Bondholder Wealth in Mergers and Acquisitions:

Evidence on the Impact and Spillover of Governance and Legal Standards[*]

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Abstract - This paper demonstrates that the bondholder wealth effects of M&As are strongly affected by cross-country variations in governance and legal standards. We examine deals that involve European firms with outstanding Eurobonds, and find that governance considerations are in fact better predictors of bond performance than either deal or firm characteristics. Firstly, bond returns in both bidding and target firms are systematically higher in M&As that involve firms from the stakeholder-oriented governance regimes of Continental Europe. Secondly, cross-border deals tend to induce lower bond returns. However, bondholders reap considerably higher gains if the deal exposes their firm to a jurisdiction with better creditor rights and claims enforcement. This suggests that cross-border M&As provide much greater scope for the functional spillover of creditor protection than has been previously assumed. Finally, bond performance is driven by both asset and financial risk changes, the merging firms' relative size, as well as a negative listing effect.

JEL classification: G34, G32, G12, G14.

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1. Introduction

The global market for corporate control has evolved immensely over the past decade in terms of both size and diversity. In a market historically dominated by the US, Europe now accounts for more than 40% of global transaction value, and deal volume is rapidly climbing in the rest of the world (Martynova and Renneboog, 2006). An important aspect of this trend is the considerable diversity of the countries where M&As take place from a corporate governance perspective. This has pronounced economic implications in cross-border deals in particular, because these instigate cross-country 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 deals occur (Bris and Cabolis, 2002).

If shareholder wealth changes exhibit great cross-country variation around M&A announcements, so should the wealth changes incurred by corporate bondholders. A key issue is that the representation of creditor versus shareholder interests differs considerably across corporate governance systems. In the Anglo-American market-oriented regimes, creditors are seen as independent parties contracting with the firm and have little influence over corporate decision making. In the stakeholder-oriented regimes of Continental Europe and Japan, banks and other risk-averse stakeholders are better positioned in the firm and exercise greater control. This dictates that M&As should be more bondholder-friendly in stakeholder-oriented systems than in the Anglo-American world, and interactions between the two regimes should have considerable wealth implications for bondholders in the cross-border deals that combine them.

Another important aspect of cross-border M&As is that they combine firms from jurisdictions that protect creditor rights to varying degrees. It has been argued that there are limitations to the functional spillover of creditor rights, because corporate assets remain under the jurisdiction of the country where they are physically located (La Porta et al., 2000). However, new or increased exposure to a jurisdiction with better creditor rights should still prompt management to avoid excessive risk-taking, to the extent that it makes insolvency proceedings more imminent against the firm if it goes into financial distress. Under certain conditions, creditors may also exacerbate the threat of litigation through *jurisdiction shopping*, whereby they race against management and each other to 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 seek to 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, King, and Mauer (2004) report losses for the bondholders of bidding firms, while the bondholders of targets benefit 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, Megginson, and Nail (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 creditworthy investment-grade firms, since the junk-grade segment of the Eurobond market is very thin. However, only Eurobonds are standardized and liquid enough to allow for the comparison of bond returns across multiple countries (Gabbi and Sironi, 2005). The use of Eurobonds also confines much of our investigation to bidding firms; the large, creditworthy firms that issue Eurobonds are rarely targeted by takeover bids.

Our empirical results suggest that governance considerations are in fact much better predictors of bond performance than either deal or firm characteristics. Firstly, bond returns in both bidders and targets are systematically higher *ceteris paribus* in M&As that involve Continental European firms. This finding is consistent with the strong representation of creditor interests in stakeholder-oriented governance regimes. Creditor influence over capital structure decisions may also explain why the bondholders of Continental European bidders, unlike their UK counterparts, only respond to asset risk changes related to business operations and not to financial risk changes related to financing operations.

Secondly, there is substantial variation in bond returns depending on whether the deal is domestic or cross-border. All else equal, bidder bonds earn lower returns from cross-border M&As. This may reflect concerns over informational asymmetries, as well as the added legal uncertainties and inefficiencies associated with the default of an internationally diversified firm. However, cross-border deals also induce strong spillovers of creditor protection to the benefit of bondholders. Bidder bond returns are considerably higher when the deal exposes the firm to a jurisdiction with better creditor rights and claims enforcement[1]. We find analogous but somewhat weaker results for target bonds, possibly owing to the small number of observations. It is remarkable that Eurobond holders respond so strongly to such considerations. Their firm is often large and internationally diversified already, and they themselves are prevented from jurisdiction shopping because Eurobond contracts always specify a governing law. Still, if the firm goes into financial distress, its other creditors – those under the more creditor-friendly jurisdiction or those who can potentially do insolvency arbitrage –, already deliver a more imminent threat of litigation. To that end, exposure to the more creditor-friendly jurisdiction

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[1] Eurobond issuers are often large and internationally diversified firms, thus they may already be exposed to the more creditor-friendly jurisdiction. In such a case, bondholders benefit because the deal shifts some or all of their firm's assets the more favourable jurisdiction.

reduces what are the agency costs of debt, by prompting management to avoid excessive risk-taking. This should benefit every creditor, whether or not insolvency arbitrage is a feasible option to them. Intuition dictates that the same results should be even stronger for firms that are not as large, creditworthy, and diversified as Eurobond issuers tend to be.

Our results also provide other interesting additions to the literature. We find that bidder bondholders benefit less from takeover bids made for public targets, which corresponds to a negative listing effect previously documented on shareholder returns (Faccio, McConnell, and Stolin, 2006). Bidder bonds earn higher gains when the target is relatively small, and are generally perceptive of changes in both asset risk and financial risk. Finally, bidder bonds fare better when the target shareholders are approached directly with a tender offer, circumventing management.

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 M&As

Finance theory suggests that M&As 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, reducing default risk and increasing debt capacity (Levy and Sarnat, 1970). The co-insurance effect is likely to be stronger in diversifying or conglomerate deals 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 deals 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 benefiting bondholders by financing their acquisitions with leverage. A cash offer generally requires debt financing because most bidders have limited cash and liquid assets (Faccio and Masulis, 2005). Thus, it tends 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, DeAngelo, and Rice (1984) point out that the managers of the bidder prefer to make an equity offer if they believe that their firm is overvalued. If the market interprets such an 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 method[2].

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, adding debt capacity (Hovakimian, Opler, and Titman, 2001). On the other, there should be a limit to the absorption capacity of bidding firms. Large deals are hard to implement successfully and there are greater uncertainties around the realization of synergies, thus the efficiency gains associated with the acquisition of smaller targets should be relatively larger (Bhagat et al., 2005). It is also possible that large acquisitions are more driven by managerial hubris or empire building aimed at creating large, diversified firms with low risk (Jensen, 1986). Target bondholders may also gain more when the bidder 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). In their empirical study, Billett, King, and Mauer (2004) provide strong evidence that both bidder and target bonds do in fact perform better when the target firm is relatively small.

