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Abstract

I investigate the effects of bank loan renegotiation on firm's financial and investment policies, and performances. I employ OLS and endogenous switching regime regressions using a large cross-country sample of loans issued and amended on a long-time period. I find that bank loan renegotiation has an economically significant and causal impact on financial policy and performances. Renegotiation provides the firm with additional degrees of freedom and unlocks its economic potential, implying important effects of firm's tangibility, growth, opportunities and cash on financial policy and performances. Bank loan renegotiation also exhibits a certification and signaling effect which can increase the effect of amendments to the credit agreement on firm's financial policy.

JEL classification: G21, G32, C31, C34

Keywords: bank loan, renegotiation, financial policy, investment policy, performance, treatment effect, Europe.

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1. Introduction

Debt contracts allows lenders to influence borrower's incentives, choices of projects' risks, and corporate policies (Gorton and Kahn, 2000). These contracts materialize the existence of bank-borrower relationships which are valuable for firms because they increase their value (Dahiya et al., 2003), help obtain better loan terms (Bharath et al., 2011), and have a significant impact on financial and investment policies (Aslan, 2016). However, bank-borrower relationships are not static and evolve when they reach a point where the initial credit agreement stipulates an ex post inefficient outcome. Following the arrival of new information and/or the occurrence of unanticipated or non-contractible states of the world, bank loan renegotiation helps updating and completing the credit agreement (Nikolaev, 2017; Roberts, 2015; Roberts and Sufi, 2009), and, at least theoretically, achieving efficient investments and optimal risk-sharing (Aghion et al., 1994).

Despite a rich theoretical literature dealing with debt renegotiation[1], most of the existing and scarce empirical evidence focus on the causes of renegotiation (Nikolaev, 2017; Roberts, 2015; Roberts and Sufi, 2009). The rare empirical studies of the consequences of renegotiation focus exclusively on debt covenants violations and amendments (Chava and Roberts, 2008; Denis and Wang, 2014; Dichev and Skinner, 2002). However, renegotiation is a much richer and complex phenomenon: most of credit agreements are amended outside of distress and early in the life of the loan, with substantial changes to most of the initial terms of the contract (amount, maturity, pricing, covenants…), sometimes amended multiple times. Furthermore, bank loan renegotiation has a significant and positive impact on firm value: borrower's abnormal return increases by 10% to 15% around the announcement date of an amendment to a credit agreement (Godlewski,

[1] See for instance Aghion and Bolton (1992); Dewatripont and Maskin (1990); Fudenberg and Tirole (1990); Hart (2001); Hart and Moore (2008, 1999, 1988); Maskin and Tirole (1999).

2015a). Therefore, the economic consequences of bank loan renegotiation on firms calls for more empirical investigation.

The purpose of this study is to empirically investigate the impact of bank loan renegotiation on corporate policies and performance. Following the literature (see section 2), I consider several proxies for financial (total and long-term debt ratios) and investment (total and long-term investment ratios) policies, and performance (ebitda to assets and return on assets) as dependent variables. This allows to test the impact of renegotiation on overall and long-term financial and investment policies, and on operational (or economic) and overall firm performance. My main dependent variable of interest is a dummy variable equal to one if the loan was renegotiated.

I start with a baseline OLS regression, controlling for firm size, tangibility, liquidity, growth, profitability, cash, and default risk, as well as industry, country and year fixed effects. Next, I implement an endogenous switching regime model (Maddala, 1986)[2] as I am interested in estimating a causal relationship between renegotiation and corporate policies and performance, and because I am facing a potential endogeneity problem[3]. In the first stage (treatment or switching equation), I model the renegotiation likelihood using a probit regression with loan, lenders, and firm characteristics. In the second stage (regime or outcome equations), I use the same dependent variables as in the baseline OLS regression. Another important advantage of this approach is to allow the measurement of the average treatment effect on the treated (ATET). It is the average gain (or loss) of debt, investment, and performance ratios (outcomes), for those firms

[2] The model is explained in detail in section 3.2.

[3] Indeed, the renegotiation likelihood may be endogenous with respect to corporate policies and performance. For instance, more profitable firms willing to alter their financial or investment policies may be more prone (and eventually successful) to renegotiate their loan(s)

who renegotiated their loan(s) (treatment). According to my knowledge, this is the first application of this model to the analysis of the consequences of bank loan renegotiation for firms[4]. I perform my analysis on a large sample of 5,000 loans to 10,000 firms over a period of 16 years and from 28 European countries.

My main findings can be summarized as follows. Bank loan renegotiation has a significant and causal impact on corporate policies and performance[5]. Renegotiation increases firm total and long-term debt while reducing investments, with a positive impact on operational performance and a negative effect on overall performance. These relationships are endogenous, and the impacts are economically significant. The ATET ranges between 4% and 6% for debt ratios, 0.4% and 1.4% for ebitda to assets, and between -0.4% and -1.1% for return on assets. Renegotiation provides the firm with additional degrees of freedom for running its business and helps unlocking the economic potential of the firm. However, this mostly translates into greater indebtness and operational performance, rather than investments. Renegotiation has a specific effect with respect to firm's tangibility, growth, opportunities and cash. It enhances the value and redeployment capacities of tangibles assets and improve firm's economic growth and future opportunities, increasing their positive impact on financial policy and operational performance. However, renegotiation implies a negative effect of free cash flow on RoA.

Additional results from sensitivity tests confirm main findings and shows that several specific characteristics influence the effect of renegotiation on corporate policies and performance. Amendments to loans with a diffuse and diluted structure of claimholders exhibit a

[4] Aslan (2016) uses endogenous switching regressions to analyze the consequences of relationship lending.
[5] Renegotiations occur before half of the initial loan maturity elapses and concern mostly the amount and/or the maturity, with substantial amendments. Loans with less informational frictions to less opaque, smaller and riskier firms with more liquid assets and cash are more prone to renegotiation.

certification and signaling effect which doubles the impact of renegotiation on financial policy. It is also the case when amending loans that are less relationship-like, such as term loans. Similarly, firms with greater opportunities and performances benefit more from renegotiation with respect to their financial policy. On the contrary, "easier" renegotiations involving less restrictive contracts without collateral or covenants have a lower impact on debt ratios. Also, firms with less tangible assets see their renegotiation impact diminished, as the redeployment of these assets is less important in that case. This impact can even turn negative when renegotiating long maturity loans or for firms with larger amounts of cash.

My findings contribute to the empirical literature on private debt renegotiation (Nikolaev, 2017; Roberts, 2015; Roberts and Sufi, 2009), particularly on its consequences for borrowers (Chava and Roberts, 2008; Denis and Wang, 2014; Dichev and Skinner, 2002). Overall, I confirm a significant and causal effect of renegotiation on corporate policies, particularly financial policy. However, my analysis is more complete as I consider the full spectrum of loan renegotiations and not only debt covenants violations and amendments. In addition to corporate policies, I also consider the consequences of renegotiation on firm performance, completing the market based view of borrower performance following renegotiation (Godlewski, 2015a). I also use a much larger sample of loans and firms compared to existing studies and I am the first to apply an original and adequate methodology – endogenous switching regime model - within a treatment effect framework. Finally, my sample covers a large period (1999-2015) and 28 European countries, providing a cross-country perspective on the consequences of bank loan renegotiation for corporate policies and performance of firms. According to my knowledge this is the first study of the impact of private debt renegotiation outside of distress on firm's financial and investment policies, and performances, in Europe. Due to the bank-based nature of the European financial

system where companies rely mostly on credit for their external corporate financing, a better understanding of the consequences of debt contracts' flexibility on firms is of utmost interest.

The reminder of the paper is organized as follows. Section 2 discusses the relevant literature and lays down the hypotheses. Data, methodology and summary statistics are described and discussed in section 3. Section 4 provides the results. I conclude in section 5.

2. Literature and hypotheses

This section is devoted to the discussion of the relevant theoretical and empirical literature on debt renegotiation and its effects on firms.

According to the incomplete contract theory, the renegotiation of a credit agreement is closely related to designing an optimal decision-making mechanism for revising the initial terms in case of contingencies (Hart and Moore, 1999, 1988), eventually allowing to achieve efficient investments and optimal risk-sharing (Aghion et al., 1994). Debt renegotiation occurs when the contracting parties are unable or unwilling to commit to the initial terms of the contract because it stipulates an ex post inefficient outcome due to unanticipated or non-contractible events. Amendments to the initial contract occur when creditors receive and evaluate information after origination that resolves uncertainty about borrowers' credit quality and/or alternative borrowing opportunities.

Credit contracts allow lenders to affect borrower's incentives through the allocation of decision rights (Dumitrescu, 2007; Fan and Sundaresan, 2000; Gorton and Kahn, 2000). In the presence of asymmetric information, better informed agents (borrowers) yield control rights to less informed agents (lenders) in the initial contract, especially through covenants (Dessein, 2005; Garleanu and Zwiebel, 2009). These are later amended upon arrival of new information to re-

equilibrate surplus sharing between the parties. However, firms with high ex ante credit risk may find the option to renegotiate most valuable (Berlin and Mester, 1992).

The credit contract has important effects on borrower's investment, operating and financing policies because creditors frequently influence corporate policies through debt renegotiation. This can be done by intervening directly in investment decisions and capital budgeting or indirectly through credit constraints. For instance, when a firm wishes to raise new debt to finance an investment opportunity, debt renegotiation outside of distress may occur through waiving financial covenants and thus mitigating agency costs of debt. When a firm wishes to reorganize its capital structure, distressed renegotiation may avoid bankruptcy costs. Hence, debt renegotiation not only serve to resolve distress but also constitute a governance channel through which creditors intervene in firm policies (Arnold and Westermann, 2016). Therefore, debt renegotiation can avoid problems such as overleverage and overinvestment (Arnold and Westermann, 2016), underinvestment (Bergman and Callen, 1991; Pawlina, 2010), ill-timed liquidation (Mella-Barral, 1999) or involuntary liquidity default (Acharya et al., 2005).

