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**CREDITOR RIGHTS, CLAIMS ENFORCEMENT, AND BOND  
PERFORMANCE IN MERGER AND ACQUISITIONS**

By

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# Creditor rights, claims enforcement, and bond performance in mergers and acquisitions

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**Abstract** – This paper shows that country-level differences in creditor protection affect bond performance around cross-border M&A announcements. Using Eurobonds and a global sample of 1,100 cross-border M&As, we find that the bondholders of bidding firms respond more positively to deals that expose their firm to a jurisdiction with stronger creditor rights and more efficient claims enforcement through courts. Positive creditor protection spillovers are enhanced by now-global jurisdictional cooperation in multinational insolvencies and creditors' ability to do insolvency arbitrage. The spillover effects we observe are stronger for firms with higher asset risk, longer maturity bonds, and a higher likelihood of financial distress.

**Keywords:** Bondholder Value; Cross-Border Mergers and Acquisitions (M&As); Creditor Rights; Legal Enforcement; Event Study; Eurobonds.

**JEL Classification:** G34, G32, G12, G14.

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# **Creditor rights, claims enforcement, and bond performance in mergers and acquisitions**

## **INTRODUCTION**

The market for corporate control has become increasingly global in the last two decades, with cross-border mergers and acquisitions (M&As) now accounting for more than a third of M&A activity worldwide (Erel et al., 2012) and exceeding domestic activity in value terms (Albuquerque et al., 2014). One important aspect of this trend are the spillovers in country-level regulatory conditions that cross-border deals facilitate. Countries differ considerably in their governance structures, accounting standards and disclosure practices, and protect investors to varying degrees. For individual firms, country-level regulatory conditions have been shown to affect both performance (Boubakri et al., 2015; La Porta et al., 2000) and governance and disclosure quality (Doidge et al., 2007). The same conditions have at the same time been shown to spill across borders through cross-border M&As, affecting both bidder and target stock returns (Martynova and Renneboog, 2008), the takeover premium demanded by target shareholders (Starks and Wei, 2013), and even the valuation of targets' rival firms (Albuquerque et al., 2014) and of entire industries (Servaes and Tamayo, 2014).

If spillovers of country-level regulatory conditions produce stock valuation effects in cross-border M&As, it is reasonable to assume that they can also affect bond valuation. Previous studies show that the performance and even design of corporate bonds are significantly affected by the quality of regulatory protection adjudicated to creditors (Choi et al., 2010; Francis et al., 2010; Miller and Reisel, 2012; Qi and Wald, 2008; Sevic and Brawn, 2015). La Porta et al. (2000) argue that there are limitations to functional creditor protection spillovers as a result of cross-border M&As, because corporate assets remain under the jurisdiction of the country where they are physically located. However, exposure to a more creditor-friendly jurisdiction should still have an effect on managerial risk-taking. Moreover, complex multinational

insolvencies have now inspired jurisdictional cooperation among national authorities worldwide, which not only enhances the threat and implications of insolvency proceedings if the firm goes into financial distress, but potentially allows creditors to engage in insolvency arbitrage.<sup>1</sup>

This paper examines the bond performance of non-financial firms in cross-border M&As, using a sample of 1,100 deals involving firms with outstanding Eurobonds in the period 2000-2013. Our sample is among the largest studied in any bond market event study on M&As.<sup>2</sup> Importantly, Eurobonds are more appropriate to use than domestic bonds for international bond market event studies. Firstly, the international Eurobond market is significantly more liquid and standardized than often immature domestic bond markets subject to local capital market regulation. Secondly, the firm-level effects of changes in regulatory conditions are better captured using Eurobonds, which are typically unsecured bearer bonds ill-protected by covenants, and their governing law provisions in the bond indenture prevent their holders from doing insolvency arbitrage themselves.<sup>3</sup> The use of Eurobonds limits the scope of our analysis to relatively large and creditworthy firms because, like domestic corporate bond markets outside the US, the Eurobond market has low tolerance for public bonds by junk-grade issuers.<sup>4</sup>

Our empirical results indicate that bond performance in cross-border M&As is indeed affected by country-level differences in creditor protection. The bondholders of bidding firms tend to respond negatively to cross-border deals, but the abnormal bond returns are systematically more positive when the deal exposes the firm to a jurisdiction with stronger creditor rights and better enforcement of creditor claims through courts. Subsample analysis further reveals that the positive creditor protection spillovers are stronger for firms that have higher asset volatility, longer maturity bonds, and a higher likelihood of financial distress. We find no evidence of negative spillovers when the firm is exposed to a country with inferior creditor protection, as creditors remain protected by the jurisdictions they already have access to. The sensitivity of Eurobond holders to positive spillovers implies that even relatively marginal new exposures affect the agency costs of debt at the firm-level, benefiting all creditor classes regardless of their seniority and ability to engage in legal arbitrage.

Our paper contributes to the growing literature on the economic impact and implications of cross-border M&As. The international business literature offers ample evidence on many aspects of these deals, including their impact on employee welfare (Clougherty et al., 2014), level of value creation (Aybar and Ficici, 2009; Aybar and Thanakijombat, 2015; Doukas and Kan, 2006; Jory and Ngo, 2014; Lebedev et al., 2015; Li et al., 2016; Shimizu et al., 2004), and relationship with national culture (Ahern et al., 2015), legal systems (Jandik and Kali, 2009) and labor market regulations (Alimov, 2015). We add to this discussion by highlighting the substantial regulatory and jurisdictional complexities that cross-border M&As generate. The complexities with respect to cross-border insolvency are seldom discussed outside the legal literature but, as our results indicate, they can potentially affect firm behavior and risk-taking through altering creditors' relative bargaining position.

## **BACKGROUND AND HYPOTHESES**

The comparative corporate governance literature observes a lot of variation in the extent to which countries accommodate creditor interests against the interests of the firm's other stakeholders. From the perspective of bondholders, notable features that set countries apart are the quality and enforcement of regulatory protection adjudicated to creditors, the extent to which minority investors are protected against expropriation by management and majority shareholders, and the overall quality of the regulatory system. An example of country-level differences in creditor protection is given by Davydenko and Franks (2008). In France, insolvency proceedings are administered by courts, creditor claims are subordinated to government and employee claims, and maintaining the firm as a going concern is preferred. Thus, creditors can neither reliably count on recovering their claims, nor control the timing and method of realizing collateral. In the UK, creditors enjoy significant control in recovering claims and realizing collateral, and have strong incentives to race against management and each other to do so. A creditor with a floating charge can sell the entire firm without having to consider other claimants, and even unsecured creditors have some liquidation rights.

La Porta et al. (2000) claim that there are limitations to functional spillovers in country-level creditor protection in internationally diversified firms, because corporate assets remain under the jurisdiction of the country where they are physically located. This territoriality principle is often referred to as the “grab rule”, where each local court takes the assets located in its geographic jurisdiction and distributes them only to those creditors that go to court to present their claims. Nonetheless, the jurisdictional exposures created by international diversification should still bring about non-trivial benefits for creditors. Firstly, exposure to a more creditor-friendly jurisdiction can subject management to an increased threat of insolvency proceedings and more serious consequences if the firm goes into financial distress. This effect should occur even if the firm is already present in that regime, because the more assets are up for grabs, the greater the incentives of creditors to pursue them. Secondly, it is not actually certain that a firm’s assets end up under the jurisdiction of the country where they are physically located. Multinational insolvencies have inspired a worldwide wave of bankruptcy law reforms to enhance cooperation among national authorities. A key template for these reforms is the Model Law on Cross-Border Insolvency issued by the United Nations Commission for International Trade Law (UNCITRAL) in 1997. The Model Law puts one jurisdiction in charge of insolvency proceedings on a worldwide basis, thereby reducing legal uncertainty, preventing firms from concealing or transferring assets, and ensuring that all creditors are treated fairly. The main proceeding is opened in the jurisdiction of the firm’s center of main interests (COMI), and any concurrent proceedings are recognized and cooperate as secondary or non-main proceedings. The Model Law, which proposes what is a modified form of the universality principle rather than territoriality, has formally been enacted by 43 countries, and similar frameworks are in place in many others including in the European Union (EU).<sup>5</sup>

One notable aspect of such jurisdictional cooperation is that in addition to mitigating legal uncertainties and the unequal treatment of foreign creditors, it may actually create scope for creditors to engage in insolvency arbitrage. This phenomenon is known as jurisdiction (or forum) shopping: if a firm operating in multiple jurisdictions becomes financially distressed, creditors may race against management and each other to litigate in a creditor-friendly jurisdiction to strengthen their legal position and obtain maximum

satisfaction for their claims. The scope for insolvency arbitration is clearly increased by cross-border M&As, resulting in a functional spillover of creditor protection across countries.<sup>6</sup>

How jurisdictional cooperation can encourage insolvency arbitration is best demonstrated by the EU's European Insolvency Regulation (EIR) introduced in 2000 and amended in 2015.<sup>7</sup> The EIR identifies a main proceeding based on the insolvent firm's COMI, but also allows creditors, wherever domiciled in the EU, to initiate non-main proceedings in any Member State where the firm has an establishment. For example, it allows French creditors to enforce their claims in the UK, even if the firm's COMI is in a third country. The EIR also extends the same right to national taxation and social security authorities, eliminating the traditional rule against the enforcement of foreign revenue debts. It defines an establishment fairly leniently, such that it may even encompass a commercial agent of the firm.

Importantly, jurisdiction shopping can also be encouraged by ambiguities as to where a firm's COMI actually is. COMI is typically defined as the firm's country of incorporation in common law countries (incorporation doctrine), and the country where the firm's headquarters are in civil law countries (real seat doctrine). In practice, real seat countries cannot exploit ambiguities in COMI to claim jurisdiction over insolvency cases, but incorporation countries can. This has led UK administrators to shift a number of insolvency cases from Continental Europe to the UK, including those of ISA Daisytek, MG Rover, Enron Directo, Deutsche Nickel and Interedil.<sup>8</sup> That creditors can do the same was demonstrated in 2004 by the Bank of America, which preemptively got Eurofood, the Irish subsidiary of Parmalat, under Irish jurisdiction despite a legal challenge by Italy before the European Court of Justice.