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 higher gains are driven by limited competition, which may come from the bidder specificity of private acquisitions and increase the likelihood of underpayment for target firms (Chang, 1998). Otherwise, Faccio, McConnell, and Stolin (2006) find that the gains persist over time and across countries, and are

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[2] Shastri (1990) argues that wealth shifts may also occur between bidder and target bondholders based on seniority. Differences in debt maturity may induce a seniority effect, whereby shorter maturity debt becomes effectively senior to longer maturity debt, and should earn higher returns as a result. We do not test this prediction because only a handful of our observations have bond data for both bidding and target firms.

invariant to size, ownership structure, industry focus, information leakages, and the payment method[3]. It is unclear ex-ante whether bondholders should also be affected by such a listing effect[4].

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 co-operation of the target firm's incumbent managers. Thus, they are more likely to be driven by hubris and empire building. 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)[5]. 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 The impact of cross-country differences in governance and legal standards

The comparative corporate governance literature observes a great deal of variation in the extent that individual countries accommodate creditor versus shareholders interests. From a governance perspective, a strong distinction is drawn between common law Anglo-American countries and the civil law countries of Continental Europe and Japan. In common law regimes, 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, 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). Other risk-averse stakeholders also develop long-term relationships with the firm, including employees who are often given board representation along with senior creditors. The greater influence of banks and other stakeholders on corporate decision making dictates that *bondholders benefit more from M&As in stakeholder-oriented governance regimes*. Of course, conflicts of interest cannot be ruled out between bondholders and the powerful banks that exert influence, especially if the bondholder claims are unsecured (La Porta et al., 1998). Nonetheless, close bank monitoring should prevent managers from excessive risk-taking, which should benefit bondholders by reducing the probability of financial distress.

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[3] 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 abnormal stock gains associated with takeovers of private firms are highest when an equity offer is made (Fuller, Netter, and Stegemoller, 2002; Moeller, Schlingemann, and Stulz, 2004). Still, Faccio, McConnel, and Stolin (2006) show that the gains persist in cash-financed deals.

[4] It is equally difficult to predict how target bondholders are affected by the public status of the bidding firm. On one hand, Schwert (2000) notes that agency problems are more severe in listed bidders, thus their acquisitions are more likely to be driven by managerial hubris and empire building. On the other, public bondholders may not respond well to the informational asymmetries induced by the delisting of the issuer. Still, unlisted bidders may be more reliant on and monitored more closely by individual creditors, which should also benefit bondholders.

[5] The type of the deal is also endogenous to other deal characteristics. For example, Martin (1996) observes that bidders tend to make tender offers for smaller firms in related industries and finance them with cash.

The fundamental differences between market- and stakeholder-oriented governance regimes also carry paramount importance in cross-border M&As. From the perspective of bondholders, cross-border M&As already exhibit some distinct peculiarities relative to domestic deals. Denis, Denis, and Yost (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 M&As for bondholders are two-fold. On one hand, the cash flow streams of bidder and target are likely to be less correlated, thus bondholders should benefit from a greater reduction in cash flow volatility. On the other, even if the projected efficiency gains are considerable, capturing these is complicated. In cross-border deals, 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 internationally diversified firms. Thus, we conjecture that *cross-border M&As accrue lower wealth benefits to bondholders than do domestic deals.*

A key consideration in cross-border M&As is that they promote strong interactions between the governance regimes of the merging firms. 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). How the representation of creditor versus shareholder interests is passed on to the combined firm depends on the change in the relative power and monitoring incentives of the pre-merger firms' banks and other risk-averse 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. This suggests that *common law firm bondholders benefit more from M&As with civil law firms, while civil law firm bondholders benefit less from M&As with common law firms.*

In cross-border deals, another critical issue relates to how creditor rights and their enforcement compare in the national jurisdictions of the merging firms. La Porta et al. (1998) find that countries of the same 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. However, 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 the more pro-debtor France.

La Porta et al. (2000) argue that there are limitations to the functional spillover of creditor rights, because corporate assets remain under the jurisdiction of the country where they are physically located. This *territoriality principle* is often referred to as the "grab rule"; each local court takes the assets located in its geographic jurisdiction and distributes them only to those creditors who come to the court to present their claims (Felsenfeld, 2000). This approach can clearly lead to the unequal treatment of creditors from other jurisdictions, because they are often given late notice of insolvency proceedings as well as have difficulty informing courts of the existence of their claims.

Nonetheless, bondholders can certainly benefit from cross-border M&As that shift some or all of their firm's assets to jurisdictions with better creditor rights. Firstly, having an establishment in a more creditor-friendly jurisdiction increases the threat of litigation against the firm in any case if it goes into financial distress. This threat can be exacerbated if the firm is already present in that jurisdiction but increases its exposure to it. Intuitively, this should exert considerable pressure on management to avoid excessive risk-taking.

Secondly, creditors are not necessarily prevented from arbitraging their firm's exposure to multiple jurisdictions, which should induce management further to reduce the probability of distress. This phenomenon is known as *jurisdiction (or forum) shopping*; if the firm becomes distressed, creditors may race against management and each other to seek out a supposedly friendly jurisdiction to strengthen their legal position and obtain maximum satisfaction for their claims. While many legal systems discourage the practice of jurisdiction shopping because it can create legal uncertainty ex-ante, it is not at all hypothetical. For example, it explains the popularity of pro-creditor bankruptcy courts in Delaware and New York within the US. US firms sometimes file for Chapter 11 bankruptcy preemptively to give them leverage against creditors. When they do not, however, creditors can submit an insolvency filing against the firm in any state in which it has an insolvent affiliate (Bank for International Settlements, 2002).

The US bankruptcy legislation also creates some potential for cross-border jurisdiction shopping by following a modified form of the *universality principle* rather than territoriality. The universality approach puts the jurisdiction of a firm's home country in charge of insolvency proceedings on a worldwide basis, with the home country being either the country where the firm is incorporated (*incorporation doctrine*) or the country where it is headquartered (*real seat doctrine*). The US system follows the incorporation doctrine and thus subjects a firm incorporated there to US jurisdiction[6]. However, it is also prepared to cooperate with and possibly recognize the judgments of secondary proceedings opened in other jurisdictions, to the extent that it helps prevent the unequal treatment of foreign creditors (Lechner, 2002).

By implementing the European Insolvency Regulation (EIR) in 2000, the European Union (EU) introduced what is the broadest and most effective international agreement on cross-border insolvency under the universality principle[7]. The EIR also takes a modified universality approach, such that it selects a principal jurisdiction to open the main insolvency proceedings but also allows secondary, territorially-based proceedings. The main objective of the regulation is to enhance co-operation among the national jurisdictions of the member states and harmonize conflict of law issues, but it also aims to eliminate incentives for firms to transfer assets from one member state to another to strengthen their legal position or favour certain creditors (Bank for International Settlements, 2002).

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[6] The incorporation doctrine is typically followed by common law while the real seat doctrine by civil law regimes. There are some exceptions, of course. For example, of the civil law Continental European countries Denmark and the Netherlands follow the incorporation doctrine.

[7] 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 Bustamente Conventions in force in much of South America. Another notable effort for cross-border cooperation is the United Nations Commission for International Trade Law (UNCITRAL) Model Law on Cross-Border Insolvency, prepared in 1997.

