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Creditor Rights, Claims Enforcement, and Bond Returns in Mergers and Acquisitions

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Abstract

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Keywords: bond returns, mergers and acquisitions, takeovers, creditor rights, claims enforcement, legal origin, shareholder protection

JEL Classifications: G34, G32, G12, G14

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Creditor Rights, Claims Enforcement, and Bond Returns in Mergers and Acquisitions

1. INTRODUCTION AND MOTIVATION

The market for corporate control has become increasingly global over the past decades, with cross-border mergers and acquisitions (M&As) now accounting for more than a third of M&A activity worldwide and exceeding domestic activity in value terms ((Erel et al., 2012; Albuquerque et al., 2014; Clougherty et al., 2014; Jory and Ngo, 2014; Alimov, 2015; Lebedev et al., 2015). The cross-country spillovers in accounting standards, disclosure practices, law enforcement, and investor protection that these deals facilitate have been shown to not only have significant stock valuation effects, differences in for example legal protection even explain a larger share of the firm-level variation in governance levels than firm characteristics (Shimizu et al., 2004; Doidge et al., 2007). Most empirical studies have investigated the economic implications of governance and legal spillover effects for shareholder wealth: these studies find that the governance regime and the relative shareholder protection (in the countries) of bidder and target are related to bidder and target shareholders returns around M&A announcements (Martynova and Renneboog, 2008; Aybar and Ficici, 2009; Jandik and Kalin, 2009; Kuipers et al., 2009; Wang and Xie, 2009; Li et al., 2016), but also to the takeover premium demanded by target shareholders in deals involving an equity offer (Starks and Wei, 2013). Bris and Cabolis (2008), Albuquerque et al. (2014), and Servaes and Tamayo (2014) show that these spillovers have important economic implications, so much so that they can change the valuation of non-targeted rival firms and entire industries where the cross-border deals occur.

As country-level differences have such large effects on shareholder returns, they may also affect the returns to creditors and, specifically, to bondholders around M&A announcements. Most of the existing studies on the effect of M&As on bondholder wealth preclude the impact of country-level institutional factors by confining their focus to US domestic deals (Billett et al., 2004; Qiu and Yu, 2009;

Hilscher and Sisli-Ciamarra, 2013) and test hypotheses on the risk or wealth expropriation effects of M&As, focusing on a co-insurance effect of cash flows in diversifying deals (Galai and Masulis, 1976; Kim and McConnell, 1977; Sarkar, 2014), a leverage effect reversing any wealth transfers from shareholders to bondholders (Dennis and McConnell, 1986; Qiu and Yu, 2009; Hilscher and Sisli-Ciamarra, 2013; Imbierowicz and Wahrenburg, 2013), substantial leverage increases in LBOs (Warga and Welch, 1993; Baran and King, 2010; Billett et al., 2010), or the relative pre-merger riskiness of bidder and target firm (Shastri, 1990). Overall, there is no conclusive evidence that bondholders benefit from mergers. Billett et al. (2004) find that bidder bondholders lose, whereas target bondholders gain in junk-grade firms and lose in investment-grade firms. Similarly, Deng et al. (2013) find that bidder bondholders earn negative returns in the two days around a merger announcement. Eger (1983) and Maquieira et al. (1998) report that bidder bondholders in the US gain in the two months surrounding the deal announcement. Other studies then again find no significant evidence that bondholders are affected by M&As (e.g. Asquith and Kim, 1982; Kim and McConnell, 1986; Dennis and McConnell, 1986; Walker, 1994).

This study is among the first to look at the effect of spillovers in governance and legal standards on bondholder returns around M&A announcements based on a large sample of international M&A deals. While some studies confirm that country and state-level governance and legal standards significantly affect bond performance (Francis et al., 2010; Miller and Reisel, 2012; Qi and Wald, 2008), few consider the effects of these differences on the performance of bonds in the context of a corporate shock such as a takeover announcement. Only Choi et al. (2010), who concentrate on the banking sector, report that bond yield spreads around takeovers are significantly affected by cross-country differences in investor protection, bank supervision, and deposit insurance conditions.[1] Our study examines how cross-country differences in governance and legal standards affect bond performance, concentrating on how differences in creditor protection and claims enforcement affect bond returns in international Eurobond-issuing firms around M&A announcements.

There is substantial variation in the way how and the extent to which countries adhere to the interests of creditors. From the perspective of bondholders, an important aspect of cross-border M&As is that they combine firms from jurisdictions with varying degrees of quality of creditor protection provided by the legal system and with variation in the efficiency of claims enforcement. Both the strength and the enforcement of creditor rights are important, as strong creditor rights have no effect unless they are upheld in court. The existing literature on corporate governance attributes only limited relevance to cross-border spillovers in the legal protection of creditors. La Porta et al. (2000) for example 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. In the same way that a US multinational firm is unable to force Chapter 11 on one of its foreign subsidiaries in default, creditor rights are not transferable from the US to the foreign country. This territoriality principle is often referred to as the "grab rule", where each local court takes the assets located in its geographic jurisdiction and distributes them only to the creditors that come to court to present their claims (Felsenfeld, 2000). Despite these arguments, cross-border M&A deals can still be beneficial for bondholders when the firm is exposed to a jurisdiction with better creditor protection. First, exposure to a more creditor-friendly regime can exacerbate the threat and implications of insolvency proceedings against the firm if it becomes financially distressed, even more so if the firm is already present in that jurisdiction – the more assets are up for grabs, the more incentives the creditors have to pursue them.[2] Second, in contrast to what La Porta et al. (2000) argue, it is not clear that assets remain under the jurisdiction of the country where they are physically located. The complexities of administering cross-border insolvencies have inspired a worldwide wave of bankruptcy law reforms to enhance co-operation among national authorities. A key template for these reforms is the Model Law on Cross-Border Insolvency, issued by the UNCITRAL (United Nations Commission for International Trade Law) in 1997. This law puts one jurisdiction in charge of the worldwide insolvency proceedings, hereby reducing legal uncertainty, preventing firms from concealing or transferring assets, and ensuring that all creditors are treated fairly. "[…] *the English courts have tended to interpret the [insolvency] Regulation fairly broadly and imaginatively, and in a*

long line of cases […] have accepted jurisdiction over various non-English companies. These have included non-UK subsidiaries of Enron and MG Rover. This has sometimes been based on relatively limited connections with the UK but has been justified on the basis of the UK's quick and commercial approach to restructuring and to the overall returns to creditors.[3]" The main proceeding is opened in the jurisdiction of the firm's centre of main interests (COMI), all other proceedings are considered secondary proceedings. Shifts in COMI are fairly common; e.g. In the Daisytek case[4], although the subsidiary company traded exclusively from France, the judge found that the centre of main interest was in the UK where its parent company was situated. Determining the COMI is not that straightforward in practice, as the country of incorporation, the country with the headquarters, and the country with significant assets may not coincide. Kaczor (2010:15) states that "*There are some good reasons for the migration of a company's COMI to certain jurisdictions. For example, stakeholders may prefer a more familiar restructuring environment. Other reasons may include: timing of the restructuring; the degree of control over the restructuring process; the appointment of the office holders, i.e. administrators, liquidators and trustees; the availability of pre-packs; the possibility to cram down creditors; and the scope of directors' duties*." The model law is therefore not derived from the territoriality principle, but it is a modified version of the universality principle. The Model Law has been enacted in a large range of countries, but in practice it has often simply formalised the already existing frameworks, as was the case in the US.

The downside of this co-operation between jurisdictions is that it may encourage creditors to arbitrage their firm's exposure to multiple jurisdictions, an action that is undertaken more easily in cross-border M&As than in domestic ones. This phenomenon is known as jurisdiction shopping, forum shopping, or insolvency arbitrage.[5] Insolvency arbitrage intensifies the threat and implications of insolvency proceedings against the firm if it goes into financial distress. Creditors can then race against management and each other to identify a jurisdiction that is the most beneficial given their legal position, and ensure that their claims are optimally satisfied. Cross-border M&As can thus clearly increase the scope for jurisdiction shopping, thereby further enhancing the potential for spillovers in creditor protection.

This is best demonstrated by the EU framework on Insolvency Regulation (EIR), a broad and effective international agreement on cross-border insolvency implemented in 2000.[6] Following the Model Law, the main proceedings are based on the firm's centre of main interests while allowing secondary proceedings in any member state where the firm is established, hereby clearly increasing the scope for insolvency arbitrage (Lechner, 2002; Omar, 2006). Moreover, the definition of an establishment is relatively lenient, as it can, for example, also include a commercial agent; it is defined as "any place of operation where the debtor carries out a non-transitory activity with human means and goods" (Freshfields Bruckhaus Deringer, 2004). Insolvency arbitrage is further encouraged by the definition of a firm's centre of main interests (Franken, 2005); according to the *incorporation doctrine*, the law to be applied is that of the country of incorporation, while the *real seat doctrine* implies that the relevant law is that of the firm's headquarters.[7] This results in a variety of interpretations, in its turn leading creditors to shift insolvency cases across jurisdictions (examples include the Bank of America, which got Eurofood under Irish jurisdiction, while Italy later challenged this feat before the European Court of Justice; the German company Deutsche Nickel which was placed under English insolvency law; and the Daisytek group which placed its UK-, France-, and German-registered companies under English jurisdiction).

Whether or not creditors can engage in insolvency arbitrage themselves, the ensuing reduction in the agency cost of debt should affect all of the firm's creditor classes. Some creditors may not want to access other jurisdictions because they have security rights (rights *in rem*) over assets in a particular country.[8] The Eurobond holders in our sample are prevented from insolvency arbitrage altogether, because Eurobonds are issued outside the issuer's domicile and thus always specify a governing law to prevent legal conflicts (Esho et al., 2004). They should nonetheless be highly sensitive to improvements in the position and bargaining power of diligent creditors in relation to the firm, which deter management from excessive risk-taking. Even more so because Eurobond holders hold unsecured claims which are not or very little protected by covenants, resulting in low recovery percentages and thus no credible threat of insolvency litigation on their part. Hence, our hypotheses are: *Cross-border deals that expose a firm to a jurisdiction with better quality of creditor protection yield higher returns to bondholders at the*

takeover announcement (Hypothesis 1). A similar positive spill-over effect is expected for cross-border deals that expose a firm to a jurisdiction with better creditor claims enforcement through courts (Hypothesis 2).

The above holds for both new and increased exposure to a jurisdiction with better creditor protection/enforcement, as both will increase pressure on management to avoid excessive risk-taking that could increase the probability of financial distress. This pressure will be strengthened if opportunities exist for insolvency arbitrage, because a diligent or astute creditor should always have the incentive to exploit disparate priority rules and other differences in creditor protection. Obviously, bondholders may also be affected by other sources of cross-country variation as they are subject to the overall regulatory environment, such as the quality of property rights, policy, and courts, or the likelihood of fraud, crime, and violence. Hence, we expect that *cross-border deals that expose a firm to a jurisdiction with a better rule of law yield higher returns to bondholders (Hypothesis 3).*

Stronger investor protection does not necessarily mean that both shareholders and creditors are protected to the same extent. Building on La Porta et al. (1998), theoretical evidence and empirical U.S.-based studies indeed argue that strong shareholder protection rights can harm bondholders, as wealth is more likely to be redistributed from bondholders to shareholders (see for example Klock et al., 2005; Cremers et al., 2007; Chava et al., 2009). However, strong shareholder rights do not necessarily have to hurt bondholders, especially when strong minority shareholder protection rights (such as anti-director rights) prevent managers and majority shareholders from expropriating the firm's assets away from both minority shareholders and creditors, whose interest may be aligned in this context (e.g. Johnson et al., 2000; Djankov et al., 2008; Miller and Reisel, 2012). We thus expect that the beneficial anti-expropriation effects outweigh wealth transfer-effects: *Abnormal returns accruing to bondholders are higher in cross-border deals that expose the firm to a jurisdiction with stronger minority shareholder rights (Hypothesis 4*).

Again, this should hold for new exposure to a jurisdiction as it increases pressure on management to avoid excessively risky actions, and it should hold even more so if the firm is already present in that

jurisdiction: then more assets are protected from expropriation by managers. While the above measures (creditor rights, creditor rights enforcement) are specific investor protection mechanisms, our models will also need to control for a country's legal origin because this is sometimes used as a proxy for the influence investors have on corporate decision making. Countries with common law systems such as the Anglo-American countries are often argued to have strong investor rights and stringent disclosure requirements, which results in more market-oriented governance systems. Civil law countries in Continental Europe and Japan are considered as stakeholder-oriented systems (with a stronger focus on the rights of employees, customers/suppliers, the community at large etc.). While the quality of legal protection of creditors has some resemblance in countries with the same type of legal and governance regimes, there is still significant variation in creditor protection across countries, even within particular families of legal regimes. For example, creditor rights are very strong and strictly enforced under English solvency law, but they are relatively weak and subject to judicial discretion under the softer US approach (Sussman, 2008). Likewise, civil law countries do not have uniform degrees of creditor protection: Musacchio (2008) for example finds that the strength of creditor rights in Brazil (a French civil law country) has been rather volatile, and when considering a cross-section of common and French civil law countries, he concludes that the relation between legal origin and the protection afforded to creditors is also not stable over time.

Using one of the largest sample sizes to date, this paper shows how cross-country differences in governance and legal standards affect bond performance in international Eurobond-issuing firms around M&A announcements.[9] As argued by Gabbi and Sironi (2005), Eurobonds are highly standardized and very liquid, which enables a direct comparison of their returns across countries. However, the downside of using this type of bonds is that the sample is limited to investment-grade firms, as junk-grade Eurobonds are relatively rare. Firms issuing Eurobonds are generally large, internationally active, and profitable firms situated in the US, Europe, and Asia. Despite Eurobond holders not being able to engage in insolvency arbitrage (Eurobond contracts specify a governing law), their returns should be sensitive to changes in the position and bargaining power of the firm's other (secured) creditor classes. This is because

Eurobonds are generally unsecured and ill-protected by covenants, so they have little credibility in threatening with insolvency litigation. Our sample consists of investment-grade bonds that can only indirectly benefit from spillovers in creditor protection. Therefore, any effects of spillovers that we will find in this paper are likely to be much stronger for non-investment grade bonds or non-Eurobond securities that directly benefit from stronger creditor rights. Unfortunately, the secondary market for those types of securities is not liquid enough to test these effects directly, and they don't allow for a straightforward comparison across countries.