It is important to recognize that the mere threat of insolvency arbitration by creditors should put added pressure on management to avoid excessive risk-taking, benefiting all creditor classes whether or not arbitration is feasible to them. Some creditors may not want to access other jurisdictions because they have security rights (rights *in rem*) over assets in a particular country.<sup>9</sup> Eurobond holders are prevented from arbitration altogether, because Eurobonds are issued outside any jurisdiction, with a governing law specified in the bond indenture for the event of legal conflicts. Nonetheless, large firms should always have diligent creditors with the incentive to exploit disparate creditor protection conditions if they go into financial



distress. Eurobond holders should be highly sensitive to the position and bargaining power of these diligent creditors *vis-à-vis* the firm – and all the more so because the threat of insolvency litigation is less credible on their part, since they hold unsecured bearer claims ill-protected by covenants, and tend to have low recovery rates if the firm is liquidated.

Given the above discussion we expect that cross-border M&As generate significant positive spillovers in country-level creditor protection, such that bondholders respond more positively to deals that expose their firm to a jurisdiction with stronger regulatory protection adjudicated to creditors.

The two key aspects of creditor protection are the quality of creditor rights in insolvency proceedings, and the efficiency of local courts in enforcing creditor claims. On one hand, the quality of creditor rights affects creditors' bargaining power in insolvency proceedings. On the other, well-functioning courts and strong legal enforcement can effectively resolve disputes between corporate constituencies, and may even substitute for weaker regulation (La Porta et al., 1998).

**H1** Cross-border M&As that expose the firm to a jurisdiction with stronger creditor rights generate higher abnormal bond returns around the deal announcement.

**H2** Cross-border M&As that expose the firm to a jurisdiction with better claims enforcement generate higher abnormal bond returns around the deal announcement.

Two further factors that are likely to affect the country-level protection enjoyed by creditors are the extent to which minority shareholders are protected against expropriation by management and majority shareholders, and the overall quality of the regulatory environment. These factors do not drive creditors' relative bargaining position *per se* but affect all outside corporate constituencies. Firstly, strong shareholder rights can harm creditors due to conflicts of interest with respect to the firm's level of risk-taking (Chava et al., 2009). However, the strong protection of minority shareholders can actually help protect creditor interests, if it prevents expropriation of assets from the firm that serve as collateral towards creditor claims (Djankov et al., 2008; Miller and Reisel, 2012). Secondly, the efficient and complete enforcement of creditor rights depends not only on well-functioning courts, but on the overall quality of the regulatory

system including the quality of property rights, control of corruption and fraud, and the incidence of crime and violence.

**H3** Cross-border M&As that expose the firm to a jurisdiction with stronger minority shareholder protection generate higher abnormal bond returns around the deal announcement.

**H4** Cross-border M&As that expose the firm to a jurisdiction with better rule of law generate higher abnormal bond returns around the deal announcements.

## **SAMPLE SELECTION, METHODOLOGY, AND DESCRIPTIVE STATISTICS**

### **Sample Selection and Methodology**

We first construct our bond sample by retrieving Eurobonds with time series data from Thomson Reuters Eikon. From the initial sample we exclude bonds with (i) special features that have strong pricing implications (e.g. options) and (ii) missing or erroneous prices and credit ratings. This search yields 1,703 Eurobonds issued by 532 firms. We then use these bonds to create pricing benchmark portfolios segmented by currency, credit rating, and duration as described below. Robust pricing benchmarks can only be created for investment-grade euro, US dollar and pound sterling Eurobonds for the period 2000-2013. The final sample of bonds that can be matched with corresponding benchmarks includes 1,194 Eurobonds issued by 350 firms.

We then search the SDC, Zephyr and CapitalIQ databases for M&As involving the issuers of the Eurobonds, excluding (i) acquisitions of assets and minority interests and (ii) transactions involving banks, insurance companies and other financial firms (SIC codes 6000-6900). Our final M&A sample comprises 1,100 cross-border deals involving 194 bidding firms with outstanding Eurobonds in the period 2000-2013, of which 26 deals also involve Eurobond-issuing targets.

The geographical distribution of the full sample is provided in Appendix 1. The bidding firms, all Eurobond issuers, are most often domiciled in France (295 deals), the UK (194), the US (129), the Netherlands (105) and Sweden (101). The target firm countries are more widely dispersed, with most targets

domiciled in the US (215 deals), the UK (79), Germany (75), France (57), Brazil (52), Spain (52) and China (51).

Abnormal bond returns are defined as the sum of daily abnormal returns in the days [-5,+5] surrounding deal announcements. Previous studies tend to use monthly returns, but daily returns largely avoid confounding events and perform more accurately in parametric tests (Bessembinder et al., 2009). Ederington et al. (2015) propose standardizing bond returns by their estimated time series volatility, because bond characteristics such as term-to-maturity and credit rating can lead to heteroskedasticity in bond returns. For ease of interpretation we use unstandardized returns in the analysis, but our results are robust to the use of standardized returns and are available on request.

Daily abnormal bond returns are calculated using a matching portfolio method that outperforms other methods of return calculation (Bessembinder et al., 2009). Each firm with multiple bonds is treated as a value-weighted portfolio of its bonds, where the abnormal returns are weighted based on each bond's market value two months before the deal announcement. This mitigates problems with cross-correlation, and gives a more accurate representation of how the firm's bondholders are affected as a whole.

Our final pricing benchmark portfolios are segmented by currency (euro, US dollar, pound sterling), credit rating (BBB, A, AA, and AAA)<sup>10</sup> and duration (1-3, 3-5, 5-7, 7-10, and 10+ years).<sup>11</sup> If a benchmark has multiple bonds by the same issuer, only the bond with the largest issue size is included. If a benchmark has less than seven bonds, a reserve benchmark is used with the same currency and bond rating but with a duration bracket of 1-5 or 5+ years. We construct both equal and value-weighted benchmarks, with the latter using each bond's market value. Throughout the analysis we use the abnormal returns calculated with the value-weighted benchmarks, since this approach performs better when dealing with daily bond returns (Bessembinder et al., 2009). Nonetheless, the results are robust to the equal-weighted approach and are available on request.

Before proceeding to the empirical analysis it is useful to determine what constitutes economically significant abnormal bond returns. For stock returns, Brown and Warner (1980) set economic significance at 1%, about one-sixth of the historical yearly stock market risk premium. Bessembinder et al. (2009) infer

that the threshold for abnormal bond returns should be 15-25 basis points (bp), since the typical bond earns a yearly risk premium of 100-150bp. However, the authors note that the yearly risk premium is much lower for investment-grade bonds, and argue that an abnormal return as small as 5bp is economically significant for high quality issues. We also adopt this threshold of 5bp, as our sample consists of investment-grade Eurobonds with low risk premia.

It is useful to remind that using Eurobonds is more appropriate for cross-country studies than using domestic bonds, and is a crucial part of our identification strategy. Eurobonds confine our analysis to large and creditworthy firms because reliable pricing benchmarks are difficult to construct in the market's shallow junk-grade segment. Ultimately, this dictates that whatever results we observe for Eurobond issuers are likely to be more pronounced for other firms. That said, domestic corporate bond markets outside the US are similarly thin in junk-grade issues.

Bond prices in Thomson Reuters Eikon are dealer quotes that can contain matrix prices not separated from actual trade data. Matrix prices are not driven by firm-specific information, which should reduce explanatory power in our analysis. However, actual trade data are simply not reported in a systematic manner outside the US, and the comparatively high liquidity of Eurobonds should ensure that Reuters data reflect actual trades.<sup>12</sup>

### **Country-level Measures of Creditor Protection**

We measure the quality of creditor rights in insolvency proceedings using the creditor rights index of Djankov et al. (2007). The index ranges from zero to four, measuring the number of laws protecting unsecured creditors from expropriation by more senior secured creditors. It has been shown to not only matter for creditors but also explain patterns in capital market development (Miller and Reisel, 2012). The index is available for 129 countries as of 2003, with higher values indicating better creditor rights. Following past studies, we use the 2003 index values for years in which the index is not available, as creditor rights remain largely stable over our time window (Cao et al., 2015; Qi and Wald, 2008).

The quality of debt claims enforcement through courts is measured using the debt enforcement index of Djankov et al. (2007). The index measures 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 as of 2003.

We use Spamann's (2010) anti-director rights index (ADRI) to measure the protection of minority shareholders against expropriation by management or majority shareholders. Spamann's index updates earlier indices by La Porta et al. (1998) and Djankov et al. (2008). It is available for 46 countries as of 2008, with higher values indicating stronger minority rights.

We finally use the World Bank's rule of law index to capture the quality of the general regulatory environment. The index is one of the World Bank's six Worldwide Governance Indicators, and aggregates the quality of contract enforcement, property rights, the effectiveness and predictability of the judiciary, the control of corruption, and the likelihood of crime and violence. The index is available for 215 countries between 1996 and 2014. It ranges from zero to five, with higher values indicating a stronger regulatory environment.

## **Descriptive Statistics**

Table 1 shows descriptive statistics for our global sample of 1,100 cross-border M&As involving 194 bidding firms and 26 target firms with outstanding Eurobonds between 2000 and 2013. Firm data are obtained for the end of the fiscal year preceding the deal announcement from Worldscope, or if unavailable, CapitalIQ, Datastream, Orbis, or Amadeus. The table shows that all 1,100 M&As involved Eurobond issuers on the bidder side but only 26 on the target side. The small size of our target sample is not surprising, since Eurobond issuers tend to be large and internationally diversified firms that are rarely subject to takeover bids. Market capitalization and total assets are expressed in 2010 prices and, where applicable, converted into euro. Variable definitions are available in Appendix 2.