While the EIR also seeks to discourage insolvency arbitrage, it may still offer some scope for jurisdiction shopping. Firstly, the regulation intends to identify the principal jurisdiction based on where the firm's centre of main interests is located, but it leaves some doubt as to where this actually is (Franken, 2005)[8]. Firms may arbitrage this ambiguity themselves by preemptively filing for bankruptcy in a jurisdiction more favourable to them (Enriques and Gelter, 2006), but the parties petitioning for insolvency proceedings in Europe are more likely to be the creditors. Secondly, creditors wherever domiciled in the EU may submit claims under territorial secondary proceedings in any member state where the firm has an establishment. This right extends to each member state's taxation and social security authorities, thereby eliminating the traditional rule against the enforcement of foreign revenue debts. The definition of an establishment is interpreted fairly loosely, and may even encompass a commercial agent of the firm[9]. The primary and secondary proceedings are not chronological; if a territorial insolvency proceeding predates the main proceeding, it may simply be converted into a secondary one. (Freshfields Bruckhaus Deringer, 2004).

It is important to emphasize that the threat of litigation against a firm across multiple jurisdictions by creditors remains hypothetical until the firm becomes financially distressed. To that end, the firm's new or increased exposure to a more creditor-friendly jurisdiction simply reduces what are the agency costs of debt, by prompting management to avoid excessive risk-taking. This should hold benefits for each individual creditor, whether or not insolvency arbitrage is a feasible option to them. Some creditors may not want to access other jurisdictions because they have security rights (rights *in rem*) over assets in a particular member state[10]. Eurobonds holders are prevented from jurisdiction shopping altogether, because these securities are sold in jurisdictions outside the issuer's home country, and thus always specify a governing law to prevent governing law conflicts (Esho, Sharpe, and Tchou, 2004). Of course, Eurobond holders must already rely on other creditors to control managerial risk-taking. The threat of litigation is less credible on their part because they hold unsecured claims ill-protected by covenants, and have no incentive themselves to liquidate the firm because of their minimal recovery percentages. In fact, this is why they tend to choose a governing law – typically English law – that facilitates collective renegotiations with the firm if it becomes liquidity-constraint.

To conclude, we strongly expect that *bondholders benefit more from cross-border M&As where the jurisdiction of the merging party provides better creditor rights*. New or increased exposure to the more creditor-friendly jurisdiction should induce management to avoid excessive risk-taking, thus mitigating the agency cost of debt. This is because if the firm goes into financial distress, litigation is made more imminent by the creditors in the more creditor-friendly jurisdiction, and is potentially exacerbated by the firm's existing creditors who can potentially enter into insolvency arbitrage. Of

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[8] The EIR presumes that the place where the firm is registered will constitute the centre of main interests. However, a showing that the firm conducts the administration of its interests on a regular business in another member state and is recognized to do so by third parties can defeat this presumption. Freshfields Bruckhaus Deringer (2004) observes that individual court decisions on the centre of main interests tend to reflect the incorporation versus real seat debate. As an example, English, French, and German courts each ruled that the firm Daisytek-ISA had its centre of main interests in their country.

[9] Establishment is defined as meaning any 'place of operation where the debtor carries out a non-transitory activity with human means and goods'.

[10] Rights *in rem* remain subject to the jurisdiction of the country where the assets are located, and are strongly protected by the EIR. This should guarantee a relative high percentage recovery to the creditors that hold them.

course, an improvement in creditor protection is *conditional on the quality of claims enforcement and the general effectiveness of the judiciary* in the merging party's country.

3. Data Selection and Descriptive Statistics

3.1 Data selection

We compile a list of M&A 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. We exclude banks, insurance companies, and other financial firms (SIC codes 6000-6900). The sample period runs from 1995 to 2004; data requirements for the construction of pricing benchmarks, described below, prevent pre-1995 deals being included. We exclude all bonds with special features e.g. those that are callable, puttable, floating-rate, or perpetual. These features have a strong impact on bond prices and their occurrence is otherwise rare among Eurobonds.

The use of Eurobonds confines the scope of our analysis to creditworthy investment-grade issuers, because the negligible size of the junk-grade Eurobond market prohibits reliable pricing in this segment entirely. The bondholder wealth effects of M&As may be peculiar in these firms, because they are often large and internationally diversified already. This latter fact should in fact play down the relevance of cross-country variations in governance and legal standards for bondholders. Consequently, any governance effects we may observe for Eurobond issuers are likely to be stronger for other firms.

We use Eurobonds for three reasons. Firstly, they are much better suited for the analysis of bond returns across multiple countries than are domestic bonds, because they are highly standardized (Gabbi and Sironi, 2005). Eurobonds are mostly unsecured and carry few covenants because international investors find these too costly to enforce. That the junk-grade segment of the relatively unregulated Eurobond market is so thin is largely because investors are reluctant to accept such ill-protected securities from low quality borrowers. Eurobonds are also typically in bearer form and tend to be governed by English common law[11] and listed on the Luxembourg Stock Exchange[12]. Secondly, Eurobonds are issued in relatively large amounts and are normally exempt from withholding tax[13], which makes their market highly competitive where different kinds of investors (mostly institutional

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[11] 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).

[12] 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.

[13] 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.

ones) from different countries actively participate[14]. These factors enhance market efficiency and liquidity, and minimize the risk of price anomalies which would make price comparisons more difficult (Gabbi and Sironi, 2005). And thirdly, Eurobonds actually constitute the only European corporate bond market that is sufficiently large and liquid to allow for the construction of robust pricing benchmarks.

We collect bond prices from the Reuters Fixed Income Database. All prices are dealer quotes, which can contain matrix prices that are not separated from actual trade data. Matrix prices are not driven by firm-specific information, which actually biases against finding significant results. However, the high liquidity of Eurobonds should ensure that the data reflect 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). We select this time window to account for information leakages (Warga and Welch, 1993) and to ensure that our results are comparable to those reported in the landmark study by Billett, King, and Mauer (2004). 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, Maxwell, and Xu (2005), we use duration as an alternative criterion to time-to-maturity. Time-to-maturity is customarily used to construct pricing benchmarks (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).

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, Maxwell, and Xu (2005) make a strong argument for the use of equal-weighted portfolios over the customarily used value-weighted ones. The authors 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, in order to identify wealth redistributions between shareholders and bondholders, we also calculate abnormal stock returns. Stock price data are collected from Datastream. To ensure the comparability of bond and stock 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.

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[14] 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.

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, Maxwell, and Xu (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 generally low, we can safely adopt the same threshold.

3.2 Descriptive statistics

Descriptive statistics on our sample firms are provided in Table 1. Accounting data are obtained from Worldscope and are measured at the fiscal year-end preceding the deal announcement. Market capitalization and the book value of assets are expressed in 2004 prices using the appropriate consumer price indices 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, King, and Mauer (2004), we compute each firm-level variable for bidding and target firms as well as their combinations (not shown in Table 1). For example, the combined asset risk is defined as the portfolio standard deviation of unlevered bidder and target stock returns, where the weights are based on each firm's market value of assets (the sum of the book value of assets and market capitalization).

(Insert Table 1 about here)

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 M&As where bond price data 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 not publicly listed. Panel B shows that accounting data are available for 75 pairs of merging firms, but only for 15 pairs do we have bond price data for both the bidder and the target.