Although still scarce, empirical evidence shows that renegotiations are prevalently a consequence of borrowers' desire to go beyond the restrictive initial debt contract.

Roberts and Sufi (2009) find that most contracts are renegotiated, often early in the life of the loan, with important amendments to the initial terms. The accrual of new information concerning the credit quality, investment opportunities, the collateral of the borrower, and fluctuations in credit and equity markets are the main determinants of renegotiation. Roberts (2015) shows that most loans are renegotiated multiple times over relatively short horizons, leading to significant changes to the contract terms. The main determinants of this process are the financial health of the borrower and the lender, the uncertainty regarding borrowers' future

profitability, and the outcome of renegotiation. Nikolaev (2017) finds that uncertainty is a strong determinant of renegotiation frequency. He also shows that the renegotiation dynamics are driven by contracting frictions, agency or information problems of the borrower-lender relationship and by demand for lender's monitoring process. Regarding the case of debt covenants renegotiation, Dichev and Skinner (2002) show that debt covenants are set relatively tightly and that their violations are common while not being associated with financial distress. Denis and Wang (2014) find that debt covenants are frequently renegotiated, primary to relax existing restrictions, resulting in economically large changes in existing limits.

In Europe, multiple renegotiations are less frequent, covenants are less frequently amended, and the first renegotiation occurs much later. Nevertheless, renegotiations lead to substantial amendments to main initial loan terms (Godlewski, 2015b, 2014). Also, renegotiating financial covenants is associated with the largest significant and positive impact on a borrower's abnormal return, ranging between 10 and 15%. Early and less frequent renegotiations also lead to significant and positive abnormal returns (Godlewski, 2015a).

Overall, these findings are consistent with the idea that debt renegotiation helps to complete the credit agreement in response to unforeseen contingencies while the renegotiation of financial contracts may certify borrower's quality.

Regarding the effects of private debt renegotiation on borrowers, empirical evidence is mostly focused on debt covenants violation and subsequent renegotiation. Dichev and Skinner (2002) conclude that private lenders use debt covenant violations as a screening device, and frequently waive violations or reset covenants without imposing serious consequences on borrowing firms. Chava and Roberts (2008) examine the impact of debt covenant violations on corporate investment. They find that capital expenditures decline in response to a covenant

violation by approximatively 13% relative to investment prior to violation. This reduction in investment is more important when agency and information problems are more severe. They conclude that transfer of control rights leads to a significant decline in investment activity as creditors intervene, mitigating investment distortions arising from financing frictions. Denis and Wang (2014) show that borrower's post-renegotiation investment and financial policies are strongly associated with the covenant amendments. Creditors have strong control rights over the borrower's operating and financial policies and they exercise these rights in a state-contingent manner through covenant renegotiation.

Following the existing literature, I can broadly classify debt renegotiation according to its reasons and its outcomes. Outcomes can be positive, negative or eventually mixed. Positive (negative) outcomes mean that amendments are favorable (unfavorable) to the borrower, such as waiving or tightening of covenants, positive or negative changes to loan amount, maturity… The reasons for renegotiation are related to the arrival of new information since loan origination. On the extremes, this information can be either "good" or "bad", leading to renegotiations outside of distress or distressed. The former means that the firm's conditions improved, and it may want to (positively) alter financial or investment policies (e.g. increase leverage or investments). The latter means that the firm is in distress and renegotiation may help to avoid liquidation or bankruptcy. In that case corporate policies can be altered but in a constrained and negative way (e.g. decrease leverage or scale down investments). However, according to the empirical literature, even negative information may lead to positive outcome, for instance waiving covenants following debt covenant violation.

Depending on the configurations of observed debt renegotiations (outside of distress vs distressed and positive vs negative outcomes), I can draw my empirical hypotheses. As

renegotiation is triggered by the arrival of new information regarding the borrower conditions and the relationship with the lenders, I expect a significant effect of renegotiation on corporate policies and performance.

H1: Bank loan renegotiation has a significant impact on corporate policies and performance.

The direction of this effect will depend on the reasons for renegotiating and its outcomes. If I consider that good information triggers renegotiation leading to positive outcomes, I can expect a positive impact on financial and/or investment policies, with an overall positive impact on performance. On the contrary, bad information leading to negative outcomes should negatively impact financial and investment policies, and thus performance. In the cases with mixed outcomes and new information, I can also observe diverging or even opposite impacts on investment and financial policies,

H2: Bank loan renegotiation has a positive / negative impact on financial and investment policies, and on firm performance.

3. Data, methodology and summary statistics

In this section, I describe the construction of my sample, present the methodology, and provide summary statistics.

3.1 Data

I obtain details of loan amendments and originations, lenders, and firm characteristics from Bloomberg Professional Terminal Service (Bloomberg). I start by extracting all available loan amendments[6] in Europe with effective dates between January 1999 and December 2015, excluding

[6] According to Bloomberg, an amendment is defined as an event when a credit agreement has been changed and the company filed an amendment in order to change some terms of the agreement. A maintenance occurs when a company uses an option that exists in the credit agreement (in this case, no amendment is filed). A waiver means that the lenders waived certain covenants for a specified number of days. A forbearance occurs when a company defaults (e.g. missed payment or failure to comply with covenants).

financials and governments. This data contains information on the loan amended terms, such as changes to amount (facility, tranche, outstanding…), maturity, covenants (financial and non-financial), pricing grid, and definition (non-material amendment). I am also able to obtain information on old and new loan terms but only for material amendments such as changes to amount or maturity. Next, I extract all loans to European borrowers (excluding financials and governments) with effective dates between January 1999 and December 2015. This provides me with information at loan origination such as the loan facility amount, spread, maturity, covenants, collateral, type, purpose, currency, etc. I also obtain information on the lenders such as their number, their retained shares of the loan, their roles (or titles), and their identities (names). This latter piece of information allows me to obtain information on League Tables from Bloomberg. I merge information on loan amendments and originations using unique identifiers. Sample size is reduced mostly due to missing information on the lenders. Finally, I use the unique borrower identifiers to add firms' characteristics such as accounting variables, financial ratios, and descriptive information (country, industry), and merge this information with the loan amendments and originations sample. This step reduces drastically the size of the sample due to missing information on firms' characteristics.

The initial sample covers 9,852 firms and 4,948 loan facilities originated on the European credit markets over 16 years and 28 countries. For comparison, Denis and Wang (2014) use a sample of 1,000 loans to 819 firms, Chava and Roberts (2008) work on a sample ranging between 499 and 1,100 firms (927 and 2,055 loans), and Dichev and Skinner (2002) use a sample of 2,810 firms and 8,004 loans.

3.2 Methodology

My main objective is to test the effect of renegotiation on corporate policies and performance. In a first step, I begin my empirical examination with a multivariate OLS regression as my baseline model:

$$Y_{it} = \alpha_0 + \alpha_1 R_{it} + \alpha_2 X_{it-1} + \gamma_i + \delta_t + \eta_j + \varepsilon_{it} \quad (1)$$

where *i*, *t* and *j* correspond to the firm, year and country respectively. Following notably Chava and Roberts (2008) and Denis and Wang (2014), my dependent variable Y_{it} captures financial policy (total and long term debt ratios), investment policy (total and long term investment ratios), and performance (ebitda/assets and return on assets)[7]. My main explanatory variable of interest R_{it} is a dummy variable equal to one if a firm renegotiated a loan, zero otherwise. The main parameter of interest is α_1, which represents the effect of renegotiation on corporate policies and performance. Following the above mention authors as well as de Jong et al. (2008), Gungoraydinoglu and Öztekin (2011), and Aslan (2016), I consider the following X_{it-1} (lagged) specific firm characteristics: tangibility ratio, z score, total assets, Tobin's q, ebitda ratio, current ratio, sales growth, cash flow[8]. I control for firm rating and listed status, as well as country GDP growth. $\gamma_i, \delta_t, \eta_j$ are industry, year and country fixed effects. ε_{it} is a random error term.

The above baseline approach does not allow to consistently estimate any causal relationships. This leads, in a second step, to implement a treatment effect approach. Furthermore, I'm facing a potential endogeneity problem when assignment to a treatment (renegotiation) may be dependent of the outcome (corporate policies and performance). Indeed, the renegotiation decision may be endogenous with respect to corporate policies and performance. For instance,

[7] All variables are defined in appendix B.

[8] In some specifications, I also consider lagged values of debt and investment ratios as explanatory variables.

more profitable firms willing to alter their financial or investment policies may be more prone (and eventually successful) to renegotiate their loan(s). This correlation may also come from unobservable variables. This violates the conditional independence assumption which assumes that no unobserved variables affect both treatment assignment and the outcome. In order to estimate a causal effect of renegotiation on corporate policies and performance, and take this endogeneity issue into account, I employ an endogenous switching regression model (Maddala, 1986a; 1986b). This is, according to my knowledge, the first application of this model to the analysis of bank loan renegotiation effects on firm policies and performance[9].

Consider the following model which describes the behavior of a firm with a criterion (or switching) function, that determines which regime the firm faces, and two regression (regime) equations:

$$R_{it}^{*} = bZ_{it} + \epsilon_{it} \quad (2)$$

$$\text{Regime 1: } Y_{1it} = \beta_1 X_{1it-1} + \varepsilon_{1it} \text{ if } R_{it} = 1 \quad (3)$$

$$\text{Regime 2: } Y_{2it} = \beta_2 X_{2it-1} + \varepsilon_{2it} \text{ if } R_{it} = 0 \quad (4)$$

The switching equation (2) sorts firms over two different treatments: renegotiation vs no renegotiation. The treatment determines which regime (1 or 2) the firm faces in equations (3) and (4). R_{it}^{*} is an unobserved latent variable and Z_{it} includes a constant term and other explanatory variables (discussed below). Same variables as in equation (1) are used for equations (3) and (4). Renegotiation is modeled as $R_{it} = 1$ if $bZ_{it} + \epsilon_{it} > 0$ and $R_{it} = 0$ if $bZ_{it} + \epsilon_{it} \leq 0$. ϵ_{it} is an error term. Y_{1it} is the (potential) outcome for renegotiation and Y_{2it} is the (potential) outcome for no renegotiation, but for the same firm. I can only observe Y_{1it} if $R_{it} = 1$ and Y_{2it} if $R_{it} = 0$.