(Insert Table 1 about here)

The Eurobond issuers involved in the sample M&As as bidders are larger than those involved as targets. The median book value of assets is €20.2 billion for the bidders and €16.7 billion for the targets, with the

difference much larger in terms of market capitalization at €15.0 billion and €684 million, respectively. The differences between bidders and targets are also significant in terms of return on assets, leverage, and asset risk, with targets less profitable, riskier and more leveraged. The median bidder has a credit rating of A, and two outstanding Eurobonds with an average term-to-maturity of 4.9 years and duration of 4.0 years. The median target is rated BBB, and has two Eurobonds with an average term-to-maturity of 6.0 years and duration of 4.4 years.

The majority of the bidding firms are serial bidders, with the median firm involved in 23 deals over the 14-year sample period. Interestingly, the countries of the target firms in Table 1 offer superior creditor protection to the bidding firm countries in terms of creditor rights, claims enforcement quality, as well as the protection of minority investors.

## **EMPIRICAL RESULTS**

### **Abnormal Bond Returns around M&A Announcements**

The abnormal bond returns on the Eurobonds of the sample's bidders and targets are shown in Table 2. Panel A indicates that, on the whole, bidder bondholders tend to react negatively and target bondholders positively to cross-border M&As. The mean abnormal bond returns are significant across all specifications, with the value-weighted benchmarks yielding -0.04% for bidder bonds and 0.26% for target bonds. The median returns are insignificant at -0.01% and 0.05%, respectively.

(Insert Table 2 about here)

Cross-border M&As should benefit bondholders through risk reduction, since low correlations in the merging parties' cash flows and asset returns should lead to a so-called coinsurance effect. In this sense, international diversification is comparable to industrial diversification (Doukas and Kan, 2006). However, creditors are faced with considerable added risks due to greater informational asymmetries, and the uncertainties and complexities of insolvency proceedings against internationally diversified firms.

The positive target abnormal returns show that for target bondholders, the risk reduction effects of being taken over by a foreign bidder are large enough to outweigh other concerns. This is expected, since bidders

tend to be larger, be more diversified, and have higher credit ratings. Previous studies find no evidence of such positive returns in domestic M&As for investment-grade targets (Billett et al., 2004; Bodnaruk and Rossi, 2016).

Panel B compares abnormal bidder bond returns for France and the UK, previously discussed as having very different creditor rights. Indeed, the creditor rights index is 0 for France and the maximum of 4 for the UK; otherwise, the two countries are similar in terms of claims enforcement, anti-director rights, and rule of law.<sup>13</sup> We find that the abnormal returns are significantly negative for UK bidders at a mean of -0.21% and median of -0.032%. In comparison, the same returns are small and insignificant for French bidders. Interestingly, we find similar results *vis-à-vis* the UK for other countries with relatively weak creditor rights including the US.<sup>14</sup> Whether this is attributable to positive spillovers offsetting the negative effects of cross-border M&As is investigated in the next sections.

Henceforth for the sake of brevity, we study the abnormal bond returns calculated over the value-weighted benchmarks; the results using the equal-weighted approach are similar and available on request.

### **Creditor Protection Spillover Effects in Cross-Border M&As**

We now investigate whether country-level differences in creditor protection affect the performance of the bidder Eurobonds in our global sample of 1,100 cross-border M&As. We have hypothesized that cross-country spillovers of creditor protection are positive, such that bondholders respond more positively to deals that expose their firm to a jurisdiction with stronger creditor protection.

To examine the occurrence of positive spillovers, we create dummy variables corresponding to each of our four creditor protection measures. Each variable is equal to one if the target country offers above-median (strong) creditor protection and the bidder country offers below-median (weak) creditor protection. The median values are calculated using the entire sample. The dummy variables are equal to zero in all other cases, with bidder bondholders expected to reap limited benefits from exposure to the target jurisdiction.

Table 3 shows the abnormal bond returns stratified by each dummy variable. We find evidence of positive creditor protection spillovers across all four creditor protection measures, in line with each of Hypotheses (1) to (4). Bondholders' response is strongest to the relative quality of creditor rights, with the mean return positive at 0.05% when the target country is more creditor-friendly, and negative at -0.06% otherwise. Both returns are statistically and economically significant, and the difference between them is significant at the 1% level. The measures capturing claims enforcement quality, anti-director rights, and the general rule of law produce similar results. In each case, the mean return is insignificantly positive (0.04%, 0.01%, 0.02%) when the target jurisdiction is more creditor-friendly, and significantly negative at -0.06% otherwise. The differences in the means are also significant in each case.

(Insert Table 3 about here)

These findings imply that cross-border M&As offer considerable scope for positive spillovers in creditor protection, which for bondholders can not only offset but outweigh the perceived risks and uncertainties introduced by these deals. As mentioned, the Eurobonds issuers in our sample are large investment-grade firms, such that the same effects<sup>15</sup> may be more pronounced for other firms.

### **The Impact of Deal and Firm Characteristics on Abnormal Bidder Bond Returns**

In Table 4, we study how the bidder abnormal bond returns in our cross-border M&A sample are affected by deal- and firm-level characteristics previously examined in the academic literature.

(Insert Table 4 about here)

Panel A examines the impact of deal characteristics, beginning with industry focus. As with international diversification, the combination of firms from different industries should have coinsurance effects. This dictates that all else equal, bondholders should benefit more from diversifying deals where the two-digit SIC codes of bidder and target are different. We find no evidence that the abnormal returns are more positive around diversifying deals. Billett et al. (2004) find similar results for US domestic M&As.

We next examine the abnormal bond returns around bids that are successfully completed with those that are ultimately withdrawn. The results show that the returns are significantly negative around successful



deals but insignificant around withdrawn bids. This indicates that bondholders can reasonably assess whether a bid is likely to succeed.

Previous studies link value creation in M&As to the target firm's listing status. It is unclear how bondholders should be affected by whether the target is private or public. However, a negative listing puzzle has been shown to affect abnormal stock returns around M&A announcements, which persist over time and across countries (Faccio et al., 2006). We find no statistical evidence of a negative listing effect.

For our subsample of deals involving listed targets, we next examine the impact of the payment method and the type and attitude of the takeover bid. Bidding firms may choose to finance deals in a way that reverses any risk reductions arising from cash flow and asset coinsurance effects. This implies that the abnormal bond returns should be lower around cash-financed deals that are often funded with debt and reduce the collateral available to creditors. Similar to Billett et al. (2004) we find no evidence that bondholders respond more negatively to cash-financed deals, although cross-border M&As are typically cash-financed so our sample contains few equity-financed deals.

Our results show no statistical evidence that the abnormal bond returns are different for tender offers compared with negotiated mergers. Tender offers are often associated with greater value creation to the extent that they indicate more confidence on the bidder's part in realizing efficiency gains (Loughran and Vijh, 1997). Bondholders seem to respond negatively to hostile takeover bids, but cross-border M&As are rarely hostile with only two hostile deals in the sample. The negative returns are not surprising since hostile bids with aggressive bargaining leave little money on the table for the bidder, and the target may adopt high-risk strategies to fend off takeover threats, including paying out liquid assets and increasing leverage (Schwert, 2000).

Panel B examines how the abnormal bond returns are affected by firm-level characteristics including deal size, the combined leverage of bidder and target relative to that of the bidder, and whether the bidder has a creditor-shareholder. Of the 1,100 target firms, accounting data are available for the 154 public firms and a further 222 private firms. For the remaining 724 privately held targets, we are unable to retrieve data from any of our databases. For the missing data we use mean imputation, replacing them with industry

averages at the country level. This allows us to keep these observations in the sample, albeit at the expense of weakening explanatory power.

We first stratify the abnormal bond returns by whether the ratio of target to bidder assets is above or below the sample median. The returns are insignificantly different between the two groups, but are less negative and insignificant when the target firm is relatively small. Billett et al. (2004) previously find that bidder bondholders respond more positively to smaller targets in US domestic deals. The authors attribute this to the difficulties of absorbing and realizing synergies on larger acquisitions, and managerial hubris and agency concerns.

We next consider financial risk changes due to the combination of bidder and target leverage. We calculate the combined firm's book leverage using weights based on each firm's book value of assets. We find no evidence that the abnormal bond returns are more negative when the combined leverage is higher than that of the pre-merger bidder. This is in line with Billett et al. (2004), and is not surprising since management can adjust leverage both through the payment method and after the takeover.

Lastly, we consider whether the bidding firm has a creditor-shareholder, a bank or other financial institution that both lends to and invest in the firm. This dual holdership phenomenon is well-documented for Continental Europe, but 10% of US shares are also held by creditor-shareholders (Bodnaruk and Rossi, 2016). The influence of a creditor-shareholder may not only make M&As more creditor-friendly, but facilitate access to debt or better credit terms to finance the deal (Jiang et al., 2010). We find no statistical evidence that the presence of a creditor-shareholder affects the abnormal bond returns.

### **Multivariate Analysis of Creditor Protection Spillovers**

In Table 5 we employ multivariate regressions to examine whether country-level differences in creditor protection affect the performance of bidding firms' Eurobonds.<sup>16</sup> In Models (1) to (4) we run separate regressions for each dummy variable corresponding to our four creditor protection measures, with Model (5) including all four variables. The regressions include the deal and firm-level characteristics previously

studied in Table 4, and control for bidder industry and year fixed effects. As a country-level control measure, we include dummy variables capturing the legal origin of the bidder and target countries.

(Insert Table 5 about here)

The regressions confirm the creditor protection spillovers that the univariate results have shown. The abnormal bond returns remain most affected by the relative quality of creditor rights, increasing by 0.09% in Model (1) and 0.07% in Model (5) when the target jurisdiction is more creditor-friendly. When the target country offers more efficient claims enforcement, the abnormal returns increase by 0.08%. These return increases are uniformly significant at least at the 5% level, confirming Hypotheses (1) and (2). They are also considerably higher than the 5bp abnormal return that Bessembinder et al. (2009) regard as being economically significant for high-quality bonds.