The descriptives show that bidding firms are generally much larger than their targets by both 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. Several bidders and targets appear to be financially distressed, but none of them are in bankruptcy at the time of the deal announcements. The Eurobond issuers we analyze are certainly not threatened by financial distress, because they would not have been able to maintain their investment-grade ratings otherwise. The 15 M&As where bond price data are available for both parties are giant deals by all standards. In this subsample, the typical bidder is rated A+ with an asset value of €20.9 billion, while the typical target firm is rated A with 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 remaining maturities 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 in corporate Eurobond issuance across Europe. An overview of bidder and target countries by legal origin, obtained from Djankov, McLiesh, and Shleifer (2004), are provided in Appendix 2. Panel A describes the M&As where bond price data 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 panel shows that the M&As create 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 bond prices are all approached by bidders from developed European countries. Of the 24 deals, 12 are cross-border, and in seven cases UK targets 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 of European bidders and targets fare in M&As. Panel A shows that bidder bondholders earn economically significant positive abnormal returns in the two months surrounding deal announcements. The bond gains are highly robust across all specifications: the mean abnormal return is 0.56% (0.52%) over the equal- (value-) weighted benchmark, while the median return 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. The fact that we only consider investment-grade bidders does not make these results any less remarkable. For US domestic deals, Billett, King, and Mauer (2004) report significant losses for bidder bonds regardless of their credit rating. Also, Shastri (1990) argues that risky debt should benefit relatively more from a risk reduction. Thus, it is possible that the bond gains would be even higher in junk-grade bidders. 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, Megginson, and Nail (1998), Mulherin and Boone (2000) and Schwert (2000).

(Insert Table 2 about here)

The security returns accrued to target firms are reported in Panel B of Table 2. The abnormal bond returns are statistically insignificant, which may well be due to the small number of observations. We only have bond data for 24 targets, simply because large, creditworthy firms with Eurobonds are rarely

targeted. The size of the returns is otherwise considerable; the mean abnormal bond return is 0.62% (0.58%) and the median return is 0.33% (0.22%) over the equal- (value-) weighted benchmarks. That they are insignificant is nonetheless in line with the US evidence, which shows that target bondholders tend not to enjoy considerable co-insurance benefits from M&As. Billett, King, and Mauer (2004) show losses for investment-grade target bonds, while other studies report insignificant returns (Asquith and Kim, 1982; Dennis and McConnell, 1986; Walker, 1994; Maquieira, Megginson, and Nail, 1998). Unsurprisingly, the shareholders of target firms realize sizeable gains, with the mean and median abnormal stock returns at 12.40% and 9.55%, respectively. This shows that bidders are compelled to pay out much of the wealth gains associated with M&As to the target shareholders, a result shown earlier for both Europe and the US (Martynova and Renneboog, 2006; Mulherin and Boone, 2000).

The remainder of this section focuses on bidding firm bonds in particular, though some discussion of target bonds is also provided. Henceforth for the sake of brevity, we only show the abnormal bond returns over the equal-weighted pricing benchmarks; the results using the value-weighted benchmarks are available on request. We also report the abnormal stock returns in some of the subsequent tables, but this is to identify wealth shifts between bondholders and shareholders, and thus we only discuss them when applicable.

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 partitioned across a number of criteria in Table 3, with Panel A illustrating the impact of deal characteristics. The results first show that bidder bondholders earn strong abnormal gains in both domestic and cross-border M&As. However, bidder bonds seem to fare worse in cross-border deals; 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 significant at the 10% level. These findings lend some support to our prior conjecture that bondholders do not respond well to the greater informational asymmetries and legal uncertainties and inefficiencies associated with cross-border deals.

(Insert Table 3 about here)

The remainder of Panel A examines the deal characteristics also considered by Billett, King, and Mauer (2004), and first shows whether a conglomerate effect is present. We define M&As as diversifying or conglomerate when the two-digit SIC codes of the bidder and the target are different; this approach is proposed by Berger and Ofek (1995) and employed in most of the recent literature. The results show that bidder bonds do not perform better in diversifying M&As. In both diversifying and non-diversifying deals, the abnormal bond returns are significantly different from zero, and are comparable in size at 0.58% and 0.55%, respectively. There is also no evidence that shareholders would underperform in diversifying deals. It is notable that for the US, Billett, King, and Mauer (2004) and Maquieira, Megginson, and Nail (1998) also report no evidence of a conglomerate effect. In fact, Maquieira, Megginson, and Nail (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.

Panel A also refutes the conjecture that cash-financed acquisitions induce lower wealth benefits for bidder bondholders. 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 sensitive to the agency and signalling implications of equity issues. For US firms, Billett, King, and Mauer (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.

An important contribution of this paper is that it examines whether bondholder wealth changes are subject to a negative listing effect. If acquisitions of private firms induce greater wealth gains for the shareholders of bidding firms, as Faccio, McConnell, and Stolin (2006) indeed find, bondholders may also benefit indirectly. Panel A shows only marginal evidence in this regard. When the target firm is privately held, both bondholders and shareholders earn significant abnormal gains. 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.

In takeover bids made for public firms, bidder bondholders are strongly affected by the form of the bid. When a tender offer is made directly to the target shareholders, the mean abnormal bond return is highly significant at 0.75%. However, deals negotiated with management have no discernible impact on bidder bonds, 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, King, and Mauer (2004) find that bidder bonds perform worse rather than better when a tender offer is made. The authors also report a further reduction in bond returns when the bid is hostile. Panel A does not support this finding either, but we only have five observations of hostile bids because they are rare in Continental Europe.

Finally, Panel A considers two more deal characteristics. Firstly, there is no evidence that the performance of bidder bonds varies 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 EIR in the European Union. Secondly, abnormal bond 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 when the target is publicly listed. 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 bidder bonds. When the target firm is relatively small, the mean abnormal bond return is 0.85%, but when it is large, the returns are both insignificant and negligible in size. Panel B suggests that abnormal stock returns are also lower when the target is relatively large, but the mean difference is statistically insignificant.

In the spirit of Shastri (1990), we next show how bidder security holders are affected by differences in the risk profiles of bidding and target firms. We first consider the impact of asset risk. Abnormal security returns are partitioned by whether the combined portfolio of the bidder and the target has higher or lower asset volatility than the pre-merger bidder. The results confirm that bidder bonds are strongly affected by asset risk changes. When asset risk is reduced, the mean abnormal bond return is significantly positive at 0.74%. When it is increased, the mean abnormal return turns insignificantly negative, and the difference in the means is significant at the 5% level. It is notable that shareholders also seem to respond negatively rather than positively to increased asset risk, which suggests that asset risk changes do not induce wealth redistributions between shareholders and bondholders.

In Panel B, financial risk does not have a statistically significant impact on bidder bonds. Still, the mean abnormal return is higher when leverage is reduced or interest coverage is increased in the combined firm. Consistent with the shareholder-bondholder conflict, increased financial risk seems to have a positive effect on abnormal stock returns, but the mean differences are again insignificant. It is notable that Billett, King, and Mauer (2004) also fail to find a significant financial risk effect. The authors point out that this type of analysis does not account for changes in financial risk post-merger or as a result of the merger itself. Indeed, we find that before the announcement date, the combined leverage of the merging firms is 0.28 on average, but this 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. When the target's rating is at least as high as the bidder's, it does seem that bidder bonds perform better and bidder stocks fare worse. However, the results are generally insignificant, possibly owing to the small number of observations.