The empirical results confirm that cross-country differences in governance and legal standards related to creditor protection and claims enforcement are strong predictors of bond performance in M&As. Cross-border deals induce significant governance and creditor protection spillovers, such that bidding firms' bondholders obtain (statistically and economically significant) higher abnormal returns of 6 to 15 basis points when their firm becomes exposed to a jurisdiction with better quality of creditor rights or better enforcement of claims in court. This suggests that bondholders do not only welcome the strength and quality of creditor rights, but also the enforcement of these laws and regulations. For a much smaller sample of target firm bonds, we find that target bondholders also earn significantly better abnormal returns when the target is taken over by a firm exposed to a jurisdiction with better creditor protection and claims enforcement. The resulting reduction in the agency cost of debt following takeovers involving firms subject to different levels of creditor protection generates beneficial effects for all creditor classes, regardless of their seniority or their ability to engage in insolvency arbitrage. Moreover, we confirm our conclusions by investigating bondholders of firms that are more likely to default and that are thus more risky to creditors. Longer maturity bonds, bonds by firms with high asset risk, and bonds by firms with a higher likelihood of financial distress are most sensitive to improvements in the quality and enforcement of creditor protection following a takeover.

The remainder of this paper is structured as follows. Section 2 describes the methodology and gives descriptive statistics. Section 3 discusses the empirical results, and Section 4 gives an overview of robustness checks and future extensions. Finally, Section 5 concludes.

2. SAMPLE SELECTION, METHODOLOGY, AND DESCRIPTIVE STATISTICS

2.1 Sample Description and Methodology

The sample of takeover deals combines worldwide deal announcements from the M&A databases of SDC, Zephyr, and CapitalIQ. One of the caveats in bond market event studies is that they often tend to suffer from small sample sizes that in earlier studies rarely exceeded 200 observations with a median of 67 (Bessembinder et al., 2009). The largest sample to date is that of Billett et al. (2004) and consists of 940 M&A deals. In order to ensure a sufficiently large sample of M&A transactions, we combine the deals recorded in three databases, and identify and drop overlapping observations. For inclusion in our M&A sample, the deals should meet the following criteria:

(1) The deal is announced between January 1, 2000, and December 31, 2013.

(2) The bidder owns less than 50% of the target's shares before the announcement and intends to hold more than 50% after the deal. We thus exclude acquisitions of assets and minority acquisitions.

(3) Transactions involving financial institutions (banks, insurance companies, or other financial firms with SIC codes between 6000 and 6900) are excluded.

(4) Transaction information is available in SDC, Zephyr, CapitalIQ, or Thomson One Banker.

Subsequently, we prune the M&A transactions to those in which the bidder and/or target firm have fixed-rate Eurobonds outstanding. Bonds with special features such as callable, putable, or perpetual bonds are excluded as they are rare, which would considerably complicate the pricing process and impede the calculation of reliable benchmark returns. Our initial sample of bonds is retrieved from the Reuters Fixed Income Database and consists of 1,194 Eurobonds from 350 issuing firms, but we remove 55 bonds due to the data requirements for the construction of benchmark indices (prior to 2000, data limitations hinder the calculation of benchmark returns). We also exclude all bonds denominated in currencies other than Euro, Pound Sterling, or US Dollar. After eliminating takeover transactions with firms for which no Eurobond return data fulfilling the above requirements are available around the deal announcement date, we retain 2,638 unique deals involving 321 Eurobond-issuing firms. Lastly, we exclude domestic deals

from our main analysis, resulting in a final sample of 1,100 cross-border deals involving 214 Eurobond-issuing firms. To the best of our knowledge, this is one of the largest sample sizes in bond market event studies so far, which is especially important as the power of parametric test statistics significantly increases with sample size (Bessembinder et al., 2009).[10] Hence, analysing a sufficiently large sample enhances the precision of our results, which is an important benefit of this study in comparison to earlier studies.

Bond ratings are obtained from Standard and Poor's or, if not available, Moody's Investors Service. The bond prices are obtained from the Reuters Fixed Income Database and are dealer quotes, but they may contain matrix prices that cannot be separated from actual trade data. As the Eurobond market is highly liquid, the vast majority of the quotes should reflect actual trades. Matrix prices are not driven by firm-specific information, so leaving them in the sample creates a bias against finding significant results, which strengthens the statistical significance of our results.

The reasons why we concentrate on Eurobonds rather than domestic bonds are the following: first, Eurobonds are highly standardised bonds, making the comparison of bond returns across countries more convenient (Gabbi and Sironi, 2005). They are usually listed on the Luxembourg Stock exchange, are governed by English common law, are usually in bearer form, are largely unsecured, and carry very few covenants. Because investors do not easily accept such ill-secured bonds from low quality borrowers, the junk-grade segment of the Eurobond market is negligible, which impedes the construction of reliable pricing benchmarks. Hence, we only have investment-grade issuers in our sample. Second, the amount raised by means of Eurobonds is usually large[11] and the issuing procedures are relatively lenient. The Luxembourg Stock Exchange exempts Eurobonds from withholding tax, applies low fees, and approves new listings fast. As a result, the Eurobond market is competitively priced, efficient (with a minimal risk of price anomalies), and highly liquid which generates a strong demand in the secondary market by (mostly institutional) investors.

The estimation of abnormal bond returns is different from estimating abnormal stock returns for a number of reasons: a firm can have several bonds outstanding, each with its own series of returns data.

Bond returns can also not easily be benchmarked against a static benchmark as its sensitivity to risk is constantly changing over time. We employ daily bond return data and aggregate bonds at the firm level. The abnormal bond returns are calculated as the sum of the daily abnormal returns in the eleven-day event window around the announcement of the deal ([-5,+5]) to account for possible information leakages. While this is a shorter event window than the two-month window in Billett et al. (2004) who only consider monthly returns, our abnormal returns are expected to suffer less from the influence of confounding events. The reason why we use daily bond returns is that this enhances the precision and the power to detect abnormal returns in event studies (relative to monthly bond returns). Furthermore, parametric tests tend to perform more accurately when using daily data. As is argued by Bessembinder et al. (2009), the methods used in earlier bond market event studies may not be well specified (e.g. because of multiple bond issues which results in cross-correlated standard errors), resulting in a low power of the tests used. Moreover, Ederington et al. (2015) find that prior studies have low explanatory power for bond returns because these studies do not control for heteroskedasticity in the bond returns due to differences in characteristics such as term-to-maturity or credit rating. Prices of long-term bonds for example, have a higher volatility than those of short-term bonds, and bond prices tend to be more volatile during financial crises. They find that standardising bond returns by their estimated time-series volatility results in more powerful tests relative to tests that assume identically distributed bond returns. In what follows, we will report the unstandardized bond returns for ease of interpretation, but our conclusions do not change significantly when using the standardized returns.

Value-weighted portfolios of a firm's bonds are formed for each issuer of multiple Eurobonds with weights equal to the market values of each bond two months before the announcement of an M&A transaction. This approach mitigates problems with cross-correlation, and gives a more accurate representation of the impact of the actual change in firm value associated with the merger event on bond returns. The abnormal bond returns (ABR) are then calculated as the difference between the raw bond return (RBR) and the return on a weighted benchmark matching portfolio, which can be interpreted as the bond's expected return (EBR): $ABR = RBR - EBR$. The weights needed to calculate the value-

weighted matching returns are again based on the market values of each bond two months before the deal announcement. While Bessembinder et al. (2009) report that when dealing with daily bond returns, the value-weighted matching portfolio approach is preferred, we also calculate equal-weighted returns as a robustness check. Moreover, non-parametric test statistics are preferred over parametric tests when dealing with investment grade bonds, as is the case when dealing with the Eurobonds in our sample. We construct a set of 60 benchmark reference portfolios, segmented by the bond's credit rating (BBB, A, AA, and AAA), currency (EUR, GBP, or USD), and duration (1-3, 3-5, 5-7, 7-10, and 10+ years). Although time-to-maturity can be used to construct pricing benchmarks (as do some investment banks), we opt to employ duration because time-to-maturity assumes that the sensitivity of a bond to risk is independent of the bond's coupon payments, a feature also known as the coupon bias (Duffee, 1998). We do not consider other factors such as size or liquidity as these have also been documented not to improve the test statistics (Bessembinder et al., 2009). Additional requirements for the construction of the benchmarks are: (i) at least seven bonds are needed in any currency-duration-credit rating bracket, and (ii) if an issuer has multiple bonds outstanding in any currency-duration-credit rating bracket, only the one with the largest amount issued is included. If the first requirement is not met, a set of 24 reserve portfolios is used, which are segmented on the same dimensions as mentioned above, but for which only two duration brackets are used (1-5 and 5-10+ years) in order to ensure a sufficient number of bonds in the portfolio. This increases the number of benchmark bond portfolios to 84.

Lastly, a threshold should be set to determine economically significant abnormal bond returns. For stock returns, Brown and Warner (1980) argue that abnormal returns of 1% are economically significant, which is roughly one-sixth of the historical yearly risk premium on the stock market. Based on this definition of abnormal returns, Bessembinder et al. (2009) then infer that, as the typical bond earns a yearly risk premium of 100-150 basis points, economically significant abnormal bond returns are approximately 15 to 25 basis points (or higher). However, they also note that economic significance also depends on a bond's risk: the M&A transactions will trigger a smaller reaction for Aaa-rated bonds (e.g. a 0.20% abnormal return) than for Ba-rated bond (e.g. a 2% abnormal return). Therefore, for investment-

grade bonds, they argue that an abnormal return of 5 basis points should be considered an economically significant change. We also adopt this criterion as our sample consists of high-quality Eurobonds, which are investment-grade and hence have a low risk premium.

2.2 Country-level Measures of Creditor Protection

In our main tests, we distinguish four country-level measures of creditor protection that could affect bondholders in cross-border M&A deals: (i) the quality and (ii) enforcement of creditors' legal protection, (iii) the general regulatory environment, and (iv) the protection from expropriation by management. In addition, we also consider the legal origin of the bidder's and target's countries.

A. Quality of creditor rights

The first dimension of creditor protection captures the quality of creditor rights, and is measured by means of the creditor rights index from Djankov et al. (2007). The index ranges from zero to four and is available for a set of 129 countries worldwide. It measures the number of laws in a country that protects creditors from expropriation by more senior secured creditors. The index has been shown to not only matter for senior secured creditors, but also to help explain patterns in total capital market development (Miller and Reisel, 2012). Therefore, the creditor rights index is referred to as a general measure of creditor power. Following past studies, we use the index values for the year 2003 in the years in which the index is not available, as creditor rights remain stable over our time window.[12] A higher level of the creditor rights index indicates a better quality of creditor rights.

B. Enforcement of creditor rights

Sufficiently strong creditor rights are important but do not matter if they cannot be enforced in court. Therefore, we measure the efficiency of actual enforcement of rules and regulations protecting creditors using the debt enforcement index by Djankov et al. (2007). The index measures how efficiently claims disputes get resolved through court, proxied by the number of calendar days needed to enforce a contract of unpaid debt worth half of the country's GDP per capita. It is available for 129 countries

worldwide, and we use again the values for the year 2003 for observations post-2003. A higher level of the debt enforcement index indicates less efficient enforcement of creditor rights in court.

C. Rule of law

We also include a Rule of Law index developed by the World Bank to capture the general regulatory environment that affects creditors. This index is different from what the two above indices (quality of creditor rights and the enforcement of creditor rights) capture because the rule of law aggregates several indicators that measure the extent to which agents have confidence in the rules of society and how well they abide by them. These rules include the quality of contract enforcement, property rights, the effectiveness and predictability of the judiciary, the control of corruption, and the likelihood of fraud, crime, and violence. It is ranges from zero to five and is available for 209 countries from 1996 to 2013. A higher level of the rule of law indicates a stronger regulatory environment.

D. Anti-director rights index

The fourth measure of creditor protection is an anti-director rights index. As pointed out by Miller and Reisel (2012), in an international setting, stronger (minority) shareholder rights can have both negative and positive consequences for bondholders. We include the anti-director rights index from Spamann (2010), which updated the original index by La Porta et al. (1998) and the revised index by Djankov et al. (2008). The index captures the laws that mandate provisions protecting minority shareholders from expropriation by managers or majority shareholders. The provisions include the right to an oppressed minority mechanism to seek redress in case of expropriation, voting rights, and rights to call a special shareholder meeting. A higher level of the index indicates stronger protection for atomistic shareholders and creditors.

E. Legal origin

Lastly, we include the legal origin of the bidder's and target's countries, distinguishing between common law (English) and civil law (French, German, Scandinavian) countries. Legal origin is used as

a proxy for the influence creditors have on corporate decision making and is obtained from Djankov et al. (2007).

2.3 Descriptive Statistics

Table 1 shows the descriptive statistics for the final sample comprising 1,100 cross-border takeover transactions involving 214 unique bond-issuing firms. As the majority of target firms are privately held, the accounting data and stock data are only available for a small subsample of targets. The accounting data are measured at the end of the fiscal year preceding the deal announcement and are obtained from Worldscope, or if not available, from CapitalIQ. The firm's market capitalization and book value of assets are adjusted for inflation using country-specific consumer price indices and are expressed in 2010 prices. The definitions for all variables including return on assets (ROA), leverage, and asset risk can be found in the Appendix.

(Insert Table 1 about here)

The bidding firms in the sample are larger in terms of market capitalisation and total assets than the corresponding target firms. The median book value of assets is €20.2 billion for the typical Eurobond-issuing bidding firm, and €16.7 billion for the typical Eurobond-issuing target firm; in terms of market capitalization the discrepancy between bidder and target are much larger. The differences between bidder and target in terms of the median ROA, leverage and asset risk are small and also exhibited in Table 1. The median (average) sample firm has (2.5) Eurobonds outstanding with a maturity of 4.8 (6) years and a duration of 4 (4.2) years, and the average (median) bond rating is BBB (A). The majority of our sample consists of serial bidders: the average bidding firm in our sample is involved in 31 bids over the full sample period of 14 years. Table 1 also exhibits that there is scope for spillover effects in country-level governance standards and regulations, with target firms being more frequently located in countries with higher creditor rights and debt claim enforcement in courts. In the next section, we will investigate this further by looking at the level of creditor rights, claims enforcement, rule of law, and anti-director rights across countries.