The anti-director rights and rule of law variables are positive but insignificant in the regressions, thus our earlier univariate results for Hypotheses (3) and (4) are not corroborated. This is not surprising and actually strengthens our identification strategy. Minority investor protection and the quality of the regulatory system are indirect measures of creditor protection that affect all outside corporate constituencies. However, creditor rights and claims enforcement measure creditor protection directly, with their significance showing that it is ultimately improvements in creditors' relative bargaining power that bondholders respond to in cross-border M&As.

Of the deal and firm-level controls, the abnormal bond returns are affected by the takeover bid's method and attitude. Contrary to our univariate results, the regressions show that the returns are significantly higher around tender offers compared with negotiated deals, and lower around hostile takeover bids. These results correspond to our earlier conjectures that tender offers are associated with greater value creation, while hostile bids are viewed as risk factors that otherwise leave little money on the table for bidding firms (Loughran and Vijh, 1997; Schwert, 2000).

The returns show no statistical relationship with the deal's industry focus, the payment method or the target's listing status, and the deal size, leverage, and creditor-shareholder variables are also insignificant. Billett et al. (2004) previously study industry focus, the payment method, deal size, and leverage for US

domestic deals with public targets only, and find no multivariate evidence that abnormal bond returns are affected by these deal- and firm-level characteristics except deal size.<sup>17</sup>

Models (1), (3) and (4) show a statistical relationship between the abnormal returns and the bidder country's legal origin, with the returns lower for common law bidders. Nonetheless, the legal origin variable is insignificant in the final Model (5) that includes all four country-level creditor protection measures. This again indicates that the importance of creditor rights and claims enforcement quality outweigh more indirect measures of creditor protection.<sup>18</sup>

### **Subsample Analysis**

In Table 6 we perform subsample analyses to corroborate our earlier results in Table 5. In order, we (i) exclude M&As by the same bidder that are announced within 30 days of each other, (ii) exclude serial bidders that made more than ten takeover bids over a three-year period, (iii) exclude deals where the bidder issued Eurobonds within three months around the deal announcement, and (iv) include M&As involving US and European bidders only. The results once again confirm positive spillovers in both creditor rights and claims enforcement quality in cross-border M&As.

(Insert Table 6 about here)

The motivation for excluding overlapping deals and serial bidders is that bidder bondholders are likely to respond more strongly to one-time takeover bids, and recent or ongoing M&As may continue to have lingering valuation effects. The exclusion of overlapping deals has no material impact on the regression.<sup>19</sup> We find that the exclusion of serial bidders cuts our sample in half to 502 deals, and greatly magnifies bondholder sensitivity to positive creditor protection spillovers. Indeed, the abnormal bond returns now increase by 0.11% in response to both superior creditor rights and more efficient claims enforcement in the target jurisdiction. It is notable that the anti-director rights index capturing minority investor protection is now also significant, increasing the abnormal returns by 0.13%.

We perform a subsample analysis on US and European bidders because, while these bidders dominate our sample by some margin, it is useful to ensure that the positive creditor protection spillovers we have

detected are not driven by outlier countries, such as emerging countries with low creditor protection standards. The results of the analysis are very similar to those based on the full sample.

We finally exclude deals where the bidder issued Eurobonds within three months around deal announcements. These may have been issued to finance the takeovers, and have significant wealth and risk implications for existing bondholders. Only 13 observations are eliminated from the sample, and the results remain fundamentally unaffected.

### **Asset Risk, Bond Maturity, and Stock Market Reaction to Previous Deal**

In Table 7 we split the full sample into subsamples of (i) bidders with asset risk lower versus higher than the sample average, (ii) bidders with an average bond maturity lower versus higher than the sample average, and (iii) bidders whose previous M&As generated positive versus negative abnormal stock returns. We define asset risk as the standard deviation of unlevered daily stock returns over days [-750,-30] before deal announcements.<sup>20</sup>

(Insert Table 7 about here)

We divide the sample by asset risk and bond maturity because bondholders exposed to higher asset volatility and market risk should be more sensitive to creditor protection standards. Indeed, we find that bondholders with greater asset risk exposures respond more strongly to positive spillovers in creditor protection. For high asset risk bondholders, the abnormal returns are higher by 0.09% when the target country has strong creditor rights, and 0.13% when it has more efficient claims enforcement. For low asset risk bondholders, the return increases are both smaller and insignificant.

The subsamples partitioned by bond maturity also show evidence for the greater sensitivity of bondholders exposed to higher market risk. For M&As where the target country has strong creditor rights, the increase in the abnormal returns is hugely significant at 0.18% on above-average maturity bonds but insignificant at 0.05% on below-average maturity bonds. The same result does not hold for the quality of claims enforcement, with the increase in the returns similar in size, but insignificant for above-maturity bonds while significant for below-maturity bonds.

We partition bidders by the abnormal stock returns on their previous M&As because we expect bondholders to be more sensitive to creditor protection standards after earlier transactions badly received by the market. This is because bidding firm performance has been shown to consistently deteriorate deal by deal, with bidders actually inching closer and closer to financial distress (Laamanen and Keil, 2008). We confirm that bidder bondholders are more sensitive to creditor protection spillovers after ill-received M&As. If the bidder's previous deal generated negative abnormal stock returns, the abnormal bond returns around its current transaction increase by 0.10% for stronger creditor rights and 0.13% for better claims enforcement in the target country. If the abnormal stock returns were previously positive, the increases in the current abnormal bond returns are smaller and only significant for stronger creditor rights.

### **Further Robustness Tests**

We now perform a variety of additional robustness tests to corroborate our earlier results and provide further insight into positive creditor protection spillovers.<sup>21</sup>

In Table 8, we provide evidence that exogenous shocks in creditor protection generate positive spillover effects. We study the 49 cross-border M&As involving Italian target firms, and exploit an exogenous change in the Italian Insolvency Act in 2008. Legislative Decree No. 169/2007 sought to shorten the liquidation process in Italy by giving trustees discretion in liquidating assets and allowing creditors to propose arrangements for other creditors to take over distressed assets. We find that since the decree entered into force, the bondholders of bidders from countries with below-median creditor protection respond more positively to takeover bids for Italian targets. The increases in abnormal bond returns hold with respect to both creditor rights and claims enforcement quality, and are significant at the 5% level despite the small sample size.

(Insert Table 8 about here)

In Table 9 we perform a variety of additional robustness tests.

Model (1) replaces the static creditor rights and debt enforcement indices of Djankov et al. (2007) with the World Bank's similar but dynamic Doing Business indicators available since 2004 for 189 countries.

The World Bank's Getting Credit indicator is actually based on Djankov et al. (2007), while its Enforcing Contracts indicator is based on Djankov et al. (2003). For the years in which the indicators are unavailable we use the Djankov et al. (2007) indices. We confirm that the creditor protection spillovers that we have previously identified are robust to the use of the World Bank indicators across all model specifications previously shown in Table 5. The model reported in Table 9 includes both indicators simultaneously, and shows that the abnormal bond returns increase by 0.07% when the target country offers stronger creditor protection as measured by both Getting Credit and Enforcing Contracts.

Model (2) examines the subsample of only those 376 deals where accounting data are available for the target firms. We have previously used mean imputation to fill accounting data unavailable from known sources for 724 privately held targets. While this has enabled us to keep these observations in the full sample, the use of non-firm specific information affects the explanatory power of our regressions. Indeed, the regression's R-squared is close to three times as high as in the previous regressions. The abnormal bond returns are now also 0.14% higher when creditor rights are stronger in the target jurisdiction. The coefficient on the claims enforcement variable is insignificant in the model, but it is significant in unreported regressions that omit the creditor rights index.

Models (3) and (4) divide the sample into partial acquisitions of majority control and full takeovers of 100% equity. We expect that bondholders are more responsive to creditor protection spillovers in full takeovers, as these better integrate the target into the bidder and create greater scope for target country regulation to affect managerial behavior and risk-taking. Indeed, the increase in the abnormal bond returns is only significant for full takeovers, at 0.10% and 0.07% if the target jurisdiction offers stronger creditor rights and better claims enforcement, respectively.

Models (5) to (7) confirm the robustness of our findings to three more alternative model specifications. Model (5) includes controls for the bidding firm's credit rating and average bond duration. Model (6) controls for both bidder industry and target industry fixed effects simultaneously. The regressions show that our results are fundamentally unchanged. Model (7) controls for fixed effects at the level of the bidding firm rather than bidder industry. The objective of this robustness test is to control for any time-invariant

firm-level omitted variables and to reduce selection bias concerns. In the model, the effect of creditor rights on the abnormal bond returns remains significant, both statistically and economically, at 0.08%, while the effect of claims enforcement becomes smaller and insignificant.

In Model (8), we study an expanded sample that includes both domestic and cross-border M&As by the 350 Eurobond issuers contained in our sample of 1,194 Eurobonds. During the selection of our sample we identified 781 domestic deals involving these firms as bidders, mostly for the US (187 deals), the UK (152), France (109), Italy (74), the Netherlands (50) and Germany (45). The combined sample brings the total number of M&As to 1,881. As expected, the inclusion of domestic M&As has no material impact on the results, since these deals do not generate creditor protection spillovers.

The final Model (9) tests our earlier conjecture that cross-border M&As generate positive but not negative spillovers in creditor protection. We did not expect negative spillovers to occur because creditors retain their ability to litigate in jurisdictions that their firm already operates in. To check for any negative spillovers we create new dummy variables for each creditor protection measure, which equal one if the bidder country offers above-median (strong) creditor protection and the target country offers below-median (weak) creditor protection. We find no evidence of negative spillovers across any of the model specifications previously shown in Table 5. In the model reported in Table 9, each creditor protection variable has a negative sign but is statistically insignificant.<sup>22</sup>

## **CONCLUSION**

This paper has shown that bond performance around cross-border M&As is affected by country-level creditor protection rules and regulations. We have studied a large global sample of 1,100 cross-border deals involving non-financial firms, investigated returns on Eurobonds rather than domestic bonds, and employed a robust matching portfolio method with hand-constructed pricing benchmarks. The use of Eurobonds rather than domestic bonds is more appropriate for international bond market event studies and has been a crucial part of our identification strategy.