4.2.2 The impact of the legal and governance regime. Table 4 compares the performance of bidder bonds in the common law UK and civil law Continental European countries, thereby capturing how the legal and governance regime affects bondholder wealth changes. The UK is the only common law, market-oriented governance regime that appears in our sample, because none of the bidding firms are from Ireland. Within the family of civil law countries with stakeholder-oriented regimes, a distinction of French, German, and Nordic civil law traditions makes no difference to the results.

(Insert Table 4 about here)

Table 4 first partitions abnormal bond returns simply by the legal tradition in place. The results show no statistical evidence that the bondholders of Continental European bidders would benefit more from M&As. Bidder bonds earn highly significant abnormal returns in both the UK and Continental Europe, and while the mean return is actually lower in Continental Europe at 0.48% versus 0.71% in the UK, the mean difference is insignificant and the median returns are identical at 0.81%.

Remarkably, the further stratification of the sample reveals considerable differences in the drivers of the positive returns across the two regimes. Panel A of Table 4 shows that the abnormal bond gains are actually driven by domestic deals in Continental Europe and by cross-border deals in the UK. There is

evidence that the bondholders of Continental European bidders benefit from both domestic and cross-border deals, but the cross-border abnormal returns are lower by a substantial 0.94% on average. The patterns observed for UK bidders are strikingly different. On one hand, the cross-border abnormal returns are significantly higher in the UK than in Continental Europe, at 0.89% and 0.18%, respectively. On the other, the gains accrued to bidder bonds are statistically insignificant in UK domestic deals, even though the mean domestic return is considerable at 0.45%. That the bondholders of UK bidders do not benefit from domestic deals corresponds well to the empirical evidence reported for the US, another market-oriented governance regime rooted in the common law tradition.

That bidder bonds earn lower gains from cross-border M&As in Continental Europe is likely to be motivated by governance concerns. We explained in Section 2.2 that creditors and other risk-averse stakeholders enjoy considerable authority in stakeholder-oriented governance regimes, and a cross-border acquisition may deteriorate their strong position *vis-à-vis* the firm. This may exacerbate the agency costs of debt, especially if the governance regime of the target country is market-oriented (Köke and Renneboog, 2005). Panel A provides some support for this argument. The cross-border abnormal returns are positive when the target country is civil law, but insignificantly negative when the target country is common law; the mean difference is marginally insignificant, but the number of observations is limited. Interestingly, the bondholders of UK bidders do not seem to respond to the legal regime of a foreign target, although the significance of the abnormal gains is considerably higher when the target country is civil law.

Another consideration that varies between the UK and Continental Europe is the sensitivity of bidder bonds to risk changes. Panel B of Table 4 partitions the sample by comparing asset and financial risks in the combined firm relative to the pre-merger bidder. The results show that asset risk is a major concern for UK bondholders; when it becomes higher rather than lower in the combined firm, the mean abnormal return is reduced by as much as 3.00%, and the reduction is significant at the 1% level. Albeit to a lesser extent, UK bonds also respond to changes in financial risk. When leverage is increased or interest coverage reduced, abnormal returns are again consistently lower, though the mean difference is only significant for interest coverage at the 10% level.

Bidder bondholders in Continental Europe seem less wary of the same issues. When asset risk increases rather than decreases, the mean abnormal bond return is lower by 0.97%, but the mean difference is only significant at the 10% level. Remarkably, Continental European bondholders seem not to respond to changes in financial risk at all, whether measured by leverage or interest coverage. These results lead back to the argument that creditors tend to exert some control over corporate decision making in stakeholder-oriented governance regimes. If they do, managers may already be compelled to minimize a deal's overall risk implications, either by a careful choice of its general terms such as the payment method, or by compensating for increased risk post-merger.

4.2.3 Creditor protection spillovers in cross-border M&As. Table 5 demonstrates that in cross-border M&As, the performance of bidder bonds also reflects the quality of creditor protection in the target country's jurisdiction. Section 2.2 argued that irrespective of the governance regime in place, bidder bonds should fare better in deals where the target firm is subject to a jurisdiction with better

creditor rights. However, an improvement in creditor protection is also conditional on the quality of claims enforcement and the effectiveness of the judiciary in the target country.

We use three country-level governance indicators to capture the conditions in the bidder and target country jurisdictions, each of which is described in Panel C of Appendix 1. Firstly, we use a *creditor rights index* we constructed for 31 European countries and the US, using information from more than 150 academic and practicing corporate lawyers (the contributors are listed at the end of the appendix). For each country, we tracked down all changes in creditor rights regulation which have taken place over the past 15 years. Consequently, our creditor rights index, which is based on the index originally developed by La Porta et al. (1998), has the advantage of being available for each year between 1990 and 2005[15]. Secondly, we measure the efficiency of claims enforcement using the *credit contract enforcement index* developed by Djankov, McLiesh, and Shleifer (2004). This variable is defined as the number of days needed to settle a payment dispute through courts, and is measured in 129 countries at January 2003. And thirdly, 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 as well as the incidence of crime. It is available bi-yearly from 1996 onwards for 209 countries[16].

Table 5 partitions bidder abnormal bond returns by the relative scores of bidder and target countries in each of the three governance variables. The results strongly confirm the occurrence of creditor protection spillovers to the benefit of bidder bonds. When the target jurisdiction offers better creditor rights, the mean abnormal bond return is 0.88% and is significant at the 1% level. When it does not, the mean return is both significantly lower and statistically insignificant at only 0.12%. We find similar but somewhat weaker results when we compare the efficiency of credit contract enforcement in the bidder and target jurisdictions; here, the mean difference in the abnormal returns is lower and marginally insignificant, but the Wilcoxon rank-sum test is significant at the 10% level.

(Insert Table 5 about here)

The table also reports the abnormal stock returns, and shows that the gains bidder bonds earn from improved creditor protection tend to come at the expense of shareholders. Interestingly, improvements in the efficiency of claims enforcement induce greater and more significant reductions in shareholder wealth. Overall, the results suggest that when exposed to a more creditor-friendly jurisdiction, bidding firm managers observe the increased threat of litigation and are prepared to limit their risk-taking in order to avoid financial distress. That Eurobond holders respond so strongly to this is critical, because their firm is often large and internationally diversified already, and they themselves are prevented from jurisdiction shopping. This suggests that creditor protection spillovers reduce the agency costs of debt in general, thus benefiting each individual creditor whether or not they can enter into insolvency arbitrage. It is interesting that otherwise, neither bondholders nor shareholders seem to be

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[15] La Porta et al. (1998) constructed their index using 1995 data, and is not available for countries in Central and Eastern Europe.

[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.

sensitive to the environmental conditions; abnormal bond and stock returns are largely unaffected by how the rule of law compares in the bidder and target countries.

4.2.4 Multivariate analysis of bidder abnormal security returns. In order to substantiate our univariate imperative findings, we now perform a multivariate analysis of the abnormal returns accrued to bidding firm security holders. Table 6 shows three pairs of regressions. In each model, we use a variety of independent variables to jointly test for the effects of governance, deal, and firm characteristics. Each independent variable is a dummy which equals one if the variable description holds and zero otherwise. As before, the abnormal stock returns are included to help identify wealth shifts between shareholders and bondholders. The coefficient estimates are compared in each pair of bond and stock regressions using a Wald test.

