"Great Expectations"?
Bankruptcy Law Reforms and Bank Credit for SMEs

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Abstract

A series of Italian Bankruptcy Law reforms, originally aiming to facilitate debt renegotiation and business continuation as a response to the crisis, allows us to disentangle how a change of creditor rights affects Bank Credit Market for SMEs. We exploit a new credit level dataset on bank credit, with more than 6.4 million pooled observations. By constructing a new Creditor Rights Index across all bankruptcy proceedings available for SMEs, we find that reforms weakening creditor rights increase interest rates and reduce amount of credit available, causing credit rationing. Effects of the reforms are not equally distributed, but are stronger for riskier firms and unsecured credits. Results highlight that regulation may have unintended consequences, if not properly designed.

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1 Introduction

How does a lender respond to an exogenous change in creditor rights? In particular, do a reduction in creditor rights, as a response to a crisis, facilitate SMEs' access to bank financing? This paper answers empirically such questions benefiting from the case of Italy (almost unique amongst the OECD advanced economies), where between 2005 and 2013 the legislator intervened 15 times to modify the Bankruptcy Law, by introducing 6 main reforms of bankruptcy proceedings for Small and Medium Enterprises (henceforth, also "*SMEs*"). In order to address the questions, the paper exploits a novel and unique proprietary database for bank credits towards SMEs, collected at *single* credit level.

There is a consensus among economists and policymakers that financial frictions are a major barrier to firm investment and thus to economic development. Protection of creditors, mirrored by their rights, may be an important source of financial frictions (La Porta, et al., 1997; Djankov, et al., 2007). From the Law and Finance literature stream onward (La Porta, et al., 1998), an extensive research has shown the relationships between countries' law origin, investor protections, and the development of financial markets. When looking at credit markets, Bankruptcy Law and its enforcement are the main drivers of financial frictions via creditor rights (La Porta, et al., 2008). In fact, the design of financial contracts depends on firm reorganization and firm liquidation in bankruptcy (Roberts & Sufi, 2009): reorganization proceeding should facilitate debt renegotiation in order to ensure that viable businesses are continued and lenders' claims are repaid; liquidation proceeding should pursue efficient liquidation of no-longer profitable firms while preserving the value of creditor claims in liquidation itself.

In Italy, the debate about Bankruptcy Law has been very alive during the last ten years, as the economy has been seeing total number of new bankruptcy procedures sharply doubling, from a minimum of 6,680 in 2007 up to 15,731 in 2012. Regulators have introduced several novels to the Italian Bankruptcy Law (*Regio Decreto* n. 267/1942, henceforth also "*B.L.*" or "*L.F.*"), primarily aiming to facilitate debt renegotiation and ultimately to better Credit Market conditions, in terms of pricing and volumes of lending. Yet, this paper proves that *ex-post* outcomes may disprove *ex-ante* policy aims; this suggests that original policy might have performed poorly and exhibited some unintended consequences. In an attempt to improve firms' access to external finance, while during the last decade emerging economies as Brazil, China, and Russia introduced new bankruptcy laws increasing the legal protection of creditors, Italy curiously moved in an opposite direction, by weakening creditors' rights in favour of debtors.

The contribution of the paper lies along three main directions:

(i) *within country perspective*: Italy has seen 6 major interventions to the Bankruptcy Law since 2005. This allows to adopt a *within country* perspective to study separately the effect of each reform *over time*. Previous research has analysed the effects of bankruptcy on firms' financial and real decisions mainly from a cross-country perspective (Djankov, et al., 2007; Davidenko & Franks, 2008). Thanks to a *within country* perspective, we are able to hold constant other institutional settings that might also affect the design of financial contracts.

(ii) *Bank credit to Small and Medium Enterprises*: empirics focus on bank credit to SMEs. The bulk of Italian economy is made of Small and Medium Enterprises, which are the most dependent from external finance. In Italy, 99.9% of firms has less than 250 employees; such firms account for 80.6% of the workforce and 68.8% of value added at national level (see Table I). Moreover, SMEs rely heavily upon bank credit (ISTAT, 2014), which constitutes about 80% of their financing sources. Therefore, studying Bank Credit Market points directly at the heart of Credit Market. It is clearly impossible to understand Italian economy without studying SMEs and bank credit, and this is true also for many advanced economies

[Table I here]

(iii) *Unique proprietary database*: one of the biggest Italian banks (henceforth, also the "Bank") participates to the research by providing a unique dataset focused on SMEs, collecting credit information at *single* credit (facility) level with more than 6.4 million facility times quarter observations. The dataset includes information on all the bank credit lines (cash, guarantees, commercial, …) and not only on loans. The micro-level analysis represents a key contribution to the literature, and allows to present novel results on both pricing and non-price terms of financial contracts.