Previous studies have often argued that there are limitations to functional spillovers in creditor protection as a result of cross-border M&As. We have shown that positive spillovers both occur and are economically significant. These results are stronger for firms with higher asset volatility, longer maturity bonds, and a higher likelihood of financial distress, and are robust to a variety of robustness tests. We have also discussed in great institutional detail how the spillover mechanism works. Exposure to a more creditor-friendly jurisdiction can subject management to an increased threat of insolvency proceedings and more serious consequences if the firm goes into financial distress. More importantly, jurisdictional cooperation in multinational insolvencies blurs national boundaries in creditor protection, and actually creates scope for insolvency arbitrage by firms, governments, and creditors alike.

The findings and institutional discussions presented in this paper fit nicely into the international business literature on cross-border M&As. Our results provide further evidence that the economic impact and implications of cross-border M&As should not be underestimated. The fact that international diversification allows creditors to arbitrage across legal systems is rarely discussed outside the legal literature and is not widely known. Corporate managers engaging in cross-border M&As should be aware of the issues raised here because should their firm go into financial distress, they may find that the relative bargaining power of their creditors and other constituencies with respect to insolvency proceedings is quite different from what they expected. At the same time, it is important for the international business literature to further consider the effects of country-level differences in national regulation on the behavior and operations of multinational firms.

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**Table 1** Descriptive statistics

|                                   | Bidding firms |        |        |           | Target firms |        |        |           | <i>Diff. in means</i> |
|-----------------------------------|---------------|--------|--------|-----------|--------------|--------|--------|-----------|-----------------------|
|                                   | N             | Mean   | Median | Std. dev. | N            | Mean   | Median | Std. dev. |                       |
| Assets (€ million)                | 1,100         | 37,982 | 20,159 | 45,851    | 26           | 23,740 | 16,696 | 22,790    | 14,241                |
| Market capitalization (€ million) | 1,100         | 29,203 | 15,077 | 35,562    | 26           | 3,540  | 684    | 4,658     | 25,663***             |
| 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***              |
| Eurobonds per firm (#)            | 1,100         | 2.50   | 2      | 2.42      | 26           | 2.35   | 2      | 1.79      | 0.16                  |
| Term-to-maturity (years)          | 1,100         | 6.02   | 4.86   | 4.14      | 26           | 6.17   | 6.04   | 2.99      | 0.14                  |
| Duration (years)                  | 1,100         | 4.18   | 4      | 2.22      | 26           | 4.42   | 4.47   | 1.92      | 0.24                  |
| Credit rating                     | 1,100         | 7.59   | 8      | 0.75      | 26           | 7.31   | 7      | 0.47      | 0.28*                 |
| Cross-border M&As per firm        | 1,100         | 31.30  | 23     | 27.93     |              |        |        |           |                       |
| Creditor rights                   | 1,100         | 1.74   | 1      | 1.49      | 26           | 2.38   | 3      | 1.58      | 0.65**                |
| Debt enforcement                  | 1,100         | 5.00   | 5.21   | 0.76      | 26           | 5.28   | 5.41   | 0.69      | 0.28*                 |
| Anti-director rights              | 1,100         | 2.93   | 3      | 0.69      | 26           | 3.31   | 3      | 0.68      | 0.37***               |
| Rule of law                       | 1,100         | 4.06   | 4.12   | 0.37      | 26           | 4.11   | 4.14   | 0.32      | 0.054                 |

*Notes:* Euro values are in 2010 prices. Bond ratings are cardinalized, with AAA=10, AA=9, A=8, BBB=7. Variable descriptions are in Appendix 2.

**Table 2** Abnormal returns on Eurobonds in days [-5,+5] around cross-border M&A announcements

|  | Benchmark indices | Mean            | Median        | N     |
|--|-------------------|-----------------|---------------|-------|
| <i>Panel A: Full sample</i>                |                   |                 |               |       |
| Bidding firms                              | Equal-weighted    | -0.049**        | -0.006**      | 1,100 |
|  | Value-weighted    | -0.041**        | -0.008        | 1,100 |
| Target firms                               | Equal-weighted    | 0.258*          | 0.066         | 26    |
|  | Value-weighted    | 0.262*          | 0.050         | 26    |
| <i>Panel B: Bidding firms, France v UK</i> |                   |                 |               |       |
| France                                     | Value-weighted    | 0.024           | -0.005        | 295   |
| UK   | Value-weighted    | -0.212***       | -0.032**      | 194   |
| <i>Difference</i>                          |                   | <i>0.236***</i> | <i>0.027*</i> |       |

*Notes:* Abnormal bond returns are 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. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 3** Abnormal returns on bidding firms' Eurobonds in days [-5,+5], by country characteristics

|  |                   | Mean            | Median        | N   |
|--|-------------------|-----------------|---------------|-----|
| <i>Target firm country scores better than bidding firm country in:</i> |                   |                 |               |     |
| Creditor rights  | Yes               | 0.054*          | 0.004         | 175 |
|  | No                | -0.059***       | -0.012**      | 925 |
|  | <i>Difference</i> | <i>0.114***</i> | <i>0.016*</i> |     |
| Claims enforcement   | Yes               | 0.043           | 0.003         | 219 |
|  | No                | -0.062***       | -0.011*       | 881 |
|  | <i>Difference</i> | <i>0.105**</i>  | <i>0.014</i>  |     |
| Anti-director rights   | Yes               | 0.014           | 0.002         | 224 |
|  | No                | -0.056**        | -0.013**      | 876 |
|  | <i>Difference</i> | <i>0.070*</i>   | <i>0.015*</i> |     |
| Rule of law  | Yes               | 0.019           | -0.009        | 224 |
|  | No                | -0.057**        | -0.008        | 876 |
|  | <i>Difference</i> | <i>0.076**</i>  | <i>0.001</i>  |     |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. 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. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.



**Table 4** Abnormal returns on bidding firm's Eurobonds in days [-5,+5], by deal and firm characteristics

|                                      |                        | Mean           | Median        | N    |
|--------------------------------------|------------------------|----------------|---------------|------|
| <i>Panel A: Deal characteristics</i> |                        |                |               |      |
| Industry focus                       | Diversifying           | -0.042         | 0.000         | 473  |
|                                      | Non-diversifying       | -0.041**       | -0.010*       | 627  |
|                                      | <i>Difference</i>      | <i>-0.001</i>  | <i>0.010</i>  |      |
| Deal status                          | Successful             | -0.052**       | -0.009*       | 953  |
|                                      | Unsuccessful           | 0.028          | 0.014         | 147  |
|                                      | <i>Difference</i>      | <i>-0.080*</i> | <i>-0.023</i> |      |
| Target public status                 | Target listed          | -0.004         | 0.003         | 154  |
|                                      | Target unlisted        | -0.047**       | -0.011        | 946  |
|                                      | <i>Difference</i>      | <i>0.043</i>   | <i>0.014</i>  |      |
| Method of payment (listed targets)   | Cash or mixed          | -0.001         | 0.003         | 150  |
|                                      | Equity only            | -0.114         | -0.0056       | 4    |
|                                      | <i>Difference</i>      | <i>0.113</i>   | <i>0.059</i>  |      |
| Deal method (listed targets)         | Tender offer           | 0.111          | 0.020         | 27   |
|                                      | Negotiated merger      | -0.028         | 0.001         | 127  |
|                                      | <i>Difference</i>      | <i>0.138</i>   | <i>0.019</i>  |      |
| Deal attitude (listed targets)       | Hostile                | -0.638         | -0.638        | 2    |
|                                      | Friendly               | 0.005          | 0.004         | 152  |
|                                      | <i>Difference</i>      | <i>-0.643</i>  | <i>-0.643</i> |      |
| <i>Panel B: Firm characteristics</i> |                        |                |               |      |
| Deal size (target/bidder)            | > sample median        | -0.059**       | -0.011        | 550  |
|                                      | < = sample median      | -0.020         | -0.002        | 550  |
|                                      | <i>Difference</i>      | <i>-0.039</i>  | <i>-0.009</i> |      |
| Leverage                             | Combined firm > bidder | -0.031         | -0.012        | 880  |
|                                      | Combined firm < bidder | -0.083         | 0.006         | 220  |
|                                      | <i>Difference</i>      | <i>0.052</i>   | <i>-0.018</i> |      |
| Bidder has creditor-shareholder      | Yes                    | -0.042         | -0.016        | 44   |
|                                      | No                     | -0.041**       | -0.008        | 1056 |
|                                      | <i>Difference</i>      | <i>-0.001</i>  | <i>0.008</i>  |      |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. 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. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 5** Abnormal returns on bidding firms' Eurobonds in days [-5,+5], multivariate regressions