[9] Chava and Roberts (2008) and Denis and Wang (2014) use regression discontinuity design models because their empirical setting is based on covenants violations with respect to specific thresholds. Aslan (2016) uses endogenous switching regressions in the case of relationship lending.

Differential financial and investment policies, and performance, across firms in regimes 1 and 2 are captured by differences between β_1 and β_2. The residuals in outcome equations (3) and (4) are correlated with the residual in the switching equation (2). The model is estimated using maximum likelihood. Another advantage of this model is that I can test whether this correlation is statistically significant; in other words, I can test the assumption that the unobservable that affect the treatment assignment also affect the outcome. Finally, this approach allows to estimate the average treatment effects on the treated: $ATET = E(Y_{1it} - Y_{2it}|R_{it} = 1)$. The ATET measures the average gain (or loss) of debt, investment, and performance ratios (outcomes), for those firms who renegotiated their loan(s) (treatment).

I rely on previous work, notably by Roberts and Sufi (2009) and Godlewski (2017), for explanatory variables in equation (2) and use loan, lenders, and firm characteristics. I consider loan amount, maturity, covenants, collateral and previous loan issuance, and the number of lenders, the concentration of retained loan shares, the lead lender retained loan share, and the existence of a previous relationship. I also include borrower rating and listing, and, in subsequent specifications, also firm size, leverage, Tobin's q, performance, and ebitda/interests ratio. I control for GDP growth, and firm industry and country.

3.3 Summary statistics

Table 1 presents the country composition of the sample and the country average proportion of renegotiated loans for the whole period. Among the 28 countries covered, United Kingdom represents the largest portion of firms (and loans), followed by France, Germany, Spain, Italy, and Netherlands. These six countries account for 71% and 70% of the firms and loans in the sample. The country coverage is consistent with the European syndicated lending market according to Bloomberg or Thomson Reuters annual reports. The heterogeneity in loan

renegotiation across countries over the sample period is important, ranging from 2.50% in Greece to 49% in Luxembourg. Figure 1 shows the distribution of loan originations and renegotiations by year. This distribution is consistent with the cyclicality of the credit market, with booms and busts around the Credit Crisis in 2008 and 2009 and the Eurozone Crisis in 2012 and 2013.

Panels A and B in table 2 and figure 2 provide more insights into bank loan renegotiations. On average 22% of the loans experience a renegotiation[10]. Figure 2 shows the breakdown of amended loan characteristics following renegotiation. Loan amount represents the most amended characteristic (30%), followed by definition (24%), which is a non-material amendment, maturity (22%), and covenants (9% for financial and 5% for non-financial)[11]. For the sub-sample of renegotiated loans, the average duration from origination to amendment equals 2.8 years or 44% of the average initial maturity[12]. Material changes to amount and maturity equal -71 million USD and +49.6 months respectively (equivalent to 4% and 69% of initial loan amount and maturity)[13]. Positive changes to amount or to maturity occur in 47% and 92% of the respective renegotiation cases, leading to changes equal to 225 million USD and 59 months respectively. Panel B of table 2 shows a breakdown of various renegotiation packages[14]. The most important package involves a single amended loan term which is the amount (18%), followed by maturity (13%), and definition (12%). Amending amount and maturity represents 9% of the renegotiation packages, followed by

[10] This figure is lower when compared to US samples: 37% (Nikolaev, 2017), or 60% to 73% (Denis and Wang, 2014; Roberts, 2015). There are several explanations for these differences. First, I investigate a different economic area which is much more bank-based and where legal protection of creditors is weaker. Second, the definition of renegotiation may vary. For instance, Roberts (2015) considers amendment, amendment and restated, and rollover as renegotiations, which might mechanically increase the proportion of renegotiations, while Denis and Wang (2014) focus only on renegotiations of covenants, amount, maturity or interest rate.

[11] These figures are close to Roberts (2015) who finds that changes to amount and maturity occur in 27% and 29% of the cases respectively.

[12] Roberts and Sufi (2009) find that renegotiation occurs after 57% of the initial maturity elapses, while Denis and Wang (2014) find that first renegotiation occurs on average after 1/3 of the maturity has elapsed.

[13] Roberts and Sufi (2009) find +193 million USD and 25.53 months respectively.

[14] Renegotiation packages accounting for at least 1% of the renegotiations are displayed. The total number of different packages is 60.

amount and definition (7%). Overall, renegotiations occur before half of the initial maturity elapses and concern mostly loan amount and/or maturity with significant changes, especially regarding maturity.

Panel C provides descriptive statistics for all variables[15] while panel D provides information on borrower industry sector, loan purpose, type, and currency. In a nutshell, these are large loans (1.7 billion USD) originated by 10 lenders for a maturity of 6 years with few covenants attached and secured in 38% of the cases. Loans' concentration is low (6%) but the lead lender retains a significant portion of the loan (29%). Firms are also large (14 billion USD), often listed with debt ratio at 30% and investments at 8% of total balance sheet. Tangible assets represent 29% of total assets, with a current ratio at 1.45 and Tobin's q at 1.21. Their performance ranges between 11% and 4% depending on the measure, while cash flow represents 2% of the balance sheet. The average Altman z score equals 2.64.

4. Results

This section is devoted to the discussion of univariate and multivariate results, and sensitivity analysis.

4.1 Univariate results

I start with the discussion of univariate results displayed in table 3. The first part of the table shows the average values of firm characteristics for borrower who renegotiated their loan(s) vs those who didn't, along with *t* statistics. Most of the *t-tests* are significant meaning that renegotiating firms are significantly different from those who don't renegotiate. Regarding financial policies, firms that renegotiate are slightly more indebted, both in total and long-term

[15] All firm variables are symmetrically winsorized at 1% to minimize the influence of outliers.

debt terms. Their investment policies are less important, as total and long-term investments are slightly lower. Renegotiating firms are overall less performant if I consider their return on assets. These firms are more often rated and listed, are smaller (by around 5 billion USD), are slightly more liquid with larger cash flows, and are riskier. Overall, less opaque but smaller and riskier firms with more liquid assets and cash tend to renegotiate their loans. Renegotiation is related to slightly greater debts, lower investments, and *in fine* weaker performance.

The second part of table 3 shows the univariate results for loan and lenders characteristics at origination. All *t* statistics are significant meaning that renegotiated loans are significantly different from non-renegotiated loans since origination. Renegotiated loans are larger (by 800 million USD), with longer maturity (by almost one year), have more often covenants (threefold) and collateral (double). Such loans are originated by borrowers who issued loans more often in the past and are arranged by a larger number of lenders (double) with a greater concentration of the retained shares, although with a much lower lead lender share. Slightly less often such loans are relationship loans. Overall, renegotiation concerns loans with less informational frictions to less opaque and uncertain borrowers at origination while the structure of the lending pool mitigates potential moral hazard problems.

4.2 Baseline OLS regression results

I start with the discussion of multivariate results in table 4 for the estimation of the baseline model (equation 1) using OLS. There are six dependent variables: financial (*Debt* and *LT debt*) and investment (*Investments* and *LT investments*) policies and performance (*Ebitda* and *RoA*). The explanatory power of the regressions, measured by the adjusted R^2, ranges from 9% (*LT investments*) to 37% (*Ebitda*). The coefficient for *Renegotiation* is always significant, with (absolute) values ranging from 0.002 to 0.009. This first result validates *H1*: bank loan renegotiation and

corporate policies and performance are significantly correlated[16]. The coefficients signs are similar to what I could expect from the univariate results in table 3: positive for financial policies, negative for investment policies, and positive for performance. These results make sense if I recall the characteristics of amendments following renegotiation (table 2, panels A and B). Loan amount and maturity are the most frequently renegotiated terms: 30% and 22% overall, 18% and 13% as unique amended terms, and 9% when both are renegotiated. Following renegotiation, maturity is extended by 50 months on average while less than a half of amount amendments are positive. Altogether, an import portion of renegotiations lead to maturity extensions while reducing loan amounts, allowing to increase firm debt while reducing their investments (but less if I consider long-term investments). This has a positive effect on operational performance but reduces general performance.

A clear majority of other explanatory variables is significant. Larger firms with more tangible assets, growth opportunities and operational performance have larger debt ratios, while the opposite is true for less riskier firms with greater liquidity and cash. Investments are positively related to firm size, growth opportunities and liquidity. Less risk, more tangible assets, operational performance and cash reduce investments. Performance is positively affected by firm size, tangibility, risk, growth opportunities and cash. Liquidity is negatively correlated with operational performance.

Overall, corporate policies and performance are significantly related to bank loan renegotiations. Firm operational performance and debt ratios are positively affected, while investments and RoA are negatively affected. Renegotiation allows to increase firm debt while reducing investments, with a positive effect on operational performance and a negative effect on

[16] However, the economic magnitude of this effect is relatively weak.

general performance. However, these baseline results only confirm a significant correlation between corporate policies and performance and bank loan renegotiation. To establish any causal relationships, I need to apply a treatment effect approach and perform an endogenous switching regime analysis.