Regarding the geographical distribution of deals by bidder's and target's country: the bidding firms are most often located in France (295 deals), the UK (194 deals), and the US (129 deals) (see Table A.1 in the Appendix). Target firms are most often located in the US (215 deals), the UK (79 deals), Germany (75), and France (57 deals). Unsurprisingly, the majority of deals involving Eurobond-issuing firms are done by firms located in the US or Europe.

3. EMPIRICAL RESULTS

3.1 Abnormal Bond Returns around M&A Announcements

Table 2 shows the abnormal bond returns for Eurobond-issuing bidding (Panel A) and target (Panel B) firms around cross-border M&A announcements. Panel C concentrates on French and English bidders because firms from these countries most frequently occur as bidders in our sample and their creditor rights are very different. The returns to bidder bondholders are negative and both statistically and economically significant in the eleven days surrounding the deal announcement (Panel A). The mean abnormal bond returns are significantly negative at -0.05% and -0.04% for the equally- and value-weighted benchmarks respectively. The equally-weighted median abnormal returns are statistically significantly different from zero at -0.006%, but given that we impose a minimum level of 0.05% for economic significance (see above), we do not regard these returns as sufficiently large. Our results go against Doukas and Kan (2006) that global diversification increases bondholder value, and are in line with existing evidence that finds either negative effects on bidder bondholder wealth, or effects not different from zero. For the U.S., Billett et al. (2004) report significantly negative losses of -0.17% (-0.09%) for their full sample (investment-grade sample) of bidder bondholders but these returns were measured over a longer time window of two months surrounding the M&A announcement. The above results thus indicate that bidder bondholders do not benefit from a co-insurance effect, but rather experience negative returns surrounding a merger announcement. Panel B demonstrates that the mean returns accruing to target bondholders are economically and statistically significant at 0.26%, both for the equal- and value-weighted benchmarks. Still, the median returns are much smaller at 0.07% and 0.05%, respectively. The results thus show that

target bondholders earn positive returns around merger announcements, while bidder bondholders earn negative returns. The target bond returns are not in line with those in Billett et al. (2004), who find significant negative target bond returns for their investment-grade sample. In the remainder of the paper, we will only report bond returns calculated relative to value-weighted benchmarks because we do not find much difference between value- and equally-weighted returns, and Bessembinder et al. (2009) argued that using the former benchmark method is better specified.

(Insert Table 2 about here)

In Panel C, we zoom in on firms from two countries (France and the UK) that are frequently present in our sample, have different levels of creditor rights but are otherwise similar in terms of claims enforcement, rule of law, and anti-director rights.[13] The bidding firms in 295 cross-border M&A transactions are located in France (which has a low level of creditor rights). UK bidders participate in 194 cross-border deals, and the UK is characterized by a high level of creditor rights. The results in Panel C suggest that bidder bondholders from these countries react differently to a cross-border merger announcement: while the bondholders of French bidders do not earn significant returns, UK bidders' bonds react significantly negatively. This difference in means and medians could arise from a spillover effect in governance regimes or creditor protection, a question we will investigate further in the next sections.

3.2 Governance Spillover Effects in Cross-Border M&As

The worldwide focus of our sample indicates that there is considerable scope for spillover effects in corporate governance standards, which is why we construct in Table 3 indicator variables capturing such potential spillover effects in the legal protection of creditors. We distinguish among deals where (i) the target is from a country with strong (above-median) creditor protection and the bidder is from a country with weaker (below-median) creditor protection, (ii) both have above-median creditor protection, (iii) both have below-median creditor protection, and (iv) the bidder's country has stronger creditor protection than the target's country. In contrast to case (i), we expect that in case (iv) the bidder

bondholders are not significantly affected by the level of legal protection in the target's country as they are expected to be better off by claiming their rights in their home country. The median value of each index is measured across all countries over all years, and the bidder and target indices are compared to their respective medians.

(Insert Table 3 about here)

We capture creditor protection by four country-level measures: the creditor rights index and the debt enforcement index (both developed by Djankov et al., 2007), the World Bank's rule of law index, and the revised anti-director rights index (Spamann, 2010). Additionally, we also consider the legal origin of the bidder and target countries, distinguishing between the weaker investor protection civil law systems and the stronger investor protection common law systems. The correlation matrix in Table A.2 in the Appendix indicates that there is no concern for multicollinearity. There is still considerable variation, even within legal systems, in the extent to which spillovers can occur in cross-border M&A deals: the correlation between target or bidder legal origin and any of the spillover dummies does not exceed 0.18.

Our results in Table 3 show that bidder bondholders react to the quality and enforcement of creditor rights in the target's country (line (a)). While the mean abnormal bond returns are significantly negative (-0.06%) in deals where there is no scope for positive spillover effects in creditor rights from the target to the bidder, they are positive (0.05%) in deals where positive spillovers can occur. The difference in means of 0.11% is statistically significant at the 99% confidence level, as well as economically significant. Similar results appear for the enforcement of creditor rights (line (b)): the mean abnormal returns are significantly negative at -0.06% if there is no scope for spillover effects from target to bidder, while they are (insignificantly) positive at 0.04% if the target's country performs better on claims enforcement than the median country and the bidder's country performs worse than the median country. The difference in means of 0.11% is significant at the 95% confidence level. For the rule of law (line (c)), we obtain similar results: mean abnormal returns are significantly negative if the target's country does not have an above-median level of rule of law whereas the bidder's country has. Again, the difference in means of 0.08% is significant at the 95% confidence level. Similar results emerge for

potential spillovers in anti-director rights (line (d)): returns are again significantly negative if there is no scope for positive spillover effects from the target's country to the bidder's country, and are insignificantly positive otherwise with a statistically significant difference in means of 0.07%. This is thus in line with existing international evidence favouring the beneficial impact of strong minority shareholder rights on bondholders' performance: by preventing managers from extracting assets from the corporation, creditors have more collateral in case of default.

Lastly, we consider legal origin and distinguish between countries with a civil law origin and countries with a common law origin. Line (e)) shows that if a common law bidder acquires a civil law target, bidder abnormal bond returns are significantly more negative (-0.18%) relative to the case where the target is common law (-0.07%). This can be explained by the fact that, in general, civil law countries have weaker creditor protection than common law countries. While the difference is economically significant, it is not statistically significant. In lines (f)-(h), we observe that the bidder bond returns do not respond to a takeover announcement when bidder and target have the same legal origin, when the bidder is civil law and the target is common law, or when the target is common law and the bidder is civil law. The lack of bondholder response in terms of returns may be due to the level of creditor rights and claims enforcement dominating the impact of legal origin, as the former measures capture creditor-specific information.

Cross-border M&As thus offer considerable scope for spillover effects in creditor protection. The Eurobond holders in our sample are not able to participate in insolvency arbitrage themselves, as Eurobonds are issued outside the issuer's domicile and thus always specify a governing law to prevent legal conflicts. However, Eurobonds are unsecured and little protected by covenants, making them sensitive to improvements in the position and bargaining power of the firm's other (secured) creditors, which deter management from excessive risk-taking. Regardless of their seniority or ability to do insolvency arbitrage, all creditors should thus be affected by improvements in creditor protection and a general reduction in the agency cost of debt.

3.3 Abnormal Bond Returns, and Transaction and Firm Characteristics

We also study the impact of transaction- and firm-specific characteristics on bond returns. In Table 4, we first examine the deal's industry focus, deal status (successful or unsuccessful bid), the target's public or private status, the means of payment, deal type (tender versus not tender) and attitude (hostile or friendly), the leverage change following the transaction, the relative size, and whether or not a major shareholder is also a creditor. We look at potential industry-level co-insurance effects of diversifying M&As and follow Berger and Ofek (1995) who define deals as diversifying or conglomerate if the two-digit SIC codes of the bidder and target are different. We find no evidence that bidder bondholders respond differently to diversifying deals than to focused transactions (both types of deals induce a -0.04% loss for the bondholders). The lack of a different bond market reaction is not entirely surprising, as Eurobond-issuing firms are generally large and already diversified, and are hence expected to respond less to diversifying deals. Moreover, this result is also in line with earlier findings by Maquieira et al. (1998) and Billett et al. (2004). We further distinguish between deals based on their status: while a successful deal earns significantly negative returns for bidder bondholders, we find that an unsuccessful (withdrawn) deal does not trigger any price movement. We also investigate whether the public versus private status of the target firm matters to bondholders. Bidder stocks perform better around bids made for private targets (Fuller et al., 2002; Faccio et al., 2006; Jaffe et al., 2015), but we find that bondholder returns are lower in takeovers of private relative to listed firms, which may reflect the lower transparency on the quality of the assets of private targets. Next, we distinguish between offers based on the means of payment (for listed targets only): all-cash bids versus offers involving equity (Martynova and Renneboog, 2009). The former trigger less negative bond returns than deals involving an equity issue, but the difference is not statistically significant as we have very few equity-financed deals in our sample. Although an all-cash transaction often implies an increase in the financial risk for the bidding firm's unsecured bondholders, the agency and signalling implications of equity financing dominate the capital structure implications of increased leverage. Bidder bondholders earn no statistically significantly different returns in tender offers, which stands in contrast with Billett et al. (2004) who do report lower bond returns for tender offers. The

bidder's bond prices react very negatively to a hostile bid announcement, reflecting that too high a price may be paid to target shareholders, which may endanger the future profitability of the merger; the lack of statistical significance can be explained by the fact that hostile bids are very rare.

(Insert Table 4 about here)

We also examine whether bidder bonds are affected by a set of firm characteristics measured at the level of the combined firm and at the pre-transaction level of the bidding firm.[14] We first consider the impact of changes in the financial risk proxied by firm leverage: counterintuitively, we do not find significantly different bond returns between ex post increases or decreases in leverage in the combined firm. Previous studies also fail to find a significant effect for financial risk (Billett et al., 2004).[15] We also find that bidder bondholders do not respond significantly differently to deal-induced varying relative size (target relative to bidder in terms of total assets): if the size ratio of the deal is smaller than the sample median, the bond returns are -0.02% and -0.06% in case of a larger relative size. Lastly, we also consider whether the bidder firm has a major shareholder who is also a creditor, which may facilitate access to debt or better credit terms to finance acquisitions. This dual holdership is an often overlooked but important phenomenon: on average, 10% of all shares outstanding of US listed firms are held by financial institutions who not only hold equity but also lend to those firms (Jiang, Li, and Shao, 2010; Bodnaruk and Rossi, 2015). We find that bond returns do not significantly depend on the presence/absence of a creditor-shareholder.

3.4 Multivariate Analysis: Spillovers in Creditor Protection

3.4.1 Bidder abnormal bond returns

We now turn to the relation between relative creditor rights protection, claims enforcement, rule of law, and anti-director rights, on the one hand, and bond returns on the other, while controlling for the transaction and firm characteristics discussed above and including year and bidder industry fixed effects. In Models (1) to (4) of Table 5, we run separate regressions for each of the four creditor protection variables, and Model (5) includes all four variables simultaneously to examine which factor dominates.

The results confirm that the cross-country variation in creditor protection is a strong predictor of bidder bond performance: a higher level of creditor rights in the target's country relative to the bidder's leads to an increase in bidder abnormal bond returns by nine basis points (Model (1)). Not only creditor rights are important but also how these rights are enforced in a court of law: when the target's country performs better in terms of enforcement of creditor protection than the bidder's country, bidder abnormal bond returns significantly increase by 8 basis points (Model (2)). Both effects are maintained in Model (5) in which the country level protection and enforcement indices are included simultaneously such that we cannot reject hypotheses 1 and 2. Therefore, we show evidence of positive spillover effects from target to bidder as the abnormal returns are respectively 7 and 8 basis points higher if the target's country has a better quality and enforcement of creditor protection. Considering that our sample comprises only investment-grade bonds that only indirectly benefit from any spillover effects, these increases in performance are also economically significant. In contrast to the previous two measures of creditor protection, the results from Models (3) and (4) show that differences in the general rule of law and differences in the anti-director rights (the degree of (minority) shareholder orientation) between target and bidder do not seem to matter. The rejection of hypotheses 3 and 4 is not surprising considering that the rule of law and the anti-director rights index are more general measures affecting any claimant in a court of law.

(Insert Table 5 about here)

The country-level control variables, and legal origin of the bidder's and target's country, do not consistently affect abnormal bond returns. The above also implies that the sources of cross-country variation that more directly capture creditor protection and claims enforcement outweigh the effect of the control variables that are related to the bid and the transaction, which is initiated by the management and/or shareholders. The bond returns are not affected by a diversifying/focus strategy, the means of payment, the status of the target (listed or private), the main shareholder of the bidding firm being a financial institution providing credit, an increase in leverage in the combined firm, or the relative size of the deal. Whereas the previous results are largely in line with the existing literature, we find that bidder

bonds perform better in tender offers relative to negotiated deals, and they perform worse in hostile deals relative to friendly deals. This is consistent with the idea that tender offers signal more confidence in the ability of the bidding firm to realise the projected efficiency gains (Loughran and Vijh, 1997). Bidder bondholders earn strongly negative returns around hostile deal announcements, which reflect that the price paid to target shareholders may be too high and that there is a danger that too many assets are transferred (in case of deals involving cash payment) to the target shareholders. These findings are in line with Billett et al. (2004), who report significantly lower returns for investment-grade bonds in hostile deals relative to friendly deals.

In Table 6, we perform a number of robustness tests on subsamples created by excluding: (i) serial bidders which make more than 10 bids in a 3 year-period (Model (2)); (ii) M&As with bidders not from the US or Europe (Model (3)) to exclude the effect of low creditor protection in emerging countries; and (iii) M&As taking place within one month from one another to eliminate possible confounding effects of near transactions (Model (4)). Our results confirm our earlier results (repeated in Model (1) of Table 6). Some results turn out stronger: e.g. in Model (2) of Table 6, we observe that the impact of creditor protection increases when excluding serial bidders, this may reflect that bondholders from one-time bidders react more strongly to a cross-border transaction because it the bidder's first exposure to the target's creditor protection regime. Model (3) shows that our baseline results are not driven by (lack of) creditor protection in emerging markets and Model (4) demonstrates that nearby takeover transactions do not erode the results. In short, Table 6 provides additional support for hypotheses 1 and 2 (and rejects 3 and 4).