|                                       | (1)                  | (2)                  | (3)                  | (4)                  | (5)                  |
|---------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Creditor rights better in target      | 0.092***<br>(0.026)  |                      |                      |                      | 0.071**<br>(0.032)   |
| Claims enforcement better in target   |                      | 0.081**<br>(0.039)   |                      |                      | 0.083**<br>(0.040)   |
| Anti-director rights better in target |                      |                      | 0.054<br>(0.045)     |                      | 0.029<br>(0.040)     |
| Rule of law better in target          |                      |                      |                      | 0.058<br>(0.065)     | 0.049<br>(0.073)     |
| Diversifying                          | -0.002<br>(0.069)    | 0.000<br>(0.069)     | 0.003<br>(0.071)     | -0.004<br>(0.072)    | -0.003<br>(0.072)    |
| Successful                            | -0.064<br>(0.041)    | -0.062<br>(0.042)    | -0.067<br>(0.042)    | -0.070<br>(0.042)    | -0.062<br>(0.042)    |
| Target listed                         | -0.024<br>(0.050)    | -0.012<br>(0.050)    | -0.024<br>(0.048)    | -0.024<br>(0.051)    | -0.020<br>(0.053)    |
| Cash or mixed                         | 0.121<br>(0.103)     | 0.142<br>(0.096)     | 0.137<br>(0.094)     | 0.141<br>(0.105)     | 0.130<br>(0.092)     |
| Tender offer                          | 0.264**<br>(0.119)   | 0.266**<br>(0.121)   | 0.269**<br>(0.116)   | 0.264**<br>(0.121)   | 0.272**<br>(0.122)   |
| Hostile                               | -2.260***<br>(0.403) | -2.223***<br>(0.371) | -2.219***<br>(0.373) | -2.250***<br>(0.398) | -2.264***<br>(0.407) |
| Deal size > sample median             | -0.005<br>(0.051)    | -0.007<br>(0.051)    | -0.003<br>(0.053)    | -0.006<br>(0.053)    | -0.003<br>(0.053)    |
| Leverage combined firm > bidder       | 0.050<br>(0.093)     | 0.058<br>(0.093)     | 0.050<br>(0.094)     | 0.052<br>(0.094)     | 0.057<br>(0.093)     |
| Bidder has creditor-shareholder       | -0.058<br>(0.054)    | -0.059<br>(0.056)    | -0.050<br>(0.054)    | -0.060<br>(0.054)    | -0.068<br>(0.060)    |
| Bidder is common law                  | -0.105*<br>(0.056)   | -0.083<br>(0.062)    | -0.101*<br>(0.060)   | -0.101*<br>(0.056)   | -0.071<br>(0.056)    |
| Target is common law                  | 0.030<br>(0.055)     | 0.032<br>(0.058)     | 0.028<br>(0.061)     | 0.028<br>(0.051)     | 0.014<br>(0.054)     |
| Constant                              | -0.058<br>(0.054)    | -0.059<br>(0.056)    | -0.050<br>(0.054)    | -0.060<br>(0.054)    | -0.068<br>(0.060)    |
| Bidder industry FE                    | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  |
| Year FE                               | Yes                  | Yes                  | Yes                  | Yes                  | Yes                  |
| Adj. R-squared                        | 0.047                | 0.047                | 0.046                | 0.046                | 0.048                |
| N                                     | 1,100                | 1,100                | 1,100                | 1,100                | 1,100                |
| Number of clusters                    | 46                   | 46                   | 46                   | 46                   | 46                   |
| Maximum VIF                           | 1.36                 | 1.37                 | 1.36                 | 1.37                 | 1.39                 |
| Mean VIF                              | 1.08                 | 1.10                 | 1.09                 | 1.09                 | 1.14                 |
| Condition index                       | 11.85                | 12.03                | 11.92                | 11.88                | 12.87                |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. Independent variables are dummies equal to one if the variable description holds and zero otherwise. Observations are clustered by bidder industry. White (1980) heteroskedasticity-robust standard errors are in parentheses. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 6** Abnormal returns on bidding firms' Eurobonds in days [-5,+5], subsample analysis

|                                       | All<br>cross-border M&As<br>(1) | No<br>overlapping deals<br>(2) | No<br>serial bidders<br>(3) | US and EU<br>bidders only<br>(4) | No bonds issued<br>close to M&As<br>(5) |
|---------------------------------------|---------------------------------|--------------------------------|-----------------------------|----------------------------------|---|
| Creditor rights better in target      | 0.071**<br>(0.032)              | 0.079**<br>(0.030)             | 0.110*<br>(0.062)           | 0.075*<br>(0.039)                | 0.078***<br>(0.029)                     |
| Claims enforcement better in target   | 0.083**<br>(0.040)              | 0.073*<br>(0.036)              | 0.105*<br>(0.061)           | 0.078*<br>(0.039)                | 0.086**<br>(0.041)                      |
| Anti-director rights better in target | 0.029<br>(0.040)                | 0.037<br>(0.040)               | 0.127*<br>(0.066)           | 0.032<br>(0.039)                 | 0.019<br>(0.045)                        |
| Rule of law better in target          | 0.049<br>(0.073)                | 0.039<br>(0.065)               | -0.010<br>(0.091)           | 0.039<br>(0.090)                 | 0.050<br>(0.073)                        |
| Deal, firm and legal origin controls  | Yes                             | Yes                            | Yes                         | Yes                              | Yes                                     |
| Bidder industry FE                    | Yes                             | Yes                            | Yes                         | Yes                              | Yes                                     |
| Year FE                               | Yes                             | Yes                            | Yes                         | Yes                              | Yes                                     |
| Adj. R-squared                        | 0.048                           | 0.055                          | 0.033                       | 0.047                            | 0.049                                   |
| N                                     | 1,100                           | 1,080                          | 502                         | 1,028                            | 1,087                                   |
| Number of clusters                    | 46                              | 46                             | 43                          | 43                               | 46                                      |
| Maximum VIF                           | 1.39                            | 1.39                           | 1.52                        | 1.38                             | 1.38                                    |
| Mean VIF                              | 1.14                            | 1.14                           | 1.16                        | 1.14                             | 1.14                                    |
| Condition index                       | 12.87                           | 13.01                          | 12.04                       | 12.98                            | 12.87                                   |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. Model (2) excludes deals announced within 30 days by the same bidder. Model (3) excludes serial bidding firms that made more than ten takeover bids over a three-year period. Model (4) includes US and European bidders only. Model (5) excludes bidders that issued Eurobonds within three months around deal announcements. Independent variables are dummies equal to one if the variable description holds and zero otherwise. Observations are clustered by bidder industry. White (1980) heteroskedasticity-robust standard errors are in parentheses. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 7** Abnormal returns on bidding firms' Eurobonds in days [-5,+5], by asset risk, bond maturity and stock market reaction to previous deal

|                                       | Asset risk       |                     | Bond maturity      |                    | Abnormal stock return around previous deal |                     |
|---------------------------------------|------------------|---------------------|--------------------|--------------------|--|---------------------|
|                                       | < average<br>(1) | >= average<br>(2)   | < average<br>(3)   | >= average<br>(4)  | >0<br>(5)                                  | <=0<br>(6)          |
| Creditor rights better in target      | 0.036<br>(0.103) | 0.093***<br>(0.031) | 0.049<br>(0.032)   | 0.181**<br>(0.068) | 0.089**<br>(0.043)                         | 0.097***<br>(0.026) |
| Claims enforcement better in target   | 0.070<br>(0.065) | 0.133*<br>(0.069)   | 0.094**<br>(0.040) | 0.073<br>(0.115)   | 0.070<br>(0.052)                           | 0.131**<br>(0.057)  |
| Anti-director rights better in target | 0.089<br>(0.055) | -0.045<br>(0.066)   | -0.025<br>(0.053)  | 0.098<br>(0.070)   | -0.063<br>(0.047)                          | 0.041<br>(0.037)    |
| Rule of law better in target          | 0.071<br>(0.140) | 0.039<br>(0.043)    | 0.111<br>(0.083)   | -0.129<br>(0.088)  | 0.009<br>(0.103)                           | 0.085<br>(0.064)    |
| Legal origin, deal and firm controls  | Yes              | Yes                 | Yes                | Yes                | Yes  | Yes                 |
| Bidder industry FE                    | Yes              | Yes                 | Yes                | Yes                | Yes  | Yes                 |
| Year FE                               | Yes              | Yes                 | Yes                | Yes                | Yes  | Yes                 |
| Adj. R-squared                        | 0.078            | 0.041               | 0.067              | 0.084              | 0.088                                      | 0.064               |
| N                                     | 525              | 575                 | 731                | 369                | 566  | 430                 |
| Number of clusters                    | 35               | 38                  | 42                 | 31                 | 39   | 34                  |
| Maximum VIF                           | 1.33             | 1.51                | 1.28               | 1.60               | 1.29                                       | 1.41                |
| Mean VIF                              | 1.16             | 1.18                | 1.14               | 1.19               | 1.14                                       | 1.17                |
| Condition index                       | 12.28            | 13.90               | 13.67              | 12.42              | 12.89                                      | 13.52               |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. Models (1) and (2) show bidders with average bond maturities below v above the sample average. Models (3) and (4) show firms with below-average v above-average asset risk. Models (5) and (6) show positive v negative abnormal stock returns around the previous M&As of bidding firms. Independent variables are dummies equal to one if the variable description holds and zero otherwise. Observations are clustered by bidder industry. White (1980) heteroskedasticity-robust standard errors are in parentheses. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 8** The 2008 change in the Italian Insolvency Act

|  | (1)                 | (2)                  |
|--|---------------------|----------------------|
| Creditor rights < sample median in bidder                | -0.593<br>(0.387)   |                      |
| Creditor rights < sample median in bidder x post-2008    | 0.975**<br>(0.464)  |                      |
| Claims enforcement < sample median in bidder             |                     | -0.468<br>(0.439)    |
| Claims enforcement < sample median in bidder x post-2008 |                     | 1.076**<br>(0.528)   |
| Post-2008  | -0.797**<br>(0.326) | -1.008***<br>(0.329) |
| Legal origin, deal and firm controls                     | Yes                 | Yes                  |
| Bidder industry and year FE                              | Yes                 | Yes                  |
| Adj. R-squared   | 0.069               | 0.086                |
| N  | 49                  | 49                   |

*Notes:* Abnormal bond returns are in percent in days [-5,+5] around M&A announcements, calculated using value-weighted benchmarks. Independent variables are dummies equal to one if the variable description holds and zero otherwise. Observations are clustered by bidder industry. White (1980) heteroskedasticity-robust standard errors are in parentheses. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.