The empirical analysis adopts a differences-in-differences (henceforth, also "*DID"*) strategy: we exploit the Italian Bankruptcy Law Reforms introduced in 2010, 2012 and 2013, and their impacts on creditor rights, as an exogenous source of time variation, while the risk of default across firms as a source of cross-sectional variation. Risk of default is useful to identify differential exposure of SMEs to each B.L. reform. Theoretical prediction, indeed, is that bank-financing conditions for firms that are more likely to enter distress should be more responsive to the features of bankruptcy proceedings.

The identification of the specific effects that each change in the B.L. has on creditor rights is a crucial starting point of this work; actually, each reform may have different implications on creditor rights. We examine 17 measures of creditor rights studied in the literature and construct a new Creditor Rights Index (henceforth, also "*CRI*") based on such measures: CRI identifies whether a

reform increases or decreases creditor rights, and to what extent. The original creditor rights index relies on four rights, but this is not enough because there are many additional rights influencing creditors' choices. In our case, were the CRI based only on four rights we would not capture any effect linked to the three reforms being analysed. CRI spans across all the bankruptcy proceedings available for SMEs, because a lender, when evaluating a credit application from a borrower, considers all the possible proceedings the latter might face. Conversely, previous studies focus on the two main proceedings: reorganization and liquidation (La Porta, et al., 1998; Rodano, et al., 2014).. Finally, we relate the change in CRI to SMEs' financing conditions, in terms of volumes and pricing: CRI is positively associated with volumes of credit and negatively related to price of credit (interest rates).

We find that a Bankruptcy Law reform reducing CRI causes a substantial drop in volumes of credit provided by a lender. The reduction is not the same across borrowers, but it is more pronounced for riskier firms and for unsecured credits. For instance, following the 2012 reform, the average exposure at default towards a firm riskier than the median suffers a differential reduction of approximately 23% more than the average credit towards a firm less risky than the median. Such a reduction corresponds to a magnitude of billions Euros at an aggregate national level.

In term of pricing, results show that a reform reducing CRI causes a significant differential increase of interest rates, especially for riskier firms and unsecured credits. For example, the 2010 reform produces a differential increase of 6.4 basis points for a credit toward a firm riskier than the median one; this corresponds to a growth of about 22% in the average interest rate cross-sectional baseline difference between (i) firms whose rating is above the median and (ii) those with a rating below the median. At a national level, such an increase corresponds to hundreds of millions Euros, paid by firms, every year, as additional interest expenses.

The combined effects of quantity reduction and price increase of credit may negatively impact firms' productivity and competitiveness, while exacerbating three well-known corporate finance problems: credit rationing, overinvestment, and underinvestment.

The remaining of the paper is organized as follows. Section 2 describes the theoretical framework in which the paper is nested. Section 3 provides the institutional framework, related to both Bankruptcy Law and its reforms (§ 3.1) and Creditor Rights Index (§ 3.2). In section 4 we present the empirical framework and results, describing the data (§ 4.1), the identification strategy (§ 4.2), the econometric specification (§ 4.3), the main results (§ 4.4), as well as robustness checks (§ 4.5). Section 5 concludes.

2 Theoretical Framework

The influence of legal framework on Corporate Finance is a natural continuation of research as it has been developing over the last 50 years. The milestone paper from Modigliani and Miller (henceforth, also "*M&M*") analyses firms as collections of investment projects and cash flows generated by these projects; hence, financial securities (namely, debt and equity) are naturally interpreted as claims to such cash flows (Modigliani & Miller, 1958). M&M do not investigate why managers would return cash flows to investors, under the assumptions that (i) investment policy is independent from financing and dividend policies, and (ii) investors can always replicate without frictions the financing and dividend policies of the firm.

Subsequent research has shown that M&M's theorems are breached, when we relax some of their underlying assumptions, such as:

(i) *existence of bankruptcy*: if there is bankruptcy, firstly, investors cannot freely replicate the financing and dividend policy of the firms any longer, and, secondly, nominal interest rate on debt increases with the probability of default (Stiglitz, 1969). Besides, bankruptcy turns out to be a costly process for investors (White, 1996; Bris, et al., 2006);

(ii) *credit rationing*: M&M base their theorems on perfect and symmetric information, which implies market equilibrium in the classical sense of demand equalling supply. Yet, with imperfect information, in equilibrium loan market may be characterized by credit rationing (Stiglitz & Weiss, 1981). In the presence of credit rationing, a bank maximises profit at a point where there is an excess demand of credit in the market;

(iii) *investor power*: research in early 1990's makes a key advance by focusing on investor powers towards the insiders and by distinguishing between contractual and residual control rights that investors have (Hart, 1995). Economists use this idea to model financial instruments not in terms of cash flows, but of rights allocated to their holders. Unlike in the M&M world, changing the capital structure of a firm modifies the allocation of power between insiders and outside investors, and thus likely affects the firm's investment policy.