(Insert Table 6 about here)

The three pairs of regressions serve different purposes. Model (1) incorporates only those independent variables that are available for both private and public firms, in order to maximize the number of observations[17]. Model (2) jointly tests the full set of independent variables on deals where both parties are publicly listed. Finally, Model (3) draws on Model (2), but it excludes some of the insignificant variables to maximize the joint significance of the bond regression. Each of the three models controls only for the bidder country's legal origin. The simultaneous inclusion of the target country's legal origin generates multicollinearity problems, and it neither contributes meaningfully nor has an impact on abnormal returns in alternative specifications[18].

In Table 6, we group the independent variables by whether they capture governance, deal, or firm characteristics. Remarkably, we find that governance considerations are by far the strongest predictors of bidder bond performance. Firstly, bondholders in Continental Europe benefit substantially more than their UK peers from takeover bids made for publicly listed targets. In Models (2) and (3), the coefficients on the common law dummy are significantly negative at the 1% level, predicting a difference in abnormal returns of 1.90% and 2.09%, respectively. Interestingly, the same result does not seem to hold when the target firm is private. In Model (1) which simultaneously considers public and private targets, the dummy coefficient is less negative and statistically insignificant.

Secondly, bidder bonds fare considerably worse *ceteris paribus* in cross-border M&As. In all three models, the coefficients on the cross-border dummy are significantly negative, varying between -1.12% in Model (1) and -2.10% in Model (3). This confirms that bondholders are wary of the added risks and uncertainties associated with cross-border deals; surprisingly, they respond particularly strongly to these when the target firm is publicly listed and thus should be subject to lower informational asymmetries.

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[17] Model (1) does not control for the relative firm characteristics (size, asset risk, financial risk) because no accounting data are available for most private firms. The model does not control for the payment method either because it is often undisclosed.

[18] We test for multicollinearity using variance inflation factors (VIF), tolerance and condition indices. None of these diagnostic measures indicate problems in the models shown in Table 6.

However, creditor protection spillovers to the benefit of bondholders are also very strong. That bidder bonds earn higher returns when the target jurisdiction is more creditor-friendly is verified by both the creditor rights and claims enforcement dummies. The creditor rights dummy is significant in all three models at least at the 5% level. Model (3) shows that the abnormal return is higher by as much as 2.13% when the jurisdiction of the foreign target offers better creditor rights. The coefficient is lower but still highly significant in Model (1). This suggests that spillovers also occur in takeovers of private targets, but the scope of these is more limited possibly owing to the smaller size of these firms. The results are largely analogous for the enforcement dummy, but its coefficient in Model (1) is statistically insignificant. Also, it now seems that wealth shifts from shareholders to bondholders are induced by improvements in creditor rights rather than claims enforcement. The Wald statistics comparing the coefficients in the bond and stock regressions are fairly weak, but for the creditor rights dummy they are significant in Model (3) and only marginally insignificant in Model (2). In the stock regressions, the coefficients on both creditor protection variables are uniformly negative, though they are insignificant in each case. As before, we find no evidence that bidder bondholders respond to the quality of rule of law in the target jurisdiction.

Of the deal characteristics, two stand out as being significant drivers of bidder bond performance. Firstly, Model (1) shows strong evidence of a negative listing effect; when the target firm is public rather than private, the abnormal return is lower by 1.18%. Surprisingly, the same result does not hold for stock returns in the way that Faccio, McConnell, and Stolin (2006) find. Secondly, all three models confirm that tender offers benefit bidder bonds more than do negotiated deals. The coefficients on the tender offer dummy are fairly stable in size, ranging between 1.30% and 1.50%. Consistent with our univariate results, the other deal characteristics have no discernible impact. Notably, bidder bonds are unaffected by whether the deal is diversifying or financed with cash. They are also invariant to whether the deal is hostile in attitude, announced after 2000, or is completed at a later stage.

The results confirm that the characteristics of the target firm have a strong impact on bond returns. In both Models (2) and (3), bidder bonds fare considerably better when the target is relatively small; when it is smaller rather than larger than the sample median, the abnormal return is higher by 1.66%. That the target's risk profile has implications for bidder bondholders is also apparent. The asset risk dummy is significant in Model (3) and falls just short of being significant in Model (2). In the former regression, the abnormal return is lower by 1.14% if asset risk is higher rather than lower in the combined firm. Of the financial risk proxies, only interest coverage affects bidder bonds; if it is reduced, the abnormal return is lower by 1.51% in Model (3). The leverage dummy is insignificant whether or not we control for interest coverage in the regressions. This may indicate that interest coverage better captures the immediate concerns of bidder bondholders over financial risk.

Overall, it is clear that cross-country variations in governance and legal standards make a very big difference to the effects of M&As on bidder bondholders. This is also evidenced by the relatively high explanatory power of Models (2) and (3) in particular. In their study of US domestic deals, Billett, King, and Mauer (2004) report an adjusted R^2 of 0.04 for their bidder bond regression. The same statistic for our Model (2), which is similarly specified but also controls for governance considerations, is higher by a large margin at 0.27.

4.3 Target firm abnormal bond returns around M&A announcements

We conclude our empirical analysis by briefly examining target firm security returns in the same multivariate framework. We only have 24 observations in total but still find some interesting results, which we report in Appendix 3. As before, three pairs of bond and stock regressions are performed. Model (1) includes only those independent variables that are available for the full set of observations. We do not control for the bidding firm's public status because it creates multicollinearity issues[19]. Model (2) jointly tests for the impact of governance, deal, and firm characteristics in those deals where the bidder is publicly listed. We do not incorporate the full set of independent variables, however, in order to maintain sufficient degrees of freedom and to avoid multicollinearity. Finally, Model (3) maximizes the joint significance of the bond regression.

The results in Appendix 3 are fairly weak but still show that governance considerations affect the performance of target bonds. In Model (3), the common law dummy is significant at the 10% level, and shows that the abnormal return that target bonds earn is 3.11% higher in Continental Europe than in the UK. There is also some evidence that target bonds fare worse in cross-border M&As, but the coefficient on the cross-border dummy is only significant in Model (2). The quality of creditor rights in the bidder country's jurisdiction also seems to matter; when it offers at least as good creditor rights as the target jurisdiction, the abnormal return is higher by as much as 7.80% in Model (3). However, the efficiency of claims enforcement does not have an impact even when the creditor rights dummy is excluded from the regression. Also, we surprisingly find that target bonds perform better when their home country actually scores higher rather than lower in the rule of law index.

Of the deal characteristics, target bondholders only seem to respond to the future outcome. When the deal is later completed, the abnormal return is higher by 3.63% in both Models (2) and (3), though the coefficient is only significant in the former. This may suggest that target bondholders already have a prior understanding of the deal's probability of success. Model (3) shows some evidence that target bonds fare worse when a tender offer is made, but this result is highly unstable across the three regressions.