(Insert Table 6 about here)

3.4.2 Target abnormal bond returns

We now turn to the impact of creditor protection on target bondholders, who comprise a much smaller subsample as listed firms and especially those with Eurobonds outstanding are only rarely targeted. For this reason, we consider a sample of cross-border and domestic deals to increase our sample size:

including domestic deals should not affect our results as no spillovers are possible in these deals. In order to identify possible positive spillover effects from bidder to target, we include in the models of Table 7 a dummy equal to one if the bidder's country performs better than the median in terms of creditor protection, claims enforcement, rule of law, and anti-director rights and if the target's country performs worse than the median. As above, we control for transaction- and firm-level variables, and legal origin. Due to the small sample size, we are not able to include year or target industry fixed effects. The results indicate that positive spillover effects also flow the other way (from bidder to target): target bondholders benefit from an exposure to better claims enforcement in the bidder's country as they earn abnormal returns of 1.13% around the takeover announcement (Model (1)). The magnitude of the spillover effects is considerably larger than in the bidder bond regressions, which can be partly explained by the fact that target bonds generally have a somewhat lower credit rating than bidder bonds and are thus more sensitive to creditor protection rules (Eurobond-issuing bidding firms have an average credit rating of 7.59, while target firms have an average rating of 7.31). Furthermore, target firms are smaller than the bidders, which implies that target bondholders stand to gain more from better creditor protection in the bidder's country. The deal- and firm-level variables are largely insignificant. In Model (2), we include variables that express that the creditor rights and claims enforcement is better in the target country. As we would expect under the positive spillover hypothesis, we find no impact on target bond returns: target bondholders are not affected by a weaker creditor protection (enforcement) regime in the bidder's country because the bidder's jurisdiction does not induce insolvency arbitrage, as the best jurisdiction is now still the one of the target country.

(Insert Table 7 about here)

3.4.3 Bond subsamples: bond maturity, asset risk, and stock returns

We study different types of firms whose bondholders are most likely to be affected by a takeover: we create subsamples of firms whose firm-level average Eurobond maturity is lower/higher than the sample average (Table 8, Models (1) and (2), respectively), whose asset risk is lower/higher than the average

(Models (3) and (4), respectively), and whose announcement stock returns to a previous acquisition are positive/negative (Models (5) and (6), respectively). The reason for examining this last issue is that serial bidders' takeover performance often deteriorates over time, with announcement returns declining deal by deal (Laamanen and Keil, 2008; Aktas et al., 2009). The vast majority of M&A deals are financed at least partially with cash, often increasing the leverage ratio of the serially acquiring firm and the likelihood of financial distress. A series of takeovers that are badly received by the market (as captured by negative short-term shareholder wealth effects) could be a proxy for future financial distress. Thus, we expect that firms with bonds of longer maturities, with higher asset risk, and with lower stock announcement returns in earlier deals are more sensitive to spillovers in the quality and enforcement of creditor protection.

(Insert Table 8 about here)

We report that bidding firms whose outstanding bonds have on average shorter maturities ("short" defined here as less than the sample average of 6 years) are less sensitive to a higher level of creditor rights in the target's country (Model (2)), but they remain sensitive to the level of claims enforcement (Model (1)). The longer a bondholders' investment horizon, the more risk they will bear such that longer maturity bondholders can benefit more from exposure to a higher level of creditor rights (Model (2)), as there is a higher likelihood the firm will default over the life-span of the bond. Firms with higher asset risk (volatility of unlevered stock returns) tend to have more volatile cash flows, and are thus more risky to bondholders given that the default probability is higher. They are hence expected to be more sensitive to creditor rights protection and claims enforcement than bondholders of firms with low asset volatilities and low default risk (Furfine and Rosen, 2011). Models (3) and (4) confirm these expectations: high asset risk firm bondholders earn 9 basis points higher abnormal returns around a merger announcement if the target's country performs better on creditor rights, and 13 basis points higher abnormal returns if it performs better on claims enforcement. Using a negative stock market reaction to past deal announcements as a reflection of possible future financial distress, we find that bidder bonds earn significantly higher returns following negatively received bids if the firm becomes exposed to a country with better creditor protection. They earn 10 basis points higher abnormal bond returns if the target's

country has better creditor rights (Model (6)) and 13 basis points higher returns if the target's country has better claims enforcement.

4. ROBUSTNESS TESTS

4.1 Time-Varying Creditor Protection Data

In Table 9 we check the robustness of our conclusions by replacing the Djankov et al. (2007) creditor protection index and debt enforcement index (which change over time but end in 2003) by a dynamic measure of creditor protection. We use the time-variant Doing Business measures from the World Bank (Getting Credit and Enforcing Contracts as alternatives for the creditor protection index and debt enforcement index, respectively) where data for both bidder and target countries are available as the country coverage of Doing Business indices is limited. If information for at least one of the two countries is missing, we use the static Djankov et al. (2007) measures of creditor protection. As before, the results in Table 9 confirm that spillovers in both the strength and enforcement of creditor rights positively affect returns to bidder bondholders in cross-border M&A deals by about the same amount as in the base model of Table 5 (7 basis points for each of the measures).

(Insert Table 9 about here)

4.2 Domestic and Cross-Border Deals

Table 10 shows results for a sample of both domestic and cross-border deals. Including domestic deals in the sample serves as an additional benchmark and should not affect our conclusions, as no credit rights/enforcement spillovers are possible in these deals. We confirm that our conclusions remain unaffected. When we add a dummy variable indicating whether the deal is a cross-border or a domestic deal to the models in Table 10, we find that this variable is not significantly related to bidder bond returns and that the measures of creditor protection remain significant.

(Insert Table 10 about here)

4.3 Excluding Mean Imputation with Industry-Level Target Data

In the above analyses, we have used a mean imputation for the observations for which target-level accounting data on leverage (to calculate the change in leverage after relative to before the takeover announcement) or relative size (target relative to bidder size) is missing. The reason why many variables for the targets are missing is that merely 15% of target firms are listed (which is not that surprising as in most M&A studies, the percentage of listed targets is about 20%, depending on the filters used to identify sample transactions). The reason for replacing the missing accounting data for the target in these two variables by their industry average is to preserve the number of observations but comes at a price as it drives the R-squared down in a multi-variate analysis. Table 11 shows that excluding these observations with missing target firm variables reduces the sample size from 1,100 to 376, but our conclusions remain largely unchanged. Even in this fairly small sample, we find that stronger credit rights protection increases abnormal bond returns by 15 basis points (Model (1)) and stronger credit claims enforcement increases returns by 10 basis points (Model (2)). When Models (1)-(4) are combined into Model (5), we find that the size of the effects remains but only the significance of the credit rights protection is maintained. As expected, the R-squared of the models on the smaller sample (Table 11) are about three times larger than in the base models of Table 5.

(Insert Table 11 about here)

4.4 Additional Robustness Tests

We perform some additional robustness tests in Table 12. First, we try to identify potential negative spillover effects from bidder to target, whereby the bidders are facing a transaction in a country with lower creditor rights, claims enforcement, rule of law, and anti-director rights (Model (1)). We do not find evidence of negative spillover effects from a weak target to strong bidder (in terms of creditor protection). This is in line with our expectations, as bidder bondholders in these deals should not be significantly affected by a lower level of legal protection in the target's country as they can claim their rights in their home country. Hence, there is no anticipation that the creditor protection regulation of the

target country would be of any use to bidder bondholders. We then return to the positive spillover hypothesis that states that a bidder acquiring a target with higher creditor protection (hypothesis 1) and stronger claims enforcement (hypothesis 2) generates higher bondholder returns, and test it in Models (2) and (3) on a sample in which the acquisitions are respectively 40 and 50 trading days apart (in order to eliminate confounding effects). We find that our earlier results are upheld with a positive impact of the target country's creditor rights and claims enforcement. While in the above results, we controlled for bidder industry fixed effects, we now control for both bidder and target industry fixed effects (Model (4)), and observe that our earlier results are confirmed (which supports hypotheses 1 and 2). In Model (5), we include bidder fixed effects to control for any time-invariant firm-level omitted variables. The effect of better creditor protection in the target's country remains statistically significant and economically large in size (8 basis points) supporting hypothesis 1, but claims enforcement is now lower and insignificant. In Model (6), we demonstrate that including the bidder's average bond duration and bond rating does not affect our main conclusions (hypotheses 1 and 2 remain upheld). Model (7) indicates that our results are not influenced by excluding bonds that are issued in a three-month window around the deal announcement and may have been a source of funds to finance the takeover transaction. We also test the validity of our results in full and partial acquisitions. In the former acquisitions, the bidder takes over 100% of the equity whereas in the latter cases, the bidder bids for majority control. Models (8) and (9) of Table 12 reveal that the results are driven by the full acquisitions of target firms and not by partial takeovers.[16]

(Insert Table 12 about here)

In unreported regressions, we find no evidence that our results are driven by the construction of our benchmark returns, as our conclusions do not qualitatively change when replacing abnormal bond returns with raw bond returns.

5. CONCLUSION

This paper demonstrates that bondholder returns triggered by cross-border takeover announcements are strongly affected by cross-country variation in corporate governance and legal standards. Earlier studies have mostly focused on US domestic deals, and hence did not examine whether bond returns are affected by spillovers in cross-border acquisitions whereby the bidder and target are subject to different creditor protection and claims enforcement. While similar issues have been investigated extensively with respect to shareholder returns, the international evidence on the effects on bondholder wealth has remained scarce. We concentrate on Eurobonds, which make up 80% of the international bond market and are issued mainly in USD, Euro, or GBP (a currency other than the domestic currency) by large, creditworthy investment-grade firms. Eurobonds are highly standardised bonds, are usually listed (in bearer form) on the Luxembourg Stock Exchange, are largely unsecured, carry few covenants, and are governed by English law. As Luxembourg exempts Eurobonds from withholding tax, applies low listing fees, and approves new listings fast, the Eurobond market is competitively priced, efficient (with a minimal risk of price anomalies), and highly liquid which generates a strong demand in the secondary market by mostly institutional investors. This entails that the Eurobond market is one of the only bond markets that can be reliably examined in terms of its reaction to corporate restructuring. By studying international cross-border deals involving target or bidding firms with Eurobonds outstanding, we show that the quality and enforcement of legal protection offered to creditors are predictors of bond performance around takeovers. Both bidder and target bondholders fare considerably better when a takeover transaction exposes the firm to a jurisdiction with a better quality of creditor rights and better enforcement of claims disputes in court. This is especially important because it suggests that cross-border M&A deals provide much greater scope for functional spillovers in creditor protection than is assumed by La Porta et al. (2000). These spillovers are intensified by the ability of creditors to arbitrage across legal systems and ultimately reduce the agency cost of debt for all creditor classes. That we find significant results for Eurobond holders is remarkable, because they are prevented from doing insolvency arbitrage themselves given that English law applies in case of insolvency. Consequently, Eurobond holders only *indirectly* benefit from spillovers in creditor

protection, which are triggered by other creditor types not constrained by the covenant restriction on the choice of jurisdiction. These results imply that the effects for other classes of creditors are potentially much stronger.

We have documented that bondholder returns respond to differences in specific creditor protection regulations and enforcement and not to cross-country differences in broader corporate governance measures such as the rule of law, anti-directors' rights indices, or legal origin. The sensitivity to better creditor protection is higher for bonds with a higher default risk, namely bonds with a longer duration, bonds of firms with higher asset risk, and bonds of firms with a sub-optimal takeover policy (proxied by negative share price returns at the announcements of previous takeovers).

We can conclude that legal principles such as the universality principle (which was formally applied in the UNCITRAL Model Law on Cross-Border Insolvency) can have important consequences for creditors', managers', and even governments' bargaining power and the distribution of assets in insolvencies of geographically diversified firms. A cross-border acquisition can result in insolvency arbitrage by creditors and an increase in creditor influence in case of potential future insolvency may have immediate repercussions in that it may reduce the asset risk taken on by the managers and hence reduce the agency costs of debt. Similarly, an increase in creditor influence in the insolvency proceedings can have important consequences for local governments and employees, for example in cases where these parties are no longer first in line to recover their claims (in terms of taxes, contributions to social security, and remuneration). Hence, policy makers should equally be aware of the relation between cross-border M&A activity and creditor protection spillovers and adjust their bankruptcy regulations towards the universality principle, aiming to enhance the co-operation between jurisdictions in these cross-border insolvencies. We have argued that there is still significantly legal uncertainty on primary and secondary proceedings and the location of the centre of main interests (location of headquarters, incorporation, main assets), which makes the practical unwinding of international bankruptcies opaque and enhances risk (perception) in the international bond markets (and hence the financing of companies in general).

REFERENCES

Acharya, V., Amihud, Y., and Litov, L. 2011. Creditor rights and corporate risk taking. *Journal of Financial Economics* 102: 150-166.

Aktas, N., de Bodt, E., and Roll, R. 2009. Learning, hubris and corporate serial acquisitions. *Journal of Corporate Finance* 15: 543-561.

Albuquerque, R.A., Ferreira, M.A., Marques, L.B., and Matos, P.P. 2014. International corporate governance spillovers: Evidence from cross-border mergers and acquisitions. European Corporate Governance Institute (ECGI) Finance Working Paper No. 390/2014.

Alimov, A. 2015. Labor market regulations and cross-border mergers and acquisitions. *Journal of International Business Studies* 46: 984-1009.

Asquith, P., and Kim, E. 1982. The impact of merger bids on the participating firms' security holders. *Journal of Finance* 37*:* 1209-1228.

Aybar, B., and Ficici, A. 2009. Cross-border acquisitions and firm value: An analysis of emerging-market multinationals. *Journal of International Business Studies* 40: 1317-1338.

