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Renneboog, L.D.R.; Szilagyi, P.G.

Publication date:
2006

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Renneboog, L. D. R., & Szilagyi, P. G. (2006). *How do Mergers and Acquisitions Affect Bondholders in Europe? Evidence on the Impact and Spillover of Governance and Legal Standards*. (CentER Discussion Paper; Vol. 2006-55). Finance.

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CentER



Discussion Paper

No. 2006–55

**HOW DO MERGERS AND ACQUISITIONS AFFECT
BONDHOLDERS IN EUROPE? EVIDENCE ON THE IMPACT
AND SPILLOVER OF GOVERNANCE AND LEGAL
STANDARDS**

By Luc Renneboog, Peter Szilagyi

August 2006

ISSN 0924-7815

How do mergers and acquisitions affect bondholders in Europe? Evidence on the impact and spillover of governance and legal standards

Luc Renneboog^{a,b,*} and Peter G. Szilagyi^a

^a Tilburg University, Warandelaan 2, 5000LE Tilburg, The Netherlands

^b European Corporate Governance Institute (ECGI)

This version: August 2006

Abstract

This paper contributes to the comparative corporate governance literature by showing how cross-country differences in governance and legal standards affect the bondholder wealth effects of European merger and acquisitions (M&As). Using investment-grade Eurobonds, we find some remarkable results. Firstly, M&As involving European firms are considerably more bondholder-friendly than are US domestic deals. Bidding firm bondholders earn economically significant positive returns, while target bondholders incur positive but insignificant returns. Overall, acquisitions do generate value to European bidding firms, but most of the wealth effect is captured by the bondholders. Secondly, bondholder gains in both bidding and target firms are systematically higher in M&As that involve Continental European firms. Thirdly, bidder abnormal bond returns are lower in cross-border deals. However, this is counterbalanced if creditor rights and the efficiency of credit contract enforcement are stronger in the target country. There is also strong evidence that, consistent with cross-border spillovers, improved creditor protection redistributes wealth from shareholders to bondholders. Finally, we document that bondholder wealth changes are subject to changes in asset risk and to a negative listing effect similar to that previously reported for changes in shareholder wealth.

JEL classification: G34; G32; G12; G14.

Keywords: Bondholder returns; Eurobonds; Mergers and acquisitions; Creditor rights; Takeover; Corporate governance; Shareholder returns; M&A; Insolvency.

We are grateful to valuable suggestions by Arnoud Boot, Abe de Jong, Marina Martynova, Gerard Mertens, Enrico Perotti, Peter Roosenboom, Chendi Zhang, and seminar participants at Tilburg University and the Workshop of the European Corporate Governance Institute in Venice. Renneboog acknowledges financial support from the European Commission via the 'New Modes of Governance'-project (NEWGOV) led by the European University Institute in Florence (contract nr. CIT1-CT-2004-506392) and from the Netherlands Organization for Scientific Research ('Shifts in Governance' Programme). Szilagyi is grateful for funding from the European Commission through the European Corporate Governance Training Network (ECGTN).

*Corresponding author. Tel: + 31-13-466-8210.

E-mail addresses: luc.renneboog@uvt.nl (L. Renneboog), p.g.szilagyi@uvt.nl (P.G. Szilagyi).

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Abstract – This paper contributes to the comparative corporate governance literature by showing how cross-country differences in governance and legal standards affect the bondholder wealth effects of European merger and acquisitions (M&As). Using investment-grade Eurobonds, we find some remarkable results. Firstly, M&As involving European firms are considerably more bondholder-friendly than are US domestic deals. Bidding firm bondholders earn economically significant positive returns, while target bondholders incur positive but insignificant returns. Overall, acquisitions do generate value to European bidding firms, but most of the wealth effect is captured by the bondholders. Secondly, bondholder gains in both bidding and target firms are systematically higher in M&As that involve Continental European firms. Thirdly, bidder abnormal bond returns are lower in cross-border deals. However, this is counterbalanced if creditor rights and the efficiency of credit contract enforcement are stronger in the target country. There is also strong evidence that, consistent with cross-border spillovers, improved creditor protection redistributes wealth from shareholders to bondholders. Finally, we document that bondholder wealth changes are subject to changes in asset risk and to a negative listing effect similar to that previously reported for changes in shareholder wealth.

1. Introduction

The European market for corporate control has evolved immensely over the past decade. The value of European mergers and acquisitions (M&As) is estimated at US\$ 1 trillion for 2005, which is still below the historical peaks recorded in 1999 and 2000. Europe's world share of transaction value has also been climbing and now reaches more than 40% (Martynova and Renneboog, 2006a). A key aspect of this trend is the considerable diversity of European countries from a corporate governance perspective. This has pronounced economic implications for cross-border M&As, where there is evidence of spillovers in governance structures, accounting standards and disclosure practices. Such considerations have been shown to affect shareholder returns (Moeller and Schlingemann, 2005), but also to influence the choice of target firms (Rossi and Volpin, 2004), the method of payment (Faccio and Masulis, 2005) and even the valuation of industries where the cross-border takeovers occur (Bris and Cabolis, 2002).

If shareholder wealth changes exhibit great cross-country variation in European M&As, so could the wealth changes incurred by corporate bondholders. In the Anglo-American market-oriented governance regimes, creditors are seen as independent parties contracting with the firm, and have little influence on corporate decision making. In the stakeholder-oriented systems of Continental Europe, banks and other risk-averse stakeholders exercise greater control, which should make M&As inherently more bondholder-friendly. In cross-border M&As, the combination of the two governance structures could instigate considerable changes in bondholder wealth. Another important feature of cross-border deals is that they combine firms from jurisdictions that protect creditor rights to varying degrees. New exposure to a jurisdiction with better creditor rights is likely to force management to avoid excessive risk-taking. Also, the combination of firms from different jurisdictions can facilitate

jurisdiction shopping, whereby creditors seek out the jurisdiction that best supports their legal position and ensures maximum satisfaction for their claims.

Existing studies on bondholder wealth preclude the impact of such institutional factors by confining their focus to US domestic deals. Rather, they test three main hypotheses on the risk effects of M&As. Firstly, bondholders benefit at the expense of shareholders from reduced risk through a *co-insurance* of cash flows i.e. reduced cash flow variability in the combined firm (Galai and Masulis, 1976). Secondly, the changes in bondholder wealth are affected by the relative pre-merger riskiness of bidder and target (Shastri, 1990). And thirdly, shareholders may reverse bondholder gains by increasing leverage at the event (by making a debt-financed cash offer) or subsequently (Dennis and McConnell, 1986). Overall, there is little evidence of bondholders benefiting from co-insurance effects at all. Billett et al. (2004) report losses for the bondholders of bidding firms, while the bondholders of targets gain in junk-grade but lose in investment-grade firms. Earlier, Eger (1983) finds significant bondholder gains, but she only considers stock-for-stock deals to omit wealth reversals through the payment method. Maquieira et al. (1998) confirm these gains for non-diversifying mergers only, where more new wealth is created but the scope for co-insurance is otherwise limited. Kim and McConnell (1977), Asquith and Kim (1982), Walker (1994) and Dennis and McConnell (1986) find that bondholders are unaffected by M&As.

This paper expands on these results by showing how cross-country differences in governance and legal standards affect the bondholder wealth effects of M&As. We use euro- and sterling-denominated Eurobonds to investigate bond price changes around both domestic and cross-border M&A announcements across Europe. The scope of this paper is thus limited to investment-grade firms, whose bondholders should benefit relatively less from risk reductions brought about by M&As than bondholders holding low-investment grade paper. However, Eurobonds constitute the only European corporate bond market that is sufficiently large, liquid and standardized to allow for the construction of robust, closely fitted pricing benchmarks.

Our analysis delivers some remarkable results. Firstly, acquisitions by European bidding firms are generally more bondholder-friendly than are US domestic deals. Bidder bondholders earn wealth gains that are highly significant both statistically and economically. There is also evidence of an increase in the total value of bidders, without a significant change in shareholder wealth. This suggests that acquisitions do create value for European bidders, but the bulk of the new wealth is accrued to the creditors in the form of reduced risk. In target firms, bondholder returns are also positive but insignificantly different from zero.

Secondly, bondholder gains in both bidders and targets are systematically higher *ceteris paribus* in M&As that involve Continental European firms. Thus, the bondholder gains observed earlier are largely driven by the better representation of creditor interests in stakeholder-oriented governance regimes. Greater creditor influence over capital structure decisions may also explain why the bondholders of Continental European bidders respond to asset risk changes related to business operations, but not to financial risk changes related to financing policy.

Thirdly, there is substantial variation in bondholder gains depending on whether the takeover is domestic or cross-border. All else equal, bidding firm bondholders earn lower returns from cross-border deals. This may reflect concerns over greater informational asymmetries as well as added legal

uncertainty and inefficiency associated with the default of internationally diversified firms. However, the negative cross-border effect can be counterbalanced by better creditor rights and credit contract enforcement in the target country. We find that improved creditor protection induces considerable wealth redistributions from shareholders to bondholders. This is an important result, because it shows evidence of cross-border spillovers in creditor protection. The bondholders of UK bidders are particularly sensitive to such spillovers in cross-border deals, and otherwise do not benefit from purely domestic deals at all. To some extent, we find analogous results for target firm bondholders, but the target population is small and presents a challenge for future research.

Our results also provide other interesting additions to the literature. Bidder bondholders earn higher returns from acquisitions of unlisted targets. A similar listing effect has been previously documented for shareholder returns (Faccio et al., 2006). In acquisitions of listed firms, bidder bondholders benefit more when the target firm is relatively small, and are generally perceptive of changes in both asset risk and financial risk. Finally, we find that bidder bondholder gains are significantly higher when a tender offer is made. The remainder of this paper is outlined as follows. Section 2 reviews the theoretical literature and makes prior conjectures on the drivers of bondholder wealth changes. Section 3 contains descriptive statistics on the sample and describes the methodology. Section 4 provides an extensive discussion of the empirical results, while Section 5 describes robustness checks and possible extensions. Finally, Section 6 allows for some concluding remarks.

2. Theoretical background and conjectures

2.1. The theory of bondholder wealth in mergers and acquisitions

Finance theory suggests that mergers and acquisitions can have many different effects on bondholders. Early studies postulate that bondholders benefit from a *co-insurance* of cash flows. If two firms with imperfectly correlated cash flow streams merge, their combined cash flow volatility becomes lower, which reduces default risk and increases debt capacity (Levy and Sarnat, 1970). The co-insurance effect is likely to be stronger in diversifying or conglomerate mergers where there is little or no economic relationship between the merging parties. Thus, it is customarily conjectured that *bondholders gain more from diversifying than from non-diversifying M&As*. However, diversifying mergers tend not to create new wealth because they neither provide operating efficiencies nor increase product or factor market power (Berger and Ofek, 1995). Then, any bondholder gains must come from mere redistributions of shareholder wealth, whereby an increase in bond prices is accompanied by an offsetting reduction in share prices (Higgins and Schall, 1975; Galai and Masulis, 1976).

Dennis and McConnell (1986) argue that bidding firms may reverse such wealth shifts by financing their acquisitions with leverage. Cash offers generally require debt financing because most bidders have limited cash and liquid assets (Faccio and Masulis, 2005). Thus, they tend to increase default risk in the combined firm as well as reduce the collateral available to bondholders. If the bidder offers equity, no assets leave the firm and financial distress costs are reduced. Ultimately, this suggests that *bondholders benefit more from equity-financed acquisitions*. Still, we cannot discount the agency and

signalling effects associated with equity financing. In the spirit of Myers and Majluf (1984), DeAngelo et al. (1984) point out that the managers of the bidder prefer an equity offer if they believe their firm is overvalued. If the market interprets an equity offer as bad news on the firm's future expected cash flows, as Mitchell and Stafford (2000) indeed find, this may also deteriorate bondholder sentiment.

It is notable that the above conjectures intuitively separate *asset risk* effects associated with business operations and *financial risk* effects associated with financing operations. From the bondholders' perspective, this distinction is formalized by Shastri (1990). The author derives predictions for the risk effects of M&As by comparing the pre-merger risk profiles of the bidder and the target. Asset risk in the combined firm can differ from the asset risks of the merging parties because they have different levels of asset risk to start with, and/or because their unlevered stock returns are imperfectly correlated. Overall, *a reduction in asset risk increases, while an increase in asset risk decreases bondholder wealth*. The impact of the asset risk change depends on the size of the risk change, but also on the pre-merger risk of debt. Thus, relatively risky bonds should benefit the most from a risk reduction, and relatively safe bonds should lose the most from a risk increase.

Shastri (1990) relates financial risk effects specifically to leverage. Obviously, other factors also contribute to the risks associated with financing operations. For example, interest coverage better captures the immediate probability of default. Whatever the measure used, financial risk in the combined firm will differ from the financial risks of the merging parties unless they are identical pre-merger. Then, *a reduction in financial risk increases, while an increase in financial risk decreases bondholder wealth*. Of course, this financial risk effect does not account for expected risk changes due to post-merger financing operations or as a result of the payment method¹.

The risk implications of other firm and deal characteristics are not unambiguous. Nonetheless, they may still have an indirect impact on credit risk, if only through affecting projected efficiency gains that influence the combined firm's ability to service its fixed debt obligations. A critical problem relates to the *relative size of the target and the bidder*. On one hand, larger targets may induce a greater co-insurance of cash flows and contribute more assets to the combined firm, which adds debt capacity (Hovakimian et al., 2001). On the other, there should be a limit to the absorption capacity of bidding firms. Large deals are hard to implement successfully, thus the efficiency gains associated with the acquisition of smaller targets should be relatively larger (Bhagat et al., 2005). Target bondholders may also gain more when the bidding firm is relatively large, to the extent that large bidders are generally more diversified and thus tend to have lower credit risk at a given leverage ratio (Faccio and Masulis, 2005).