The results of the paper stem from the breach of these assumptions, because the analysis focuses on bankruptcy law and how it affects investor power (i.e. creditor rights), finding that we might observe credit rationing following a reduction in creditor rights.

Most of rights given by a security are eventually linked to investor protections, either creditors or shareholders. On this basis, a new literature stream follows naturally from 1998, aiming to establish whether cross-country differences in laws pertaining to investor protection have consequences for Corporate Finance (La Porta et. al., 1998, henceforth "*LLVS*"). LLVS find that: *(i)* countries whose legal rules originate in the common law tradition tend to protect investors considerably more than

countries whose laws originate in the civil law, and especially the French-civil law, tradition; *(ii)* law enforcement differs substantially around the world; *(iii)* countries develop substitute mechanism for poor investor protection, such as mandatory dividends or legal reserve requirements. On this note, subsequent studies show that investor protection by the legal system is central to understand the patterns of Corporate Finance in different countries, in a variety of aspects: corporate governance (La Porta, et al., 2000), ownership of the firm (Gorton & Schmid, 2000), development of financial markets (Djankov, et al., 2007), and allocation of real resources (Hsieh & Klenow, 2009). After a decade of research, the scholars who introduced the importance of law to understand finance differences across countries conclude that "*legal origins are central to understanding the varieties of capitalism*" (La Porta, et al., 2008). The paper focuses on the effects of changes in the law on the investors (namely, creditors); it thus addresses questions that are crucial to understand patterns of Corporate Finance at a global level.

Investor protection deals with both shareholders and creditor rights. As for the latter, and more generally for financial contracts, they are shaped mainly through the design of bankruptcy law and its enforcement (La Porta, et al., 2008; Roberts & Sufi, 2009). Creditor rights tend to be more complex than shareholders rights, for two main reasons. First, there is a higher variety of creditors, relative to shareholders, with different interests; so protecting rights of some creditors may have the effect of reducing the rights of other creditors. Second, there are three general creditor strategies of dealing with an insolvent firm: (i) foreclosure, (ii) reorganization (continuation), and (iii) liquidation (as a going concern or as piecemeal sale); each of them requires different rights and enforcement procedures to be effective (Djankov, et al., 2008). The debate between liquidation and continuation from the social viewpoint has been extensive and raises the question of which procedure should be preferred and why. LLVS introduce a creditor rights index, based on four rights, which scores both liquidation and reorganization, because almost all countries rely to some extent on both procedures. Using the creditor right index, researchers show that private credit rises after improvements in creditor rights and in information sharing (Djankov, et al., 2007; Haselmann, et al., 2008). Consistently to such findings, we extend the original creditor rights index and introduce a new CRI that accounts for 17 creditor rights studied in the literature. Moreover, in order to account for all possible bankruptcy proceedings that a debtor may start, CRI considers not only liquidation and reorganization, but all proceedings available for SMEs.

Previous research has analysed the effects of bankruptcy on firms' financial and real decisions mainly from a cross-country perspective (Djankov, et al., 2007; Davidenko & Franks, 2008; Acharya & Subramanian, 2009; Acharya, et al., 2011). Conversely, we adopt a within country perspective which allows to hold fixed other aspects of the institutional environment that might also have

consequences on financial contracts. Some studies have used a within country approach to examine the relationship between financial contracts and law enforcement, but these are not focused on the innovation in Bankruptcy Law, pointing rather at the change in the judicial system (Jappelli, et al., 2005; Visaria, 2009). A few recent papers have investigated the effects of within country changes in Bankruptcy Law (Rodano, et al., 2014; Ponticelli, 2013). Compared to such studies, the paper contributes to the literature in two ways: firstly, by using a novel dataset that collects information on all the credit lines provided by a bank (including non-cash facilities) and, secondly, by studying three novel Bankruptcy Law reforms introduced after the Great Recession.

The theoretical predictions of the analysis can be linked to a simple model of credit where a firm is cash constrained and needs bank financing to implement a project (Hart & Moore, 1998). Cash flows from the project are uncertain and only partially verifiable from outsiders (Gennaioli & Rossi, 2013); the financing contract should thus aim to ensure that the debtor has incentives to repay the due amount. Such theoretical framework generates the following predictions according to the literature (Rodano, et al., 2014; Cerqueiro, et al., 2014): (i) reforms that facilitate renegotiation of outstanding credits should weaken debtor's incentives to repay and thus increase the cost of bank financing; (ii) reforms that strengthen creditor rights should, instead, reduce the cost of bank financing; (iii) reforms that weaken creditor rights should decrease the volumes of credit, and thus the access to it, causing credit rationing.