Of the firm characteristics, the size of the target firms relative to their respective bidders has no discernible impact on the performance of target bonds. However, target bondholders are very sensitive to asset risk considerations. Both Models (2) and (3) show that when asset risk is higher rather than lower in the combined firm, abnormal bond returns are reduced considerably; in Model (3), the reduction is 8.62% and is significant at the 1% level. Surprisingly, there is no evidence that target bonds would respond in the same way to increases in financial risk. In fact, they seem to gain rather than lose from higher leverage in the combined firm in Model (3) in particular. The coefficient on the interest coverage dummy included in Model (2) has the correct sign but is statistically insignificant.

5. Robustness Checks and Extensions

To ensure the validity of our empirical findings, which we summarize in Appendix D, we perform a variety of robustness checks. The separate investigation of euro- and sterling-denominated Eurobonds

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[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.

suffers from sample size issues and does not yield materially different results otherwise. 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 deals financed at least partially with equity does not change our empirical outcomes. Similarly, the size effects we previously identified persist when the relative size of bidding and target firms is measured by the book value of assets rather than market capitalization. Replacing the firm-level dummies with the actual variables yields qualitatively the same results.

We also repeat our analysis using long leverage as an alternative to total leverage. Bondholders may 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. Using this variable, we get practically the same results in both the univariate and multivariate frameworks.

We try several alternative specifications of the governance variables used throughout the paper. While our creditor rights index draws on the index developed by La Porta et al. (1998), it includes an additional regulatory provision on whether a reorganization option is available to firms in addition to the option to be liquidated (see Panel C of Appendix 1). When we remove this additional provision from the index, we get the same results.

As alternatives to the World Bank's rule of law index, we use the indices created by La Porta et al. (1998) on the rule of law, accounting standards, and judicial efficiency. Each of these is insignificantly related to abnormal bond returns. Of course, a problem with these indicators is that they neither capture regulatory changes over time nor are they available for Central and Eastern European countries. We also recalculate our results using each of the five other indices published by the World Bank: voice and accountability, political stability, government effectiveness, regulatory quality, and control of corruption. We find no material differences, which is unsurprising because these indices are correlated.

We also experiment with variables that capture other aspects of the institutional environment. For example, the level of creditor protection may be affected by the quality of corporate information available to creditors. We investigate this issue using a corporate transparency index which we developed using the international network we employed to build our creditor rights index (see Appendix 1). The results show no evidence that bondholders would respond to this indicator. As an alternative to the corporate transparency index, we introduce a firm-level dummy which captures whether a firm has issued American Depository Receipts (ADR). ADRs prescribe compliance with US accounting standards and are typically associated with improved disclosure. We find that this variable has no effect on bond returns either.

Finally, we 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 which capture cross-country differences in shareholder rights and the protection of minority shareholders. The shareholder protection indices we use for this purpose were also built using the same international network. We find that bidder stocks respond positively to an improvement in the protection of minority shareholders *vis-à-vis* the incumbent shareholders, but not in the protection of shareholders *vis-à-vis* management. Bond prices are unaffected by each of these variables across all specifications. The results are marginal to the focus of this paper and are not reported here.

6. Conclusion

This paper demonstrates that the bondholder wealth effects of M&As are strongly affected by cross-country variations in governance and legal standards. Earlier studies have focused on US domestic deals, and made no attempt to examine how bond performance may differ in domestic versus cross-border M&As, 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 with respect to shareholder wealth.

We have examined deals that involve European firms with outstanding Eurobonds, and shown that governance considerations are in fact better predictors of bond performance than either deal or firm characteristics. Our empirical findings are summarized in Appendix 4. Firstly, the results show that bond returns 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-oriented governance regimes relative to the market-oriented Anglo-American world. Secondly, bondholders earn lower returns from cross-border M&As in bidding firms in particular. However, they reap substantially higher gains if the deal exposes their firm, or increases their firm's exposure, to a jurisdiction with better creditor rights and claims enforcement. This suggests that cross-border deals provide much greater scope for the functional spillover of creditor protection than has been previously assumed. While corporate assets tend to remain under their home country's jurisdiction, new or increased exposure to a more creditor-friendly jurisdiction should induce management to avoid excessive risk-taking in any case, thereby mitigating the agency cost of debt. If the firm's creditors can also enter into insolvency arbitrage, as may potentially be the case under the US and European bankruptcy regimes, this pressure on management can only exacerbated. That Eurobond holders respond so strongly to such considerations is remarkable, because their firm is often large and internationally diversified already, and they themselves are prevented from doing insolvency arbitrage in the way that other creditors may be able to. These findings constitute a major contribution to the comparative corporate governance literature, and expose further the powerful economic implications of cross-border M&As.

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Table 1: Descriptive statistics

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

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.

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

	Weighting of bond pricing benchmark	Mean	*Statistic*	Median	*Statistic*	N
Panel A: Bidding firms						
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
Panel B: Target firms						
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

Abnormal returns are in % and are described in Panel A of Appendix 1. 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.

Table 3: Bidder abnormal security returns around M&A announcements

Panel A: Deal characteristics

	Grouping criteria	Bonds		Stocks		N
		Mean	Median	Mean	Median	
Geographical focus	Domestic	0.84[a]	0.91[a]	0.48	-0.51	79
	Cross-border	0.41[b]	0.77[a]	0.86	1.02	146
	Difference	*-0.43*	*-0.13[c]*	*0.38*	*1.53*	
Industry focus	Same two-digit SIC code	0.55[a]	0.80[a]	0.49	-0.23	152
	Different two-digit SIC code	0.58[b]	0.82[a]	1.39	0.78	73
	Difference	*0.04*	*0.02*	*0.90*	*1.01*	
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
	Difference	*-0.28*	*-0.69*	*-2.65*	*-3.47*	
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
	Difference	*-0.26*	*-0.20*	*-1.92*	*-2.85*	
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
	Difference	*0.81[c]*	*0.60*	*-2.43*	*-3.31*	
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
	Difference	*0.37*	*1.14*	*-14.61[b]*	*-4.58[b]*	
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
	Difference	*-0.03*	*0.51*	*3.84[b]*	*3.68[c]*	
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
	Difference	*-0.08*	*-0.09*	*0.07*	*0.71*	

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
	Difference	*-0.93[b]*	*-0.84[c]*	*-1.43*	*-3.69*	
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
	Difference	*-1.45[b]*	*-0.74[c]*	*-5.13*	*-5.54*	
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
	Difference	*-0.51*	*-0.12*	*4.31*	*5.49*	
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
	Difference	*-0.54*	*-0.08*	*0.15*	*2.52*	
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
	Difference	*-0.53*	*-1.60*	*5.88*	*7.52*	

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.