Baran, L. C., and King. T.D. 2010. Going private transactions, bondholder returns, and wealth transfer effects. *Journal of Banking and Finance* 34: 1856-1872.

Becht, M., Mayer, C., and Wagner, H. 2008. Where do firms incorporate? Deregulation and the cost of entry. *Journal of Corporate Finance* 14: 241-256.

Berger, P., and Ofek, E. 1995. Diversification's effect on firm value. *Journal of Financial Economics* 37: 39-65.

Bessembinder, H., Kahle, K., Maxwell, W., and Xu, D. 2009. Measuring abnormal bond performance. *Review of Financial Studies* 22: 4220-4258.

Billett, M.T., Jiang, Z., and Lie, E. 2010. The effect of change-in-control covenants on takeovers: Evidence from leveraged buyouts. *Journal of Corporate Finance* 16: 1-15.

Billett, M.T., King, T.D., and Mauer, D.C. 2004. Bondholder wealth effects in mergers and acquisitions: New evidence from the 1980s and 1990s. *Journal of Finance* 59: 107-135.

Bodnaruk, A., and Rossi, M. 2016. Dual ownership, returns, and voting in mergers. *Journal of Financial Economics* (forthcoming).

Bris, A., and Cabolis, C. 2008. The value of investor protection: Firm evidence from cross-border mergers. *Review of Financial Studies* 21: 605-648.

Brown, S., and Warner, J. 1980. Measuring security price performance. *Journal of Financial Economics* 8: 205-258.

Cao, J., Cumming, D., Qian, M., and Wang, X. 2015. Cross-Border LBOs. *Journal of Banking and Finance* 50: 69-80.

Chava, S., Livdan, D., and Purnanandam, A. 2009. Do shareholder rights affect the cost of bank loans? *Review of Financial Studies* 22: 2973–3004.

Choi, S., Francis, B., and Hasan, I. 2010. Cross-border bank M&As and risk: Evidence from the bond market. *Journal of Money, Credit, and Banking* 42: 615-645.

Clougherty, J.A., Gugler, K., Sorgard, L., and Szucs, F.W. 2014. Cross-border mergers and domestic-firm wages: Integrating "spillover effects" and "bargaining effects". *Journal of International Business Studies* 45: 450-470.

Cremers, M., Nair, V.B., and Wei, C. 2007. Governance mechanisms and bond prices. *Review of Financial Studies* 20: 1359-1388.

Davydenko, S., and Franks, J. 2008. Do bankruptcy codes matter? A study of defaults in France, Germany and the UK. *Journal of Finance* 62: 565-608.

Deng, X., Kang, J., and Low, B.S. 2013. Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics* 110: 87-109.

Dennis, D., and McConnell, J. 1986. Corporate mergers and security returns. *Journal of Financial Economics* 16: 143-87.

Djankov, S., McLiesh, C., and Shleifer, A. 2007. Private credit in 129 countries. *Journal of Financial Economics* 84: 299-329.

Djankov, S., La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. 2008. The law and economics of self-dealing. *Journal of Financial Economics* 88: 430-465.

Doidge, C., Karolyi, A., and Stulz, R. 2007. Why do countries matter so much for corporate governance?" *Journal of Financial Economics* 86: 1-39.

Doukas, J.A., and Kan, O.B. 2006. Does global diversification destroy firm value? *Journal of International Business Studies* 37: 352-371.

Duffee, G. 1998. The relation between Treasury yields and corporate bond yield spreads. *Journal of Finance* 53: 2225-2241.

Ederington, L., Guan, W., and Yang, L. 2015. Bond market event study methodology. *Journal of Banking and Finance* 58: 281-293.

Edwards, A.K., Harris, L.E., and Piwowar, M.S. 2007. Corporate bond market transaction costs and transparency. *Journal of Finance* 62(3): 1421-1451.

Eger, C. 1983. An empirical test of the redistribution effect in pure exchange mergers. *Journal of Financial and Quantitative Analysis* 18: 547-572.

Esho, N., Sharpe, I., and Tchou, N. 2004. Moral hazard and collective action clauses in the Eurobond market. Working Paper, University of New South Wales.

Erel, I., Liao, R., and Weisbach, M. 2012. Determinants of cross-border mergers and acquisitions. *Journal of Finance* 67: 1045-1082.

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

Felsenfeld, C. 2000. *Felsenfeld on International Insolvency*. Huntington, NY: Juris Publishing.

Francis, B.B., Hasan, I., John, K., and Waisman, M. 2010. The effect of state antitakeover laws on the firm's bondholders. *Journal of Financial Economics* 96: 127-154.

Franken, S. 2005. Creditor- and debtor-oriented corporate bankruptcy regimes revisited. *European Business Organization Law Review* 5: 645-76.

Freshfields Bruckhaus Deringer. 2004. *The EU Regulation on Insolvency Proceedings*. London: Freshfields Bruckhaus Deringer.

Fuller, K, Netter, J., and Stegemoller, M. 2002. What do returns to acquiring firms tell us? Evidence from firms that make many acquisitions. *Journal of Finance* 57(4): 1763-1793.

Furfine, C., and Rosen, R. 2011. Mergers increase default risk. *Journal of Corporate Finance* 17: 832-849.

Gabbi, G., and Sironi, A. 2005. Which factors affect corporate bonds pricing? Empirical evidence from Eurobonds primary market spreads. *European Journal of Finance* 11: 59-74.

Galai, D., and Masulis, R. 1976. The option pricing model and the risk factor of stock. *Journal of Financial Economics* 3: 53-81.

Hilscher, J., and Şişli-Ciamarra, E. 2013. Conflicts of interest on corporate boards: The effect of creditor-directors on acquisitions. *Journal of Corporate Finance* 19(1): 140–158.

Imbierowicz B. and Wahrenburg, M. 2013. Wealth transfer effects between stockholders and bondholders. *Quarterly Review of Economics & Finance* 53(1): 1-23.

Jaffe, J., Jindra, J., Pedersen, D., and Voetmann, T. 2015. Returns to acquirers of public and subsidiary targets. *Journal of Corporate Finance* 31: 246-270.

Jandik, T., and Kalin, R. 2009. Legal systems, information asymmetry, and firm boundaries: Cross-border mergers, joint ventures, or strategic alliances. *Journal of International Business Studies* 40: 578-599.

Jiang, W., Li, K., and Shao, P. 2010. When shareholders are creditors: Effects of the simultaneous holding of equity and debt by non-commercial banking institutions. *Review of Financial Studies* 23: 3595-3637.

Johnson, S., Boone, P., Breach, A., and Friedman, E. 2000. Corporate governance and the Asian Financial crisis. *Journal of Financial Economics* 58: 141-186.

Jory, S.R. and Ngo, T.N., 2014. Cross-border acquisitions of state-owned enterprises. *Journal of International Business Studies* 45: 1096-1114.

Kaczor, A. 2010. Moving a company's COMI to achieve a restructuring: factors for consideration. *Amicus Curiae* 83: 13-15.

Kim. E., and McConnell, J. 1977. Corporate mergers and the co-insurance of corporate debt. *Journal of Finance* 32: 349-65.

Klock, M., Mansi, S., and Maxwell, W. 2005. Does corporate governance matter to bondholders? *Journal of Financial and Quantitative Analysis* 40: 693-720.

Kuipers, D., Miller, D., and Patel, A. 2009. The legal environment and corporate valuation: Evidence from cross-border takeovers. *International Review of Economics and Finance* 18: 552-567.

Laamanen, T., and Keil, T. 2008. Performance of serial acquirers: Toward an acquisition program perspective. *Strategic Management Journal* 29(6): 663-672.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. 1998. Law and finance. *Journal of Political Economy* 106: 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., and Vishny, R. 2000. Investor protection and corporate governance. *Journal of Financial Economics* 58: 3-27.

Lebedev, S., Peng, M.W., Xie, E., and Stevens, C.E. 2015. Mergers and acquisitions in and out of emerging economies. *Journal of World Business* 50: 651-662.

Lechner, R. 2002. Waking from the jurisdictional nightmare of multinational default: The European Council regulation on insolvency proceedings. *Arizona Journal of International and Comparative Law* 19: 975-1024.

Li, J., Li, P., and Wang, B. 2016. Do cross-border acquisitions create value? Evidence from overseas acquisitions by Chinese firms. *International Business Review* 25: 471-483.

Loughran, T., and Vijh, A. 1997. Do long-term shareholders benefit from corporate acquisitions? *Journal of Finance* 52: 1765-1790.

Maquieira, C., Megginson, W., and Nail, L. 1998. Wealth creation versus wealth redistributions in pure stock-for-stock mergers. *Journal of Financial Economics* 48: 3-33.

Martynova, M., and Renneboog, L. 2008. Spillover of corporate governance standards in cross-border mergers and acquisitions. *Journal of Corporate Finance* 14: 200-223.

Martynova, M., and Renneboog, L. 2009. What determines the financing decision in corporate takeovers: Cost of capital, agency problems, or the means of payment? *Journal of Corporate Finance* 15: 290-315.

Miller, D.P., and Reisel, N. 2012. Do country-level investor protections affect security-level contract design? Evidence from foreign bond covenants. *Review of Financial Studies* 25: 408-438.

Musacchio, A. 2008. Can civil law countries get good institutions? Lessons from the history of creditor rights and bond markets in Brazil. *The Journal of Economic History* 68: 80-106.

Omar, P. 2006. Confronting the challenge of diverse priority through the European Insolvency Regulation. In *International Case-law Alert No. 10*. Nottingham, United Kingdom: INSOL Europe.

Qi Y., and Wald, J.K. 2008. State laws and debt covenants. *Journal of Law and Economics* 51: 179-207.

Qi, Y., Roth, L., and Wald, J.K. 2011. How legal environments affect the use of covenants. *Journal of International Business Studies* 42: 235-262.

Qi, Y., Roth, L., and Wald, J.K. 2010. Political rights and the cost of debt. *Journal of Financial Economics* 95: 202-226.

Qiu. J., and Yu, F. 2009. The market for corporate control and the cost of debt. *Journal of Financial Economics* 93: 505-524.

Sarkar, S. 2014. How large are the coinsurance benefits of mergers? Working Paper, University of Southern California.

Servaes, J., and Tamayo, A. 2014. How do industry peers respond to control threats? Management Science 60: 380-399.

Shastri, K. 1990. The differential effects of mergers on corporate security values. *Research in Finance* 8: 179-201.

Shimizu, K., Hitt, M.A., Vaidyanath, D., and Pisano, V. 2004. Theoretical foundations of cross-border mergers and acquisitions: A review of current research and recommendations for the future. *Journal of International Management* 10: 307-353.

Spaman, H. 2010. The "Antidirector Rights Index" revisited. *Review of Financial Studies* 23: 467-486.

Starks, L.T., and Wei, K.D. 2013. Cross-Border mergers and differences in corporate governance. *International Review of Finance* 13: 265–297.

Sussman, O. 2005. The economics of the EU's corporate-insolvency law and the quest for harmonisation by market forces. Oxford Financial Research Centre Working Paper 2005-FE-16.

Walker, M. 1994. Determinants of bondholder wealth following corporate takeovers (1980-1988). *Quarterly Journal of Business and Economics* 33: 12-29.

Wang, C., and Xie, F. 2009. Corporate governance transfer and synergistic gains from mergers and acquisitions. *Review of Financial Studies* 22(2): 829–858.

Warga, A., and Welch, I. 1993. Bondholder losses in leveraged buyouts. *Review of Financial Studies* 6: 959-982.

White, H. 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica* 48: 817-38.

Table 1 Descriptive statistics

	Bidding firms				Target firms				
Eurobond Issuers	N	Mean	Median	Std. dev.	N	Mean	Median	Std. dev.	Difference in means
Market capitalization (EUR million)	1,100	29,203	15,077	35,562	26	3,540	684	4,658	25,663***
Total assets (EUR million)	1,100	37,982	20,159	45,851	26	23,740	16,696	22,790	14,241
Return on assets (%)	1,100	9.1	8.3	6.3	26	5.6	9.0	18.2	3.4**
Leverage	1,100	0.28	0.26	0.13	26	0.32	0.28	0.17	0.04*
Asset risk	1,100	0.013	0.012	0.004	26	0.025	0.016	0.043	0.012***
Bonds per firm (#)	1,100	2.50	2	2.42	26	2.35	2	1.79	0.16
Bond maturity (years)	1,100	6.02	4.86	4.14	26	6.17	6.04	2.99	0.14
Bond duration (years)	1,100	4.18	4	2.22	26	4.42	4.47	1.92	0.24
Bond rating	1,100	7.59	8	0.75	26	7.31	7	0.47	0.28*
Deals per firm	1,100	31.30	23	27.93					
Creditor rights index	1,100	1.74	1	1.49	26	2.38	3	1.58	0.65**
Debt enforcement index	1,100	5.00	5.21	0.76	26	5.28	5.41	0.69	0.28*
Rule of law	1,100	4.06	4.12	0.37	26	4.11	4.14	0.32	0.054
Anti-director rights index	1,100	2.93	3	0.69	26	3.31	3	0.68	0.37***

Notes: This table shows the descriptive statistics for the unbalanced sample of Eurobond-issuing bidding and target firms. Market Capitalization and Total Assets are expressed in millions of Euros. Variable descriptions are given in the Appendix. Bond ratings are cardinalized i.e. BBB=7,…AAA=10, and Euro values are expressed in real terms (2010 prices).