The empirical results of the paper are consistent with the theoretical predictions and support the hypothesis that each single reform has peculiar effects on the Credit Market, because it impacts differently creditor rights. Interestingly, the effects of each Bankruptcy Law reform vary across firms: debtors more exposed to each reform reflect most the consequences of that reform. Besides, different kinds of credits experience differently the impacts of a reform; this may be due to the variety of rights in a financial contract; for instance, we report that unsecured credits suffer a contraction of volumes and an increase of interest rates, following a reform, more than secured ones. These findings are related to recent work arguing that outcomes of legal enforcement can be different across borrowers when the supply of credit is inelastic (Lilienfeld-Toal, et al., 2012).

3 Institutional Framework

The central idea behind the Law and Finance theory is that the legal framework in which companies operate affects their financial (e.g. capital structure) and real decisions. In the case of bankruptcy, the legal framework relates primarily to the Bankruptcy Law. In Europe, despite the common currency, there is not a common default process; this can segment national capital markets and it is thus essential to understand the countrywide legal framework in which companies and

investors operate. For example, if B.L reform drives a structural change in a national Bank Credit Market, there is room for investors' new opportunities such as: providing new financing means to firms as a substitute for bank credit; "court shopping" across countries to restructure SMEs' debt under the most favourable legal setting; investing in distressed bank debt.

In order to study the consequences of Bankruptcy Law on Bank Credit Market, we need to proceed in two steps: first, we have to understand the legal framework while identifying relevant Bankruptcy Law reforms that could potentially affect creditor rights; second, we need to assess the effective impact of each reform on the creditor rights themselves. The next two paragraphs present Bankruptcy Law and bankruptcy proceedings in Italy (§ 3.1) and introduce a new Creditor Rights Index that can be globally used to assess the level of creditor rights in a given jurisdiction (§ 3.2).

3.1 Bankruptcy Law and bankruptcy proceedings in Italy

The Bankruptcy Law that disciplines proceedings available for SMEs in Italy is the R.D. n. 267/1942. Since 2005, there are four main proceedings applicable to SMEs[1]:

(i) Private foreclosure – PF (*art. 67 B.L.*): a one-to-one debt renegotiation based on "*a program that appears suitable to allow the restructuring of the company's debt and to ensure the rectification of its financial position*" (Vietti, et al., 2014);

(ii) Foreclosure endorsed by the Court – FC (*art. 182-bis B.L.*): a one-to-one debt restructuring plan which requires creditors holding at least 60% of the overall debt face value to agree, in order to be enforced. If such percentage is achieved, the court can enforce the restructuring plan, which makes it binding for the agreeing creditors and ensures a moratorium by imposing a temporary automatic stay to not-agreeing creditors;

(iii) Reorganization – R (*Concordato Preventivo*): a collective reorganization plan triggered by the debtor and run under supervision of a court, which aims either to continue or to liquidate the firm. Reorganization is equivalent to Chapter 11 under the U.S. legal system;

(iv) Liquidation – L (*Fallimento*): a collective liquidation procedure under direct supervision of a court, which can be compared to Chapter 7 under the U.S. legal system.

Typically, as we move from Private Foreclosure to Liquidation, we observe a worsening of debtor's financial distress.

Each proceeding may have different outcomes, which the literature has classified into three categories: (i) foreclosure, (ii) reorganization (continuation), and (iii) liquidation, as a going concern

[1] There are three additional bankruptcy proceedings disciplined by the Italian law: *Amministrazione Straordinaria* (D.Lgs. 270/99), *Amministrazione Straordinaria Speciale* (D.L. 347/2003 and L. 39/2004), and *Liquidazione Coatta Amministrativa* (Art. 194 and subsequent from the B.L.). The first two proceedings are designed for big firms, having at least 200 and 500 employees, respectively; the latter is available only for firms whose possible default is of public interest, such as banks and insurance companies. Therefore, such proceedings are out of the scope of this paper.

or as piecemeal sale (Djankov, et al., 2008). Figure 1 summarizes possible outcomes of each Italian procedure, distinguishing according to the literature. At the extremes, we find Private Foreclosure and Liquidation: the first aims to continue the business as a going-concern, while the latter, by definition, targets to liquidate the firm and then to distribute cash proceeds to creditors. In between, there are Foreclosure Endorsed by the Court and Reorganization, which could produce every combination of outcomes, as they tend to be flexible legal instruments.