Wealth creation in M&As has also been linked to the public status of the target firm in recent empirical research. Acquisitions of unlisted targets have been shown to generate better returns for bidder shareholders, and existing studies have been unable to fully explain why. It is plausible that the shareholder gains are driven by limited competition, which may come from the bidder specificity of the acquisition and increases the likelihood of underpayment for the target firm (Chang, 1998). Still,

¹ Shastri (1990) argues that wealth redistributions may also occur between bidder and target bondholders based on seniority. Differences in debt maturity induce a seniority effect, whereby shorter maturity debt becomes effectively senior to longer maturity debt. Then, the holders of shorter maturity bonds should experience a more positive wealth effect than do the holders of longer maturity bonds. The available data do not enable us to test this prediction.

Faccio et al. (2006) find that the abnormal shareholder gains persist over time and across countries, and are invariant to size, ownership structure, industry focus, information leakages and the payment method². It is also ex ante unclear whether bondholders are affected by the public listing of the target³.

The type of and attitude towards a takeover bid are also related to projected synergy levels and the disciplining of target management. *Negotiated deals* are typically friendly and prescribe the cooperation of the target firm's incumbent managers. Thus, they are more likely to be driven by hubris, but also by managerial empire building aimed at creating large, diversified firms with low risk (Jensen, 1986). Conversely, *tender offers* are associated with greater wealth creation, as they bypass target management and indicate greater confidence in the bidder's ability to realize efficiency gains (Loughran and Vijh, 1997)⁴. In tender offers, the premium paid to the target shareholders is also higher, especially when *the hostility of the bid* leads to aggressive bargaining (Schwert, 2000). Nonetheless, Bhagat et al. (2005) find no evidence that tender offers would induce bidders to overpay for target firms.

2.2. Cross-border deals and the impact of regulatory and governance standards

From the perspective of bondholders, cross-border M&As exhibit some distinct peculiarities relative to domestic deals. Denis et al. (2002) draw a parallel between global and industrial diversification, and observe that the two induce a similar diversification discount in share prices. Accordingly, Moeller and Schlingemann (2005) find that US firms that acquire cross-border targets achieve lower abnormal stock returns and lesser improvements in operating performance. In the spirit of these findings, the implications of cross-border takeovers for bondholders are two-fold. On one hand, the cash flow streams of bidder and target are likely to be less correlated in cross-border deals, thus bondholders should benefit – and shareholders lose – from reduced cash flow volatility. On the other, even if the projected efficiency gains are considerable, capturing these is complicated. In cross-border M&As, informational asymmetries are greater and clashes in corporate culture may occur. Bondholders may also suffer directly from the added legal uncertainty and inefficiency associated with the default of an internationally diversified firm. Thus, we conjecture that *cross-border M&As accrue lower wealth benefits to bondholders than do domestic mergers*.

In cross-border M&As, the relative differences in the regulatory and institutional character of the bidder and target countries are of paramount importance. For bondholders, a critical issue relates to how creditor rights and their enforcement compare in the national jurisdictions of the merging firms, as

² Chang (1998) compares equity-financed acquisitions of private firms to private equity placements, where monitoring is improved and informational asymmetries are reduced by the emergence of new blockholders (the concentrated target owners). Accordingly, the shareholder wealth gains associated with takeovers of private firms are highest when an equity offer is made (Fuller et al., 2002; Moeller et al., 2004). Still, the abnormal shareholder gains remain even in cash-financed private deals (Faccio et al., 2006).

³ It is equally difficult to predict how target bondholders are affected by the public status of the bidder. On one hand, listed bidders are likely to be larger because of their access to capital markets. Schwert (2000) notes that agency problems are also more severe in listed bidders, thus their acquisitions are more likely to be driven by empire building. On the other, unlisted bidders may be more reliant on and monitored more closely by individual creditors, and their acquisitions are less likely to be driven by managerial hubris.

⁴ The choice of acquisition type is also endogenous to other deal characteristics. Martin (1996) observes that bidders tend to make tender offers for smaller firms in related industries and finance them with cash.

- in marked contrast with the US where bankruptcy law is federal - insolvency law is still a matter of national law even within the EU. La Porta et al. (2000) argue that there are limitations to the functional spillover of creditor protection, because corporate assets remain under the jurisdiction of the country where they are located. Until 2000, this *territoriality principle* was indeed the only principle regulating the various insolvency regulations in Europe. However, in that year, the European Union (EU) passed the European Insolvency Regulation (EIR)⁵ in order to enhance co-operation among jurisdictions in insolvency proceedings and harmonize conflict of law issues (Enriques and Gelter, 2006). As a consequence, the EU has adopted a modified form of *universalism*, which has one main jurisdiction in charge of insolvency proceedings while also still allowing secondary, territorially-based proceedings. The EIR intends to identify the principal jurisdiction based on where the debtor's centre of main interests (COMI) is located. Unfortunately (and surprisingly), the EIR does not define COMI and the preamble to this regulation remains very vague. While in some firms there is little doubt where the COMI is located, in larger, internationally diversified firms there may be ambiguity (Franken, 2005)⁶. While in the US the choice of bankruptcy court is frequently taken by the insolvent corporation, the parties petitioning for bankruptcy proceedings in Europe are usually creditors⁷. Consequently, cross-border diversification facilitates insolvency law arbitrage by creditors through *jurisdiction (or forum) shopping*, whereby they may race to choose a supposedly friendly jurisdiction to strengthen their legal position and obtain maximum satisfaction for their claims. While the ambiguities in the European regulation allow for jurisdiction shopping to the benefit of creditors, it is also possible that the debtor pre-empts creditors in filing for bankruptcy under the universalism rule in a national jurisdiction that is not to the advantage of creditors. However, when this latter case arises, creditors may open secondary or territoriality-based proceedings in jurisdictions other than where the debtor's centre of main interest is located provided that the firm has assets in those countries (Enriques and Gelter, 2006)⁸.

To conclude, bondholders can clearly benefit from improved creditor protection brought about by cross-border M&As for three reasons. Firstly, new exposure to a jurisdiction with better creditor rights is likely to force management to avoid excessive risk-taking. Secondly, a cross-border acquisition (of substantial foreign operations) may lead to jurisdiction shopping in case of insolvency such that the best possible law from the perspective of the creditors may apply. Third, in case the jurisdiction adopted does not maximize creditor rights, the creditors could open territoriality-based proceedings whereby all creditors (including the ones from the jurisdiction with the worse creditor rights) would

⁵ European Council Regulation No. 1346/2000 on insolvency proceedings. Other international treaties on cross-border insolvency include the Nordic Bankruptcy Convention of 1933 and the Montevideo and Bustamante Conventions in force in much of South America (BIS, 2002).

⁶ Franken (2005: 248-254) points out that COMI is 'a highly manipulative concept [...] that leaves ample discretion for creative judicial interpretation'. Another potential source of conflict is that common law jurisdictions determine the applicable insolvency law by the firm's place of incorporation (the *incorporation doctrine*), while civil law jurisdictions determine the same, by the firm's head office or "real seat" (the *real seat doctrine*).

⁷ Jurisdiction shopping by creditors is also a well-known phenomenon in US general insolvency law, and explains the popularity of pro-creditor bankruptcy courts in Delaware and New York. The BIS (2002) points out that jurisdiction shopping may be generally more relevant for common law jurisdictions that follow the "incorporation doctrine" than for civil law jurisdictions applying the "real seat doctrine".

⁸ 'If creditors of an establishment located in another member state have statutory priority rights that do not have equivalents under the home-country law, they can protect their priority position by filing for a secondary bankruptcy proceeding' (Franken, 2005:255).

also have a claim on the assets of the country which protects creditor rights' best. Thus, *if a cross-border takeover allows access to a jurisdiction with better creditor rights (through the principle of universalism or territoriality), it induces relatively higher bondholder wealth gains for the bondholders in the country with the lower creditor protection.* Of course, an improvement in creditor protection is also *conditional on the general effectiveness and predictability of the judiciary and the enforcement of debt contracts.*⁹

La Porta et al. (1998) find that countries of a common legal origin bear some resemblance in the extent they protect creditor rights. A notable observation is that on average, common law countries offer stronger creditor protection than do civil law – especially French civil law – countries. Still, there is enormous variation even within particular families of legal origin. For example, English insolvency law strictly enforces creditor rights, whereas the softer US approach puts them under judicial discretion (Sussman, 2005). La Porta et al. (1998) report similar differences within the French legal family, such as between the more pro-creditor Netherlands and more pro-debtor France.

However, a strong distinction must still be drawn between common and civil law countries from a governance perspective. In the common law Anglo-American countries, strong shareholder rights *vis-à-vis* managers and stringent disclosure requirements encouraged the emergence of market-oriented corporate governance systems. These regimes basically view creditors and other stakeholders as independent parties that maintain arm's-length contractual arrangements with the firm (Jensen and Meckling, 1976). In the civil law-based, more stakeholder-oriented governance systems of Continental Europe, the dynamics of the firm-creditor relationship are very different. Banks act as concentrated lenders and delegated monitors, playing a key role in mitigating informational asymmetries and agency problems (Diamond, 1991), and reducing the marginal utility of external market mechanisms. Other stakeholders also develop long-term relationships with the firm, and closely-held equity and pyramid-like group memberships are in place. The greater influence of banks and other risk-averse stakeholders on corporate decision making dictates that *bondholders in the stakeholder-oriented governance regimes of Continental Europe benefit more from mergers and acquisitions.* Conflicts of interest cannot be ruled out between senior banks and junior bondholders, especially if bondholder claims are unsecured (La Porta et al., 1998). Nonetheless, close bank monitoring should prevent managers from excessive risk-taking, which should also make acquisitions more bondholder-friendly.

The fundamental differences between market- and stakeholder-oriented governance regimes also carry paramount importance in cross-border M&As. Existing studies show clear evidence of cross-border spillovers in governance structures, accounting standards and disclosure practices when a target firm adopts the governance system of its foreign bidder or *vice versa* (Bris and Cabolis, 2002; Goergen and Renneboog, 2004; Moeller and Schlingemann, 2005). The strong influence of creditors is also likely to be passed on in cross-border deals, but this will depend on the change in the relative power and monitoring incentives of banks and other stakeholders. Intuitively, cross-regime M&As may import creditor influence from the perspective of one firm, but dilute creditor influence from the perspective of another. Thus, *the bondholders of a common law firm gain more from a takeover of a*

⁹ In the special cases where the governing law of the debt contract is expressly specified, as is the case with Eurobonds, jurisdiction shopping is not directly applicable. Nonetheless, the improved bargaining power of the other creditors puts pressure on management to moderate their risk-taking even at the expense of shareholder value (Esho et al., 2004).

civil law firm, while the bondholders of a civil law firm gain less from a merger with a common law firm.

3. Data selection and descriptive statistics

3.1. Data selection

We compile a list of merger announcements from the Mergers and Acquisitions Database of the Securities Data Corporation (SDC). Transactions classified as acquisitions of assets and minority interests are excluded. We require that one of the merging parties (i) be domiciled in Europe, (ii) be publicly listed, and (iii) have fixed-rate euro- or sterling-denominated Eurobonds. The sample period runs from 1995 to 2004; data requirements for the construction of pricing benchmarks, described below, prevent pre-1995 deals being included. Our focus is also confined to investment-grade issuers, as the negligible size of the junk-grade Eurobond market prohibits reliable pricing in this segment entirely. We exclude all bonds with special features i.e. those that are convertible, callable, puttable or subordinated. These features have a strong impact on bond prices and their occurrence is otherwise rare among Eurobonds.

We use Eurobonds for three main reasons. Firstly, they constitute the only European corporate bond market that is sufficiently large and liquid to allow for the construction of robust pricing benchmarks. Secondly, Eurobonds are much more standardized than are domestic bonds. They are mostly unsecured and carry fewer covenants, which international investors often find too costly to enforce. Thus, most Eurobonds are de facto of high credit quality, because investors are unwilling to accept such ill-protected securities from low quality borrowers. Eurobonds are also typically governed by English law¹⁰ and listed on the Luxembourg Stock Exchange¹¹, which facilitates comparability across borrowers of different nationalities. And thirdly, Eurobonds are issued in relatively large amounts, typically in bearer form, and are normally exempt from withholding tax¹². This ensures that they are held predominantly by institutional investors, which makes the Eurobond market highly liquid and competitive, ensuring efficiency and a minimal risk of price anomalies (Gabbi and Sironi, 2005)¹³.

¹⁰ The choice of governing law is typically negotiated between the underwriter and the issuer. UK law is generally preferred, because the “freedom of contract” principle permits the inclusion of collective action clauses in the bond contract, allowing for the timely and orderly renegotiation of contract terms in the event of default. In addition, UK law allows greater scope for the bond trustee to negotiate with the issuer, which sits well with Eurobond investors who tend to prefer anonymity (Smith and Walter, 1997).

¹¹ The Luxembourg Stock Exchange was among the first relax Eurobond issuing procedures in 1990. It also has major advantages over other exchanges such as low fees, no withholding tax and the quick approval of new listings.

¹² Eurobonds are usually exempted from withholding tax if they are publicly available (via a stock exchange listing) and are widely distributed. The latter condition requires the bonds to have a modest face value, usually a few thousand euro. The average and median size of the Eurobonds contained in the sample are € 1.12 billion and € 521.69 million, respectively.