Table 2 Bidder and target abnormal bond returns

Panel A: Eurobond-issuing bidding firms

	Benchmark Index	N	Mean	Median
Abnormal bond returns [-5,+5]	Equal-weighted	1,100	-0.049**	-0.006*
	Value-weighted	1,100	-0.041**	-0.008

Panel B: Eurobond-issuing target firms

	Benchmark Index	N	Mean	Median
Abnormal bond returns [-5,+5]	Equal-weighted	26	0.258*	0.066
	Value-weighted	26	0.262*	0.050

Panel C: Country-specific Eurobond-issuing bidding firms

	Type	N	Mean	Median
Abnormal bond returns [-5,+5]	French bidders (CR=0)	295	0.024	-0.005
	UK bidders (CR=4)	194	-0.212***	-0.032**
Difference			*0.238***	*0.027**

Notes: This table describes the abnormal bond returns in the days [-5,+5] surrounding the deal announcement for bidding and target Eurobond-issuing firms and two country-specific subsamples. Abnormal returns are expressed in percent and their calculation is explained in the Appendix. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 3 Impact of cross-country variation in legal standards on bidder abnormal bond returns in cross-border M&A announcements

Type		Bidder abnormal bond returns [-5,+5] Mean	Median	N
(a) Target has better **creditor rights**	No	-0.059***	-0.012**	925
	Yes	0.054*	0.004	175
	Difference	*0.114****	*0.016***	
(b) Target scores better on **claims enforcement**	No	-0.062***	-0.011*	881
	Yes	0.043	0.003	219
	Difference	*0.105***	*0.014*	
(c) Target scores better on **rule of law**	No	-0.057**	-0.008	876
	Yes	0.019	-0.009	224
	Difference	*0.076***	*0.001*	
(d) Target has stronger **anti-director rights**	No	-0.056**	-0.013**	876
	Yes	0.014	0.002	224
	Difference	*0.070**	*0.015**	
(e) Target legal origin (bidder=common)	Civil	-0.182***	-0.045***	180
	Common	-0.065	0.002	177
	Difference	*0.117*	*0.047**	
(f) Bidder legal origin (target=common)	Civil	0.013	0.001	289
	Common	-0.065	0.002	177
	Difference	*0.078*	*0.001*	
(g) Target legal origin (bidder=civil)	Civil	-0.011	-0.005	454
	Common	0.013	0.001	289
	Difference	*0.024*	*0.006*	
(h) Bidder legal origin (target=civil)	Civil	-0.011	-0.005	454
	Common	-0.182***	-0.045***	180
	Difference	*0.172***	*0.027***	

Notes: This table shows the abnormal bond returns accruing to bidder bondholders in the days [-5,+5] relative to the M&A announcements. Abnormal returns are expressed in percent and computed using a value-weighted benchmark index approach. The difference-in-means t-test assumes unequal variances across subsamples. The significance of medians and differences in medians are based on signed-rank and rank-sum tests, respectively. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 4 Bidders abnormal bond returns by deal and firm characteristics

	Type	Bidder abnormal bond returns [-5,+5] Mean	Median	N
Industry focus	Same	-0.041*	-0.010*	627
	Different	-0.042	0.000	473
	Difference	*0.001*	*0.010*	
Deal status	Unsuccessful	0.028	0.014	147
	Successful	-0.052**	-0.009*	953
	Difference	*0.080**	*0.023*	
Target public status	Unlisted	-0.047**	-0.011	946
	Listed	-0.004	0.003	154
	Difference	*0.043*	*0.014*	
Means of payment (listed targets)	All Cash	-0.001	0.003	150
	Equity or mixed	-0.114	-0.056	4
	Difference	*0.113*	*0.059*	
Deal type (listed targets)	No tender offer	-0.028	0.001	127
	Tender offer	0.111	0.020	27
	Difference	*0.138*	*0.019*	
Deal attitude (listed targets)	Friendly	0.005	0.004	152
	Hostile	-0.638	-0.638	2
	Difference	*0.643*	*0.643*	
Leverage	< in combined firm than in bidder	-0.083	0.006	220
	> in combined firm than in bidder	-0.031	-0.012	880
	Difference	*0.052*	*0.018*	
Relative size	< = sample median	-0.020	-0.002	488
	> sample median	-0.059**	-0.011	612
	Difference	*0.039*	*0.009*	
Bidder major shareholder	No creditor	-0.041**	-0.008	1056
	Creditor	-0.042	-0.016	44
	Difference	*0.001*	*0.008*	

Notes: This table partitions bidder abnormal bond returns according to a set of deal and firm characteristics: the degree of industry focus, the deal status (successful versus unsuccessful), the public of private status of the target, the means of payment (cash versus equity or mixed offer), the deal type (tender versus no tender), friendly or hostile transaction, increase or decrease in leverage, small or large relative size, presence of a major shareholder who is also a creditor. Abnormal returns are expressed in percent. The difference-in-means t-test assumes unequal variances across subsamples. The significance of medians and differences in medians are based on signed-rank and rank-sum tests, respectively. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 5 Multivariate results for bidder abnormal bond returns

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)
Creditor rights better in target	0.092***				0.071**
	(0.026)				(0.032)
Claims enforcement better in target		0.081**			0.083**
		(0.039)			(0.040)
Rule of law better in target			0.058		0.049
			(0.065)		(0.073)
Anti-director rights better in target				0.054	0.029
				(0.045)	(0.040)
Diversifying deal	-0.002	0.000	-0.004	0.003	-0.003
	(0.069)	(0.069)	(0.072)	(0.071)	(0.072)
Equity or mixed financing	-0.121	-0.142	-0.141	-0.137	-0.130
	(0.103)	(0.096)	(0.105)	(0.094)	(0.092)
Listed target	-0.024	-0.012	-0.024	-0.024	-0.020
	(0.050)	(0.050)	(0.051)	(0.048)	(0.053)
Tender offer	0.264**	0.266**	0.264**	0.269**	0.272**
	(0.119)	(0.121)	(0.121)	(0.116)	(0.122)
Hostile deal	-2.260***	-2.223***	-2.250***	-2.219***	-2.264***
	(0.403)	(0.371)	(0.398)	(0.373)	(0.407)
Successful deal	-0.064	-0.062	-0.070	-0.067	-0.062
	(0.041)	(0.042)	(0.042)	(0.042)	(0.042)
Creditor as major bidder shareholder	-0.058	-0.059	-0.060	-0.050	-0.068
	(0.054)	(0.056)	(0.054)	(0.054)	(0.060)
Leverage increase in combined firm	0.050	0.058	0.052	0.050	0.057
	(0.093)	(0.093)	(0.094)	(0.094)	(0.093)
Relative size above median	-0.005	-0.007	-0.006	-0.004	-0.003
	(0.051)	(0.051)	(0.053)	(0.053)	(0.053)
Bidder is common law	-0.105*	-0.083	-0.101*	-0.101*	-0.071
	(0.056)	(0.062)	(0.056)	(0.060)	(0.056)
Target is common law	0.030	0.032	0.028	0.028	0.014
	(0.055)	(0.058)	(0.051)	(0.061)	(0.054)
Bidder Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Constant	0.044	-0.011	0.034	0.020	-0.001
	(0.257)	(0.252)	(0.254)	(0.251)	(0.255)
Observations	1,100	1,100	1,100	1,100	1,100
Clusters	46	46	46	46	46
Adj. R-squared	0.047	0.047	0.046	0.046	0.048
Robust standard Errors	YES	YES	YES	YES	YES
Maximum VIF	1.36	1.37	1.37	1.36	1.39
Mean VIF	1.08	1.10	1.09	1.09	1.14
Condition Index	11.85	12.03	11.88	11.92	12.87

Notes: This table shows regressions with clustering of the observations by bidder industry, where the dependent variable is the bidder abnormal bond return (expressed in percent), calculated by means of the value-weighted benchmark index approach. The independent variables are dummy variables representing country, deal, or firm characteristics and are equal to one if the variable description holds and zero otherwise. Variable descriptions are given in the Appendix. Columns (1) to (4) include indicator variables for spillover effects in the creditor rights index, claims enforcement, rule of law, and anti-director rights index, respectively. Column (5) includes all four simultaneously. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 6 Spillovers in creditor protection on bidder abnormal bond returns for different subsamples

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)
Sample	Cross-border	Excludes serial bidders	US & EU only	No overlapping deals
Creditor rights better in target	0.071**	0.110*	0.075*	0.079**
	(0.032)	(0.062)	(0.039)	(0.030)
Claims enforcement better in target	0.083**	0.105*	0.078*	0.073*
	(0.040)	(0.061)	(0.039)	(0.036)
Rule of law better in target	0.049	-0.010	0.039	0.039
	(0.073)	(0.091)	(0.090)	(0.065)
Anti-director rights better in target	0.029	0.127*	0.032	0.037
	(0.040)	(0.066)	(0.039)	(0.040)
Diversifying deal	-0.003	0.091	-0.012	-0.004
	(0.072)	(0.0670)	(0.089)	(0.072)
Equity or mixed financing	-0.130	-0.317**	-0.113	-0.108
	(0.092)	(0.120)	(0.099)	(0.083)
Listed target	-0.020	-0.059	-0.031	-0.012
	(0.053)	(0.087)	(0.056)	(0.055)
Tender offer	0.272**	0.301*	0.255*	0.276**
	(0.122)	(0.164)	(0.143)	(0.120)
Hostile deal	-2.264***	-2.136***	-2.259***	-2.274***
	(0.407)	(0.391)	(0.394)	(0.394)
Successful deal	-0.062	-0.055	-0.043	-0.070
	(0.042)	(0.074)	(0.042)	(0.043)
Creditor as major bidder shareholder	-0.068	-0.265**	-0.083	-0.039
	(0.060)	(0.124)	(0.056)	(0.052)
Leverage increase in combined firm	0.057	-0.033	0.060	0.082
	(0.093)	(0.090)	(0.096)	(0.086)
Relative size above median	-0.003	0.009	-0.011	-0.020
	(0.053)	(0.086)	(0.057)	(0.055)
Bidder is common law	-0.071	-0.035	-0.076	-0.067
	(0.056)	(0.086)	(0.066)	(0.055)
Target is common law	0.014	0.014	0.012	0.029
	(0.054)	(0.067)	(0.053)	(0.057)
Bidder Industry FE	YE	YES	YES	YES
Year FE	YE	YES	YES	YES
Constant	-0.001	0.311	-0.038	-0.081
	(0.255)	(0.306)	(0.264)	(0.241)
Observations	1,100	502	1,028	1,080
Clusters	46	43	43	46
Adj. R-squared	0.048	0.033	0.047	0.055
Robust standard Errors	YES	YES	YES	YES
Maximum VIF	1.38	1.52	1.38	1.39
Mean VIF	1.14	1.16	1.14	1.14
Condition Index	12.87	12.04	12.98	13.01

Notes: This table shows similar regressions as in Table 5 but on different samples: Column (2) excludes serial bidding firms, Column (3) excludes deals by bidding firms not located in the US or Europe, Column (4) excludes deals that occur within 30 days of another deal by the same firm. Variable descriptions are in the Appendix. Robust standard errors with a White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 7 Multivariate results for target abnormal bond returns (all deals)

Dependent variable: Target abnormal bond returns [-5,+5]	(1)		(2)
Creditor rights better in bidder	0.509	Creditor rights better in target	0.242
	(0.368)		(0.334)
Claims enforcement better in bidder	1.133*	Claims enforcement better in target	-1.122
	(0.599)		(0.682)
Rule of law better in bidder	-0.049	Rule of law better in target	-0.407
	(0.775)		(0.552)
Anti-director rights better in bidder	0.438	Anti-director rights better in target	-0.407
	(0.826)		(0.568)
Cross-border	-0.409	Cross-border	0.415
	(0.417)		(0.472)
Diversifying deal	-0.496	Diversifying deal	-0.676
	(0.419)		(0.475)
Equity or mixed financing	0.334	Equity or mixed financing	0.439
	(0.470)		(0.486)
Listed target	-1.100	Listed target	-1.200
	(1.069)		(1.374)
Tender offer	-0.292	Tender offer	-0.701
	(0.817)		(0.766)
Hostile deal	0.401	Hostile deal	0.201
	(0.810)		(0.787)
Successful deal	0.402	Successful deal	0.404
	(0.393)		(0.389)
Leverage increase in combined firm	0.082	Leverage increase in combined firm	0.086
	(0.336)		(0.359)
Relative size above median	Omitted	Relative size above median	Omitted
Target is common law	1.188**	Target is common law	1.415*
	(0.556)		(0.803)
Constant	0.656	Constant	1.046
	(0.950)		(1.303)
Observations	60		57
Adj. R-squared	0.165		0.086
Robust standard Errors	YES		YES
Maximum VIF	1.65		2.48
Mean VIF	1.34		1.62
Condition Index	12.46		12.98

Notes: This table shows regressions with clustering of the observations by target industry, in which the dependent variable is the target abnormal bond return (in percent), calculated by means of the value-weighted benchmark index approach. The independent variables in Column (1) include the creditor protection spillover variables and dummy variables (representing country, deal, or firm characteristics) equal to one if the variable description holds and zero otherwise. The independent variables in Column (2) include variables identifying negative spillover effects from bidder to target and country, deal, and firm-level dummy variables equal to one if the variable description holds and zero otherwise. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 8 Spillovers in creditor protection on bidder abnormal bond returns: bond maturity, asset risk, and stock returns