[Figure 1 here]

Each of the proceedings requires different rights and enforcement processes to be effective. Table II presents the distinguishing features of each Bankruptcy Proceeding available for SMEs, as of the time when the 2013 reform becomes effective.

[Table II here]

For instance, PF and FC are a one-to-one renegotiation between the debtor and a creditor, while Reorganization is a collective procedure. In case of Reorganization, creditors are required to vote and there is a cram-down process, under certain conditions, while in case of FC any creditor has the individual right to accept the restructuring plan proposed by the debtor. Such a variety of rights is known by a bank at the time when it provides new finance to a firm; therefore, in order to assess the impact of the Bankruptcy Law on Bank Credit Market, it is essential to include in the analysis all the proceedings that a financially distressed debtor might eventually activate. That is the reason why the CRI takes into account all the bankruptcy proceedings available to SMEs as we explain in detail in § 3.2.

This paper exploits the case of Italy, where from 2005 to 2013 six main reforms of bankruptcy proceedings for SMEs were introduced and changed repeatedly creditor rights (see Table III), either weakening or strengthening them. Such an unusually active phase of reforms allows examining the effects of changing creditor rights on credit market at micro level, within a country and from a time-series perspective, rather than examining a macro level cross-country comparison as major studies do.

[Table III here]

Specifically, there are six main reforms affecting creditor rights (2005, 2006, 2008, 2010, 2012 and 2013); other legislative interventions modify the B.L. but do not affect straight creditor rights: for example, D.L. 179/2012 and L. 221/2012 enforce the possibility of sending/receiving

documents by certified e-mail rather than registered letter. In this work, we focus exclusively on the reforms that do have an impact on creditor rights. The starting point is 2005 because in that year PF and FC are firstly introduced and from the same year the Government and the Parliament have begun the B.L.'s reforming process.

Each reform has some peculiarities: for instance, 2005 introduce two new proceedings, Foreclosure and Foreclosure endorsed by the Court, while 2012 reform speed up debtors' access to Reorganization. It is thus relevant to investigate not only cumulatively, but also separately, the effects of each reform on creditor rights, as it might have different implications for the Bank Credit Market. Overall, we observe that Italian legislation has progressively moved from a pro-creditor to a pro-debtor approach, more similar to the U.S. system, thus reducing legal protection of creditors. On the contrary, emerging economies such as Brazil, China, and Russia have recently introduced new Bankruptcy Laws increasing the legal protection of creditors, in an attempt to improve firm's access to external finance. The Parliament itself emphasises the shift towards a more debtor-friendly philosophy; in the illustrative report to the Parliament accompanying the draft of the D.L. 83/2012 (2012 reform) it is declared that Reorganization would have been modified on the model of U.S. Chapter 11. Major legal experts stress that "*reformed Bankruptcy Law shows special preference for – and, somehow, even fosters – all those solutions which are aimed at the continuation of the business activity and, more in general, at the preservation of the value of the production plants*" (Barachini, 2014); correspondingly, major law firms comment that "*Italian Bankruptcy Law has been extensively reformed in recent years in order to focus on the reorganization of distressed and failing businesses rather than on their liquidation*" (Shearman & Sterling LLP, 2012; Freshfields Bruckhaus Deringer LLP, 2012).

There is a common feeling that both regulators and legal experts had many "Great Expectations" on the reforms; our main query is whether these reforms really facilitate the life of SMEs or if there are any "Side Effects" or unintended consequences for SMEs themselves, also after a careful consideration of creditors' reactions to a change in their rights.

There are two main stylized facts that direct our attention to the research question: first, the behaviour of bank interest rates relative to the Government bond yields in correspondence of the reforms; second, the number of new in-court proceedings following such reforms. As for the first fact, we observe that the average interest rate on bank credit mirrors the trend of government bond yield until the 3rd quarter of 2012, while diverges substantially thereafter (see Figure 2). In that quarter the 2012 reform is introduced; hence, it might be the case that the reforms cause a structural increase in the price of credit.

[Figure 2 here]

As for the second fact, the number of new reorganizations has been, on average, constantly increasing from 2008, but with a sharp boost after the 3rd quarter of 2012 (see Figure 3, left panel): new reorganizations spike from 421 (2012-Q2) to 1,600 (2012-Q4); this may be linked to the reduction of creditor rights that characterizes 2012 Reform. Besides, subsequent to the Bankruptcy Law reforms, there is an increasing use of Reorganization as a substitute for Liquidation (see Figure 3, right panel): the share of Reorganization in the new in-court proceedings rises to 29.21% (2012-Q4) from 3.76% (2005-Q2); this might suggest that the regulators' intention to favourite restructuring over liquidation has been achieved. Yet, the question is whether such an increase in the number of new reorganizations is positive SMEs' bank credit conditions, and especially for those not in financial distress that thus does not benefit from accessing a bankruptcy proceeding.