¹³ It is well-known that retail investors often acquire Eurobonds for tax minimization purposes. Still, in some countries they are forbidden from holding bearer securities altogether. We do not expect these peculiarities to materially influence our results, as retail investors still account for only a small share of total Eurobond holdings.

We collect bond prices from the Reuters Fixed Income Database. All prices are dealer quotes, which often contain matrix prices that are not separated from actual trade data. Matrix prices are not driven by firm-specific information, which makes our analysis less likely to return significant results. Nonetheless, the high liquidity of Eurobonds should ensure that M&A announcements induce actual trades. Bond ratings are obtained from Standard and Poor's or, when unavailable, Moody's Investors Service.

Abnormal bond returns are defined as the sum of monthly abnormal returns in the two months surrounding the deal announcement (i.e. months -1 and 0) to account for information leakages (Warga and Welch, 1993). Consistent with the recent literature, we treat each issuer of multiple Eurobonds as a value-weighted portfolio of its bonds, where the weights are based on the market value of each bond two months before the announcement. When a firm has both euro- and sterling-denominated Eurobonds outstanding, the sterling market value is converted into euro. Abnormal monthly returns are computed using a matching portfolio method, described in Appendix 1. We construct 40 reference Eurobond portfolios segmented by currency (euro and sterling), credit rating (BBB, A, AA and AAA) and duration (1-3, 3-5, 5-7, 7-10 and 10+ years). Each portfolio must contain a minimum of 10 bonds; where this condition is not satisfied, we use one of 20 reserve portfolios created in two duration categories (1-5 and 5+ years). In the spirit of Kahle et al. (2005), we use duration as an alternative criterion to time-to-maturity. Time-to-maturity is customarily used to construct pricing benchmarks (as done e.g. by Merrill Lynch, Lehman Brothers and iBoxx). However, it does not account for *coupon bias*, by assuming that the risk sensitivity of bonds is independent of their coupon payments (Duffee, 1998). To ensure robustness, we compute both equal- and value-weighted returns on the matching portfolios. The value-weighted approach uses weights based on bond market values two months before the announcement. Kahle et al. (2005) make a strong argument for the use of equal-weighted portfolios over the customarily used value-weighted ones. They report that the value-weighted approach suffers more from positive skewness, which leads to a lower rejection region for negative abnormal returns and a higher rejection region for positive abnormal returns. We find strong support for this contention, but it does not affect the fundamental outcomes of this paper.

Finally, to identify wealth redistributions between shareholders and bondholders, we also calculate abnormal stock returns. Stock price data are collected from Datastream. To ensure direct comparability with abnormal bond returns, abnormal stock returns are also defined as the sum of monthly abnormal returns in months -1 and 0. Monthly abnormal returns are computed as the monthly raw stock returns minus the returns on the benchmark equity index of the issuer's domicile.

Before proceeding to the empirical analysis, it is useful to determine what constitutes economically significant abnormal returns. Brown and Warner (1980) set the economic significance of abnormal stock returns at 1%, or about one-sixth of the historical yearly stock market risk premium. Kahle et al. (2005) argue that given the lower market risk premium that bonds earn relative to shares, abnormal bond returns should be lower. The authors infer that if the typical bond earns a risk premium of 1.75% per year, abnormal bond returns exceeding 0.25% should already be regarded as economically significant. Given that the risk premium demanded on high quality Eurobonds is equally low, we can adopt a similar threshold for economic significance.

3.2. Descriptive statistics

Descriptive statistics on the sample are provided in Table 1. Accounting data are obtained from Worldscope and are measured at the fiscal year-end preceding the M&A announcement. Market capitalization and the book value of assets are expressed in 2004 prices using the appropriate consumer price index and, where applicable, converted into euro. Return on assets (ROA), asset risk, leverage, and interest coverage are defined in Appendix 1. In the spirit of Billett et al. (2004), we also compute these firm-level variables for the combined firm (not shown in Table 1). The combined asset risk is defined as the portfolio standard deviation of unlevered bidder and target returns, where the weights are based on the market value of assets (the sum of the book value of assets and market capitalization). The combined leverage ratio uses weights based on the market value of assets. Finally, the combined interest coverage is weighted by the book value of debt.

(Insert Table 1)

Panels A and B of Table 1 report descriptive statistics for the full sample and the largest balanced sample, respectively. The full sample contains a total of 238 deals where abnormal bond returns are available for either the bidder or the target. In Panel A, we report accounting data for 236 bidders and 77 targets. This reflects the fact that most target firms and two bidding firms are unlisted. Panel B shows that accounting data are available for 75 pairs of merging firms, but only for 15 pairs do we have both accounting data and abnormal bond returns.

Bidding firms are substantially larger than their targets both by market capitalization and the book value of assets. In the balanced sample shown in Panel B, the book value of assets of the typical bidder is €15.7 billion, while that of the target is €1.5 billion. Bidders also appear to be more mature, to the extent that they are more profitable, more levered and have lower asset risk than their respective target firms. The interest coverage ratios of bidders and targets are not statistically different. The data suggest that several bidders and targets are financially distressed. Nonetheless, none of them are in bankruptcy at the time of M&A announcements. The 15 takeovers for which abnormal bond returns are available for both merging parties are giant deals by all standards. In this subsample, the typical bidder is rated A+ and has an asset value of €20.9 billion, while the typical target firm is rated A and has an asset value of €7.1 billion. There is no evidence that these bidders would be more levered than their targets, but they are more profitable and have lower asset risk. The typical bidding and target firms have two bonds each, with a remaining maturity of 5.5 years and 7.1 years, respectively.

Though not reported in Table 1, the vast majority of the M&A announcements occur towards the end of our sample period. In total, 45 deals were announced before 2001, 70 in 2001-2002 and 123 in 2003-2004. This corresponds to the recent rapid rise of corporate bond issuance across Europe over the past decade. An overview of bidder and target countries by region and legal origin are provided in Appendix 2. The legal origin of each country is identified by Djankov et al. (2004). Panel A describes the mergers where abnormal bond returns are available for the bidding firms. Of the 225 bidders, 79 are UK firms, while the rest are domiciled in Continental Europe, mainly in French and German civil law countries. The data show that takeover activity creates considerable scope for cross-border

spillovers of governance structures. Of the 225 deals, 145 are cross-border, and only in 52 cases are the bidder and target countries of the same legal origin. UK bidders tend to approach target firms in French civil law countries such as France, Spain and the Netherlands. Civil law bidders are more active in the German civil law countries of Central and Eastern Europe such as Poland and the Czech Republic. In Panel B, the 24 European target firms with abnormal bond returns are all approached by bidders from developed European countries. Of the 24 deals, 12 are cross-border, and in seven cases UK target firms are approached by French or German civil law bidders.

4. Empirical results

4.1. Abnormal security returns around M&A announcements

Table 2 provides a simple overview of how the various security holders fare in European mergers and acquisitions. Panel A shows that in bidding firms, bondholders earn substantial positive abnormal returns in the two months surrounding M&A announcements. The gains are economically significant and are highly robust across all specifications: the mean abnormal bond return is 0.56% (0.52%) over the equal- (value-) weighted benchmarks, and the median is 0.81% (0.71%). This is a striking departure from existing US evidence, which typically documents no or negative changes in the wealth of bidder bondholders. Overall, the results imply that European bidding firms make creditor-friendly bids that lead to reduced risk in the combined firm. The fact that we only consider investment-grade bidders does not make these results any less remarkable. For US deals, Billett et al. (2004) report significant bondholder losses regardless of the bidder's credit rating. Moreover, Shastri (1990) argues that safe debt benefits relatively less from a risk reduction. This suggests that the bondholder gains induced by takeover bids should be even higher in junk-grade than in investment-grade bidders.

(Insert Table 2)

The shareholders of European bidders do not incur statistically significant wealth benefits from M&A announcements, though the mean and median abnormal stock returns are positive at 0.78% and 0.34%, respectively. Similar results are reported for Europe by Campa and Hernando (2004) and Goergen and Renneboog (2004), and for the US by Maquieira et al. (1998), Mulherin and Boone (2000) and Schwert (2000). Still, there is some evidence of overall wealth creation in bidding firms. Panel A approximates changes in total firm value by combining abnormal bond and stock returns¹⁴. The mean combined abnormal return is 0.70% (0.69%) when the equal- (weighted-) bond pricing benchmarks are used, and the median is 0.34% (0.26%). Notably, the t-tests of the means are insignificant, but the non-parametric Wilcoxon signed-ranks tests are significant at the 10% level. This

¹⁴ To approximate the changes in total firm value, we weight abnormal bond and stock returns with the book value of long-term debt and market capitalization. Billett et al. (2004) point out that the use of long-term debt value implicitly assumes that the abnormal returns of the firm's short-term debt and debt-like instruments are zero. This should not affect the results materially, as short claims are inherently less sensitive to changes in the underlying long-term fundamentals.

suggests that M&As do tend to create value in bidding firms, but the bulk of new wealth is captured by the firms' creditors in the form of reduced default risk.

The abnormal security returns of target firms are reported in Panel B of Table 2. Target bondholders do not reap statistically significant wealth benefits from M&A announcements, although the results may be economically significant (as defined by Kahle et al., 2005). The mean abnormal bond return is 0.62% (0.58%) and the median is 0.33% (0.22%) over the equal- (value-) weighted benchmarks. The insignificance of these results may well be due to the small number of observations in the sample. Nonetheless, our findings are not dissimilar to existing US evidence that the co-insurance benefits of M&As are negligible for the bondholders of creditworthy target firms. Billett et al. (2004) show significant abnormal bond losses in investment-grade targets, while other studies report insignificant abnormal returns (Asquith and Kim, 1982; Dennis and McConnell, 1986; Walker, 1994; Maqueira et al., 1998). Predictably, the shareholders of target firms still realize sizeable wealth gains. The abnormal target stock returns are large and highly significant, with the mean and median at 12.40% and 9.55%, respectively. There is an equally substantial increase in the combined value of targets. This indicates that target shareholders compel bidders to pay out much of the expected wealth gains associated with the deal, and is fully consistent with earlier results reported for both Europe and the US (Martynova and Renneboog, 2006a; Mulherin and Boone, 2000).

The remainder of this section provides a detailed analysis of bondholder wealth changes in both bidding and target firms. Henceforth for the sake of brevity, we only show the abnormal bond returns obtained using the equal-weighted pricing benchmarks. The results using the value-weighted benchmark portfolios are available on request. In order to identify wealth transfers between bondholders and shareholders, we also report the abnormal stock returns in some of the subsequent tables.

4.2. Bidding firm abnormal bond returns around M&A announcements

4.2.1. Analysis of bidder abnormal security returns

A. The impact of deal characteristics. The abnormal security returns of bidding firms are stratified across a number of criteria in Table 3. Panel A illustrates the impact of deal characteristics, and first examines whether a conglomerate effect is present. Following Berger and Ofek (1995), we define M&As as diversifying or conglomerate when the two-digit SIC codes of the bidder and the target are different. Contrary to our prior conjecture, bidder bondholders do not benefit more from diversifying deals. In both diversifying and non-diversifying M&As, the abnormal bond returns are significantly different from zero, and are comparable in size at 0.58% and 0.55%, respectively. This suggests that bondholders benefit both from greater co-insurance in diversifying deals and greater operating synergies in non-diversifying deals. Abnormal stock returns are also unaffected by the industry focus of the deal, thus there is no direct evidence of wealth redistributions in the way that Galai and Masulis (1976) propose. It is notable that for the US, Billett et al. (2004) and Maqueira et al. (1998) also report no evidence of a conglomerate effect. In fact, Maqueira et al. (1998) find quite the reverse for pure stock-for-stock deals; they show that bidder abnormal bond returns are insignificant in diversifying deals and significantly positive in non-diversifying deals.

(Insert Table 3)

Panel A also refutes the conjecture that equity-financed acquisitions induce greater wealth benefits for the bondholders of the bidder. In fact, cash offers are associated with a higher mean abnormal bond return than are equity or mixed offers (though the difference in the means is insignificant). This suggests that bondholders are also sensitive to the agency and signalling implications of equity issues. For US firms, Billett et al. (2004) report similar results, while Travlos (1987) finds that the negative effects of equity financing outright dominate. Shareholder wealth changes are also not driven expressly by the payment method. The mean abnormal stock return is consistently lower when equity financing is used, but the differences in the means associated with the alternative payment methods are never significant.

An important contribution of this paper is that it examines whether bondholder wealth changes are subject to a listing effect. If acquisitions of private firms induce greater wealth gains for the shareholders of bidding firms, as Faccio et al. (2006) confirm, bondholders may also benefit indirectly. Panel A shows only marginal evidence in this regard. Both bondholders and shareholders earn significant abnormal gains when the target firm is privately held. When the target is publicly listed, abnormal bond returns are lower but still significant, while abnormal stock returns are insignificantly negative. The differences in means and medians are insignificant in both cases, although the difference in the means of abnormal stock returns becomes significant when only domestic deals are considered.

In acquisitions of listed firms, the form of the takeover bid has a pronounced impact on the wealth of bidder bondholders. When a tender offer is made, the mean abnormal bond return is highly significant at 0.75%. Conversely, negotiated deals have no discernible impact on bondholder wealth, and the difference in the mean returns associated with the two deals types is statistically significant. To some extent, this may owe to the fact that tender offers are typically financed with cash and directed at smaller, less levered target firms. It is nonetheless striking that for the US, Billett et al. (2004) report a negative rather than a positive effect of tender offers on bondholder wealth. The authors document a similar negative relationship between bondholder wealth and hostile offers. The results in Panel A do not support this finding for Europe. However, our sample comprises only five hostile bids, which is expected given the high degree of ownership concentration of Continental European firms. We nonetheless confirm that bidder shareholders suffer substantial wealth losses when a hostile bid is made. The mean abnormal stock return amounts to -14.14%, which suggests that hostile bidders tend to overpay for target firms. To some extent, non-hostile but competitive tender offers also run the risk of overpayment. Accordingly, the mean abnormal stock return is also lower when a tender offer is made (but the mean difference relative to negotiated deals is statistically insignificant).