**Table 9** Further robustness tests

|                                       | Doing Business indicators | No mean imputation for targets | Partial acquisitions of majority control | Full takeovers of 100% equity | Controls for credit rating and duration | Target industry fixed effects | Bidder fixed effects | Include domestic deals | Negative spillovers |
|---------------------------------------|---------------------------|--------------------------------|--|-------------------------------|---|-------------------------------|----------------------|------------------------|---------------------|
|                                       | (1)                       | (2)                            | (3)                                      | (4)                           | (5)                                     | (6)                           | (7)                  | (8)                    | (9)                 |
| Creditor rights better in target      | 0.072*<br>(0.038)         | 0.141**<br>(0.063)             | -0.139<br>(0.236)                        | 0.102*<br>(0.055)             | 0.066**<br>(0.032)                      | 0.073**<br>(0.033)            | 0.078*<br>(0.045)    | 0.056*<br>(0.033)      |                     |
| Creditor rights better in bidder      |                           |                                |  |                               |   |                               |                      |                        | -0.042<br>(0.042)   |
| Claims enforcement better in target   | 0.070*<br>(0.038)         | 0.095<br>(0.068)               | 0.191<br>(0.183)                         | 0.070*<br>(0.041)             | 0.080*<br>(0.042)                       | 0.086*<br>(0.044)             | 0.004<br>(0.056)     | 0.090**<br>(0.041)     |                     |
| Claims enforcement better in bidder   |                           |                                |  |                               |   |                               |                      |                        | -0.054<br>(0.044)   |
| Anti-director rights better in target | 0.039<br>(0.042)          | 0.075<br>(0.106)               | 0.056<br>(0.151)                         | 0.001<br>(0.059)              | 0.022<br>(0.038)                        | 0.034<br>(0.041)              | -0.002<br>(0.038)    | 0.039<br>(0.040)       |                     |
| Anti-director rights better in bidder |                           |                                |  |                               |   |                               |                      |                        | -0.052<br>(0.083)   |
| Rule of law better in target          | 0.042<br>(0.071)          | -0.030<br>(0.085)              | 0.147<br>(0.212)                         | 0.033<br>(0.074)              | 0.049<br>(0.071)                        | 0.046<br>(0.062)              | 0.035<br>(0.046)     | 0.085<br>(0.080)       |                     |
| Rule of law better in bidder          |                           |                                |  |                               |   |                               |                      |                        | -0.004<br>(0.042)   |
| Legal origin, deal and firm controls  | Yes                       | Yes                            | Yes                                      | Yes                           | Yes                                     | Yes                           | Yes                  | Yes                    | Yes                 |
| Bidder industry FE                    | Yes                       | Yes                            | Yes                                      | Yes                           | Yes                                     | Yes                           |                      | Yes                    | Yes                 |
| Target industry FE                    |                           |                                |  |                               |   | Yes                           |                      |                        |                     |
| Bidder FE                             |                           |                                |  |                               |   |                               | Yes                  |                        |                     |
| Year FE                               | Yes                       | Yes                            | Yes                                      | Yes                           | Yes                                     | Yes                           | Yes                  | Yes                    | Yes                 |
| Adj. R-squared                        | 0.048                     | 0.122                          | 0.099                                    | 0.058                         | 0.049                                   | 0.049                         |                      | 0.045                  | 0.045               |
| N                                     | 1,100                     | 376                            | 407                                      | 1,052                         | 1,100                                   | 1,100                         | 958                  | 1,881                  | 1,100               |
| Number of clusters                    | 46                        | 34                             | 35                                       | 41                            | 46                                      | 46                            | 187                  | 50                     | 46                  |
| Maximum VIF                           | 1.36                      | 1.45                           | 1.59                                     | 1.61                          | 1.39                                    | 1.38                          | 1.38                 | 1.52                   | 1.86                |
| Mean VIF                              | 1.14                      | 1.15                           | 1.28                                     | 1.25                          | 1.14                                    | 1.14                          | 1.12                 | 1.21                   | 1.24                |
| Condition index                       | 12.42                     | 12.26                          | 6.63                                     | 7.13                          | 12.36                                   | 12.87                         | 12.32                | 13.49                  | 13.15               |

*Notes:* Abnormal bond returns are in percent, calculated using value-weighted benchmarks. Model (1) uses the Getting Credit and Enforcing Contracts indicators of World Bank Doing Business. Model (2) includes only those M&As where target accounting data are available. Models (3) and (4) respectively show partial acquisitions of majority control and full takeovers of 100% equity. Model (5) controls for bidder credit ratings and average bond durations. Model (6) controls for both bidder and target industry fixed effects. Model (7) controls for bidder fixed effects. Model (8) includes both domestic and cross-border M&As. Model (9) investigates negative creditor protection spillovers. Independent variables are dummies equal to one if the variable description holds and zero otherwise. Observations are clustered by bidder industry. White (1980) heteroskedasticity-robust standard errors are in parentheses. Variable descriptions are in Appendix 2. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% level.



## APPENDIX 2: VARIABLE DESCRIPTIONS

### (i) Abnormal bond returns

*Abnormal bond returns* are the sum of daily abnormal bond returns over a matched benchmark index in the days [-5,+5] surrounding M&A announcements. Firms with multiple bonds are treated as value-weighted portfolios, where the weights are the market values of each bond two months before the deal announcement. Each benchmark index is segmented by currency (euro, pound sterling, or US dollar), credit rating (BBB, A, AA, and AAA) and duration (1-3, 3-5, 5-7, 7-10, and 10+ years). If a benchmark has less than seven bonds, a reserve benchmark is used with a duration of 1-5 or 5+ years. Value-weighted benchmarks are constructed using weights based on each bond's market value. Bond ratings are from Standard and Poor's or, when unavailable, Moody's Investors Service. Source: *Thomson Reuters Eikon*.

### (ii) Firm-level variables

*Deal size (target/bidder)* is the target firm's book value of assets divided by the bidding firm's book value of assets. It is measured at the fiscal year-end preceding the deal announcement and converted into euro where applicable. Source: *Amadeus, CapitalIQ, Datastream, Orbis, Worldscope, Zephyr*.

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

*Leverage* is the book value of debt divided by the book value of assets. It is measured at the fiscal year-end preceding the deal announcement. Leverage in the combined firm is calculated using weights based on the book value of assets, converted into euro where applicable. For missing values industry averages are used. Source: *Amadeus, CapitalIQ, Datastream, Orbis, Worldscope, Zephyr*.

*Asset risk* is the standard deviation of unlevered daily stock returns. Unlevered stock returns are defined as the product of stock returns and  $(1 - \text{leverage})$ . The standard deviation of unlevered stock returns is computed over days [-750,-30] before deal announcements. Source: *Datastream, Worldscope*.



*Bidder has creditor-shareholder* is a dummy variable equal to one if the bidder has a creditor (bank or other financial institution) among its major shareholders. Source: *Amadeus, Orbis, SDC, Zephyr*.

(iii) Country-level variables

*Creditor rights* (max=4) captures the number of laws protecting creditors from expropriation by more senior secured creditors. First, there are restrictions, such as creditor consent or minimum dividends, for a debtor to file for reorganization. Second, secured creditors are able to seize their collateral after the reorganization petition is approved, i.e. there is no "automatic stay" or "asset freeze." Third, secured creditors are paid first out of the proceeds of liquidating a bankrupt firm, as opposed to other creditors such as the government or employees. Finally, management does not retain administration of its property pending the resolution of the reorganization. Source: *Djankov et al. (2007)*.

*Claims enforcement* captures the efficiency of claims disputes resolution through courts, It is the number of calendar days needed to enforce a contract of unpaid debt worth 50% of a country's GDP per capita. Source: *Djankov et al. (2007)*.

*Anti-director rights* (max=7) 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. Source: *Djankov et al. (2008)*.

*Rule of law* index (max=5) aggregates several indicators that measure how well agents abide by the rules of society. These include perceptions of the incidence of crime, the effectiveness and predictability of the judiciary and the enforceability of contracts. Source: *World Bank Worldwide Governance Indicators*.

*Legal origin* is a dummy variable that identifies the legal origin of each country. The five origins are English, French, German, Nordic and Socialist. Source: *Djankov et al. (2007)*.