4.3 Endogenous switching regressions results

In a first stage, I estimate the switching (or treatment) equation (2) using a probit regression. Results are shown in table 5. I test three alternative specifications: with loan and lenders characteristics at origination only (1), and with current and lagged firm characteristics (2 and 3). According to models' statistics, specification (1) has the best explanatory and reclassification power (pseudo R^2 and % of correct reclassification equal to 21% and 80.32%). A clear majority of coefficients are significant. I first comment on specification (1) that confirms univariate results in table (3). Larger loans with longer maturities, covenants and collateral, arranged by numerous lenders with concentrated retained shares, to rated and listed firms who had previously issued loans are more often renegotiated. Relationship loans with larger retained shares by the lead lenders are less often renegotiated. The largest economic significance is associated with lead share (marginal effect equal to -40%), followed by lenders' concentration (19%), covenants (17%) and collateral (13%). In other words, organizational and contractual mechanisms that mitigate adverse selection and moral hazard have the largest effects on renegotiation. These results are consistent with recent evidence by Nikolaev (2017) who shows that demand for monitoring and strategic aspects of control rights play an important role in the renegotiation decision.

Contractual features such as collateral mitigates adverse selection problems (Besanko and Thakor, 1987a, 1987b; Bester, 1985) and are more prone to renegotiation (Bester, 1994) while

covenants mitigate moral hazard risk and amending restrictive covenants allows to rebalance the allocation of contractual control rights (Dessein, 2005; Garleanu and Zwiebel, 2009). Larger pools of lenders are associated with less informational frictions while their concentration in terms of retained shares of the loan mitigates moral hazard among lenders (Lee and Mullineaux, 2004; Preece and Mullineaux, 1994; Sufi, 2007). Other features that mitigate information asymmetry and uncertainty are also important. Larger amount and longer maturity are associated with lower information asymmetry and less uncertainty (Berger et al., 2005; Mosebach, 1999) while rated and listed firms who issued more loans in the past are less opaque. These features might also enhance firm bargaining power and therefore increase the likelihood of renegotiation. The latter is reduced when the lead lender retains a larger share of the loan, as this increases its own bargaining power. Relationship loans should allow writing more complete contracts since origination because of reduced information asymmetry and better mutual knowledge between contracting parties, thus reducing the scope for renegotiation.

According to specifications (2) and (3), larger firms with greater growth opportunities renegotiate less often while the opposite occurs for firms with greater financial leverage, operational performance and better interests' coverage. Among these variables, the largest marginal effects (between 17% and 20%) is associated with the ebitda/assets ratio. These results confirm that firms in rather better conditions tend to renegotiate their loans to go beyond the initial restrictive debt contract, eventually thanks to better bargaining power[17].

[17] I notice that coefficients for *Amount, Previous issues, Concentration* and *Listed* change signs or become insignificant, due to the inclusion of firm characteristics and because the sample composition changes.

In a second stage, I estimate the regime equations (3 and 4). Results can be found in table 6[18]. Panels A, B, and C give results for financial (*Debt, LT debt*) and investment (*Investments, LT investments*) policies, and performance (*Ebitda, RoA*) respectively. For each table, the first line informs which switching (or treatment) model was used. I provide two alternatives: one based on the results of probit regression (1) (*Renegotiation (1)*), and another based on the results of probit regression (3) (*Renegotiation (3)*) from table 5. The second line reminds which proxy of financial and investment policies, and performance is the dependent variable (same as in table 4). For each of them, the third line denotes which regime equation's results are displayed: R (renegotiation – equation 3) and NR (no renegotiation – equation 4). At the bottom of each table, the average treatment effect on the treated (ATET) is provided, while the Chi^2 statistic gives the result of a Wald test of endogeneity[19].

In panel A the ATET is significant and ranges between 4% and 6%, meaning that renegotiation causes debt ratios of renegotiating firms to increase by this percentage, compared to those firms that didn't renegotiate their loan(s). In other words, bank loan renegotiation increases debt ratios. I note that according to the Wald tests there is endogeneity between renegotiation and financial policy. Most of the coefficients have the same significance and signs as in table 4. However, I note several cases where the magnitudes and signs differ according to the regime. The effect of tangibility, and sales and GDP growth on financial policy are larger for renegotiating firms. Renegotiation increases the value of tangible assets for financial policy, as well as the potential of stronger firm and economy growth. I also notice a different effect of cash flow: renegotiating firms

[18] I focus on the specifications corresponding to models (1) in table 4 (i.e. without lagged debt and investment ratios as explanatory variables).

[19] More formally, the null hypothesis is that the treatment and outcome unobservables are uncorrelated.

experience a positive impact of cash on financial policy (although the coefficient is not significant), while the absence of renegotiation implies a negative impact of cash on debt ratios.

In panel B the ATET is significant for *LT investments* only with a small magnitude of 0.6%. This result is different as compared to table 4, where the coefficient for *Renegotiation* was negative. The relationship between renegotiation and investment policy is endogenous only for *LT investments* according to the Wald tests. Most of the coefficient have similar significance and signs as in table 4, without noticeable differences between renegotiating and non-renegotiating firms. The evidence is rather mixed, without an economically strong impact of renegotiation on investment policy.

Finally, in panel C the ATET is significant and positive for operational performance (ranging from 0.4% to 1.4%) and negative for general performance (ranging from -0.4% to -1.1%). These results are consistent with those obtained in the baseline regressions (table 4). The Wald tests confirm the endogenous relationship between renegotiation and performance (with one exception). Again, most of the coefficients are similar in significance and sign to those in table 4, but I observe several differences in their magnitude depending on the regime. Greater tangibility of assets has a larger positive impact on operational performance for renegotiating firms, as well as growth opportunities (Tobin's q) and economic growth (GDP) which have a similar effect on general performance. On the contrary, cash flow has a negative impact on RoA for renegotiating firms. These results are close to the ones for financial policy: renegotiation allows to enhance the value of firm's tangibility and growth opportunities for its performances, while it reduces the effect of cash flow.

Overall, I find that renegotiation has a significant and causal impact on corporate policies and performance. This effect is the most important for financial policy and operational

performance. Renegotiation has a specific effect with respect to firm's tangibility, growth, opportunities and cash. In my sample, amendments concern mostly loan amount, maturity and financial covenants. Renegotiation allows to update and go beyond the initial, eventually restrictive, credit agreement, for instance by increasing maturity or amount. It also helps reduce informational frictions, uncertainty and moral hazard in the bank-borrower relationship. This provides the firm with additional degrees of freedom for running its business. In other words, renegotiation helps unlocking the economic potential of the firm. However, this potential translates in greater indebtness and operational performance, rather than increased investments.

Tangible assets are the economic (or core) assets delivering economic performance. They can also serve as collateral to ease the capacity to raise external funding and are easier to liquidate to raise cash. Renegotiation enhances the value and redeployment capacities of its tangibles assets, with positive impact on debt and operational performance. Sales growth is a measure of firm's activity which may translate into future profits and cash flows while Tobin's q is a proxy for growth and investment opportunities, as well as investors' confidence in the company. Firm's growth is of course related to economic growth, measured here by GDP growth. Renegotiation allows to improve the impact of firm's economic growth and future opportunities for their financial policy and performance. Finally, renegotiation makes free cash flow more harmful for RoA. This result is related to the cons of greater flexibility of the firm, with greater moral hazard problems on the management side and less efficient use of firm's resources to achieve better returns.

4.4 Sensitivity tests

For my sensitivity tests, I am interested if and how specific contractual, lenders and borrower characteristics[20] influence the causal effect of renegotiation on corporate policies and performance. I estimate equations (3) and (4) with debt, investments and ebitda ratios as dependent variables on various subsamples[21]. I present the ATET coefficients and Wald tests in table 7. Panels A and B display the results for specific contractual and lenders characteristics, and firm characteristics respectively. I compare these results to those obtained in table 6: ATET around 6% for debt, -0.3 (but non-significant) for investments, and 0.4% for ebitda.

In panel A, results for less known firms (with fewer past issues or without relationship) which may be more informationally problematic are similar to main results in table 6 (with a negative effect on investments as the ATET is equal to -1.6%). The renegotiation of loans without contractual features that mitigate the consequences of informational frictions, such as the absence of collateral or covenants, has a reduced impact on debt (ATET around 3%). Renegotiating a less restrictive contract is less costly and diminishes the certification and signaling value of renegotiation, especially for financial policy. The renegotiation of term loans which are less relationship-like contracts (contrary to revolving loans) almost doubles the positive impact on financial policy (ATET equal to 11%), with small and positive effects on investments and performance. Here, the certification and signaling effect of renegotiation is reinforced due to the contractual nature of the credit agreement. On the contrary, renegotiating loans with longer maturities (above sample median of 5.2 years) is negative for financial (ATET equal to -1.4%) and investment (ATET equal to -1.7%) policies. As maturity is usually extended following renegotiation,

[20] The choice of these characteristics is also guided by the statistical and economic significance of the coefficients in table previous tables and econometric issues related to estimation convergence.
[21] I rely on model (1) for the estimation of the treatment (renegotiation) equation (2) (i.e. without firm characteristics).

one may consider that renegotiating an already long maturity is a "bad" signal for corporate policies, without important economic advantages for the company. Larger pools of lenders or lower retained share of the loan by the lead lender enhance the positive effect of renegotiation on financial policy (ATET ranges between 7% and 10%). Such structures are usually associated with borrowers or deals that are less problematic in terms of adverse selection and moral hazard, easing the renegotiation process. Furthermore, a diffuse or diluted structure of claimholders reinforces the bargaining power of the firm and the certification or signaling effect of renegotiation.

In panel B, many specific firm characteristics lead to overall similar results as in table 6. It is the case for larger and more liquid firms (although with a negative impact of renegotiation on investments), with larger sales growth, and without a rating. Firms with less tangible assets experience a diminished effect of renegotiation on their financial policy (2.4%), which is expected due to the nature and importance of firm's tangibility. On the contrary, I notice that renegotiation has a larger impact on financial policy when the firm has greater growth opportunities or when it is more profitable (ATET between 9.8% and 10.7%). This result reinforces previous findings regarding the unlocking of firm's potential with respect to financial policy following renegotiation. Finally, firms with larger cash flows imply no effect of renegotiation on financial policy and performance, except for investments with a negative impact -1.3%. Such firms may rely more on their cash and thus the potential of renegotiation is reduced, although the negative impact on investments confirm the moral hazard problems associated to excess cash.