Finally, Panel A considers the impact of two more deal characteristics on security returns. Firstly, there is no evidence that the wealth gains accrued to bidder bondholders vary over time. Notably, abnormal bond returns are comparable before and after 2000, which marked the end of the European M&A wave and the introduction of the European Insolvency Regulation in the European Union. Shareholder wealth changes are insignificantly negative until 2000 and significantly positive thereafter. This suggests that during the takeover wave, bidders were more likely to undertake bad acquisitions or

overpay for target firms. Secondly, both abnormal bond and stock returns are unaffected by whether the deal is later completed. Though not reported in Panel A, the reason for non-completion has no impact either; non-completion may arise when the offer is rejected or withdrawn, or when the bidder acquires a toehold but does not proceed to take full control.

B. The impact of relative firm characteristics. Panel B illustrates how the pre-merger characteristics of bidding and target firms affect bidder security holders in acquisitions of listed target firms. We first stratify the sample by whether the ratio of the target and bidder market capitalization is greater than the sample median. The results lend strong statistical evidence to a negative size effect on abnormal bond returns. When the target firm is relatively small, the mean abnormal bond return is 0.85%. Conversely, when the target is relatively large, abnormal bond returns are both insignificant and negligible in size. Remarkably, Panel B suggests that abnormal stock returns are also lower when the target is relatively large, but the mean difference is statistically insignificant. Though not reported here, this is attributable to the fact that the size effect holds for domestic but not for cross-border deals.

In the spirit of Shastri (1990), we illustrate next how bidder security holders are affected by differences in the risk profiles of bidding and target firms. We first consider the impact of changes in asset risk. Abnormal security returns are partitioned by whether the combined portfolio of bidder and target has higher or lower asset volatility than the pre-merger bidder. The results confirm our conjecture that bondholder wealth is strongly affected by asset risk changes. When asset risk is reduced in the combined firm, the mean abnormal bond return is significantly positive at 0.74%. When asset risk is increased, the mean abnormal return turns insignificantly negative, and the difference in the means is significant at the 5% level. Billett et al. (2004) report comparable but considerably weaker results for investment-grade US bidders. It is notable that shareholders also appear to respond negatively rather than positively to increased asset risk.

In Panel B, financial risk changes only have a marginal impact on bondholder wealth. When leverage is lower or interest coverage is higher in the combined firm, the mean abnormal bond return is highly significant. Conversely, when the combined leverage is higher or the combined interest coverage is lower, the mean return is negligible. The differences in the means are significant economically but fall marginally short of being significant statistically. Predictably, increased financial risk seems to have a positive rather than a negative effect on abnormal stock returns, but the mean differences are again insignificant. It is notable that Billett et al. (2004) also fail to find a significant financial risk effect. The authors point out that this type of analysis does not account for a change in financial risk post-merger or as a result of the merger itself. We find strong support for this argument (not reported in the table). Before the announcement date, the combined leverage of the merging firms is 0.28 on average, but it rises to 0.38 in the fiscal year after the deal's completion.

Panel B finally partitions the sample by the credit rating of the bidder relative to that of the target. Credit ratings proxy for the overall default probability and thus jointly capture both asset and financial risks. Bidder bondholders do seem to respond to the relative rating of the target firm. The results show that the mean abnormal bond return is 0.56% when the target is rated at least as high as the bidder, but only 0.03% when it is rated lower. The bondholder returns are even more divergent when median returns are considered (1.72% versus 0.12%). The response of shareholders is exactly opposite, with

abnormal stock returns reduced considerably when the target is rated relatively high. Unfortunately, none of mean differences are significant owing to the small sample size of just 21 observations. Nonetheless, these patterns are consistent with the conflict of shareholder and bondholder interests with respect to risk-taking, and lend support to our earlier results.

4.2.2. Bidder abnormal bond returns in domestic and cross-border acquisitions

A. The impact of deal and firm characteristics. Table 4 documents some major differences in the response of bidder bondholders to domestic and cross-border M&As. A first important finding is that bondholders reap statistically significant abnormal wealth benefits from both domestic and cross-border deals. However, there is some evidence that the cross-border abnormal bondholder gains are slightly lower. The difference in the mean abnormal bond returns, at 0.84% and 0.41%, respectively, is only marginally insignificant, while the Wilcoxon rank-sum test is in fact significant at the 10% level. These findings lend some support to our conjecture that bondholders do not respond well to the greater informational asymmetries and legal uncertainties and inefficiencies associated with cross-border deals.

(Insert Table 4)

The remainder of Table 4 compares the drivers of bidder bondholder wealth in domestic versus cross-border M&As. Domestic and cross-border abnormal bond returns are individually partitioned by deal and firm characteristics in Panels A and B, respectively. For the sake of brevity, we only report those results where notable differences emerge. For example, we do not show the impact of the payment method, the type and attitude of the deal, and the relative size of the bidder and the target.

Panel A shows that the lack of a conglomerate effect persists for both domestic and cross-border M&As. However, it is notable that the difference between domestic and cross-border abnormal returns is only significant when the deal is non-conglomerate and when the target firm is privately held. This suggests that bidder bondholders are more concerned about the uncertainties of cross-border acquisitions when operational synergies are to be realized, and when informational asymmetries are greater. It is also interesting that only after 2000 do bondholders benefit relatively less from cross-border deals.

The risk sensitivity of bidder bondholders also differs somewhat in domestic and cross-border M&As. Panel B shows that in cross-border deals, bondholders are highly sensitive to asset risk, but not to financial risk measured by leverage or interest coverage. This may suggest that under greater asymmetric information, bondholders discount the informativeness of such accounting-based risk measures. In domestic deals, bond returns respond equally to changes in asset risk and financial risk. The mean differences depicted in the panel fall marginally short of being significant, but this may be attributed to the limited sample size.

B. Creditor protection spillovers in cross-border acquisitions. We have conjectured in Section 2.2 that cross-border M&As induce considerable spillovers in the regulatory and institutional standards that protect bondholders *vis-à-vis* the firm. We use four country-level governance indicators to compare

creditor protection in the bidder and target countries. Each of these variables is described in detail in Panel C of Appendix 2. Firstly, we use the creditor rights protection index developed by Martynova and Renneboog (2006b) using information collected from more than 150 academic and practicing corporate lawyers located in 31 European countries and the US. The authors gather detailed information on changes in creditor rights regulation which have taken place by country over the past 15 years. Consequently, their creditor rights index, which is based on the index constructed by La Porta et al. (1998), has the advantage of being available for each year between 1990 and 2005 and for more European countries¹⁵. Secondly, the efficiency of claims disputes resolution is measured by the credit contract enforcement index of Djankov et al. (2004). This variable is defined as the number of days needed to resolve a payment dispute through courts, and is measured in 129 countries at January 2003. Thirdly, we use the corporate transparency index of Martynova and Renneboog (2006b), also constructed using the same international network mentioned above and available on a yearly basis, to measure the general quality of information available to corporate investors. And fourthly, we use a general rule of law index constructed by the World Bank. This variable aggregates several indicators that measure the effectiveness and predictability of the judiciary, the enforceability of contracts and the incidence of crime. It is available bi-yearly from 1996 onwards for 209 countries¹⁶.

Table 5 partitions abnormal bond returns by the relative scores of target and bidder countries in each of the four governance variables. Abnormal stock returns are also reported in order to identify potential wealth shifts between bondholders and shareholders. The first key result is that bondholders only benefit from cross-border M&As when the deal provides access to a jurisdiction with better creditor rights. The table shows that the mean abnormal bond return is highly significant when creditor rights are better in the target country and insignificant otherwise. The mean difference of 0.66% is highly significant both statistically and economically, which confirms that creditor rights spillovers do occur in cross-border M&As.

(Insert Table 5)

Improvements in the efficiency of credit contract enforcement have a similar but more muted impact on bidder bondholder wealth. The mean difference in abnormal bond returns is lower and marginally insignificant, but the rank-sum test is significant at the 10% level. What is more interesting is that the better enforcement of credit contracts also induces a statistically significant reduction in shareholder wealth. Table 5 shows that abnormal stock returns are positive when enforcement is poorer in the target country, but they turn insignificantly negative when it is better. This suggests that improved enforcement redistributes wealth from shareholders to bondholders by reducing the tolerance of creditors for unserviced debt claims and by decreasing the probability that shareholders retain some value in insolvent firms in countries with a more creditor-oriented insolvency jurisdiction. Otherwise,

¹⁵ The index by La Porta et al. (1998) is not available for countries in Central and Eastern Europe and is static (constructed for 1995).

¹⁶ The World Bank publishes six governance indicators: rule of law, voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality and control of corruption. These indices are all highly correlated, thus we only include the rule of law index in our analysis. We have recomputed all our results with the other indices and found no material differences.

neither bondholders nor shareholders seem to respond to the general conditions of the institutional environment. Table 5 suggests that abnormal bond returns are insensitive to the relative level of corporate transparency and rule of law in the target country. There is some indication that bidder shareholders incur relatively higher wealth gains when the rule of law is improved, but none of the results are significant statistically.

4.2.3. Bidder abnormal bond returns: the impact of the legal and governance regime

We now examine the impact of the legal origin in the spirit of the conjectures proposed in Section 2.2. We distinguish between common law and civil law countries, which crudely proxies for market- and stakeholder-oriented governance systems, respectively. For bidder countries, this reduces to a mere distinction between the UK and Continental Europe, because all bidders are European and none are from Ireland. Within the family of civil law countries, a distinction of French, German and Nordic civil law traditions does not change the results.

Table 6 first partitions bidder abnormal bond returns by the bidder's domicile: a civil law Continental European country or the common law UK. The initial results show that bidder bondholders incur substantial wealth gains in both cases. Abnormal bond returns are highly significant in both Continental Europe and the UK at 0.48% and 0.71%, respectively, and the mean difference is statistically insignificant. This does not support our prior conjecture that Continental European bondholders should benefit more from M&As.

(Insert Table 6)

However, the further stratification of the sample reveals considerable differences in the drivers of abnormal returns in Continental Europe and the UK. The differential impact of governance standards is illustrated in Panel A. The first remarkable finding is that the abnormal bondholder gains are driven by domestic deals in Continental Europe and by cross-border deals in the UK. There is some evidence that Continental European bondholders gain both from domestic and cross-border M&As. However, the cross-border abnormal bond returns are substantially lower, by 0.94% on average. The patterns observed for UK bidders are strikingly different. The cross-border abnormal bond returns are considerable, and are significantly higher than those reported for Continental Europe. In contrast, UK domestic deals do not accrue significant gains to bidder bondholders. The difference between the domestic and cross-border abnormal bond returns is insignificant. Still, the absence of abnormal bond gains in domestic deals corresponds well to the empirical evidence reported for the US, another market-oriented governance regime rooted in the common law tradition.

The lower cross-border returns in Continental Europe are likely to be motivated by governance concerns. In stakeholder-oriented governance regimes, creditors and other stakeholders enjoy considerable authority *vis-à-vis* the firm, and a cross-border acquisition may deteriorate their strong domestic position. This may induce greater agency costs of debt, which could be amplified further if the target regime is market-oriented (Köke and Renneboog, 2005). Panel A provides some support for this argument. In Continental Europe, cross-border abnormal bond returns are positive when the target country is civil law, but insignificantly negative when the target country is common law. The

difference in the mean abnormal returns is marginally insignificant, but the number of cross-regime deals is relatively small.

In cross-border acquisitions by UK bidders, the legal regime of the target country has no discernible impact on bondholder wealth. Rather, bondholders respond specifically to an improvement in creditor rights. Panel A shows that the mean abnormal bond return is extremely high (2.33%) when creditor rights are better in the target country, but it is negligible (0.09%) otherwise. Interestingly, Continental European bondholders do not respond materially to creditor rights differences, though the mean abnormal return is again higher when the target country offers better protection.

The bondholders of UK bidders also react more to firm and deal characteristics. Panel B illustrates that abnormal bond returns in the UK, but not in Continental Europe, are subject to a negative listing effect and are significantly higher when a tender offer is made. UK bondholders are also more sensitive to risk considerations. Panel C shows that abnormal bond returns respond to asset risk changes in both the UK and Continental Europe. However, the response of UK bondholders is considerably stronger. When asset risk in the combined firm is greater, the relative reduction in the mean abnormal bond return is 3.00% in the UK and 0.97% in Continental Europe. Moreover, only UK bondholders seem to be responsive to changes in financial risk. The panel shows that UK abnormal bond returns are significantly lower when interest coverage is reduced in the combined firm, and the negative impact of increased leverage is only marginally insignificant. The same financial risk effects appear to be of little concern to the bondholders of Continental European bidders. This may be attributable to the better representation of creditor interests in these firms. In stakeholder-oriented governance regimes, banks and other risk-averse stakeholders have a strong influence on capital structure decisions, which may prevent the firm from exacerbating financial risk.

4.2.4. Multivariate analysis of bidder abnormal security returns

To substantiate our univariate findings, we now perform a multivariate analysis of abnormal security returns in bidding firms. Table 7 shows the results of three pairs of regressions on abnormal bond and stock returns in the two months surrounding M&A announcements. In the models, we use a variety of independent variables to jointly test for the effects of governance, deal and firm characteristics. Each independent variable is an indicator variable which equals one if the variable description holds and zero otherwise. As before, the abnormal stock returns are included to help identify wealth transfers between shareholders and bondholders. The coefficient estimates are compared in each pair of bond and stock regressions using a Wald test.