[Figure 3 here]

3.2 Creditor Rights Index

We exploit each reform as an exogenous source of time variation to analyse how creditors' rights impact the credit market. The starting point of our analysis is the CRI, because we need to assess whether a given reform strengthens or weakens creditor rights. In order to develop the CRI, we examine 17 measures of creditor rights studied in the literature. Then, we study how changes in Bankruptcy Law affect CRI and relate CRI to the volume and price of bank credit.

The CRI relies on the seminal work of LLVS (La Porta, et al., 1998), which introduces a creditor rights index based on 4 rights. We extend the original index up to 17 rights, which are crucial to examine the effective power that creditors have when dealing with a firm. These rights includes, for example: automatic stay on assets when the proceeding begins; creditor individual voting rights on the restructuring/liquidation plan; cram-down procedure by the Court to force even disapproving creditors to accept the restructuring/liquidation plan; and the possibility for a debtor to unilaterally terminates a contract when the proceeding starts. The complete description of the 17 rights is provided in Appendix A.

CRI assesses the level of creditor rights and is measured for Italy, although it can be easily replicated globally for any other country. For each right, as score of 0 (pro-debtor) or 1 (pro-creditor) is assessed; the sum of the score across all the rights represent the CRI at a given point in time; therefore, the higher the CRI, the stronger the legal protection of creditors. From a cross-sectional perspective, CRI is measured separately for each of the four bankruptcy proceedings, ranging from a minimum of 0 to a maximum of 17. Total CRI is the sum of CRI across all the proceedings; it can vary from a minimum of 0 to a maximum of 68. From a time series standpoint, CRI is measured from

31.12.2004 to 31.12.2014, which allows to study even separately the effect of each Bankruptcy Law reform over the last 10 years. Table IV summarizes CRI from 2004 to 2014.

[Table IV here]

Over time, Total CRI has lessened significantly, reducing by 24% between 2004 and 2014; this reflects the pro-debtor philosophy pursued by the regulators. Reforms from 2010 onward drive most of the reduction, as Figure 4 clearly depicts in the left panel. The biggest (negative) variation due a single reform happens in 2012; the drop of CRI registered in that year subsequently has been offset marginally by 2013 reform, which interrupts the reduction season of the CRI itself.

[Figure 4 here]

From a cross-sectional point of view (see Figure 4, right panel), we observe that creditor rights have been modified differently, in magnitude and in direction, depending on the specific bankruptcy proceeding. This suggests the importance of including all the proceedings when assessing the impact of B.L. on the Bank Credit Market: Liquidation's CRI increases from 7 to 9 (+29%), while Reorganization's CRI suffers the biggest contraction, reducing to a minimum of 2 from a maximum of 10, which corresponds to an 80% reduction of creditor rights in that proceeding. The reforms intervene only once PF's CRI when its discipline is introduced; on the contrary, regulators have changed repeatedly creditor rights in FC, that overall registers a trend of reduction over time (-30% from 2004 to 2014).

LLVS rights are the first four rights composing CRI limited to Reorganization and Liquidation. Between 2004 and 2014, only one right is modified (namely, "restriction for going into procedure") in the 2005. Afterwards, such rights are constant; thus, they are not changing during the period being analysed (2009Q4-2014Q2). It becomes crucial to include other rights rather than just the original four, in order to assess more precisely the effect of a given bankruptcy law reform. If we had considered only the LLVS rights, we would have not captured any effect from the three reforms being examined.

As the data on CRI proves, regulators have modified repeatedly and substantially creditor rights during the last 10 years; this situation allows to study the effects of a series of reforms over time within a country. In addition, the design of our CRI can capture the differences across all the proceedings; this is crucial, because increase of creditor rights in a proceeding may be offset, or fostered, by a change of creditor rights in another one. Indeed, what matters for a creditor is the portfolio of rights available, rather than those limited to a single proceeding.

Our findings are confirmed by the principal component analysis run on the CRI distinguishing across the 4 bankruptcy proceedings or across the 17 rights, whose results are summarized in Table V and Table VI, respectively.