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)	(6)
Sample	Bond maturity < average	Bond maturity ≥ average	Asset risk < average	Asset risk ≥ average	Abnormal stock return > 0	Abnormal stock return ≤ 0
Creditor rights better in target	0.049	0.181**	0.036	0.093***	0.089**	0.097***
	(0.032)	(0.068)	(0.103)	(0.031)	(0.043)	(0.026)
Claims enforcement better in target	0.094**	0.073	0.070	0.133*	0.070	0.131**
	(0.040)	(0.115)	(0.065)	(0.069)	(0.052)	(0.057)
Rule of law better in target	0.111	-0.129	0.071	0.039	0.009	0.085
	(0.083)	(0.088)	(0.140)	(0.043)	(0.103)	(0.064)
Anti-director rights better in target	-0.025	0.098	0.089	-0.045	-0.063	0.041
	(0.053)	(0.070)	(0.055)	(0.066)	(0.047)	(0.037)
Diversifying deal	-0.057	0.114*	-0.052	0.059	-0.048	0.007
	(0.084)	(0.063)	(0.129)	(0.037)	(0.096)	(0.069)
Equity or mixed financing	-0.217	-0.165	0.054	0.062	-0.108	0.161
	(0.152)	(0.193)	(0.261)	(0.190)	(0.096)	(0.146)
Listed target	-0.031	0.057	0.003	-0.053	-0.052	0.074
	(0.067)	(0.083)	(0.070)	(0.153)	(0.078)	(0.054)
Tender offer	0.210	0.329	0.140	0.301**	0.358*	-0.220**
	(0.140)	(0.207)	(0.274)	(0.124)	(0.181)	(0.084)
Hostile deal	NA	-2.530***	NA	-2.199***	NA	NA
		(0.310)		(0.407)		
Successful deal	-0.137***	0.040	-0.065	-0.042	-0.102*	-0.022
	(0.050)	(0.070)	(0.040)	(0.081)	(0.055)	(0.092)
Creditor as major bidder shareholder	-0.088	-0.096	-0.039	-0.089	-0.036	-0.011
	(0.076)	(0.103)	(0.112)	(0.065)	(0.064)	(0.123)
Leverage increase in combined firm	0.049	0.054	0.111	-0.006	0.107	-0.007
	(0.106)	(0.072)	(0.148)	(0.039)	(0.107)	(0.083)
Relative size above median	0.034	-0.027	0.019	-0.020	-0.009	0.023
	(0.067)	(0.090)	(0.065)	(0.082)	(0.069)	(0.079)
Bidder is common law	-0.134**	0.017	-0.103	-0.001	-0.057	-0.039
	(0.055)	(0.078)	(0.090)	(0.047)	(0.053)	(0.065)
Target is common law	0.069	-0.089	0.065	-0.031	0.103	-0.109**
	(0.070)	(0.082)	(0.068)	(0.055)	(0.075)	(0.046)
Bidder Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Constant	0.382	0.072	0.054	-0.021	-0.015	0.398
	(0.284)	(0.192)	(0.471)	(0.322)	(0.177)	(0.402)
Observations	731	369	525	575	566	430
Clusters	42	31	35	38	39	34
Adj. R-squared	0.067	0.084	0.078	0.041	0.088	0.064
Robust standard errors	YES	YES	YES	YES	YES	YES
Maximum VIF	1.28	1.60	1.33	1.51	1.29	1.41
Mean VIF	1.14	1.19	1.16	1.18	1.14	1.17
Condition Index	13.67	12.42	12.28	13.90	12.89	13.52

Notes: This table shows regressions for different subsamples of firms, where the dependent variable is the bidder abnormal bond returns (in percent), calculated by means of the value-weighted benchmark index approach. The observations are clustered by bidder industry. Columns (1) and (2) show results for firms with average maturities above and below the sample average, respectively. Columns (3) and (4) are for firms with, respectively, below-average and above-average asset risk. Columns (5) and (6) are for firms with, respectively, positive and negative announcement returns in the previous M&A transaction. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 9 Multivariate results for bidder abnormal bond returns, using Doing Business creditor protection measures

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)
Creditor rights better in target	0.088**				0.072*
	(0.034)				(0.038)
Claims enforcement better in target		0.060*			0.070*
		(0.035)			(0.038)
Rule of law better in target			0.058		0.042
			(0.065)		(0.071)
Anti-director rights better in target				0.054	0.039
				(0.045)	(0.042)
Diversifying deal	-0.001	0.000	-0.004	0.003	-0.001
	(0.069)	(0.069)	(0.072)	(0.071)	(0.072)
Equity or mixed financing	-0.121	-0.159	-0.141	-0.137	-0.150
	(0.106)	(0.097)	(0.105)	(0.094)	(0.096)
Listed target	-0.022	-0.020	-0.024	-0.024	-0.026
	(0.050)	(0.047)	(0.051)	(0.048)	(0.050)
Tender offer	0.266**	0.262**	0.264**	0.269**	0.270**
	(0.119)	(0.121)	(0.121)	(0.116)	(0.121)
Hostile deal	-2.222***	-2.238***	-2.250***	-2.219***	-2.247***
	(0.371)	(0.392)	(0.398)	(0.373)	(0.407)
Successful deal	-0.066	-0.065	-0.070	-0.067	-0.065
	(0.041)	(0.042)	(0.042)	(0.042)	(0.041)
Creditor as major bidder shareholder	-0.066	-0.051	-0.060	-0.050	-0.065
	(0.054)	(0.055)	(0.054)	(0.054)	(0.059)
Leverage increase in combined firm	0.047	0.052	0.052	0.050	0.049
	(0.093)	(0.094)	(0.094)	(0.095)	(0.094)
Relative size above median	-0.004	-0.011	-0.006	-0.004	-0.006
	(0.052)	(0.050)	(0.053)	(0.053)	(0.054)
Bidder is common law	-0.101*	-0.086	-0.101*	-0.101*	-0.068
	(0.056)	(0.054)	(0.056)	(0.060)	(0.050)
Target is common law	0.028	0.047	0.028	0.028	0.029
	(0.055)	(0.059)	(0.051)	(0.061)	(0.058)
Bidder Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Constant	0.046	-0.001	0.034	0.020	0.005
	(0.259)	(0.250)	(0.254)	(0.251)	(0.253)
Observations	1,100	1,100	1,100	1,100	1,100
Clusters	46	46	46	46	46
Adj. R-squared	0.047	0.046	0.046	0.046	0.048
Robust standard Errors	YES	YES	YES	YES	YES
Maximum VIF	1.36	1.36	1.37	1.36	1.36
Mean VIF	1.08	1.12	1.09	1.09	1.11
Condition Index	11.86	12.02	11.88	11.92	12.31

Notes: This table shows regressions with clustering of the observations by bidder industry, where the dependent variable is the bidder abnormal bond return (expressed in percent), calculated by means of the value-weighted benchmark index approach. The independent variables are dummy variables representing country, deal, or firm characteristics and are equal to one if the variable description holds and zero otherwise. Variable descriptions are in the Appendix. Columns (1) to (4) include indicator variables for spillover effects in the creditor rights index, claims enforcement, rule of law, and anti-director rights index, respectively. Column (5) includes all four simultaneously. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 10 Multivariate results for bidder abnormal bond returns, cross-border and domestic deals

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)
Creditor rights better in target	0.090***				0.056*
	(0.027)				(0.033)
Claims enforcement better in target		0.089**			0.090**
		(0.040)			(0.041)
Rule of law better in target			0.089		0.085
			(0.075)		(0.080)
Anti-director rights better in target				0.059	0.039
				(0.045)	(0.040)
Cross-border deal	0.025	0.023	0.033	0.027	0.001
	(0.035)	(0.034)	(0.034)	(0.035)	(0.034)
Diversifying deal	-0.025	-0.023	-0.025	-0.022	-0.024
	(0.079)	(0.079)	(0.078)	(0.080)	(0.078)
Equity or mixed financing	-0.028	-0.037	-0.028	-0.032	-0.028
	(0.110)	(0.112)	(0.116)	(0.110)	(0.116)
Listed target	-0.058	-0.051	-0.061	-0.059	-0.058
	(0.054)	(0.054)	(0.054)	(0.054)	(0.055)
Tender offer	0.309***	0.309***	0.308***	0.312***	0.311***
	(0.089)	(0.091)	(0.091)	(0.088)	(0.091)
Hostile deal	-0.599	-0.591	-0.594	-0.585	-0.600
	(0.744)	(0.729)	(0.751)	(0.732)	(0.753)
Successful deal	-0.047	-0.046	-0.053	-0.048	-0.049
	(0.049)	(0.048)	(0.050)	(0.049)	(0.049)
Creditor as major bidder shareholder	-0.076	-0.079	-0.082	-0.071	-0.089
	(0.084)	(0.085)	(0.085)	(0.084)	(0.089)
Leverage increase in combined firm	0.085	0.089	0.085	0.084	0.089
	(0.106)	(0.106)	(0.106)	(0.106)	(0.106)
Relative size above median	0.014	0.013	0.012	0.015	0.014
	(0.044)	(0.044)	(0.045)	(0.045)	(0.046)
Bidder is common law	-0.071	-0.056	-0.071	-0.068	-0.043
	(0.060)	(0.065)	(0.060)	(0.064)	(0.063)
Target is common law	0.082	0.077	0.070	0.079	0.050
	(0.061)	(0.064)	(0.055)	(0.066)	(0.058)
Bidder Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Constant	0.022	-0.013	0.020	0.004	0.013
	(0.246)	(0.241)	(0.248)	(0.243)	(0.248)
Observations	1,881	1,881	1,881	1,881	1,881
Clusters	50	50	50	50	50
Adj. R-squared	0.042	0.042	0.043	0.042	0.045
Robust standard Errors	YES	YES	YES	YES	YES
Maximum VIF	1.52	1.48	1.45	1.45	1.52
Mean VIF	1.15	1.17	1.15	1.17	1.21
Condition Index	12.87	12.91	12.99	12.90	13.49

Notes: This table shows regressions clustering observations by bidder industry, where the dependent variable is the bidder abnormal bond return (expressed in percent), calculated by means of the value-weighted benchmark index approach. The independent variables are dummy variables representing country, deal, or firm characteristics and are equal to one if the variable description holds and zero otherwise. Variable descriptions are in the Appendix. Columns (1) to (4) include indicator variables for spillover effects in the creditor rights index, claims enforcement, rule of law, and anti-director rights index, respectively. Column (5) includes all four simultaneously. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 11 Multivariate results for bidder abnormal bond Returns, excluding mean imputation with industry-level target data

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)
Creditor rights better in target	0.147***				0.141**
	(0.041)				(0.063)
Claims enforcement better in target		0.100*			0.095
		(0.059)			(0.068)
Rule of law better in target			0.026		-0.030
			(0.064)		(0.085)
Anti-director rights better in target				0.131	0.075
				(0.095)	(0.106)
Diversifying deal	-0.092	-0.091	-0.091	-0.090	-0.091
	(0.072)	(0.071)	(0.074)	(0.070)	(0.074)
Equity or mixed financing	-0.181	-0.225	-0.216	-0.172	-0.167
	(0.152)	(0.136)	(0.159)	(0.151)	(0.139)
Listed target	-0.057	-0.066	-0.074	-0.070	-0.047
	(0.066)	(0.067)	(0.065)	(0.068)	(0.069)
Tender offer	0.241**	0.241**	0.234**	0.254**	0.259**
	(0.106)	(0.105)	(0.104)	(0.107)	(0.113)
Hostile deal	-2.402***	-2.353***	-2.362***	-2.345***	-2.386***
	(0.363)	(0.318)	(0.332)	(0.329)	(0.353)
Successful deal	0.074	0.065	0.064	0.057	0.070
	(0.111)	(0.112)	(0.112)	(0.118)	(0.115)
Creditor as major bidder shareholder	0.107	0.107	0.120	0.121	0.096
	(0.094)	(0.094)	(0.100)	(0.101)	(0.093)
Leverage increase in combined firm	0.012	0.012	0.006	0.010	0.030
	(0.050)	(0.052)	(0.052)	(0.051)	(0.051)
Relative size above median	0.089	0.108	0.109	0.104	0.086
	(0.079)	(0.072)	(0.074)	(0.077)	(0.079)
Bidder is common law	-0.091	-0.060	-0.084	-0.073	-0.061
	(0.060)	(0.069)	(0.066)	(0.066)	(0.066)
Target is common law	0.101**	0.102*	0.116**	0.073	0.061
	(0.048)	(0.054)	(0.051)	(0.069)	(0.067)
Bidder Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES
Constant	0.482***	0.453**	0.493***	0.529***	0.468**
	(0.150)	(0.180)	(0.148)	(0.164)	(0.186)
Observations	376	376	376	376	376
Clusters	34	34	34	34	34
Adj. R-squared	0.123	0.117	0.114	0.121	0.122
Robust standard Errors	YES	YES	YES	YES	YES
Maximum VIF	1.46	1.44	1.43	1.44	1.48
Mean VIF	1.13	1.15	1.13	1.15	1.24
Condition Index	9.36	9.27	9.30	9.32	10.21

Notes: This table shows regressions clustering observations by bidder industry, where the dependent variable is the bidder abnormal bond return (expressed in percent), calculated by means of the value-weighted benchmark index approach. The independent variables are dummy variables representing country, deal, or firm characteristics and are equal to one if the variable description holds and zero otherwise. Variable descriptions are in the Appendix. Columns (1) to (4) include indicator variables for spillover effects in the creditor rights index, claims enforcement, rule of law, and anti-director rights index, respectively. Column (5) includes all four simultaneously. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

Table 12 Robustness tests

Dependent variable: Bidder abnormal bond returns [-5,+5]	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Sample	Negative spillovers	No overlapping deals in 40 days	No overlapping deals in 50 days	Bidder and target industry FE	Bidder FE	Duration and credit rating	Exclude bonds around M&As	Partial acquisitions	Full acquisitions
Creditor rights better in target		0.078**	0.072**	0.073**	0.078*	0.066**	0.078***	-0.139	0.102*
		(0.030)	(0.031)	(0.030)	(0.045)	(0.032)	(0.029)	(0.236)	(0.055)
Creditor rights better in bidder	-0.042								
	(0.042)								
Claims enforcement better in target		0.071*	0.067*	0.086*	0.004	0.080*	0.086**	0.191	0.070*
		(0.037)	(0.036)	(0.044)	(0.056)	(0.042)	(0.041)	(0.183)	(0.041)
Claims enforcement better in bidder	-0.054								
	(0.044)								
Rule of law better in target		0.041	0.044	0.046	0.035	0.049	0.050	0.147	0.033
		(0.065)	(0.064)	(0.062)	(0.046)	(0.071)	(0.073)	(0.212)	(0.074)
Rule of law better in bidder	-0.004								
	(0.042)								
Anti-director rights better in target		0.035	0.035	0.034	-0.002	0.022	0.019	0.056	0.001
		(0.040)	(0.040)	(0.041)	(0.038)	(0.038)	(0.045)	(0.151)	(0.059)
Anti-director rights better in bidder	-0.052								
	(0.083)								
Deal and firm characteristics	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bidder industry FE	YES	YES	YES	YES	NO	YES	YES	YES	YES
Target industry FE	NO	NO	NO	YES	YES	NO	NO	NO	NO
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Bidder firm FE	NO	NO	NO	NO	YES	NO	NO	NO	NO
Constant	0.080	-0.083	-0.076	-0.034	0.069	-0.325	-0.010	-0.491	0.192
	(0.261)	(0.241)	(0.241)	(0.286)	(0.300)	(0.332)	(0.278)	(0.430)	(0.128)
Observations	1,100	1,078	1,074	1,100	958	1,100	1,087	145	584
Clusters	46	46	46	46	187	46	46	25	36
Adj. R-squared	0.045	0.054	0.053	0.049	NA	0.049	0.049	0.230	0.060
Robust standard errors	YES	YES	YES	YES	YES	YES	YES	YES	YES
Maximum VIF	1.86	1.39	1.39	1.38	1.38	1.39	1.38	1.51	1.40
Mean VIF	1.24	1.14	1.14	1.14	1.12	1.14	1.14	1.24	1.17
Condition Index	13.15	13.00	12.98	12.87	12.32	12.36	12.87	9.14	8.76

Notes: This table shows additional robustness tests with the abnormal bidder bond return as the dependent variable. Column (1) identifies negative spillovers from bidder to target, Columns (2) and (3) exclude deals that occur within, respectively, 40 and 50 days of each other, Column (4) controls for bidder and target industry effects, Column (5) includes bidding firm fixed effects. In Column (6), we additionally control for the firm's average duration and credit rating of bonds outstanding, and in Column (7), we exclude bonds that were issued within a three-month period around the M&A announcement. Columns (8) and (9) consider subsamples of partial acquisitions (where the bidder acquires a majority stake) and full acquisitions (where the bidder acquires a 100% stake), respectively. Robust standard errors with White (1980) correction for heteroskedasticity are given in parentheses. Deal-level control variables include dummies for diversifying deals, means of payment, target public status, hostile deals, successful deals, and deals that are above-median in size. Firm-level control variables include dummies for the presence of a creditor-major shareholder in the bidding firm, an increase in post-merger leverage in the combined firm, and a common law bidder or target firm. In the model of Column (6), the firm's average bond duration and credit rating are also included as control variables. *, ** and *** denote significance at the 10, 5 and 1% level, respectively.