(Insert Table 7)

The three pairs of regressions serve different purposes. Model (1) incorporates only those independent variables that are available for acquisitions of both private and listed companies. This specification is designed to maximize the number of observations in the regressions¹⁷. Model (2)

¹⁷ We do not test for relative firm characteristics (size and asset and financial risk effects), as the accounting data of some bidding and target firms are lacking. The model also does not control for the payment method, as it is often not disclosed.

jointly tests the full set of independent variables for acquisitions of listed firms. Finally, Model (3) draws on Model (2), but excludes some of the insignificant variables to maximize the joint significance of the bond regression. We verify the absence of omitted variables using the Ramsay RESET test. The indicator variable that captures the relative level of creditor rights in the bidder and target countries is included in all three models. The models do not test for the target country's legal origin and country-level corporate transparency. The inclusion of these generates multicollinearity problems in the regressions, and they neither contribute meaningfully nor have an impact on abnormal returns in alternative specifications¹⁸.

In each regression shown in Table 7, we arrange the independent variables by whether they capture governance, deal or firm characteristics. A first key finding is that all else equal, bidder bondholders benefit considerably less from cross-border than from domestic M&As. The relative reduction in abnormal bond returns is economically significant in all three specifications, varying between 1.12% in Model (1) and 2.10% in Model (3). This supports our prior conjecture that bondholders do not respond well to the added risks associated with cross-border deals. It also reinforces the earlier univariate results that were similar but considerably weaker. There is equally strong evidence that at least in acquisitions of listed firms, bidder bondholders earn substantially lower gains in the UK than in Continental Europe. In Model (1), the coefficient is insignificant on the dummy that captures whether the bidder country is common law (i.e. the UK). However, it becomes highly significant when acquisitions of private firms are excluded in Models (2) and (3). As has been mentioned, including the target country's legal origin in the regressions does not change this result, and the coefficient on the target country dummy is always insignificant.

Table 7 confirms that bidder bondholders benefit more from cross-border deals where creditor protection is better in the target country. The coefficient on the creditor rights dummy is highly significant in all three specifications. In Model (3) it is also significantly different from the coefficient in the stock regression, which is (insignificantly) negative. We interpret this as marginal evidence that improved creditor rights *vis-à-vis* the firm redistribute wealth from shareholders to bondholders. Contrary to the univariate results, there is no statistical evidence for a similar wealth shift when credit contracts are more efficiently enforced in the target country. Still, in the bond regressions of Models (2) and (3) the coefficient on the enforcement dummy is highly significant. This suggests that bondholders do respond favorably to improved enforcement. The relative level of rule of law has no discernible impact on abnormal bond returns.

Of the deal characteristics, two stand out as being significant drivers of the changes in bidder bondholder wealth. Firstly, Model (1) shows strong evidence of a negative listing effect; when the target firm is publicly listed, abnormal bond returns are lower by 1.18%. However, the results do not confirm that acquisitions of listed targets would accrue lower benefits to shareholders. Secondly, all three models indicate that tender offers benefit bondholders more than do negotiated deals. When a tender offer is made, abnormal bond returns are higher by between 1.30% in Model (1) and 1.50% in Model (2). The other deal characteristics have no discernible impact on bondholder wealth changes. Notably, abnormal bond returns are unaffected by whether the deal is diversifying, financed with

¹⁸ We test for multicollinearity using variance inflation factors (VIF), tolerance and condition indices. In the models shown in Table 7, none of these diagnostic measures indicate problems.

equity, or hostile. They are also invariant to whether the deal is announced after 2000 or is later completed. Abnormal stock returns do not respond to any of these deal characteristics either except deal attitude, which corresponds to the univariate findings in Section 4.2.1.

Finally, Models (2) and (3) illustrate for acquisitions of listed targets how the merging firms' relative characteristics affect abnormal bond returns in the bidding firm. Consistent with the univariate results, the size effect is fully confirmed in the multivariate regressions. When the relative market capitalization of target and bidder is higher than the sample median, abnormal bond returns are reduced significantly, by 1.66%. Bondholders are also sensitive to both asset risk and financial risk considerations. The asset risk dummy is marginally insignificant in Model (2) but turns significant in Model (3). In this specification, abnormal bond returns are lower by 1.14% when asset risk is greater in the combined firm than in the pre-merger bidder. Interestingly, shareholder wealth also decreases in asset risk, confirming the earlier univariate findings. Of the financial risk indicators, changes in interest coverage have an economically significant impact on bondholder wealth. When the combined interest coverage is higher, abnormal bond returns increase by 1.78% in Model (2) and 1.51% in Model (3). On the other hand, the relative level of combined leverage has no discernible impact. This result holds irrespective of whether we include the interest coverage dummy in the regressions, and may indicate that interest coverage better captures the immediate concerns of bidder bondholders over financial risk.

4.3. Target firm abnormal bond returns around M&A announcements

This section extends the analysis of security holder wealth changes to target firms. Regrettably, the small sample size of just 24 observations does not allow the same exhaustive investigation of target abnormal bond and stock returns. We still resort to performing the multivariate regressions described in Section 4.2.4 and report the results in Appendix 3. As before, the appendix contains three pairs of bond and stock regressions. Model (1) only includes those independent variables that are available for the full set of observations. It does not examine the effect of the bidder's public status either due to multicollinearity issues¹⁹. Model (2) jointly tests for the impact of governance, deal and firm characteristics for the acquisitions where the bidding firm is publicly listed. Still, it does not incorporate the full set of independent variables, including the payment method, to maintain degrees of freedom and to avoid multicollinearity. Finally, Model (3) maximizes the joint significance of the bond regression by excluding some of the insignificant independent variables. As before, the absence of omitted variables is verified using the Ramsay RESET test. The models do not test for the acquirer country's legal origin and country-level corporate transparency; neither variable has an impact on abnormal returns and they create multicollinearity problems in the regressions.

Appendix 3 shows only marginal evidence that target abnormal bond returns are affected by the deal's geographical focus. The coefficient on the cross-border dummy is negative in all three specifications, but it is only significant in Model (2). There is stronger indication in Model (3) that target abnormal bond returns are lower in the common law UK than in civil law Continental European countries. This coincides both with our prior conjecture and the respective result for bidding firms.

¹⁹ Only two unlisted bidders, one government-owned and one subsidiary, appear in the sample, and the coefficient on the listing dummy is otherwise insignificant.

Model (3) also confirms that in cross-border deals, weaker creditor rights in the bidder country lead to lower target abnormal bond returns. The relative efficiency of credit contract enforcement has no such impact, even when the creditor rights dummy is excluded from the regressions. Somewhat surprisingly, target bondholders reap consistently higher wealth gains when the rule of law is better in their home country. Abnormal stock returns are largely insensitive to each of these governance conditions.

For the deal characteristics, Model (3) shows marginal evidence that target abnormal bond returns are lower when a tender offer is made. This result is inconsistent with our earlier findings for bidding firms, although it is not robust to the inclusion of the hostility dummy which otherwise has no effect and is thus excluded in Model (3). Shareholder wealth gains are significantly higher when a tender offer is made. This is expected, as tender offers are made directly to the target shareholders and can thus induce intense price competition for the shares of the target firm.

Finally, Models (2) and (3) illustrate the impact of the relative characteristics of bidding and target firms. Target bondholders do not respond to the relative size of target and bidder in the way that bidder bondholders do. However, target abnormal bond returns are equally affected by changes in asset risk. Model (2) indicates that the wealth gains of target shareholders also decrease in asset risk; Billett et al. (2004) report a similar, albeit marginally insignificant, result for the US. There is no evidence that target abnormal bond returns are negatively affected by an increase in financial risk. In Model (2), the coefficient on the interest coverage dummy has the correct sign but is statistically insignificant. Surprisingly, target bondholders respond positively to an increase in leverage, while target shareholders respond negatively (Model 3).

5. Robustness checks and extensions

We perform a variety of robustness checks to ensure the validity of the above results. The separate investigation of euro- and sterling-denominated Eurobonds suffers from sample size issues and otherwise does not yield materially different results. Our findings are also robust to alternative specifications of the deal- and firm-level variables. Beginning with the payment method, distinguishing pure stock-for-stock M&As rather than (partially) equity-financed deals makes no difference to the empirical findings. Similarly, the results are essentially identical when we use the book value of assets rather than market capitalization to measure the relative size of bidding and target firms. Replacing the firm-level dummies with the actual variables yields qualitatively similar results.

We also investigate whether long leverage has a stronger impact on bondholder wealth than does total leverage, which incorporates both short- and long-term liabilities. Bondholders should respond more to long leverage, because their claims are not directly affected by the servicing of short-term liabilities. We define long leverage as the book value of long-term debt divided by the sum of the book value of long-term debt and market capitalization. The results show that a change in long leverage does have an effect on the bondholders of UK bidders. However, it has no impact on bondholders in Continental Europe, who seem to be generally insensitive to financial risk changes. Using long leverage in the multivariate regressions of Table 7 and Appendix 3 does not change the results either.

We try several alternative specifications of the governance variables used throughout the paper. While Martynova and Renneboog's (2006b) creditor rights index draws on the index created by La Porta et al. (1998), it includes an additional regulatory provision on whether creditor approval is required to initiate bankruptcy proceedings (see Panel C of Appendix 1). When we remove this additional provision from the index and repeat the analysis, practically the same results are obtained. We also replace Martynova and Renneboog's (2006b) corporate transparency index and the World Bank's rule of law index by the indicators created by La Porta et al. (1998) on accounting standards, judicial efficiency and rule of law. Each of these indices is statistically insignificantly related to abnormal bond returns. Of course, a problem with these indices is that they neither capture regulatory changes over time nor are they available for Central and Eastern European countries.

As another alternative to the corporate transparency index, we introduce a firm-level dummy in the regressions that captures whether a firm has issued American Depository Receipts (ADR). ADRs prescribe compliance with US accounting standards and are typically associated with improved disclosure. The dummy has no impact on changes in bondholder wealth. Also, we have noted earlier that the World Bank publishes six governance indicators: rule of law, voice and accountability, political stability, government effectiveness, regulatory quality and control of corruption. A recalculation of the results with these alternative indices does not yield material differences.

Finally, we also perform multivariate regressions that maximize the joint significance of the stock rather than the bond regressions. In these models, we include two additional dummy variables that capture cross-country differences in Martynova and Renneboog's (2006b) indices of shareholder rights and minority shareholder protection (which were also constructed using the international network specified in Appendix 3). We find that shareholder wealth changes are positively affected by an improvement in the protection of minority shareholders *vis-à-vis* incumbent shareholders but not in shareholder protection *vis-à-vis* management. Bondholder wealth changes are unaffected by each of these variables across all specifications, and the wealth redistribution effects previously identified also persist. These results are marginal to the focus of this paper and are not reported here.

6. Conclusion

This paper makes an important contribution to the comparative corporate governance literature by investigating for the first time the bondholder wealth effects of European M&As. Existing studies have focused on US domestic deals only and shown very limited evidence that either bidding or target firm bondholders would benefit from M&As at all (Eger, 1983; Maquieira et al., 1998; Billett et al., 2004). More importantly, no attempt has been made to demonstrate how bondholder wealth changes may differ in cross-border takeovers, across governance systems or as a result of cross-border spillovers in creditor protection. Similar issues have been a hot topic in recent academic research and have been investigated extensively for changes in shareholder wealth (Moeller and Schlingemann, 2005, for the US and Goergen and Renneboog, 2004, for Europe).

(Insert Table 8)

We show that each of these factors has a fundamental impact on bondholder wealth based on investment-grade Eurobonds (we summarize the conjectures and the economic effects in Table 8). Firstly, we find that M&As involving European firms are considerably more bondholder-friendly than are US domestic deals. The wealth benefits accrued to bidding firm bondholders are economically substantial and statistically significant (with a mean of 0.56% and a median of 0.81%), while in target firms abnormal returns are positive but insignificant. Secondly, bondholder gains in both bidding and target firms are systematically higher in M&As that involve Continental European firms. This is consistent with the better representation of creditor interests in stakeholder- relative to market-oriented governance regimes. And thirdly, bidding firm abnormal bond returns are lower in cross-border deals. However, this is counterbalanced by wealth redistributions from shareholders to bondholders if creditor rights and the efficiency of credit contract enforcement are better in the target country. This is a key result because it shows for the first time that creditor protection spillovers change the relative riskiness of security classes. To some extent, we find similar results for target firm bondholders, but our target sample is small and presents a challenge for future research.

These findings ultimately show that cross-country differences in creditor rights and the representation of creditor interests cannot be discounted. The interactions between market- and stakeholder-oriented regimes have considerable economic implications, and this has as much an impact on bondholders as it does on shareholders in cross-border M&As. Our results also provide other interesting additions to the existing literature. We show that bidder bondholders earn considerably lower, but still significant, abnormal returns when the target firm is publicly listed. A similar listing effect has already been reported for the shareholders of bidding firms in the existing literature. In acquisitions of listed firms, bidder bondholders benefit more when the target firm is relatively small and when a tender offer is made. Finally, bondholders respond strongly to the changes M&As induce in both asset risks related to business operations and financial risks related to capital structure.

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Table 1
Descriptive statistics

Variable descriptions are provided in Panel B of Appendix 1. Bond ratings are obtained from Standard and Poor's or, when unavailable, Moody's. The ratings are cardinalized i.e BBB=1, BBB=2, BBB+=3,...,AAA=10.