Overall, these additional tests confirm main findings while also showing that several specific characteristics influence the effect of renegotiation on corporate policies. Amendments to loans with a diffuse and diluted structure of claimholders exhibit a certification and signaling effect which doubles the impact of renegotiation on financial policy. It is also the case when

amending loan types that are less relationship-like, such as term loans. Similarly, firms with greater opportunities and performances benefit more from renegotiation with respect to their financial policy. Here I confirm the important role of renegotiation in unlocking the economic potential of firms by updating the initial credit agreement. On the contrary, "easier" renegotiations involving less restrictive contracts without collateral or covenants have less impact on debt ratios. Also, firms with less tangible assets see their renegotiation impact diminished, as the redeployment of these assets is less important in that case. This impact can even turn negative when renegotiating long maturity loans or for firms with larger amounts of cash.

5. Conclusion

I investigate the effects of bank loan renegotiation on firm's financial and investment policies, and performances. I employ OLS and endogenous switching regime regressions using a large sample of loans to firms from 28 European countries over a long period from 1999 to 2015. The treatment effect approach allows me to estimate a causal relationship between renegotiation and corporate policies and performance, while controlling for its endogeneity. I can also compute the average treatment effect on the treated, measuring explicitly the consequences of renegotiation for borrowers.

I find that bank loan renegotiation has a significant and causal impact on corporate policies and performance. More precisely, renegotiation provides the firm with additional degrees of freedom and unlocks its economic potential. This increases firm debt while reducing investments, with a positive impact on operational performance and a negative effect on general performance. The ATET ranges between 4% and 6% for debt ratios, 0.4% and 1.4% for ebitda to assets, and between -0.4% and -1.1% for return on assets.

Renegotiation has an important effect regarding firm's tangibility, growth, opportunities and cash. It enhances the value and redeployment capacities of tangibles assets, with positive impact on debt and operational performance. Renegotiation allows to improve the impact of firm's economic growth and future opportunities for their financial policy and performance. However, renegotiation makes free cash flow more harmful for RoA.

Additional results show that amendments to loans that are less relationship-like, such as term loans, or with a diffuse and diluted structure of claimholders exhibit a certification and signaling effect which doubles the impact of renegotiation on financial policy. Firms with greater opportunities and performances benefit more from renegotiation. On the contrary, renegotiations involving less restrictive contracts without collateral or covenants have a lower impact on financial policy. Firms with less tangible assets see their renegotiation impact diminished, as the redeployment of these assets is less important in that case. This impact can even turn negative when renegotiating long maturity loans or for firms with larger amounts of cash.

Appendix

Appendix A: Description of amended terms

Amount
Borrow amount = change to borrowed amount
Borrowing base amount = change to borrowing base amount which is the value assigned to a collection of a borrower's assets (such as accounts receivable or inventory), used by lenders to determine the initial and/or ongoing loan amount, and/or compliance with one or more debt covenants
Facility amount = change to facility amount
LOC amount = change to line of credit amount which acts as a guarantee provided by lenders to pay off debt or obligations if the borrower cannot
Outstanding amount = change to loan outstanding amount
Prepay amount = change to prepay amount
Tranche amount = change to tranche amount

Covenants financial = change to financial covenants which enforce minimum financial performance against the borrower (such as coverage, leverage, current ratio, tangible net worth and maximum capital expenditures)

Covenants non-financial = change to non-financial covenants which can be affirmative (state what action the borrower must take to comply with the loan) and negative (limit the borrower's activities)

Maturity
Maturity change = change to loan maturity

Pricing
Loan fee = change to loan fees (such as upfront fee, commitment fee, facility fee, etc.)
Pricing grid = change to pricing grid such as altering the level of applicable margin contingent on borrower's leverage

Definition
Definition change = change to definition of key terms in loan agreement (for instance the definition of an accounting ratio used as a benchmark for a financial covenant, such as the equity to assets ratio)

Appendix B: Variables definitions

(*source: Bloomberg*)

Dependent variables
Debt = Total debt / Total assets
LT debt = Long term debt / Total assets
Investments = Total investment assets / Total assets
LT Investments = Long term investments / Total assets
Ebitda = Earnings before interests, taxed, depreciation & amortization / Total assets
RoA = Net income / Total assets

Renegotiation variables
Renegotiation = 1 if a loan is renegotiated (0 otherwise).
Change to amount ($mln) = change to loan amount for renegotiations involving amount amendment (in MLN USD).
Change to maturity (m.) = change to loan maturity for renegotiations involving maturity amendment (in months).
Time to renegotiation = time from loan origination to renegotiation (in months).
Time to renegotiation / Maturity = time to renegotiation divided by loan maturity at origination (in percent).

Loan and lender variables
Amount = Loan facility amount at origination (in MLN USD).
Maturity = Loan maturity at origination (in years).
Covenants =1 if loan has covenants.
Secured = 1 if loan is secured.
Previous issues = Number of loans previously issued by a firm.
Lenders = Number of lenders in the syndicate.
Concentration = Herfindahl-Hirschman index computed on the retained shares of the loan by syndicate members.
Lead share = % of the loan retained by the lead lender (loan agent).
League = 1 if the loan agent was listed among the top 3 of the Bloomberg European league table one year before the origination year.
Relationship = 1 if the loan agent syndicated a loan for the same borrower during the last 3 years before the origination year.

Firm variables
Rated = 1 if a firm has a rating (Moody's or S&P, Senior Unsecured Debt or LT Issuer Credit).
Listed = 1 if a firm is listed on a stock exchange.
Total asset = total assets (in MLN USD).
Sales growth = Net sales or revenue of the firm
Tangibility = Net fixed assets / Total assets
Current ratio = Current assets to current liabilities.
Tobin's q = Total market value / Total assets
Z score = Altman Z score
Cash flow = Free cash flow / Total assets
Leverage = Total Debt / Common equity

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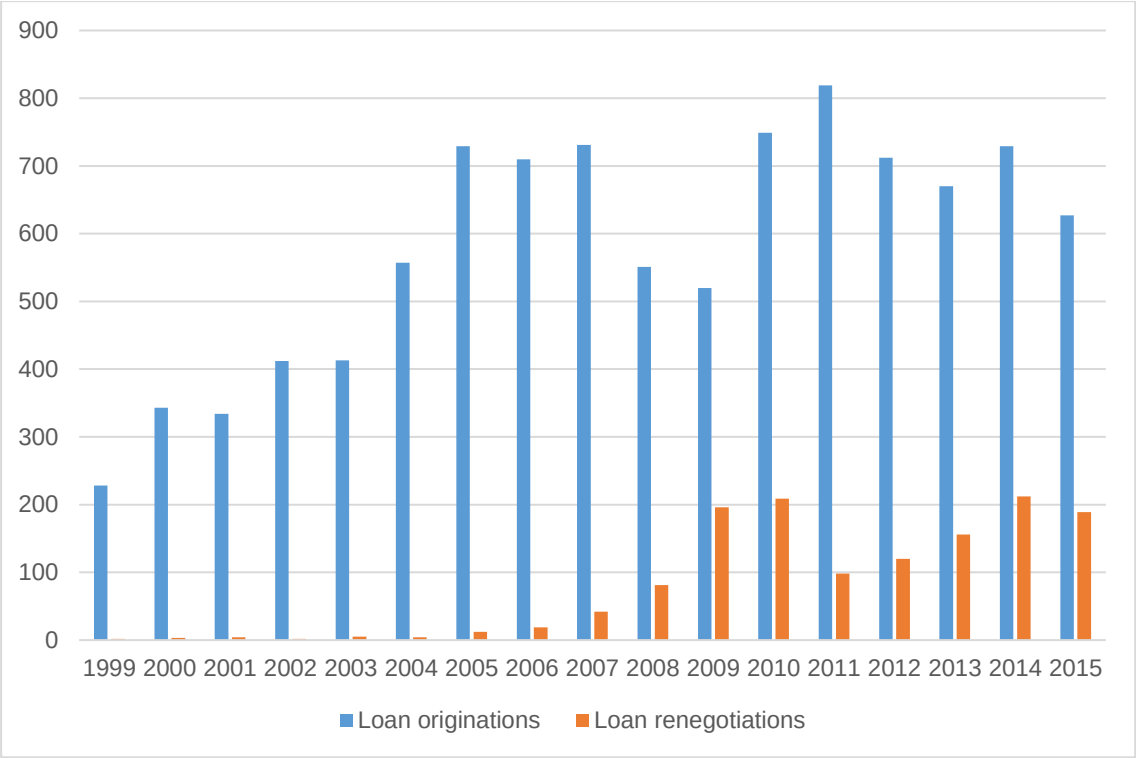

Figure 1 Loan origination and renegotiation over time

This figure shows the number of loans (originated and renegotiated) by year.