[Table V here]

According to the principal component analysis by proceeding, the first two and three components explain 81% and 94% of the variance in the CRI, respectively. The first component can be interpreted as the "restructuring" component: it has positive loadings, between 0.42 and 0.55, for the three proceedings that can end up in continuation (PF, FC and Reorganization), while it has a negative loading of -0.50 on Liquidation. The second component can be thought as the "in-court procedures": in fact, it has positive loadings on all the proceedings which somehow involves a Court (FC, Reorganization and Liquidation), while it has a negative loading on PF which is an out-of-the-court renegotiation.

[Table VI here]

The principal component analysis by individual rights emphasises the importance of including more rights than those introduced by LLVS. Overall, rights can be condensed in six components, the firs three of which explain 88% of the variance in the CRI. Rights are not all equally important: in the first component, for instance, "early automatic stay" and "no silent consent" matter most. Moreover, some rights switch sign in the loading across the components (eg. "restrictions for going into proceeding); this implies "hedging" effects of some rights against others.

These results suggest that regulators evaluate differently each proceeding: creditor rights in a proceeding may "hedge" or "leverage" creditor rights in another proceeding. What matters, overall, is the combination of rights that creditors receive.

4 Empirical Framework and Results

We relate CRI with the price and volume of bank credit and we find that a contraction of creditor rights is associated with a reduction of volume and an increase of price (interest rate) of bank credit. The relationship between CRI and bank credit conditions is not equal across firms but it is more pronounced for riskier firms, which should be closer to financial distress and thus more likely to activate a bankruptcy proceeding. In addition, we investigate separately the three post-crisis Bankruptcy Law reforms (2010, 2012 and 2013) and prove that each reform has different consequences on bank credit market's conditions and, thus, SMEs access to finance.

Our work is based on a comprehensive and novel dataset collected at single credit level and on a DID econometric strategy which isolates the causal effects of Bankruptcy Law reforms. The next paragraphs present the data (§ 4.1), the identification strategy (§ 4.2), the econometric specification (§ 4.3), the main results (§ 4.4), and the robustness checks (§4.5).

4.1 Data

In order to focus on the Bank Credit Market for SMEs, the paper takes advantage of a unique and proprietary database provided by one of the biggest Italian banks, with over 1,500 branches and a stronger presence in the richest regions. The dataset is a completely anonymous panel based on the information collected to comply with banking supervisory requirements. It is built at facility (credit) level where a facility can be a line of credit, a loan or a bank guarantee, of any technical kind, provided by the Bank to a single borrower. Besides, the database includes measures of probability of default as well as credit rating of a firm, as estimated by the risk management office of the Bank according to Basel Rules.

4.1.1 Data sources

Proprietary Database: the dataset contains credits towards all firms client of the Bank, excluding financial and insurance companies. Data are provided both for performing and non-performing credits, as well as for cash and non-cash Bank's exposure: therefore, the database represents the universe of the Bank's exposure to non-financial SMEs. The information is collected at quarterly frequency with a time horizon spanning from December 2009 to June 2014, for a total of 19 quarters: this allows to study, both collectively and separately, the three Bankruptcy Law reforms that impacted most CRI, namely 2010, 2012 and 2013 reforms.

The database has more than 6.4 million facility times quarter observations, with an average of 340,281 facilities and 147,409 firms per quarter, corresponding to 2.3 facilities per firm. Data on interest rates have been disclosed for a subsample of 1.4 million facility times quarter observations, primarily for loans. Such an extensive database allows to investigate the reaction of one lender to each reform separately, at single credit level. We thus scrutinize financial decisions of the lender following each of the last three reforms of the Bankruptcy Law, considering the reforms either cumulatively and separately; this yields an ideal set-up to check the impacts of each reform on the credit market at micro level. The analysis at *single* credit level is unique, and disentangles the effects of reforms on the distinguishing feature of the Bank Credit Market such as volumes of lending, pricing and guarantees.

Cerved – Centrale Bilanci: to complete the proprietary database, we collect firms' financial statements information from the Cerved database, collected by the Cerved Group and available to the

Bank via Centrale Bilanci. These data cover the universe of Italian corporations and are commonly used by banks to assess credit risk. The dataset provides an extensive and unique coverage of SMEs, which is especially relevant for our purposes since our research focuses on this kind of firms. From this dataset, we collect yearly information on income statements and balance sheets, such as revenues, EBITDA, assets, and firm's financing structure.

European Central Bank (*ECB*): information about credit standards applied to SMEs has been collected by the ECB Bank Lending Survey.

Italian National Institute of Statistics (ISTAT): data on macroeconomics, such as gross domestic products and inflation are from ISTAT.