	<i>Panel A: Unbalanced sample of all firms</i>						<i>Panel B: Data available for both bidders and targets</i>					
	N	Mean	Median	Std. dev.	Min.	Max.	N	Mean	Median	Std. dev.	Min.	Max.
	<i>Bidding firms</i>						<i>Bidding firms</i>					
Market capitalization (millions of 2004 euro)	236	20,217	9,399	35,449	865	335,284	75	24,509	9,373	48,319	864,549	335,284
Assets (millions of 2004 euro)	236	27,949	12,407	39,950	953	246,959	75	24,351	15,689	33,086	1,572	230,385
Return on assets	236	7.6%	7.1%	6.5%	-22.2%	33.6%	75	7.9%	7.6%	7.4%	-22.2%	27.2%
Leverage	236	0.31	0.30	0.16	0.01	0.86	75	0.28	0.25	0.16	0.01	0.69
Interest coverage	236	5.9	4.0	15.2	-21.3	224.5	75	8.2	4.1	25.9	-5.9	224.5
Asset risk (std. dev. of unlevered stock returns)	236	0.06	0.06	0.03	0.02	0.17	75	0.07	0.06	0.03	0.02	0.13
Number of bonds per firm	225	2.76	2	2.39	1	16	15	2.47	2	1.6	1	6
Bond maturity (years remaining)	225	6.60	5.88	3.42	1.48	21.38	15	6.67	5.45	4.00	3.11	15.79
Bond duration (years)	225	5.14	4.93	1.93	1.41	12.07	15	5.01	4.62	2.00	2.78	9.73
Bond rating	225	4.35	4	2.01	1	10	15	6.47	6	2.07	4	10
	<i>Target firms</i>						<i>Target firms</i>					
Market capitalization (millions of 2004 euro)	77	6,122	1,053	16,723	13	118,343	75	5,301	964	15,117	13	118,343
Assets (millions of 2004 euro)	77	4,557	1,489	7,347	16	36,768	75	4,475	1,480	7,405	16	36,768
Return on assets	77	4.9%	8.4%	17.4%	-75.7%	35.0%	75	4.5%	8.3%	17.5%	-75.7%	35.0%
Leverage	77	0.23	0.20	0.18	0.00	0.65	75	0.23	0.21	0.18	0.00	0.65
Interest coverage	77	35.7	4.3	361.5	-805.6	3,054.0	75	36.3	4.3	366.4	-805.6	3,054.0
Asset risk (std. dev. of unlevered stock returns)	77	0.09	0.08	0.08	0.02	0.51	75	0.10	0.08	0.08	0.02	0.51
Number of bonds per firm	24	2	2	0.98	1	4	15	2	2	1.07	1	4
Bond maturity (years remaining)	24	8.22	6.82	4.67	2.98	22.44	15	7.96	7.11	3.76	2.98	13.92
Bond duration	24	5.74	5.54	1.97	2.77	9.88	15	5.69	5.57	1.72	2.81	8.39
Bond rating	24	4.75	5	2.07	1	9	15	4.53	5	1.96	2	8

Table 2
Bidding and target firm abnormal security returns around M&A announcements

Abnormal returns are in % and are described in Panel A of Appendix 1. Variable descriptions are provided in Panel B of Appendix 1. Combined returns are computed as weighted averages, where the bond weights are based on the book value of long-term debt and the equity weights on market capitalization at the fiscal year-end preceding the announcement. Where applicable, the weights are converted into euro. The significance level of medians is based on Wilcoxon signed-ranks tests. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

	Weighting of bond pricing benchmark	Mean	Statistic	Median	Statistic	N
<i>Panel A: Bidding firms</i>						
Abnormal bond return	Equal	0.56	4.21 ^a	0.81	5.93 ^a	225
	Value	0.52	3.91 ^a	0.71	5.34 ^a	225
Abnormal stock return		0.78	1.16	0.34	1.32	225
Combined abnormal bond and stock return	Equal	0.70	1.36	0.34	1.76 ^c	225
	Value	0.69	1.34	0.26	1.74 ^c	225
<i>Panel B: Target firms</i>						
Abnormal bond return	Equal	0.62	0.96	0.33	1.00	24
	Value	0.58	0.91	0.22	0.83	24
Abnormal stock return		12.40	3.47 ^a	9.55	2.86 ^a	24
Combined abnormal bond and stock return	Equal	10.23	3.62 ^a	6.15	2.94 ^a	24
	Value	10.24	3.62 ^a	6.16	2.60 ^a	24

Table 3
Bidder abnormal security returns around M&A announcements

Abnormal returns are in % and are described in Panel A of Appendix 1. Abnormal bond returns are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Variable descriptions are provided in Panel B of Appendix 1. The difference in means t-test assumes unequal variances across groups when a test of equal variances is rejected at the 10% level. The significance level of medians and differences in medians are based on Wilcoxon signed-ranks and rank-sum tests, respectively. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

Panel A: Deal characteristics

Grouping criteria		Bonds		Stocks		N
		Mean	Median	Mean	Median	
Industry focus	Same two-digit SIC code	0.55 ^a	0.8 ^a	0.49	-0.23	152
	Different two-digit SIC code	0.58 ^b	0.82 ^a	1.39	0.78	73
	<i>Difference</i>	<i>0.04</i>	<i>0.02</i>	<i>0.90</i>	<i>1.01</i>	
Payment method	Cash only	0.61 ^a	0.85 ^a	0.79	0.92	142
	Equity or mix	0.34	0.16	-1.86	-2.55	23
	<i>Difference</i>	<i>-0.28</i>	<i>-0.69</i>	<i>-2.65</i>	<i>-3.47</i>	
Target firm's public status	Unlisted	0.65 ^a	0.85 ^a	1.43 ^b	0.77 ^c	149
	Listed	0.39 ^c	0.66 ^a	-0.49	-2.08	76
	<i>Difference</i>	<i>-0.26</i>	<i>-0.20</i>	<i>-1.92</i>	<i>-2.85</i>	
Deal type in acquisitions of listed firms	Negotiated deal	-0.06	0.39	0.86	0.12	34
	Tender offer	0.75 ^b	0.99 ^a	-1.58	-3.19	42
	<i>Difference</i>	<i>0.81^c</i>	<i>0.60</i>	<i>-2.43</i>	<i>-3.31</i>	
Deal attitude in acquisitions of listed firms	Friendly	0.36	0.64 ^b	0.47	-1.80	71
	Hostile	0.73	1.78	-14.14 ^c	-6.38 ^c	5
	<i>Difference</i>	<i>0.37</i>	<i>1.14</i>	<i>-14.61^b</i>	<i>-4.58^b</i>	
Date of announcement	1995-2000	0.58	0.34 ^c	-2.41	-2.89	38
	2001-2004	0.55 ^a	0.85 ^a	1.43 ^b	0.78 ^b	187
	<i>Difference</i>	<i>-0.03</i>	<i>0.51</i>	<i>3.84^b</i>	<i>3.68^c</i>	
Deal status	Not completed	0.61 ^a	0.85 ^a	0.73	-0.09	68
	Completed	0.53 ^a	0.77 ^a	0.81	0.62	157
	<i>Difference</i>	<i>-0.08</i>	<i>-0.09</i>	<i>0.07</i>	<i>0.71</i>	

Panel B: Firm characteristics in acquisitions of listed firms

Grouping criteria		Bonds		Stocks		N
		Mean	Median	Mean	Median	
Relative size of target to bidder	Smaller or equal to sample median	0.85 ^b	0.99 ^a	0.18	0.06	36
	Larger than sample median	-0.07	0.15	-1.26	-3.63	35
	<i>Difference</i>	<i>-0.93^b</i>	<i>-0.84^c</i>	<i>-1.43</i>	<i>-3.69</i>	
Asset risk	Lower in combined firm than in bidder	0.74 ^a	0.76 ^a	0.99	1.91	51
	Higher in combined firm than in bidder	-0.71	0.02	-4.14	-3.63	17
	<i>Difference</i>	<i>-1.45^b</i>	<i>-0.74^c</i>	<i>-5.13</i>	<i>-5.54</i>	
Leverage	Lower in combined firm than in bidder	0.59 ^b	0.68 ^a	-2.17	-3.58	44
	Higher in combined firm than in bidder	0.07	0.56	2.14	1.91	27
	<i>Difference</i>	<i>-0.51</i>	<i>-0.12</i>	<i>4.31</i>	<i>5.49</i>	
Interest coverage	Higher in combined firm than in bidder	0.66 ^b	0.67 ^b	-0.60	-2.55	37
	Lower in combined firm than in bidder	0.11	0.58	-0.45	-0.03	34
	<i>Difference</i>	<i>-0.54</i>	<i>-0.08</i>	<i>0.15</i>	<i>2.52</i>	
Bond rating	Bidder rated lower or equal to target	0.56	1.72	-6.93	-4.43 ^c	5
	Bidder rated higher than target	0.03	0.12	-1.04	3.10	16
	<i>Difference</i>	<i>-0.53</i>	<i>-1.60</i>	<i>5.88</i>	<i>7.52</i>	

Table 4
Bidding firm abnormal bond returns around domestic and cross-border M&A announcements

Abnormal bond returns are in % and are described in Panel A of Appendix 1. They are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Variable descriptions are provided in Panel B of Appendix 1. The difference in means t-test assumes unequal variances across groups when a test of equal variances is rejected at the 10% level. The significance level of medians and differences in medians are based on Wilcoxon signed-ranks and rank-sum tests, respectively. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

Grouping criteria		Domestic M&As			Cross-border M&As			<i>Difference</i>	
		Mean	Median	N	Mean	Median	N	<i>Mean</i>	<i>Median</i>
Abnormal bond returns		0.84 ^a	0.91 ^a	79	0.41 ^b	0.77 ^a	146	-0.43	-0.13 ^c
<i>Panel A: Deal characteristics</i>									
Industry focus	Same two-digit SIC code	0.85 ^a	0.94 ^a	52	0.39 ^b	0.72 ^a	100	-0.46	-0.22 ^c
	Different two-digit SIC code	0.83 ^b	0.87 ^a	27	0.44	0.81 ^a	46	-0.39	-0.06
	<i>Difference</i>	-0.02	-0.07		0.05	0.09			
Target firm's public status	Unlisted	1.04 ^a	0.94 ^a	46	0.47 ^b	0.82 ^a	103	-0.57	-0.12 ^c
	Listed	0.56	0.56 ^b	33	0.26	0.69	43	-0.30	0.13
	<i>Difference</i>	-0.48	-0.38		-0.21	-0.13			
Date of announcement	1995-2000	0.48	0.15	17	0.67	0.45 ^c	21	0.19	0.30
	2001-2004	0.94 ^a	0.94 ^a	62	0.36 ^b	0.79 ^a	125	-0.58 ^b	-0.15 ^b
	<i>Difference</i>	0.47	0.79		-0.31	0.34			
<i>Panel B: Firm characteristics in acquisitions of listed firms</i>									
Asset risk	Smaller in combined firm than in bidder	0.81 ^b	0.61 ^b	25	0.67 ^b	0.78 ^b	26	-0.13	0.17
	Greater in combined firm than in bidder	-0.52	-0.16	6	-0.82	0.02	11	-0.30	0.18
	<i>Difference</i>	-1.32	-0.77		-1.49 ^b	-0.76 ^c			
Leverage	Smaller in combined firm than in bidder	0.95 ^b	0.85 ^c	20	0.29	0.68	24	-0.67	-0.17
	Greater in combined firm than in bidder	-0.16	0.49	12	0.26	0.71	15	0.41	0.22
	<i>Difference</i>	-1.11	-0.36		-0.03	0.03			
Interest coverage	Greater in combined firm than in bidder	0.99 ^b	1.41 ^c	17	0.37	0.65	20	-0.62	-0.76
	Smaller in combined firm than in bidder	0.03	0.42	15	0.18	0.76	19	0.16	0.34
	<i>Difference</i>	-0.96	-0.99		-0.19	0.11			

Table 5

The impact of the regulatory and governance environment on bidding firm abnormal security returns around cross-border M&A announcements

Abnormal returns are in % and are described in Panel A of Appendix 1. Abnormal bond returns are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Variable descriptions are provided in Panel C of Appendix 1. The difference in means t-test assumes unequal variances across groups when a test of equal variances is rejected at the 10% level. The significance level of medians and differences in medians are based on Wilcoxon signed-ranks and rank-sum tests, respectively. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

Grouping Criteria	Bonds		Stocks		N	
	Mean	Median	Mean	Median		
<i>Target country scores better than bidder country in:</i>						
Creditor rights	No	0.12	0.60	0.55	0.56	70
	Yes	0.88 ^a	1.08 ^a	-0.02	-0.72	37
	<i>Difference</i>	<i>0.77^c</i>	<i>0.48^c</i>	<i>-0.58</i>	<i>-1.28</i>	
Credit contract enforcement	No	0.22	0.66 ^b	2.20 ^b	2.35 ^b	89
	Yes	0.72 ^b	0.86 ^a	-0.82	-1.43	53
	<i>Difference</i>	<i>0.50</i>	<i>0.20^c</i>	<i>-3.03^c</i>	<i>-3.78^c</i>	
Corporate transparency	No	0.43 ^c	0.79 ^b	0.48	0.34	73
	Yes	0.28	0.79 ^c	0.08	-0.87	34
	<i>Difference</i>	<i>-0.15</i>	<i>0.00</i>	<i>-0.41</i>	<i>-1.21</i>	
Rule of law	No	0.42 ^b	0.75 ^a	0.65	0.96	114
	Yes	0.36	0.79 ^b	1.78	3.97	32
	<i>Difference</i>	<i>-0.06</i>	<i>0.04</i>	<i>1.13</i>	<i>2.81</i>	