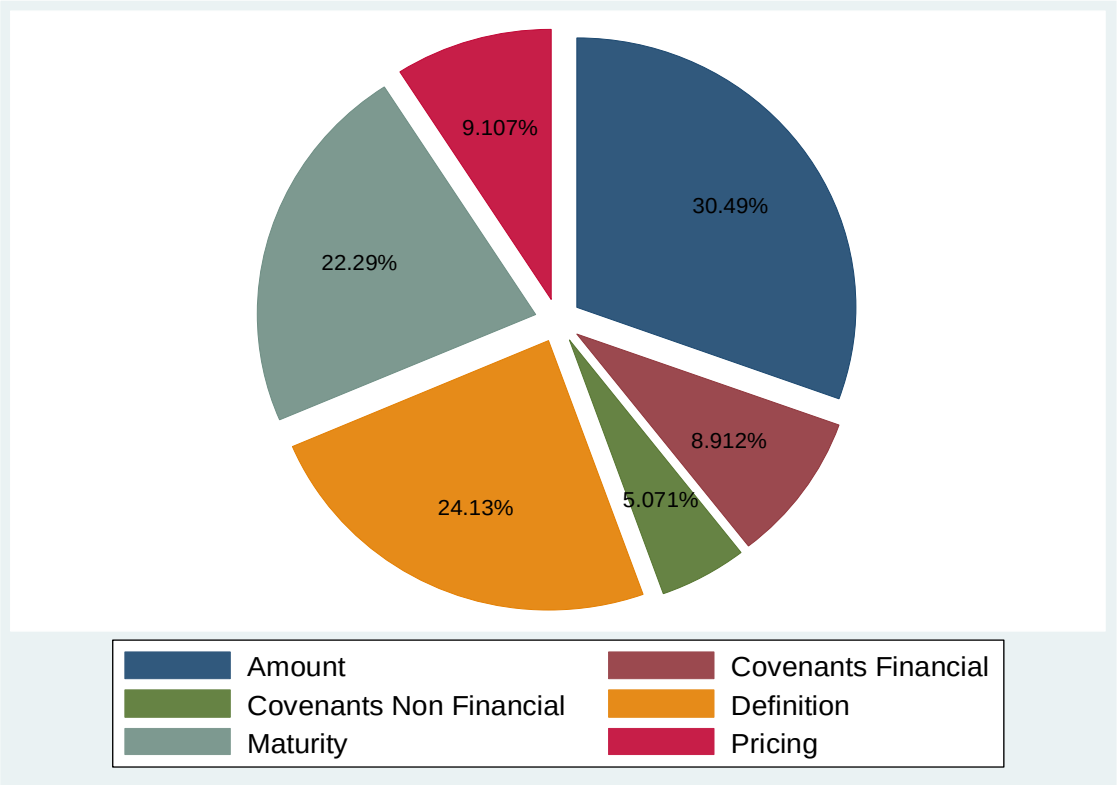

Figure 2 Amended terms

This figure shows the breakdown of amended loan characteristics following renegotiation. Amended characteristics are described in appendix A.

Table 1 Sample composition by country

This table presents the number of loans, firms and average percent of renegotiated loans by borrower country.

Country	Loans	Firms	Renegotiation
AUSTRIA	76	38	22.22%
BELGIUM	169	98	22.34%
BULGARIA	11	10	8.70%
CROATIA	27	11	8.57%
CYPRUS	16	7	32.14%
CZECH REPUBLIC	53	33	13.33%
DENMARK	124	57	12.97%
ESTONIA	19	8	40.00%
FINLAND	242	89	16.99%
FRANCE	1,209	485	18.18%
GERMANY	912	429	24.10%
GREECE	113	65	2.50%
HUNGARY	40	18	34.12%
IRELAND	150	80	26.15%
ITALY	695	391	11.38%
LATVIA	9	6	41.67%
LITHUANIA	12	6	8.33%
LUXEMBOURG	183	106	49.31%
NETHERLANDS	632	331	32.98%
NORWAY	330	171	24.83%
POLAND	133	76	14.86%
RUSSIAN FEDERATION	308	122	24.68%
SPAIN	779	323	16.55%
SWEDEN	378	140	10.20%
SWITZERLAND	299	131	24.45%
TURKEY	88	45	3.13%
UKRAINE	21	14	19.35%
UNITED KINGDOM	2,696	1,272	22.96%

Table 2 Descriptive statistics

Panel A provides descriptive statistics for variables related to renegotiation (definitions are provided in appendix B). Panel B shows the breakdown of renegotiation packages in details. x means that a specific loan term was amended. For instance, amending simultaneously the loan amount and maturity occurs in 9.37% of the renegotiations. Panel C provides descriptive statistics for all variables. Panel D shows the breakdown of the sample by borrower industry sector, loan purpose, loan type, and loan currency. All variables are described in appendix B.

Panel A

Variable	Mean	SD	P25	Median	P75
Renegotiation	0.22	0.41	0.00	0.00	0.00
Time to renegotiation	2.81	2.09	1.18	2.26	4.02
Time to renegotiation / Maturity	0.44	0.35	0.23	0.40	0.57
Change to amount (mln$)	-70.81	834.16	-55.00	0.00	60.00
Change to maturity (months)	49.60	85.28	30.42	50.50	76.25

Panel B

Maturity	Definition	Covenants Financial	Covenants Non Financial	Price	Amount	Percent
					x	18.02%
x						12.55%
	x					12.43%
x					x	9.37%
	x				x	7.06%
	x	x	x			3.70%
		x				3.58%
x				x	x	2.88%
	x	x	x		x	2.68%
				x		2.29%
x				x		2.16%
x	x				x	1.94%
x	x					1.71%
x	x	x	x	x	x	1.39%
x		x	x	x		1.34%
	x		x			1.24%
				x	x	1.19%
x	x			x		1.09%
	x			x		1.02%

Panel C

Variable	Mean	SD	P25	Median	P75
Amount	1,693.71	23,747.78	129.74	360.25	1,000.00
Maturity	6.02	3.34	4.26	5.22	7.39
Covenants	0.11	0.31	0.00	0.00	0.00
Secured	0.38	0.48	0.00	0.00	1.00
Previous issues	3.97	3.40	2.00	3.00	5.00
Lenders	10.01	12.52	3.00	6.00	12.00
Concentration	0.06	0.18	0.00	0.00	0.00
Lead share	0.29	0.29	0.09	0.17	0.33
League	0.19	0.39	0.00	0.00	0.00
Relationship	0.14	0.34	0.00	0.00	0.00
Rated	0.17	0.38	0.00	0.00	0.00
Listed	0.68	0.47	0.00	1.00	1.00
Debt	0.30	0.20	0.16	0.28	0.41
LT Debt	0.23	0.19	0.09	0.20	0.33
Leverage	1.59	2.91	0.37	0.77	1.54
Investments	0.08	0.18	0.00	0.02	0.07
LT investments	0.06	0.16	0.00	0.01	0.03
Ebitda	0.11	0.23	0.07	0.11	0.15
Ebitda / Interests	0.15	0.36	0.03	0.06	0.12
RoA	0.04	0.09	0.01	0.04	0.07
Total asset	14,592.99	39,329.06	478.39	2,111.60	9,340.13
Sales growth	0.74	171.34	-0.00	0.00	0.00
Tangibility	0.29	0.25	0.09	0.23	0.44
Current ratio	1.45	1.13	0.89	1.20	1.65
Tobin's q	1.21	1.68	0.73	0.98	1.36
Z score	2.64	2.52	1.36	2.38	3.80
Cash flow	0.02	0.15	-0.01	0.03	0.06

Panel D

Borrower industry sector		Loan purpose		Loan type		Loan currency	
Basic Materials	8.92%	Acquisition	15.00%	Term	57.00%	EUR	55.00%
Communications	11.90%	General corporate purposes	22.00%	Revolving	40.00%	GBP	22.00%
Consumer, Cyclical	17.69%	LBO	17.00%			USD	16.00%
Consumer, Non-cyclical	21.62%	Project finance	4.00%				
Diversified	2.45%	Debt refinancing	28.00%				
Energy	5.52%	Working capital	4.00%				
Industrial	23.12%						
Technology	3.71%						
Utilities	5.05%						

Table 3 Univariate analysis

This table provides means and t statistics for loan, lenders, and firm characteristics with respect to renegotiation vs no renegotiation. All variables are described in appendix B.

Variable	No renegotiation	Renegotiation	T-test
Rated	0.16	0.22	(-8.80)***
Listed	0.67	0.74	(-9.59)***
Debt	0.30	0.31	(-12.05)***
LT Debt	0.23	0.24	(-17.06)***
Leverage	1.59	1.59	(-0.10)
Investments	0.09	0.07	(20.55)***
LT investments	0.06	0.05	(7.47)***
Ebitda	0.11	0.11	(-0.22)
Ebitda / Interests	0.15	0.15	(0.58)
RoA	0.04	0.03	(11.80)***
Total asset	15,673.84	10,828.68	(24.52)***
Sales growth	0.78	0.61	(0.18)
Tangibility	0.29	0.29	(4.43)***
Current ratio	1.45	1.47	(-4.63)***
Tobin's q	1.21	1.21	(-0.08)
Z score	2.66	2.57	(6.88)***
Cash flow	0.02	0.03	(-5.10)***
Amount	1,515.26	2,342.69	(-2.09)*
Maturity	5.82	6.73	(-16.47)***
Covenants	0.07	0.24	(-35.35)***
Secured	0.32	0.59	(-33.92)***
Previous issues	3.85	4.34	(-8.35)***
Lenders	8.02	16.35	(-40.45)***
Concentration	0.05	0.09	(-13.36)***
Lead share	0.31	0.21	(20.24)***
Relationship	0.14	0.12	(2.66)**

Table 4 Baseline OLS regressions (equation 1)

This table presents estimated coefficients and standard errors, clustered at the firm level (in parentheses) from OLS regressions of equation (1). The second line displays the dependent variable use in the specification. Lag means one-year lag with respect to the year of renegotiation. All variables are described in appendix B. All regressions include dummies for firm industry, country and year. *, **, and *** indicate a statistically significant coefficient at the 10%, 5%, and 1% confidence level.