### APPENDIX 3: CORRELATION MATRIX

|                                       | Creditor rights better in target | Claims enforcement better in target | Anti-director rights better in target | Rule of law better in target | Diversifying | Successful | Target listed | Cash or mixed | Tender offer | Hostile | Deal size > median | Leverage combined firm > bidder | Bidder has creditor-shareholder | Bidder is common law | Target is common law |
|---------------------------------------|----------------------------------|-------------------------------------|---------------------------------------|------------------------------|--------------|------------|---------------|---------------|--------------|---------|--------------------|---------------------------------|---------------------------------|----------------------|----------------------|
| Creditor rights better in target      | 1                                |                                     |                                       |                              |              |            |               |               |              |         |                    |                                 |                                 |                      |                      |
| Claims enforcement better in target   | -0.012                           | 1                                   |                                       |                              |              |            |               |               |              |         |                    |                                 |                                 |                      |                      |
| Anti-director rights better in target | 0.243                            | 0.200                               | 1                                     |                              |              |            |               |               |              |         |                    |                                 |                                 |                      |                      |
| Rule of law better in target          | 0.323                            | -0.043                              | -0.020                                | 1                            |              |            |               |               |              |         |                    |                                 |                                 |                      |                      |
| Diversifying                          | 0.009                            | -0.019                              | -0.070                                | 0.049                        | 1            |            |               |               |              |         |                    |                                 |                                 |                      |                      |
| Successful                            | -0.041                           | -0.018                              | -0.007                                | 0.033                        | -0.021       | 1          |               |               |              |         |                    |                                 |                                 |                      |                      |
| Target listed                         | 0.032                            | -0.057                              | 0.050                                 | 0.037                        | -0.139       | -0.227     | 1             |               |              |         |                    |                                 |                                 |                      |                      |
| Cash or mixed                         | 0.026                            | -0.008                              | -0.007                                | -0.007                       | 0.022        | 0.021      | -0.150        | 1             |              |         |                    |                                 |                                 |                      |                      |
| Tender offer                          | 0.011                            | -0.035                              | -0.022                                | 0.022                        | -0.007       | -0.024     | 0.393         | 0.088         | 1            |         |                    |                                 |                                 |                      |                      |
| Hostile                               | 0.040                            | -0.021                              | -0.022                                | 0.031                        | -0.037       | -0.046     | 0.106         | -0.003        | 0.131        | 1       |                    |                                 |                                 |                      |                      |
| Deal size > sample median             | -0.015                           | 0.004                               | -0.051                                | -0.007                       | -0.005       | -0.077     | -0.115        | 0.031         | -0.077       | 0.022   | 1                  |                                 |                                 |                      |                      |
| Leverage combined firm > bidder       | 0.019                            | -0.035                              | 0.016                                 | 0.005                        | 0.058        | 0.011      | -0.191        | -0.045        | -0.097       | 0.021   | 0.134              | 1                               |                                 |                      |                      |
| Bidder has creditor-shareholder       | 0.025                            | 0.061                               | -0.023                                | 0.081                        | -0.027       | 0.026      | -0.029        | -0.012        | 0.058        | -0.009  | -0.009             | 0.044                           | 1                               |                      |                      |
| Bidder is common law                  | -0.026                           | -0.331                              | -0.134                                | -0.085                       | 0.096        | -0.002     | -0.017        | 0.042         | 0.016        | 0.016   | 0.008              | -0.043                          | -0.003                          | 1                    |                      |
| Target is common law                  | 0.010                            | 0.033                               | 0.183                                 | 0.179                        | 0.062        | 0.023      | 0.004         | 0.021         | 0.007        | -0.037  | 0.070              | 0.029                           | -0.034                          | 0.101                | 1                    |

## NOTES

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<sup>1</sup> Choi et al. (2010) examine how bonds perform in cross-border bank M&As using a small sample of 147 deals. The authors find that bank bondholders perceive these deals as risk-increasing activities, and that yield spread changes are affected by country differences in the regulatory banking environment. It is important to note that this study is different from our paper in terms of both focus and approach. Firstly, M&As within the banking industry are subject to very different regulatory considerations such as country-level bank regulation and supervision designed to prevent bank insolvencies. Secondly, Choi et al. (2010) explicitly exclude Eurobonds from their analysis and focus on domestic bonds. The use of Eurobonds is more appropriate for international bond event studies and a crucial part of our identification strategy. Thirdly, Choi et al. (2010) calculate abnormal bond yields using the mean-adjusted model rather than a matching portfolio method, against the recommendations of Bessembinder et al. (2009).

<sup>2</sup> Bessembinder et al. (2009) find that bond market event studies rarely exceed 300 events with a median sample of 67. They show that a large sample is critical for the power of non-parametric tests. For example, the probability of detecting a shock of 10 basis points (bp) is less than 50% for 50 observations, but 100% for 500 observations. To the best of our knowledge, the largest studies focusing on M&As remain those of Billett et al. (2004) and Pereira da Silva et al. (2015) with 940 and 938 deals, respectively.

<sup>3</sup> Eurobonds are typically issued in bearer form and large issue sizes, and exempt from withholding tax if exchange-distributed. These features attract huge demand from a very diverse set of mostly institutional investors, which makes their market competitive, efficient, and liquid with a relatively low risk of price anomalies. Eurobonds tend to be unsecured and carry few covenants, because their investors often prefer to stay anonymous and find recovering collateral and enforcing covenants too costly. Eurobonds are typically governed by English common law and listed on the Luxembourg Stock Exchange. The Luxembourg Stock Exchange was among the first to relax Eurobond issuing procedures in 1990, offering low fees, no withholding tax, and a quick approval of new listings. The bond's governing law is specified in the bond contract, and is typically negotiated between the underwriter and the issuer. English common law is generally preferred because it permits collective action clauses that allow for timely and orderly

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renegotiations if the issuer defaults. English law also allows greater scope for the bond trustee to negotiate with the issuer, which sits well with Eurobond investors who wish to remain anonymous.

<sup>4</sup> The Eurobonds in our sample are all investment-grade and tend to have large issue sizes, with the average issue size at €693 million. Domestic bond markets outside the US are also thin in junk-grade issues, however.

<sup>5</sup> The Model Law was drafted using previous cross-border insolvency agreements, including the Nordic Bankruptcy Convention of 1933, the Montevideo and Bustamante Conventions in force in much of South America, and the Convention on Insolvency Proceedings of the European Union, later enacted as the European Insolvency Regulation (EIR) of 2000. The US introduced the Model Law into the US Bankruptcy Code as Chapter 15 in 2005. However, it had already applied a modified form of universality, whereby it claimed worldwide jurisdiction over US-incorporated firms, but was prepared to cooperate with and possibly recognize the rulings of proceedings abroad to prevent the unequal treatment of foreign creditors.

<sup>6</sup> Jurisdiction shopping by creditors is a well-known phenomenon even within the US, and explains the popularity of specialized bankruptcy courts in Delaware and New York. While the US Bankruptcy code is federal, state courts enjoy considerable judicial discretion and protect creditor interests to varying degrees. Firms sometimes file for Chapter 11 bankruptcy preemptively to give them leverage against creditors. When they do not, however, creditors can submit an insolvency filing against the firm in any state in which it has an insolvent affiliate (BIS, 2002).

<sup>7</sup> Council Regulation (EC) No. 1346/2000 of 29 May 2000, repealed by Regulation No. 2015/848 of 20 May 2015.

<sup>8</sup> Becht et al. (2008) discuss how Continental European firms reincorporate in the UK voluntarily to become subject to UK common law. This trend of cross-country incorporation mobility has been reinforced by a series of rulings by the European Court of Justice, which dictates that firms are free to select their country of incorporation within the EU independently of their real seat. The fact that real seat countries cannot export their law was demonstrated by the 2011 insolvency case of Mediasucre International, a French firm. Mediasucre's French liquidator sought but was refused to include Rastelli Davide, an Italian firm intermixed with Mediasucre, in Mediasucre's insolvency proceedings opened in France.

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<sup>9</sup> 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 percentage recovery to the creditors that hold them.

<sup>10</sup> Bond ratings are obtained from Standard and Poor's or, when unavailable, Moody's Investors Service to maximize sample coverage. This should not affect our results, as ratings and ratings changes for these two agencies are highly correlated.

<sup>11</sup> Most public bond indices, including those published by Bank of America Merrill Lynch and iBoxx, are segmented by term-to-maturity. However, term-to-maturity incorrectly assumes that a bond's market risk sensitivity is independent of its coupon payments. Benchmark portfolios could be segmented further based on factors such as size or liquidity. Bessembinder et al. (2009) find that further segmentation does not improve benchmark performance significantly.

<sup>12</sup> The only comprehensive database of actual bond trades is the Trade Reporting and Compliance Engine (TRACE) database run by the US Financial Industry Regulatory Authority (FINRA). TRACE data are often used in academic research. However, Eurobonds are mostly ineligible for TRACE and in fact prohibited from trading by investment banks within the US due to their bearer form.

<sup>13</sup> France and the UK have respective scores of 5.66 and 4.32 in claims enforcement, 4 and 3 in anti-director rights, and 4.16 and 3.93 in rule of law. However, the creditor rights index is 0 for France and the maximum 4 for the UK.

<sup>14</sup> The mean abnormal bond return is significantly negative at -0.21% for UK bidders, but insignificantly positive at 0.01% for US bidders. The US has a creditor rights score of 1, against a score of 4 for the UK.

<sup>15</sup> As a robustness test, we study the returns on the domestic bonds of our sample of US bidding firms. We find that the raw returns on their domestic bonds are about four times as large as those on their Eurobonds.

<sup>16</sup> In unreported regressions, we also examine whether the target firms' Eurobonds are affected by country-level differences in creditor protection. Despite the small sample size of only 26 observations, we find evidence that target bondholders respond even more strongly to superior creditor protection in the bidder country. This is not surprising, since the target firms are smaller with lower credit ratings than the bidding firms, thus their bondholders should be more sensitive to creditor protection spillovers.

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<sup>17</sup> The deal size variable employed by Table 5 is a dummy variable equal to one if the deal size is greater than the sample median and zero otherwise. In unreported robustness tests we use the continuous deal size variable, defined as the ratio of the target's book value of assets to the bidder's book value of assets, but the results are unchanged. To avoid selection bias concerns, we additionally control for the bidder's pre-merger leverage ratio and find that it does not affect our results.

<sup>18</sup> In unreported regressions we also control for the difference in GDP per capita between the bidder and target countries, to the extent that country wealth proxies for the quality of creditor protection. We find no evidence that the relative wealth of the bidder and target countries affects the abnormal returns.

<sup>19</sup> In unreported robustness tests we also exclude overlapping deals announced within 40 days and 50 days of each other, with similar results.

<sup>20</sup> In unreported regressions we also split the full sample into completed versus withdrawn deals. We find that bondholders are only sensitive to creditor protection spillovers in M&As that are subsequently completed. Indeed, based on the univariate results in Table 4 we previously concluded that bondholders can reasonably assess whether a takeover bid is likely to succeed.

<sup>21</sup> We perform a range of robustness tests even beyond those reported in the paper. Notably, to reduce concerns about endogeneity and selection bias, we use a nearest-neighbor and propensity score matching approach to match bidders with targets. Using a nearest-neighbor estimator, the treatment effects in terms of the abnormal bond returns are 0.08% and 0.19% for creditor rights and claims enforcement, respectively. The treatment effects using propensity score matching are even higher at 0.11% and 0.28%, respectively.

<sup>22</sup> We also perform a similar analysis for our sample of 26 cross-border M&As involving target firms with outstanding Eurobonds. The results again show no evidence of negative spillovers.