Table 6

The impact of legal origin on bidding firm abnormal bond returns around M&A announcements

Abnormal bond returns are in % and are described in Panel A of Appendix 1. They are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Variable descriptions are provided in Panels B and C of Appendix 1. The difference in means t-test assumes unequal variances across groups when a test of equal variances is rejected at the 10% level. The significance level of medians and differences in medians are based on Wilcoxon signed-ranks and rank-sum tests, respectively. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

		Bidder is civil law			Bidder is common law			<i>Difference</i>	
		Mean	Median	N	Mean	Median	N	<i>Mean</i>	<i>Median</i>
Abnormal bond returns		0.48 ^a	0.81 ^a	146	0.71 ^a	0.81 ^a	79	0.23	0.00
<i>Panel A: Governance characteristics</i>									
Geographical focus	Domestic	1.12 ^a	1.12 ^a	46	0.45	0.61	33	-0.68	-0.81
	Cross-border	0.18	0.69 ^b	100	0.89 ^a	1.05 ^a	46	0.71 ^b	0.36 ^b
	<i>Difference</i>	-0.94 ^a	-0.43 ^a		0.45	0.44			
Legal regime of target country in cross-border deals	Civil law	0.31	0.69 ^a	83	0.92 ^b	1.05 ^a	32	0.61	0.36
	Common law	-0.45	0.47	17	0.84	1.05 ^c	14	1.29	0.58
	<i>Difference</i>	-0.76	-0.22		-0.08	0.00			
Creditor rights in cross-border deals	Worse in target country	0.13	0.66	49	0.09	0.53	21	-0.04	-0.13
	Better in target country	0.42	0.80 ^b	28	2.33 ^a	1.96 ^a	9	1.91 ^a	1.16 ^a
	<i>Difference</i>	0.29	0.14		2.24 ^b	1.43 ^a			
<i>Panel B: Deal characteristics</i>									
Target firm's public status	Unlisted	0.43 ^b	0.79	107	1.19 ^a	1.21 ^a	42	0.75 ^b	0.42 ^b
	Listed	0.60 ^b	0.83	39	0.16	0.88	37	-0.44	0.05
	<i>Difference</i>	0.17	0.04		-1.02 ^b	-1.04 ^b			
Deal type in acquisitions of listed firms	Negotiated deal	0.46	0.76	21	-0.89	-0.08	13	-1.36 ^c	-0.84 ^c
	Tender offer	0.76 ^c	0.99 ^a	18	0.74 ^c	0.66	24	-0.03	-0.33
	<i>Difference</i>	0.30	0.23		1.63 ^b	0.74 ^c			
<i>Panel C: Firm characteristics in acquisitions of listed firms</i>									
Asset risk	Smaller in combined firm than in bidder	0.98 ^a	1.02 ^a	23	0.54	0.43	28	-0.45	-0.59
	Greater in combined firm than in bidder	0.02	0.39	12	-2.46 ^b	-1.61 ^c	5	-2.48 ^c	-2.00 ^c
	<i>Difference</i>	-0.97 ^c	-0.63		-3.00 ^a	-2.04 ^b			
Leverage	Smaller in combined firm than in bidder	0.64	1.02 ^b	21	0.55	0.25	23	-0.09	-0.77
	Greater in combined firm than in bidder	0.68 ^c	0.71 ^c	15	-0.68	0.01	12	-1.35	-0.70
	<i>Difference</i>	0.04	-0.31		-1.23	-0.24			
Interest coverage	Greater in combined firm than in bidder	0.53	1.01	16	0.75	0.30	21	0.21	-0.71
	Smaller in combined firm than in bidder	0.75 ^b	0.79 ^a	20	-0.79	-0.05	14	-1.54 ^b	-0.84
	<i>Difference</i>	-0.22	0.22		1.54 ^c	0.35			

Table 7
Multivariate regressions explaining bidding firm abnormal security returns

The dependent variable is the abnormal bond or stock return depending on the specification. Abnormal returns are in % and are described in Panel A of Appendix 1. Abnormal bond returns are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Each independent variable is a dummy variable equal to one if the description holds and zero otherwise. Variable descriptions are provided in Panels B and C of Appendix 1. T-statistics in parentheses use standard errors adjusted with the White (1980) correction for heteroskedasticity. Variance inflation factors (VIF), tolerance, and condition indices are diagnostic measures testing for multicollinearity. Beta coefficients are compared in each pair of bond and stock regressions using a Wald F-test. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

	Dependent dummy variables	Model 1			Model 2			Model 3		
		Bonds	Stocks	<i>F</i> -test	Bonds	Stocks	<i>F</i> -test	Bonds	Stocks	<i>F</i> -test
Governance characteristics Dummy = 1 if	Cross-border deal	-1.12 (-2.89) ^a	-0.76 (-0.38)	(0.03)	-1.62 (-1.88) ^c	4.19 (0.51)	(0.48)	-2.10 (-2.97) ^a	7.95 (1.16)	(2.18)
	Bidder is common law	-0.31 (-0.74)	-2.56 (-1.25)	(1.3)	-1.90 (-2.98) ^a	-6.55 (-1.13)	(0.61)	-2.09 (-3.48) ^a	-5.27 (-0.88)	(0.32)
	Creditor rights better in target country	1.00 (2.36) ^b	-1.32 (-0.58)	(1.05)	2.28 (2.61) ^b	-10.99 (-1.40)	(2.41)	2.13 (2.81) ^a	-10.90 (-1.34)	(3.05) ^c
	Credit contract enforcement better in target country	0.71 (1.29)	-0.21 (-0.08)	(0.15)	2.02 (2.22) ^b	-1.61 (-0.16)	(0.15)	2.63 (3.17) ^a	-5.84 (-0.62)	(1.11)
	Rule of law better in target country	-0.26 (-0.59)	1.89 (0.66)	(0.77)	-0.53 (-0.60)	3.78 (0.55)	(0.30)			
	Diversifying deal	-0.21 (-0.58)	-0.93 (-0.51)	(0.16)	0.94 (1.00)	-0.53 (-0.07)	(0.05)			
Deal characteristics Dummy = 1 if	Equity or mixed financing				0.42 (0.56)	-3.78 (-0.67)	(0.45)	0.36 (-0.53)	-4.30 (-0.85)	-0.68
	Target is publicly listed	-1.18 (-2.78) ^a	0.94 (0.40)	(0.92)						
	Tender offer	1.3 (2.50) ^b	-2.53 (-0.82)	(2.12)	1.50 (2.15) ^b	-2.99 (-0.63)	(0.60)	1.36 (2.44) ^b	-6.45 (-1.41)	(2.83) ^c
	Hostile bid	-0.02 (-0.02)	-13.33 (-1.79) ^c	(7.17) ^d	0.97 (1.10)	-14.41 (-1.44)	(3.20) ^c			
	Announcement after 2000	-0.09 (-0.20)	2.02 (0.80)	(1.03)	0.32 (0.44)	3.32 (0.70)	(0.28)			
	Completed deal	0.08 (0.27)	0.51 (0.33)	(0.06)	-0.11 (-0.19)	-1.97 (-0.46)	(0.12)			
Firm characteristics Dummy = 1 if	Relative size $\frac{\text{target}}{\text{bidder}} > \text{sample median}$				-1.67 (-2.20) ^b	3.21 (0.58)	(0.70)	-1.66 (-2.52) ^b	0.70 (0.14)	(0.22)
	Asset risk $\frac{\text{combined}}{\text{bidder}} > \text{asset risk}_{\text{bidder}}$				-1.07 (-1.63)	-8.32 (-1.46)	(1.60)	-1.14 (-2.00) ^c	-10.62 (-1.85) ^c	(3.20) ^c
	Leverage $\frac{\text{combined}}{\text{bidder}} > \text{leverage}_{\text{bidder}}$				0.23 (0.36)	3.85 (0.80)	(0.43)			
	Interest coverage $\frac{\text{combined}}{\text{bidder}} > \text{interest coverage}_{\text{bidder}}$				1.78 (2.47) ^b	-1.47 (-0.27)	(0.34)	1.51 (2.56) ^b	-2.90 (-0.61)	(0.84)
Intercept	1.25 (2.18) ^b	0.62 (0.21)		0.08 (0.06)	5.37 (0.67)		0.95 (1.38)	10.41 (1.53)		
Adjusted R ²	0.04	0.03		0.27	-0.04		0.33	-0.01		
F-test	1.77 ^c	0.96		2.26 ^b	0.73		3.81 ^a	0.90		
No. of observations		185			53			53		
Mean VIF		1.47			1.96			1.68		
Maximum VIF		1.91			3.90			2.62		
Minimum tolerance		0.53			0.26			0.38		
Condition index		9.98			16.16			7.86		

Table 8
Summary of economic effects on abnormal bond returns

This table summarizes the economic effects of the independent dummy variables in the regressions shown in Table 7 and Appendix 3 and discussed in Sections 4.2.4 and 4.3. In the regressions, the dependent variables are the abnormal bond returns, described in Panel A of Appendix 1. The abnormal bond returns are computed using equal-weighted pricing benchmarks; the results using value-weighted benchmarks are available on request. Each independent variable is a dummy variable equal to one if the description holds and zero otherwise. Variable descriptions are provided in Panels B and C of Appendix 1.

Dummy variables	Bidding firms		Target firms	
	Expected sign	Economic effect	Expected sign	Economic effect
<i>Ref: Mean abnormal bond return</i>		0.56%		0.62%
<i>Governance characteristics</i>				
Cross-border deal	-	-2.10%	-	0
Bidder is common law	-	-2.09%		
Target is common law			-	-3.11%
Creditor rights better in target country	+	2.13%	-	-7.80%
Credit contract enforcement better in target country	+	2.63%	-	0
Rule of law better in target country	+	0	-	7.56%
Corporate transparency better in target country	+	0	-	0
<i>Risk-related deal and firm characteristics</i>				
Diversifying deal	+	0	+	0
Equity or mixed financing	+	0	+	0
Asset risk greater in combined firm	-	-1.14%	-	-8.62%
Leverage greater in combined firm	-	0	-	6.08%
Interest coverage lower in combined firm	-	-1.51%	-	0
<i>Other deal and firm characteristics</i>				
Relative size of target/bidder greater than median		-1.66%		0
Target is publicly listed		-1.18%		
Bidder is publicly listed				0
Tender offer		1.36%		0
Hostile bid		0		0
Announcement after 2000		0		0
Completed deal		0		0

Appendix 1
Description of the variables

Panel A: Abnormal bond and stock returns

- Abnormal bond returns** The sum of the monthly abnormal returns in the two months [-1,0] surrounding M&A announcements. Monthly abnormal returns are computed as the bond's return minus the return on a matched equal- (value-) weighted benchmark. Each of the 40 equal- (value-) weighted benchmarks is segmented by currency (euro or sterling), bond rating (BBB, A, AA or AAA) and duration (1-3, 3-5, 5-7 and 10+ years). Bond ratings are from Standard and Poor's or, when unavailable, Moody's Investor Service. Where the benchmark contains less than 10 bonds, we use one of 20 reserve benchmarks constructed in two duration categories (1-5 and 5+ years). Value-weighted benchmarks are constructed using weights based on bond market values. Firms with multiple bonds are treated as value-weighted portfolios, where the weights are the market value of each outstanding bond issue two months before the deal announcement. Source: *Reuters Fixed Income Database*.
- Abnormal stock share returns** The sum of the monthly abnormal returns in the two months [-1,0] surrounding M&A announcements. Monthly abnormal returns are computed as the raw stock return corrected for return on the benchmark equity index of the issuer's domicile. Source: *Datastream*.

Panel B: Firm-level variables

- Asset risk** The standard deviation of unlevered stock returns. Unlevered stock returns are defined as the product of stock returns and $(1 - \text{leverage})$. The standard deviation of unlevered stock returns is computed over months -25 to -2 (and a minimum of 10 months of return data need to be available). In the combined firm, it is defined as the portfolio standard deviation of unlevered bidder and target stock returns. In each portfolio, the weights are the market value of assets, measured at the fiscal year-end preceding the deal announcement and converted into euro where applicable. Source: *Datastream* and *Worldscope*.
- Interest coverage** Earnings before interest and tax (EBIT) divided by interest expense on debt less interest capitalized. In the combined firm, it is calculated using weights based on the book value of debt, which is converted into euro where applicable. It is measured at the fiscal year-end preceding the deal announcement. Source: *Worldscope*.
- Leverage** The book value of total debt divided by the market value of assets (the sum of the book value of total debt and market capitalization). Leverage in the combined firm is calculated using weights based on the market value of assets, converted into euro where applicable. It is measured at the fiscal year-end preceding the deal announcement. Source: *Worldscope*.
- Relative size of the target and bidder** The market capitalization of the target firm divided by the market capitalization of the bidding firm. It is measured at the fiscal year-end preceding the deal announcement and converted into euro where applicable. Source: *Worldscope*.
- Return on assets (ROA)** EBIT divided by the book value of assets. ROA in the combined firm is calculated using weights based on the book value of assets, converted into euro where applicable. It is measured at the fiscal year-end preceding the deal announcement. Source: *Worldscope*.