	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(3)	(1)	(2)	(3)
	Debt		LT debt		Investments		LT investments		Ebitda			RoA		
Renegotiation	0.008***	0.008***	0.007***	0.009***	-0.004***	-0.004***	-0.002***	-0.002***	0.002***	0.003***	0.002***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Tangibility (lag)	0.156***	0.142***	0.180***	0.173***	-0.045***	-0.043***	-0.038***	-0.040***	0.101***	0.102***	0.096***	0.039***	0.045***	0.045***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Z score (lag)	-0.015***	-0.014***	-0.010***	-0.010***	-0.003***	-0.003***	-0.002***	-0.002***	0.008***	0.008***	0.008***	0.008***	0.008***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
log(Assets) (lag)	0.004***	0.005***	0.008***	0.008***	0.007***	0.008***	0.005***	0.004***	0.000	0.000*	-0.000	0.003***	0.002***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tobin's q (lag)	0.005***	0.005***	0.004***	0.004***	0.004***	0.004***	0.002***	0.002***	0.021***	0.021***	0.021***	0.015***	0.014***	0.015***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ebitda (lag)	0.025	0.031	0.040**	0.053***	-0.025***	-0.025***	-0.019***	-0.019***						
	(0.021)	(0.020)	(0.019)	(0.020)	(0.004)	(0.004)	(0.003)	(0.003)						
Current ratio (lag)	-0.028***	-0.026***	-0.009***	-0.008***	0.008***	0.008***	0.000	0.000	-0.004***	-0.003***	-0.002***	0.002***	0.002***	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Sales growth (lag)	0.022***	0.022***	0.022***	0.020***	-0.004***	-0.004***	-0.001***	-0.001***	-0.000	0.000	0.000	0.005***	0.005**	0.005***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.001)	(0.001)	(0.000)	(0.000)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Cash-flow (lag)	-0.077***	-0.088***	-0.019	-0.015	-0.033***	-0.035***	-0.032***	-0.031***	0.360***	0.363***	0.363***	0.233***	0.241***	0.229***
	(0.027)	(0.025)	(0.025)	(0.026)	(0.005)	(0.005)	(0.004)	(0.004)	(0.011)	(0.012)	(0.012)	(0.008)	(0.008)	(0.008)
Investments (lag)		-0.063***								-0.031***			0.043***	
		(0.013)								(0.005)			(0.004)	
LT investments (lag)				0.109***										
				(0.013)										
Debt (lag)						-0.010***					0.035***			-0.037***
						(0.002)					(0.002)			(0.002)

LT debt (lag)								0.013***						
								(0.002)						
Rated	0.012***	0.009***	0.015***	0.013***	-0.006***	-0.006***	-0.004***	-0.004***	0.002***	0.002***	0.002***	0.001	0.001**	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)
Listed	0.084***	0.083***	0.042***	0.037***	0.014***	0.014***	0.015***	0.015***	0.010*	0.012*	0.008	-0.007	-0.006	-0.004
	(0.014)	(0.015)	(0.012)	(0.013)	(0.004)	(0.004)	(0.002)	(0.001)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.006)
GDP growth	0.198***	0.185***	0.233***	0.207***	-0.072***	-0.070***	-0.029***	-0.032***	-0.008	-0.015	-0.015	-0.011	-0.015	-0.003
	(0.020)	(0.020)	(0.019)	(0.019)	(0.011)	(0.011)	(0.008)	(0.008)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Intercept	0.205***	0.200***	0.068***	0.070***	0.024***	0.026***	0.028***	0.028***	0.028***	0.027***	0.021***	-0.059***	-0.039***	-0.050***
	(0.016)	(0.017)	(0.014)	(0.015)	(0.005)	(0.005)	(0.003)	(0.003)	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.006)
Loans	3,362	3,234	3,362	3,148	3,244	3,244	3,160	3,160	3,366	3,238	3,366	3,374	3,245	3,374
Firms	1,689	1,624	1,689	1,581	1,629	1,629	1,587	1,587	1,691	1,626	1,691	1,694	1,630	1,694
Adj.R2	0.24	0.23	0.21	0.20	0.12	0.12	0.09	0.09	0.37	0.37	0.37	0.26	0.26	0.26

Table 5 Probit regressions (1st stage, equation 2)

This table presents estimated coefficients, marginal effects, and standard errors, clustered at the loan (1) or borrower (2, 3) level (in parentheses) from probit regressions of equation (2). All variables are described in appendix B. All regressions include control variables for main loan currencies (EUR, USD, GBP), loan type (term), loan purposes (acquisition, general corporate, LBO, debt refinancing), firm industry and country. *, **, and *** indicate a statistically significant coefficient at the 10%, 5%, and 1% confidence level.

	(1)		(2)		(3)	
	Coef.	Marg. Ef.	Coef.	Marg. Ef.	Coef.	Marg. Ef.
Amount (log)	0.006**	0.001**	-0.068***	-0.019***	-0.069***	-0.019***
	(0.003)		(0.004)		(0.004)	
Maturity	0.056***	0.014***	0.055***	0.015***	0.056***	0.015***
	(0.001)		(0.002)		(0.002)	
Covenants	0.678***	0.174***	0.648***	0.180***	0.658***	0.182***
	(0.010)		(0.015)		(0.016)	
Secured	0.505***	0.130***	0.509***	0.141***	0.510***	0.141***
	(0.008)		(0.014)		(0.014)	
Previous issues	0.007***	0.002***	-0.015***	-0.004***	-0.017***	-0.005***
	(0.001)		(0.003)		(0.003)	
Lenders	0.011***	0.003***	0.017***	0.005***	0.017***	0.005***
	(0.001)		(0.001)		(0.001)	
Concentration	0.731***	0.188***	-0.007	-0.002	-0.026	-0.007
	(0.029)		(0.044)		(0.045)	
Lead share	-1.574***	-0.404***	-0.934***	-0.259***	-0.941***	-0.260***
	(0.043)		(0.055)		(0.056)	
Relationship	-0.215***	-0.055***	-0.067***	-0.019***	-0.058***	-0.016***
	(0.010)		(0.015)		(0.015)	
Rated	0.179***	0.046***	0.112***	0.031***	0.115***	0.032***
	(0.009)		(0.015)		(0.016)	
Listed	0.195***	0.050***	-0.760***	-0.211***	-0.878***	-0.243***
	(0.008)		(0.116)		(0.109)	
log(Assets)			-0.049***	-0.014***		
			(0.004)			
Leverage			0.006***	0.002***		
			(0.002)			
Tobin's q			-0.021***	-0.006***		
			(0.007)			
Ebitda			0.607***	0.168***		
			(0.083)			
Ebitda / Interests			0.033*	0.009*		
			(0.018)			
log(Assets) (lag)					-0.049***	-0.014***
					(0.004)	
Leverage (lag)					0.004	0.001
					(0.002)	
Tobin's q (lag)					-0.026***	-0.007***
					(0.007)	
Ebitda (lag)					0.717***	0.198***
					(0.086)	

Ebitda / Interests (lag)					0.040**	0.011**
					(0.019)	
GDP growth	-1.882***	-0.484***	-4.515***	-1.253***	-4.533***	-1.253***
	(0.182)		(0.277)		(0.286)	
Intercept	-1.628***		-0.995***		-0.886***	
	(0.052)		(0.144)		(0.140)	
Loans	5,033		1,905		1,788	
Firms	2,528		957		898	
Pseudo.R^2	0.21		0.18		0.18	
Chi^2	32,560.86		12,429.02		11,742.22	
Log.L.	-84,163.59		-34,358.13		-32,119.15	
%Correct	80.32		77.06		77.28	

Table 6 Endogenous switching regressions (2nd stage, equations 3 and 4)

This table presents estimated coefficients and standard errors, clustered at the firm level (in parentheses) from the second stage estimation of regime equations (3) and (4). Panels A, B, and C give results for financial (Debt and LT debt) and investment (Investments and LT investments) policies, and performance (Ebitda and RoA) respectively The first line indicates the probit regression used for 1st stage (equation 2) from table 5. The second line displays the dependent variable used in the specification. The third line indicates the regime: R stands for "renegotiation" (equation 3), NR stands for "no renegotiation" (equation 4). Lag means one-year lag with respect to the year of renegotiation. All variables are described in appendix B. ATET is the average treatment effect on the treated (i.e. renegotiation). The Chi² statistic gives the result of a Wald test with H0: treatment and outcome unobservables are uncorrelated. All regressions include dummies for firm industry, country and year. *, **, and *** indicate a statistically significant coefficient at the 10%, 5%, and 1% confidence level.

Panel A

	Renegation (1)		Renegotiation (3)		Renegation (1)		Renegotiation (3)	
	Debt		Debt		LT debt		LT debt	
	R	NR	R	NR	R	NR	R	NR
Tangibility (lag)	0.239***	0.123***	0.212***	0.130***	0.221***	0.157***	0.203***	0.162***
	(0.011)	(0.006)	(0.009)	(0.005)	(0.010)	(0.005)	(0.009)	(0.005)
Z score (lag)	-0.019***	-0.014***	-0.018***	-0.013***	-0.013***	-0.011***	-0.013***	-0.010***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
log(Assets) (lag)	0.003***	0.004***	0.006***	0.006***	0.010***	0.008***	0.013***	0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
Tobin's q (lag)	0.014***	0.004***	0.001	0.003**	0.013***	0.004***	0.005	0.004***
	(0.003)	(0.001)	(0.004)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)
Ebitda (lag)	0.114**	0.093**	0.009	0.047	0.166***	0.092***	0.044	0.042
	(0.052)	(0.037)	(0.042)	(0.037)	(0.049)	(0.033)	(0.038)	(0.033)
Current ratio (lag)	-0.026***	-0.028***	-0.013***	-0.026***	-0.009***	-0.011***	0.000	-0.011***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
Sales growth (lag)	0.126***	0.020***	0.094***	0.021***	0.124***	0.020***	0.096***	0.020***
	(0.009)	(0.001)	(0.010)	(0.001)	(0.013)	(0.001)	(0.013)	(0.001)
Cash-flow (lag)	0.056	-0.229***	0.010	-0.215***	0.051	-0.133***	0.046	-0.118**
	(0.082)	(0.051)	(0.066)	(0.052)	(0.078)	(0.045)	(0.060)	(0.046)
Rated	-0.017***	0.010***	-0.001	0.000	-0.023***	0.012***	-0.012***	0.004**
	(0.004)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Listed	-0.078***	0.173***	-0.045***	0.176***	-0.026	0.103**	-0.004	0.106***
	(0.014)	(0.044)	(0.013)	(0.044)	(0.017)	(0.040)	(0.015)	(0.041)
GDP growth	0.417***	0.063*	0.231***	0.072**	0.247***	0.167***	0.149***	0.187***
	(0.067)	(0.033)	(0.062)	(0.032)	(0.062)	(0.032)	(0.057)	(0.031)
Intercept	0.651***	0.142***	0.433***	0.125***	0.379***	0.066	0.184***	0.059
	(0.030)	(0.045)	(0.030)	(0.045)	(0.034)	(0.042)	(0.033)	(0.042)
ATET	0.058***		0.040***		0.060***		0.044***	
	(0.005)		(0.006)		(0.005)		(0.006)	
Loans	1,683		1,597		1,683		1,597	
Firms	845		820		845		820	
Chi²	267.56***		50.43***		413.52***		122.56***	