APPENDIX

VARIABLE DESCRIPTIONS

(i) Abnormal bond returns

Abnormal bond returns are the sum of the daily abnormal returns in the eleven days [-5,+5] surrounding the deal announcement. Abnormal returns are computed as the bond's return minus the return on a matched equal- or value-weighted benchmark portfolio. Each of the benchmark portfolios is segmented by currency (Euro, Pound, or US Dollar), bond rating (BBB, A, AA, and AAA) and duration (1-3, 3-5, 5-7, 7-10, and 10+ years). Bond ratings are from Standard and Poor's or, when unavailable, Moody's Investors Service. If an issuer has multiple bonds outstanding in any currency-duration-credit rating bracket, only the one with the largest amount issued is included. If a benchmark portfolio contains less than 7 bonds, one of the reserve benchmark portfolios is used. These reserve portfolios are segmented along the same dimensions as mentioned above, but only two duration brackets are used (1-5 and 5-10+ years). Value-weighted benchmarks are constructed using weights based on the bond's market value. Firms with multiple bonds outstanding are treated as value-weighted portfolios, where the weights are the market values of each bond two months before the deal announcement. Source: *Reuters Fixed Income Database.*

(ii) Firm-level variables

Asset risk is the standard deviation of unlevered daily 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 the time period -750 to -30. Source: *Datastream* and *Worldscope*.

Leverage is the book value of total debt divided by the book value of total assets. Leverage 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. Industry average values are used if values are missing. Source: *Worldscope*, *Zephyr* and *CapitalIQ*.

The *relative size of target to bidder* is the book value of total assets of the target firm divided by the book value of total assets of the bidding firm. It is measured at the fiscal year-end preceding the deal announcement and converted into euro where applicable. Source: *Worldscope*, *Zephyr*, and *CapitalIQ*.

Return on assets (ROA) is earnings before interest and tax (EBIT) divided by the book value of assets. It is measured at the fiscal year-end preceding the deal announcement. Source: *Worldscope*, *Zephyr*, and *CapitalIQ*.

Bidder has creditor major shareholder is a dummy equal to one if the bidding firm has a creditor (bank or other financial institution) as a major shareholder. Source: *SDC, Zephyr, Amadeus,* and *Orbis*.

Bidder is common law is a dummy equal to one if the bidding firm is of English legal origin. Source: *Djankov et al. (2007).*

(iii) Deal-level variables

Cross-border deal is a dummy equal to one if the bidding and target firm are not located in the same country, and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ*.

Diversifying deal is a dummy equal to one if the bidding and target firm have different two-digit SIC codes, and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ*.

Equity or mixed financing is a dummy equal to one if the deal is financed at least partially using stock, and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ.*

Listed target is a dummy equal to one if the target's public status is labelled as "Public", and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ*.

Tender offer is a dummy equal to one if the deal is classified as a "Tender Offer", and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ*.

Hostile deal is a dummy equal to one if the deal's attitude is classified as "Hostile", and zero otherwise. Source: *SDC, Zephyr,* and *CapitalIQ*.

Partial acquisition indicates that the deal involves a majority stake that is less than 100%. Source: *SDC, Zephyr,* and *CapitalIQ.*

Full acquisition indicates that the deal involves a 100% stake in the target. Source: *SDC, Zephyr,* and *CapitalIQ.*

Table A.1 Sample distribution by bidder and target country

Bidder country	Target country																																											
	AR	**AT**	**AU**	**BE**	**BR**	**CA**	**CH**	**CL**	**CO**	**DE**	**DK**	**EG**	**ES**	**FI**	**FR**	**GB**	**GR**	**HK**	**IE**	**IL**	**IN**	**IT**	**JO**	**JP**	**KE**	**KR**	**MX**	**NL**	**NO**	**NZ**	**PE**	**PK**	**PT**	**SE**	**SG**	**TH**	**TR**	**TW**	**US**	**ZA**	**Total**
AR		1						1																																	**2**
AT				1																											1										**2**
AU						1	4																				1	2		1									1		**10**
BE							1			1		1			3	1					1							1													**9**
BR	1		1	1																	1	1																3		**8**
CA									1						1	2													1								1	7		**13**
CH			1			1				1			1									1						2					1					5		**13**
CL	1				1				1																					1										**4**
DE		1		3	1	5	6				1		2		4	5		1			5			3		2	1	4		1			3			3		14		**65**
DK							1			2				1		3					1							2	1				5					1		**17**
ES					1				1																													1		**3**
FI		1			1		2			1	2				1													1	2				2					9		**22**
FR	8	2	4	10	26	5	16	3	4	20	3	5	17			24	1	5	2	2	19	24	2	7	1	3	2	6	1			1	4	2	2	9	2	50	3	**295**
GB	3		9	2	6	4	5		1	15	4	1	6	2	16		7	1	3		9	8		3		1	1	3	2	2		2	2			6		68	2	**194**
GR		1					2																																	**3**
HK			2		1		1									1					2																	1		**8**
IN																																						1		**1**
IT	1			1	1	1		1	1	3			5		6		2		1		2							1	1							1		1		**29**
JP			1		2	1		1		1						1																				1		1		**9**
KR			2													1													1				1					1		**6**
MX	1				1								1															1										3		**7**
NL	1		2	7	2	1	5	1		17		1	3		7	8	1			1	2	6			1	3	1		1	1			2			1		30		**105**
NO			2		3					1	6		2	1	2	4											1	2					7					4		**35**
NZ									1																															**1**
PT													5																									1		**6**
SE	6	1		2	2	2	3	2	1	3	6		9		7	12		1	1			2	1			2	1	5	3					2	1	6	2	14	4	**101**
TH															1																									**1**
TR																																			1					**1**
TW																																		1						**1**
US	1		5	1	4	17	5	2	1	10	6		1	1	9	17		2	1	3	7	5		6		1	2	3	7					2	2	2	3	2		1	**129**
Total	**23**	**7**	**29**	**28**	**52**	**38**	**51**	**11**	**12**	**75**	**28**	**8**	**52**	**5**	**57**	**79**	**11**	**10**	**8**	**6**	**49**	**47**	**3**	**19**	**2**	**12**	**10**	**33**	**20**	**5**	**1**	**1**	**3**	**29**	**7**	**7**	**30**	**7**	**215**	**10**	**1,100**

Table A.2 Correlation matrix of variables used in multivariate regressions

	Target is common law	Bidder is common law	Creditor rights better in target	Claims enforcement better in target	Rule of law better in target	Anti-director rights better in target	Diversifying deal	Equity or mixed financing	Listed target	Tender offer	Hostile bid	Successful deal	Bidder has creditor as major shareholder	Leverage in combined firm > bidding firm	Relative deal size > median
Target is common law	1														
Bidder is common law	0.1012	1													
Creditor rights better in target	0.0999	-0.0255	1												
Claims enforcement better in target	0.0333	-0.3310	-0.0115	1											
Rule of law better in target	0.1787	-0.0853	0.3232	-0.0429	1										
Anti-director rights better in target	0.1832	-0.1335	0.2430	0.2001	-0.0203	1									
Diversifying deal	0.0618	0.0960	0.0088	-0.0192	0.0487	-0.0699	1								
Equity or mixed financing	-0.0212	-0.0419	-0.0263	0.0077	0.0070	0.0070	-0.0220	1							
Listed target	0.0040	-0.0167	0.0322	-0.0568	0.0367	0.0497	-0.1388	0.1497	1						
Tender offer	0.0067	0.0155	0.0113	-0.0350	0.0219	-0.0219	-0.0072	0.0880	0.3932	1					
Hostile bid	-0.0366	0.0160	0.0398	-0.0213	0.0314	-0.0216	-0.0371	-0.0026	0.1058	0.1311	1				
Successful deal	0.0231	-0.0017	-0.0410	-0.0183	0.0327	-0.0071	-0.0205	-0.0207	-0.2265	-0.0240	-0.0460	1			
Bidder has creditor as major shareholder	-0.0342	-0.0028	0.0254	0.0609	0.0811	-0.0226	-0.0274	-0.0123	-0.0289	0.0576	-0.0087	0.0256	1		
Leverage in combined firm > bidding firm	0.0285	-0.0417	0.0186	-0.0353	0.0045	0.0158	0.0578	-0.0453	-0.1913	-0.0969	0.0213	0.0107	0.0441	1	
Relative deal size > median	0.0698	0.0079	-0.0147	0.0044	-0.0065	-0.0509	-0.0050	0.0311	-0.1147	-0.0774	0.0219	-0.0771	-0.0091	0.1341	1

NOTES

[1] Our paper differs from Choi et al. (2010) in terms of industry focus, as banks are subject to fundamentally different legal and institutional rules and regulations. Whereas Choi et al. (2010) consider deposit insurance conditions, the degree of strictness of bank supervision, and the transparency of bank supervision, our focus is on creditor rights and claims enforcement in a non-banking sample. Choi et al. (2010) find no evidence for spillovers in creditor rights, strengthening our statement that for our non-banking sample different cross-country spillovers apply. Furthermore, whereas Choi et al. (2010) explicitly exclude Eurobonds from their sample of domestic bonds, our focus on Eurobonds is a crucial part of the identification strategy.

[2] An example of differences in creditor rights for France and the UK can be found in Davydenko and Franks (2008). In France, insolvency proceedings are administered by courts and maintaining the firm as a going concern is preferred. However, as claims from secured creditors are subordinated to claims by the government and employees, and creditors cannot control the timing or method of realising the collateral, they do not count on recovering their claims in full. In the UK, creditors can control the realisation of the collateral, and thus have strong incentives to race against management and each other to pursue this realization. A creditor with a floating charge can even sell the entire firm without having to consider other claimants, and even unsecured creditors have some liquidation rights.

[3] Source: https://www.ashurst.com/doc.aspx?id_Content=2016

[4] Source: http://www.yorkshirepost.co.uk/news/uk-practitioner-to-win-case-1-2531626

[5] Within the US, forum shopping by creditors is well known at the state level, examples of this are the specialised bankruptcy courts of Delaware and New York. State courts have some degree of judicial discretion and they provide different levels of creditor rights protection.

[6] European Council Regulation No. 1346/2000 on insolvency proceedings.

[7] A series of rulings by the European Court of Justice have changed EU company law, opening up the EU more to cross-border incorporation mobility (Becht et al., 2008).

[8] 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 relatively high recovery percentage in case of bankruptcy to the creditors holding them.

[9] Despite the somewhat misleading name, Eurobonds are not directly related to Europe or Euros. Eurobonds are bonds that are denominated in a currency different from the currency of the country in which they are issued, and they make up about 80% of the international bond market. The market is mainly held by large institutional investors and the first Eurobond was issued in 1963.

[10] For instance, for a sample size of fifty observations of investment-grade bonds (such as Eurobonds), the probability of detecting a shock of 10 basis points is less than 50% (when using non-parametric test statistics). However, when the sample size increases to five hundred observations, this probability increases to almost 100%.

[11] The average Eurobond in our sample raises €693 million. For comparison: the average issue size in a sample of US domestic bonds as in Edwards, Harris, and Piwowar (2007) is $213 million.

[12] Other studies based on the Djankov et al. (2007) creditor rights index also use the 2003 values for observations post-2003: see for example Acharya, Amihud, and Litov (2011), Qi and Wald (2010), Miller and Reisel (2012), and Qi and Wald (2011), Cao, Cumming, Qian, and Wang (2015). In additional robustness tests, we report results using a dynamic measure of creditor protection from the Doing Business database of the World Bank.

[13] The UK and France score 5.66 and 4.32, respectively, for claims enforcement; 4.16 and 3.93 for the rule of law; and 4 and 3 for the anti-director rights index. Although the two countries still differ slightly on these creditor protection measures, they differ considerably more in terms of the creditor rights index (0 for France, versus 4 for the UK).

[14] As we need pre- and post-deal accounting or stock market data for both the bidder and the target, and the vast majority of target firms are not publicly listed, we apply a mean imputation (replacing missing accounting data by the industry average). This preserves the number of observations, but drives the R-squared down in a multivariate analysis.

[15] Billett et al. (2004) argue that this type of analysis does not take into account potential changes in financial risk as a result of the deal: bidders may increase leverage shortly before or after the deal to finance the offer. We indeed find that leverage increases from 0.30 before the deal to 0.32 in the fiscal year after the deal.

[16] We also test creditor protection/enforcement for the subsamples of completed and uncompleted deals. We find that our results are upheld in the former but not in the latter.

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