Panel C: Governance variables

Creditor rights protection (Max=5)	<p>This variable captures regulatory provisions that allow creditors to force repayment more easily, take possession of collateral or gain control in financial distress. It is part of a corporate regulation database constructed by Martynova and Renneboog (2006b) with the help of 150 corporate lawyers, and is available yearly between 1990-2004 for 31 European countries and the US. The regulatory provisions are quantified as follows:</p> <ul style="list-style-type: none"> • Debtor-oriented versus creditor-oriented code: 1 if no reorganization option (liquidation only), 0 if reorganization + liquidation option; • Automatic stay on the assets: 1 if automatic stay is obliged in reorganization (if debt-oriented code) or liquidation procedure (if liquidation code), 0 if no automatic stay; • Secured creditors are ranked first: 1 if secured creditors are ranked first in the reorganization procedure (if debtor-oriented code) or liquidation procedure (if liquidation code), 0 if government and employees are ranked first; • Creditor approval of bankruptcy: 1 if creditor approval is required to initiate a reorganization procedure (if debtor-oriented code) or liquidation procedure (if liquidation code), 0 otherwise; • Appointment of official to manage reorganization/liquidation procedure: 1 if it is required by law in a reorganization procedure (if debtor-oriented code) or a liquidation procedure (if liquidation code), 0 otherwise.
Credit contract enforcement (days)	<p>This variable measures the efficiency of claims disputes resolution through courts, and is obtained from Djankov et al. (2004). It is defined as the number of calendar days needed to enforce a contract of unpaid debt worth 50% of a country's GDP per capita, and is measured in 129 countries at January 2003.</p>
Corporate transparency (Max=10)	<p>This variable measures the quality of information available to investors about the firm, its ownership structure and management. It is part of a corporate regulation database constructed by Martynova and Renneboog (2006b) with the help of 150 corporate lawyers, and is available yearly between 1990-2004 for 31 European countries and the US. The regulatory provisions are quantified as:</p> <ul style="list-style-type: none"> • Disclosure of managerial compensation: 0 if not required, 1 if required on aggregate basis, 2 if required on individual basis; • Disclosure of transactions between management and company: 2 if required, 0 if not • Disclosure of large ownership stakes: 0 if not required or the minimum requirement is 25% or more, 1 if between 10% and 25%, 2 if between 5% and 10%, 3 if less than 5%; • Frequency of financial reports per year: 0 if once, 1 if twice, 2 if more than twice; • Comply or explain rule: 1 if the requirement is present, 0 otherwise.
Legal origin	<p>A dummy variable that identifies the legal origin of each country. The five origins are English, French, German, Nordic and Socialist. Source: Djankov et al. (2004).</p>
Rule of law (Max=5)	<p>This variable aggregates several indicators that measure how well agents abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary and the enforceability of contracts. It is published by the World Bank, and is available bi-yearly from 1996 onwards for 209 countries.</p>

Sources of Martynova and Renneboog's (2006b) creditor rights protection and corporate transparency indices:

Austria: Prof. Dr. Susanne Kalls (University of Klagenfurt), Prof. Dr. Christian Nowotny and Mr. Stefan Fida (Vienna University of Economics and Business Administration); **Belgium:** Prof. Dr. Eddy Wymeersch (University of Ghent, Chairman of the Commission for Finance, Banking and Assurance), Prof. Dr. Christoph Van der Elst (University of Ghent); **Bulgaria:** Dr. Plamen Tchipev (*Institute of Economics, Bulgarian Academy of Sciences*), Ms. Tania Bouzeva (*ALIENA Consult Ltd., Sofia*), Dr. Ivaylo Nikolov (*Centre for Economic Development, Sofia*); **Croatia:** Dr. Domagoj Racic and Mr. Josip Stajfer (*The Institute of Economics, Zagreb*), Mr. Andrej Galogaža (*Zagreb Stock Exchange*), Prof. Dr. Drago Čengić (*I VO PILAR Institute of Social Sciences*), Prof. Dr. Edita Culinovic-Herc (*University of Rijeka*); **Cyprus:** Mr. Marios Clerides (Chairman) and Ms. Christiana Vovidou (*Cyprus Securities and Exchange Commission*); **Czech Republic:** Prof. Dr. Lubos Tichy, Mr. Martin Abraham, and Mr. Rostislav Pekar (*Squire, Sanders & Dempsey, Counsellors at Law*), Dr. Petr

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Pereira, Sragga Leal, Oliveira Martins, J dice e Associados - Sociedade de Advogados*), Dr. Manuel Costa Salema, Dr. Carlos Aguiar, and Mr. Pedro Pinto (*Law firm Carlos Aguiar P Pinto & Associados*), Mr. Antonio Alfaia de Carvalho (*Lebre Sá Carvalho & Associados*); **Romania**: Mr. Gelu Goran (*Salans, Bucharest office*), Dr. Sorin David (*Law firm David & Baias SCPA*), Ms. Adriana I. Gaspar (*Nestor Nestor Diculescu Kingston Petersen, Attorneys & Counselors*), Mr. Catalin Baiculescu and Dr. Horatiu Dumitru (*Musat & Associates, Attorneys at Law*), Ms. Catalina Grigorescu (*Haarmann Hemmelrath Law Firm*); **Russia**: Dr. Aleksandra Vertlugina (*AVK Security & Finance, St. Petersburg*); **Slovak Republic**: Dr. Jozef Makuch (Chairman) and Dr. Stanislav Škurla (*Financial Market Authority, Slovak Republic*), Dr. Frantisek Okruhlica (*Slovak Governance Institute*); **Slovenia**: Prof. Dr. Janez Prasnikar and Dr. Aleksandra Gregoric (*University of Ljubljana*), Prof. Dr. Miha Juhart (Chairman), Mr. Klemen Podobnik, and Ms. Ana Vlahek (*Securities Market Agency*); **Spain**: Prof. Dr. Candido Paz-Ares (*Universidad Autonoma de Madrid*), Prof. Dr. Marisa Aparicio (*Universidad Autonoma de Madrid and Universidad Pontificia Comillas de Madrid*), Prof. Dr. Guillermo Guerra (*Universidad Rey Juan Carlos*); **Sweden**: Prof. Dr. Per Samuelsson and Prof. Dr. Gerard Muller (*School of Economics and Management at Lund University*), Prof. Dr. Rolf Dotevall (*Göteborg University*), Dr. Catarina af Sandeberg and Prof. Dr. Annina Persson (*Stockholm University*), Prof. Dr. Björn Kristiansson (*Linklaters Sweden*); **Switzerland**: Dr. Urs P. Gnos (*Walder Wyss & Partners*), Prof. Dr. Gerard Hertig (*Swiss Federal Institute of Technology - ETH Zurich*), Dr. Michel Haymann (*Haymann & Baldi*), Prof. Dr. Wolfgang Drobetz (*University of Basel – WWZ*), Prof. Dr. Karl Hofstetter (*Universität Zürich*), Prof. Dr. Peter Nobel and Mr. Marcel Würmli (*Universität St. Gallen*); **UK**: Prof. Dr. Antony Dnes (*Bournemouth University*), Prof. Dr. Dan Prentice and Ms. Jenny Payne (*Oxford University*), Prof. Dr. Brian R Cheffins, Mr. Richard Charles Nolan, and Mr. John Armour (*University of Cambridge*), Prof. Dr. Paul Davies (*London School of Economics*), Mr. Gerard N. Cranley, Ms. Holly Gregory, and Ms. Ira Millstein (*Weil, Gotshal & Manges*), Ms. Eva Lomnicka (*University of London*); **US**: Prof. Mark Roe (*University of Harvard*), Prof. Dr. Edward Rock (*University of Pennsylvania Law School*), Prof. Dr. William Bratton (*Georgetown University*).

Appendix 2

Domicile and legal origin of bidding and target firms

Legal origin is obtained from Djankov et al. (2004). The legal regimes of Russia and the Ukraine are defined as socialist. Developed Europe includes the EU-15 countries, Norway and Switzerland. Emerging European countries that appear in the sample are the EU-12 new member states, Croatia, Serbia and Montenegro, Turkey, Russia and the Ukraine. Developed non-European countries include Australia, Canada, Japan and the US. Emerging non-European countries include Argentina, Bangladesh, Brazil, China, Egypt, El Salvador, Guatemala, India, Mexico, Peru, Singapore, South Africa, South Korea and Tanzania.

Panel A: European bidders with abnormal bond returns

	<i>Legal origin of bidder country</i>				Total
	Common law	French	German	Nordic	
Total	79	64	57	25	225
Domestic deals	33	27	14	6	80
Cross-border deals, of which:	46	37	43	19	145
<i>Legal origin of target country</i>					
Common law	14	5	10	2	31
French	19	13	8	2	42
Civil law	11	12	19	7	49
German	2	2	2	6	12
Nordic	-	5	4	2	11
Socialist	-	-	-	-	-

Panel B: European targets with abnormal bond returns

	<i>Legal origin of target country</i>				Total
	Common law	French	German	Nordic	
Total	13	4	4	3	24
Domestic deals	6	2	2	2	12
Cross-border deals, of which:	7	2	2	1	12
<i>Legal origin of bidder country</i>					
Common law	-	-	1	-	1
French	4	-	1	-	5
Civil law	3	2	-	-	5
German	-	-	-	1	1
Nordic	-	-	-	-	-

Appendix 3

Multivariate regressions explaining target firm abnormal security returns

The dependent variable is the abnormal bond or stock return depending on the specification. Abnormal returns are in % and are described in Panel A of Appendix 1. Abnormal bond returns are computed using equal-weighted pricing benchmarks; results using value-weighted benchmarks are available on request. Each independent variable is a dummy variable equal to one if the description holds and zero otherwise. Variable descriptions are provided in Panels B and C of Appendix 1. T-statistics in parentheses use standard errors adjusted with the White (1980) correction for heteroskedasticity. Variance inflation factors (VIF), tolerance, and condition indices are diagnostic measures testing for multicollinearity. Beta coefficients are compared in each pair of bond and stock regressions using a Wald F-test. *a*, *b* and *c* denote significance at the 1, 5 and 10% level, respectively.

	Dependent dummy variables	Model 1			Model 2			Model 3		
		Bonds	Stocks	<i>F</i> -test	Bonds	Stocks	<i>F</i> -test	Bonds	Stocks	<i>F</i> -test
Governance characteristics Dummy = 1 if	Cross-border deal	-2.84 (-1.30)	2.32 (0.16)	(0.12)	-4.09 (-1.81) ^c	-0.06 (-0.00)	(0.15)	-2.94 (-1.16)	0.73 (0.05)	(0.09)
	Target is common law	-3.20 (-1.16)	7.22 (0.79)	(0.85)	-4.32 (-1.55)	4.81 (0.54)	(0.66)	-3.11 (-1.92) ^c	1.07 (0.09)	(0.14)
	Creditor rights better in target country	-1.06 (-0.52)	-1.38 (-0.12)	(0.00)	-4.41 (-1.65)	-5.95 (-0.76)	(0.01)	-7.80 (-3.22) ^b	4.03 (0.32)	(0.67)
	Credit contract enforcement better in target country	0.17 (0.06)	5.35 (0.33)	(0.08)						
	Rule of law better in target country	4.34 (2.62) ^b	3.66 (0.26)	(0.00)	7.26 (2.17) ^c	6.51 (0.57)	(0.00)	7.56 (2.83) ^b	1.58 (-0.14)	(0.19)
Deal characteristics Dummy = 1 if	Diversifying deal	-2.04 (-0.87)	10.10 (1.03)	(1.05)						
	Equity or mixed financing							-1.36 (-0.73)	-7.20 (-0.64)	(0.29)
	Tender offer	0.83 (0.47)	18.73 (2.08) ^c	(3.52) ^c	-0.16 (-0.10)	25.18 (2.76) ^b	(5.09) ^b	-3.79 (-2.27) ^c	34.22 (3.43) ^b	(17.55) ^a
	Hostile bid	-2.92 (-1.45)	9.14 (1.21)	(1.14)	-0.96 (-0.49)	-2.25 (-0.20)	(0.01)			
	Announcement after 2000	-3.47 (-1.66)	2.64 (0.28)	(0.35)						
Firm characteristics Dummy = 1 if	Completed deal				3.64 (2.02) ^c	-13.80 (-1.36)	(1.92)	3.63 (1.77)	-14.19 (-1.32)	(2.70)
	Relative size $\frac{\text{target}}{\text{bidder}} >$ > sample median				-1.43 (-0.90)	-11.64 (-1.13)	(0.69)			
	Asset risk $\frac{\text{combined}}{\text{target}} >$ > asset risk $\frac{\text{combined}}{\text{target}}$				-5.67 (-2.55) ^b	-13.77 (-2.12) ^c	(0.37)	-8.62 (-3.61) ^a	-3.59 (-0.31)	(0.09)
	Leverage $\frac{\text{combined}}{\text{target}} >$ > leverage $\frac{\text{combined}}{\text{target}}$				4.83 (1.78)	-16.74 (-1.82) ^c	(3.05)	6.08 (2.60) ^b	-31.06 (-2.69) ^b	(11.88) ^b
	Interest coverage $\frac{\text{combined}}{\text{target}} >$ > interest coverage $\frac{\text{combined}}{\text{target}}$				2.72 (1.38)	7.24 (1.24)	(0.21)			
Intercept	4.95 (1.77) ^c	-7.64 (-1.05)		-0.08 (-0.03)	17.51 (1.44)		2.79 (-1.35)	19.71 (1.24)		
Adjusted R ²	0.10	0.22		0.06	0.40		0.11	0.56		
F-test	2.56 ^c	2.71 ^b		2.86 ^c	9.00 ^a		6.35 ^b	144.10 ^a		
Number of observations		24			22			17		
Mean VIF		2.59			2.77			3.32		
Maximum VIF		4.88			4.17			4.72		
Minimum tolerance		0.21			0.24			0.21		
Condition number		9.72			13.14			14.08		