Panel B

	Renegation (1)		Renegotiation (3)		Renegation (1)		Renegotiation (3)	
	Investments		Investments		LT investments		LT investments	
	R	NR	R	NR	R	NR	R	NR
Tangibility (lag)	-0.041***	-0.048***	-0.040***	-0.048***	-0.036***	-0.045***	-0.036***	-0.046***
	(0.003)	(0.002)	(0.004)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
Z score (lag)	-0.003***	-0.003***	-0.003***	-0.003***	-0.002***	-0.003***	-0.003***	-0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
log(Assets) (lag)	0.007***	0.010***	0.007***	0.010***	0.006***	0.006***	0.006***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tobin's q (lag)	0.010***	0.006***	0.007***	0.006***	0.003***	0.004***	0.006***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Ebitda (lag)	-0.054***	-0.055***	-0.056***	-0.066***	-0.046***	-0.038***	-0.070***	-0.045***
	(0.010)	(0.009)	(0.009)	(0.010)	(0.008)	(0.006)	(0.007)	(0.006)
Current ratio (lag)	0.004***	0.008***	0.001*	0.009***	0.001	-0.002***	-0.000	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sales growth (lag)	-0.021***	-0.003***	-0.016***	-0.003***	-0.013***	-0.001***	-0.012***	-0.001***
	(0.005)	(0.000)	(0.004)	(0.000)	(0.004)	(0.000)	(0.004)	(0.000)
Cash-flow (lag)	-0.040***	-0.039***	-0.053***	-0.047***	-0.039***	-0.044***	-0.044***	-0.057***
	(0.009)	(0.009)	(0.009)	(0.010)	(0.010)	(0.008)	(0.009)	(0.008)
Rated	-0.012***	-0.009***	-0.016***	-0.011***	-0.014***	-0.005***	-0.016***	-0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Listed	0.034***	0.056***	0.028***	0.056***	0.015***	0.036***	0.013***	0.037***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
GDP growth	-0.061***	-0.021	-0.048**	-0.014	-0.091***	0.028*	-0.079***	0.033*
	(0.022)	(0.019)	(0.022)	(0.019)	(0.020)	(0.016)	(0.020)	(0.017)
Intercept	-0.071***	-0.076***	-0.047***	-0.075***	-0.025***	-0.014***	-0.016**	-0.016***
	(0.006)	(0.005)	(0.007)	(0.006)	(0.005)	(0.005)	(0.007)	(0.005)
ATET	-0.003		-0.001		0.006***		0.006***	
	(0.002)		(0.002)		(0.002)		(0.002)	
Loans	1,631		1,549		1,592		1,512	
Firms	819		778		800		759	
Chi²	2.90		5.58*		31.12***		27.16***	

Panel C

	Renegation (1)		Renegotiation (3)		Renegation (1)		Renegotiation (3)	
	Ebitda		Ebitda		RoA		RoA	
	R	NR	R	NR	R	NR	R	NR
Tangibility (lag)	0.122***	0.079***	0.105***	0.078***	0.024***	0.025***	0.026***	0.026***
	(0.004)	(0.002)	(0.004)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
Z score (lag)	0.005***	0.007***	0.006***	0.007***	0.007***	0.008***	0.007***	0.008***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
log(Assets) (lag)	-0.002***	-0.002***	-0.002***	-0.002***	0.001***	0.001***	0.001**	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Tobin's q (lag)	0.031***	0.017***	0.027***	0.016***	0.029***	0.016***	0.030***	0.016***

	(0.001)	(0.002)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Current ratio (lag)	-0.005***	-0.004***	-0.005***	-0.003***	0.004***	-0.000	0.002***	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sales growth (lag)	-0.004	-0.003***	-0.003	-0.004***	-0.001	0.002***	0.004	0.002***
	(0.004)	(0.000)	(0.004)	(0.000)	(0.005)	(0.001)	(0.006)	(0.001)
Cash-flow (lag)	0.308***	0.289***	0.240***	0.303***	0.165***	0.227***	0.149***	0.228***
	(0.022)	(0.011)	(0.015)	(0.012)	(0.009)	(0.011)	(0.009)	(0.012)
Rated	0.002	0.004***	0.007***	0.002**	0.002*	0.003***	0.002	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Listed	-0.076***	0.002	-0.070***	0.005	-0.042***	-0.008***	-0.046***	-0.006**
	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.003)	(0.005)	(0.003)
GDP growth	0.146***	-0.128***	0.074***	-0.107***	-0.055*	-0.073***	-0.055**	-0.061***
	(0.028)	(0.015)	(0.028)	(0.015)	(0.029)	(0.014)	(0.028)	(0.014)
Intercept	0.114***	0.055***	0.124***	0.051***	-0.062***	-0.031***	-0.036***	-0.041***
	(0.008)	(0.007)	(0.009)	(0.007)	(0.010)	(0.005)	(0.012)	(0.005)
ATET	0.004**		0.014***		-0.011***		-0.004*	
	(0.002)		(0.002)		(0.002)		(0.002)	
Loans	1,684		1,596		1,687		1,599	
Firms	846		820		847		830	
Chi²	12.18***		26.82***		49.84***		3.31	

Panel 1

Table 7 Endogenous switching regressions - sensitivity tests

This table presents results from the endogenous switching regressions (second stage) using different sub-samples. Each sub-sample is defined according to a specific variable and eventually its sample median (information is provided in italic). Panel A presents the results using loan and lenders characteristics. Panel B presents the results using firm characteristics. The explanatory variables are the same as in table 6, including dummies for firm industry, country and year. The probit regressions for the treatment (Renegotiation) equation (1) are also performed on the respective sub-samples, using model (1) from table 5. Debt, Investments and Ebitda are the main dependent variables. ATET is the average treatment effect on the treated (i.e. renegotiation). The Chi² statistic gives the result of a Wald test with H0: treatment and outcome unobservables are uncorrelated. *, **, and *** indicate a statistically significant coefficient at the 10%, 5%, and 1% confidence level.

Panel A

	Debt	Investments	Ebitda
	Long maturity (> med.: 5.19)		
ATET	-0.014**	-0.017***	0.000
	(0.007)	(0.003)	(0.002)
Chi²	122.67***	1.18	14.11***
	No covenants		
ATET	0.030***	-0.007**	0.008***
	(0.006)	(0.003)	(0.002)
Chi²	266.81***	48.37***	79.09***
	No collateral		
ATET	0.032***	0.007*	-0.002
	(0.006)	(0.004)	(0.002)
Chi²	114.86***	38.20***	7.80**
	Few prev. issues (< med.: 3)		
ATET	0.051***	-0.016***	0.004*
	(0.006)	(0.002)	(0.002)
Chi²	183.54***	30.78***	8.05**
	Large syndicate (> med.: 6)		
ATET	0.105***	0.002	-0.002
	(0.006)	(0.003)	(0.002)
Chi²	327.20***	9.56**	23.39***
	Low lead share (< med.: 0.17)		
ATET	0.069***	-0.003	0.001
	(0.006)	(0.003)	(0.002)
Chi²	276.60***	1.72	21.62***
	No prior relation.		
ATET	0.051***	0.000	-0.001
	(0.005)	(0.003)	(0.002)
Chi²	261.49***	12.36***	9.84**
	Term loan		
ATET	0.112***	0.010**	0.010***
	(0.008)	(0.005)	(0.003)
Chi²	327.41***	11.26***	38.85***

Panel B

	Debt	Investments	Ebitda
	Low tangibility (< med.: 0.23)		
ATET	0.024***	-0.008**	0.001
	(0.006)	(0.004)	(0.003)
Chi²	28.49***	34.17***	7.81**
	High log(Assets) (< med.: 7.62)		
ATET	0.044***	-0.014***	0.007***
	(0.006)	(0.003)	(0.002)
Chi²	190.53***	39.18***	23.25***
	High Tobin's q (> med.: 0.98)		
ATET	0.107***	-0.004	-0.002
	(0.006)	(0.004)	(0.002)
Chi²	289.64***	1.07	19.70***
	High ebitda (> med.: 0.11)		
ATET	0.098***	-0.016***	0.000
	(0.006)	(0.002)	(0.002)
Chi²	355.22***	35.36***	24.19***
	High current ratio (> med.: 1.20)		
ATET	0.054***	-0.011***	0.003
	(0.005)	(0.003)	(0.002)
Chi²	72.94***	20.12***	8.08**
	High sales growth (> med.: 0.00)		
ATET	0.055***	-0.006**	0.004**
	(0.006)	(0.003)	(0.002)
Chi²	169.45***	4.88*	9.47**
	High cash-flow (> med.: 0.03)		
ATET	0.007	-0.013***	0.004
	(0.007)	(0.004)	(0.003)
Chi²	16.42***	9.04**	1.91
		Unrated	
ATET	0.042***	0.008***	0.003
	(0.005)	(0.003)	(0.002)
Chi²	182.88***	33.55***	20.38***

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