rather than testing this indirect effect on takeover efficiency, we test the direct effect of takeover law in the target's country on bidder and target returns.

4 Another way to measure the efficiency of takeover regulation is to examine whether strict takeover law curbs the incentive of bidders to launch takeover bids or reduces the frequency of value-creation deals. However, it is difficult to examine these effects in practice. As these questions are beyond the scope of our study, we will focus on the impact of takeover law on shareholder wealth to examine the efficiency of takeover law.

5 State anti-takeover regulation is different in this context due to the history of the US corporate governance system and the large proportion of hostile transactions.

6 For example, the Takeover Code in the UK includes 271 pages and numerous provisions within 38 main takeover rules in 2006, while the Takeover Act in Germany consists of 8 main takeover articles in 2006.

7 Key provisions promulgated by the directive are the mandatory bid rule (Article 5.1), equitable price (Article 5.4), disclosure (Article 8.2 and Article 10.1), the obligations of the target board (Article 9.2), breakthrough rule (Article 11), Squeeze-out rule (Article 15) and sell-out rights (Article 16). Among these key provisions, board neutrality and the break-through rule are the most controversial provisions where Article 12 allows member states to adopt them as optional arrangements. Whereas 19 EU member states have implemented the board neutrality rule (Article 9) of the directive, only three member states have adopted the breakthrough rule (Article 11). The breakthrough rule allows transfer restrictions become void during a takeover bid. It provides rights to the bidder to void voting restrictions and limit multiple-vote securities. According to the Application of Directive 2004/25/EC on takeover bids, only three countries - Latvia, Lithuania, and Estonia - had adopted the breakthrough rule as an optional arrangement for their companies by June 2012. Due to the limited adoption of the breakthrough rule in Europe, we exclude it in the construction of our takeover law index.

8 For example, EU decisions gradually eliminated the differences in national legislation and harmonized the regulation of ownership disclosure in European countries, particularly Directive 88/627/EEC, Directive 2001/34/EC and Directive 2004/109/EC.

9 Nenova (2003) examines the control block premium by considering the impact of takeover regulation, where takeover regulation is proxied by three variables in 1997.

10 The governance index developed by Martynova and Renneboog (2011a) contains some of the provisions studied in this paper but encompasses a much broader range of governance variables that are not relevant in the takeover process.

11 In the UK, takeovers and mergers are self-regulated by the City Code on Takeovers and Mergers issued by the Takeover Panel. The Panel's statutory functions are set out in and under Chapter 1 of Part 28 (sections 942 to 965) of the Companies Act 2006. Although the City Code has changed in the past three decades, these changes are relatively minor as far as our UK takeover law index is concerned. For example, the threshold to trigger the mandatory bid rule has been 30% since the first edition of the City Code was published in April 1985. The threshold to trigger the mandatory bid rule for any person who holds no less than 30% but not more than 50% when acquiring more voting rights was reduced from 2% of the voting rights in 1985 to 1% in 1993. To enable a systematic comparison across countries, we focus on the threshold that first triggers the mandatory bid rule. Therefore, the change does not affect the score of the UK index. The protection of minority shareholders in Ireland before 1997 is similar to the UK because takeovers in Ireland are regulated by the UK City Code before 1997.

12 For example, based on the experience with the takeover of Mannesmann AG by Vodafone plc, the Germany introduced its first takeover law in 2002.

13 During the collection of takeover law provisions, we noticed that there were many letters from the target firms to the regulators which require a particular protection to the target shareholders.

14 Studies using share price information to measure the wealth effect of takeovers include Ang and Ismail (2015), Cuñat et al. (2012), Sokolyk (2011), Giroud and Mueller (2010), Schouten and Siems (2010), Bris and Cabolis (2008), Martynova and Renneboog (2008b), Armour et al. (2007), Faleye (2007), Faccio et al. (2006), Rossi and Volpin (2004), Daines (2001), Comment and Schwert (1995).

15 See, for example, Cuñat et al. (2012), Sokolyk (2011), Giroud and Mueller (2010), Cable and Holland (1999).

16 Faccio et al. (2006) find that acquirers in 17 European countries earn  $-0.38$  percent during the period 1996–2001, but this result is not significantly different from zero.

17 We find that robust standard errors are more conservative in our models than standard errors clustered by country.

18 Deal features that have explained takeover returns in previous studies are controlled for in our analysis, namely payment method, hostile deals, diversifying takeovers, toehold and cross-border transactions (Ang and Ismail, 2015; Betton et al., 2009; Bauguess et al., 2009; Martynova and Renneboog, 2008b; Faccio et al., 2006; Rossi and Volpin, 2004; Franks and Mayer, 1996; Jensen and Ruback, 1983).

19 We include Tobin's Q, cash flow, leverage and financial distress in our regression analysis (Alexandridis et al., 2013; Bebchuk et al., 2009; Faccio et al., 2006; Dong et al., 2006; Moeller et al., 2004; Servaes, 1991; Morck et al., 1990; Lang et al., 1989). Target pre-announcement run-up stock price, proxied by the target run-up CARs is also controlled in our regressions because it could reflect public information about the takeover, an increase in the target's stand-alone value, or illegal insider trading (King, 2009; Schwert, 1996; Jarrell and Poulsen, 1989).

20 Arguably, firm-specific compliance may have some additional explanatory power over country specific legal provisions. Recently, Enriques et al. (2014) argue that takeover regulation should support an effective choice to allow individual companies to decide their takeover regime at the company level. However, it is beyond the scope of this study due to the limited availability of firm-level data.

21 The statistics of the takeover law provisions, not reported, show that 44% of the EU countries have the ownership disclosure provision as their first single takeover regulation. If we consider a joint implementation of ownership disclosure as their first takeover rule, this number rises to 88%. Furthermore, we find that, though only 6% of the EU countries implement mandatory bid rule provision as their first single takeover rule, the joint implementation of mandatory bid rule is 44%.

22 Results are available from the authors upon request.

23 We also test share prices four weeks before the announcement as an alternative denominator. Results are qualitatively similar, but weaker, as one would expect if the announcement effect is concentrated in a narrow window around the announcement day.

24Another transmission mechanism from changes in takeover laws to shareholder wealth may be the type of consideration, because the method of payment in M&A transactions interacts strongly with the internal and external corporate governance context of a firm (Faccio and Masulis, 2005) and affects the announcement returns and premiums paid in these transactions as shown in this paper (see also Moeller et al, 2004). We test the effect of takeover law on whether the consideration in a transaction consists entirely of cash but find no effect in our sample.

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