Table 4: The impact of legal origin on bidding firm abnormal bond returns around M&A announcements

		Bidder is civil law			Bidder is common law			*Difference*	
		Mean	Median	N	Mean	Median	N	*Mean*	*Median*
Abnormal bond returns		0.48[a]	0.81[a]	146	0.71[a]	0.81[a]	79	*0.23*	*0.00*
	Panel A: Governance characteristics								
	Domestic	1.12[a]	1.12[a]	46	0.45	0.61	33	*-0.68*	*-0.81*
Geographical focus	Cross-border	0.18	0.69[b]	100	0.89[a]	1.05[a]	46	*0.71[b]*	*0.36[b]*
	Difference	*-0.94[a]*	*-0.43[a]*		*0.45*	*0.44*			
Legal regime of	Civil law	0.31	0.69[a]	83	0.92[b]	1.05[a]	32	*0.61*	*0.36*
target country	Common law	-0.45	0.47	17	0.84	1.05[c]	14	*1.29*	*0.58*
in cross-border deals	*Difference*	*-0.76*	*-0.22*		*-0.08*	*0.00*			
	Panel B: Firm characteristics in acquisitions of listed firms								
	Smaller in combined firm than in bidder	0.98[a]	1.02[a]	23	0.54	0.43	28	*-0.45*	*-0.59*
Asset risk	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]*
	Difference	*-0.97[c]*	*-0.63*		*-3.00[a]*	*-2.04[b]*			
	Smaller in combined firm than in bidder	0.64	1.02[b]	21	0.55	0.25	23	*-0.09*	*-0.77*
Leverage	Greater in combined firm than in bidder	0.68[c]	0.71[c]	15	-0.68	0.01	12	*-1.35*	*-0.70*
	Difference	*0.04*	*-0.31*		*-1.23*	*-0.24*			
	Greater in combined firm than in bidder	0.53	1.01	16	0.75	0.30	21	*0.21*	*-0.71*
Interest coverage	Smaller in combined firm than in bidder	0.75[b]	0.79[a]	20	-0.79	-0.05	14	*-1.54[b]*	*-0.84*
	Difference	*-0.22*	*0.22*		*1.54[c]*	*0.35*			

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.

Table 5: The impact of the regulatory and governance environment on bidding firm abnormal security returns around cross-border M&A announcements

Grouping Criteria		Bonds		Stocks		N
		Mean	Median	Mean	Median	
Target country scores better than bidder country in:						
Creditor rights	No	0.12	0.60	0.55	0.56	70
	Yes	0.88[a]	1.08[a]	-0.02	-0.72	37
	Difference	*0.77[c]*	*0.48[c]*	*-0.58*	*-1.28*	
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
	Difference	*0.50*	*0.20[c]*	*-3.03[c]*	*-3.78[c]*	
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
	Difference	*-0.06*	*0.04*	*1.13*	*2.81*	

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.

Table 6: Multivariate regressions explaining bidding firm abnormal security returns

	Dependent dummy variables	Model 1 Bonds	Model 1 Stocks	F-test	Model 2 Bonds	Model 2 Stocks	F-test	Model 3 Bonds	Model 3 Stocks	F-test
Governance characteristics Dummy = 1 if	Bidder is common law	-0.31 (-0.74)	-2.56 (-1.25)	(1.03)	-1.90 (-2.98)[a]	-6.55 (-1.13)	(0.61)	-2.09 (-3.48)[a]	-5.27 (-0.88)	(0.32)
	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)
	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)			
Deal characteristics Dummy = 1 if	Diversifying deal	-0.21 (-0.58)	-0.93 (-0.51)	(0.16)	0.94 (1.00)	-0.53 (-0.07)	(0.05)			
	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	1.30 (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[a])	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 $_{target/bidder}$ > 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 $_{combined}$ > asset risk $_{bidder}$				-1.07 (-1.63)	-8.32 (-1.46)	(1.60)	-1.14 (-2.00)[c]	-10.62 (-1.85)[c]	(3.20)[c]
	Leverage $_{combined}$ > leverage $_{bidder}$				0.23 (0.36)	3.85 (0.80)	(0.43)			
	Interest coverage $_{combined}$ > interest coverage $_{bidder}$				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		

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.

Appendix 1: Variable descriptions

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 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 – 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 (Max=5) This index 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 database we constructed with the help of more than 150 academic and practicing corporate lawyers (the contributors are listed at the end of this appendix). We tracked down all changes in creditor rights regulation which have taken place over the past 15 years such that the index is available yearly between 1990-2005 for 31 European countries and the US. The regulatory provisions are quantified as follows:

- 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 no automatic stay is obliged in reorganization (if debt-oriented code) or in the liquidation procedure (if liquidation code), 0 if 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) This index measures the efficiency of claims disputes resolution through courts, and is obtained from Djankov, McLiesh, and Shleifer (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.

Legal origin A dummy variable that identifies the legal origin of each country. The five origins are English, French, German, Nordic and Socialist. Source: Djankov, McLiesh, and Shleifer (2004).

Rule of law (Max=5) This index 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.

Sources of the creditor rights index:
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 (*IVO 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, Cousellors at Law*), Dr. Petr Kotáb and Prof. Dr. Milan Bakes (*Charles University of Prague*), Dr. Stanislav Myslil (*Čermák Hořejš Myslil a spol, Lawyers and Patent Attorneys*), Dr. Jan Bárta (*Institute of State and Law, The Academy of Science of Czech Republic*), Ms. Jana Klirova (*Corporate Governance Consulting, Prague*); **Denmark**: Prof. Dr. Jesper Lau Hansen and Prof. Dr. Ulrik Rammeskow Bang-Pedersen (*University of Copenhagen*); **Estonia**: Prof. Dr. Andres Vutt (*University of Tartu*), Mr. Toomas Luhaaar, Mr. Peeter Lepik, and Ms Katri Paas (*Law Office of Lepik & Luhaäär*); **Finland**: Prof. Dr. Matti J. Sillanpää (*Turku School of Economics and Business Administration*), Mr. Ingalill Aspholm (*Rahoitustarkastus/Financial Supervision Authority*), Ms Ari-Pekka Saanio (*Borenius & Kemppinen, Attorneys at Law, Helsinki*), Ms Johan Aalto (*Hannes Snellman, Attorneys at Law; Helsinki*); **France**: Prof. Dr. Alain Couret (*Université Paris I- Panthéon-Sorbonne*), Ms. Joëlle Simon (*MEDEF - French Business Confederation*), Prof. Dr. Benoit Le Bars (*MC Université de Cergy-Pontoise*), Prof. Dr. Alain Pietrancosta (*Universities of Tours and Paris I- Panthéon-Sorbonne*), Prof. Dr. Viviane de Beaufort (*ESSEC-MBA*), Prof. Dr. Gerard Charreaux (*Université de Bourgogne Pôle d'économie et de gestion*); **Germany**: Prof. Dr.

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Appendix 2: Legal origin of bidding and target firms

Panel A: European bidders with abnormal bond returns

	Common law	Civil law			Total
		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
Legal origin of target country					
Common law	14	5	10	2	31
Civil law — French	19	13	8	2	42
Civil law — German	11	12	19	7	49
Civil law — Nordic	2	2	2	6	12
Socialist	-	5	4	2	11

Legal origin of bidder country (header spanning Common law / Civil law columns)

Panel B: European targets with abnormal bond returns

	Common law	Civil law			Total
		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
Legal origin of bidder country					
Common law	-	-	1	-	1
Civil law — French	4	-	1	-	5
Civil law — German	3	2	-	-	5
Civil law — Nordic	-	-	-	1	1

Legal origin of target country (header spanning Common law / Civil law columns)

The legal origin of each country is obtained from Djankov, McLiesh, and Shleifer (2004).

Appendix 3: Multivariate regressions explaining target firm abnormal security returns

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

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.

Appendix 4
Summary of economic effects on abnormal bond returns

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

This table summarizes the economic effects of the independent dummy variables in the regressions shown in Table 6 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. *nss* stands for 'not statistically significant'.