4.1.2 Variables of interest

A) Outcome variables

The main purpose of the paper is to consider critically Bank Credit Market's reaction to bankruptcy law reforms. The two distinguishing features of each market are volume and price; we identify two output variables per each feature:

a) *Volume variables*:

(i) *Total Exposure at Default* (*EAD*): exposure at default of the Bank, both on and off balance, for a given facility *i* to firm *j* at time *t*; it represents the effective gross exposure of the Bank according to Basel rules, in case of debtor's default. *EAD* reflects an economic concept that is influenced by the amount of credit granted by the Bank, the amount of credit utilized by a firm, and the Bank's credit portfolio composition;

(ii) *Recoverable Amount at Default* (*RAD*): euro amount that the Bank recovers in case of default, for a given facility *i* to firm *j* at time *t*. It is computed as the product of *EAD* and the recovery rate for a given credit; the recovery rate (*RR*) is the percentage of the lent amount that a Bank is expected to recover conditional on debtor's default, as estimated according to Basel regulation. *RAD* thus expresses the absolute Euro-value that the Bank is expected to recover in case of debtor's default.

b) Price Variables:

(i) *Interest Rate* (*IR*): annual interest rate charged by the Bank to firm *j* on the facility *i* at time *t*. It is the nominal interest rate in annual terms for a given credit;

(ii) *Interest Rate Spread* (*Spread*): difference between *IR* for facility *i* to firm *j* during quarter *t* and the average 3-month Euribor rate in that quarter. It represents the spread that the Bank charges over the interbank prevailing rate.

In addition, for each output variable, we perform the analysis also by splitting the sample in:

(i) secured and unsecured credits, because the Bank, following a reform, could even modify guarantees on a facility or the mix of secured and unsecured credits in its portfolio;

(ii) new and old credits, because as a response to a reform the Bank has always the option to reduce new facilities (number and amount), to deny roll-over of old credits, or to renew expired credit lines for a smaller amount.

Finally, as a robustness check, we include the granted amount of credit (*Granted*) as variable, in order to study changes in volumes of credit as a response to a modification of creditor rights. *Granted* is the maximum nominal amount that the Bank is willing to lend to a firm *j* for a given facility *i* at time *t*; it is a nominal contractual amount that needs time to renegotiate and adjust to a law reform.

B) Input variables

We can group input variables in four main economic groups (vector notation in parenthesis):

a) *Credit characteristics (X_{ijt})*: to test empirically our hypothesis, we utilize a number of credit specific features traditionally accounted for controls by the literature; all these features are marked separately for each credit *i* to firm *j* at quarterly frequency *t*. *Guarantee* is a set of binary variables tracking whether a facility has no guarantee (*Unsecured*), a mortgage guarantee (*Mortgage*), a pledge guarantee (*Pledge*), an external guarantee provided by a consortium (*Confidi*), a personal guarantee (*Personal*), and/or any other guarantee different from the previous ones (*Other*). *Status* is a set of categorical variables indicating whether a credit is performing (*Bonis*), or is *Non Performing* according to the classification of the four increasing levels of distress identified by Bank of Italy: *Past Due*, *Restructured*, *Incaglio*, and *Sofferenza*[2]. *Non Cash* is a binary variable taking the value of 1 if a facility is a non-cash exposure (e.g. bank guarantee). *New Facility* is a dummy variable tracking if a credit is newly issued in a given quarter *t*. *Maturity* is a set of binary variables mapping whether the original maturity of a credit is up to 1 year (*Short Term*), between 1 and 5 years (*Medium Term*), or above 5 years (*Long Term*). *Facility Nature* is a set of categorical variables indicating the technical nature of each facility (e.g. credit cards, loans, commercial facility, cash credit line, …) as classified according to Bank of Italy's regulation requirements (SISBA codification). *Interest Rate Kind* is a set of dummy variables tracking the kind of interest rate applied to facility *i* to firm *j* in quarter *t* (fixed, variable, capped, …) as classified by credit officers of the Bank.

[2] The classification of non-performing facilities required by Bank of Italy is provided by "*Circolare n. 272 del 30 luglio 2008 - 6° aggiornamento, § B.6*" available on https://www.bancaditalia.it/compiti/vigilanza/normativa/archivio-norme/circolari/c272/C_272_Matrice_testo_integrale_6_agg.pdf.

b) *Firm's structural characteristics (D_{jt})*: in our empirical analysis, we control even for structural characteristics of each firm *j* at quarterly frequency *t*. *Industry* is a set of categorical variables indicating the industry in which each firm operates; industry classification complies with Italian Chamber of Commerce categories (ATECO). *Segment Size* is a set of binary variables tracking the credit segment size of a firm according to Bank of Italy's classification requirements to fulfil the Credit Register (Retail Business, Small Business, Corporate, …). *Province* stands for a set of binary variables mapping the province where a firm is headquartered.

c) *Firms' financing and operating characteristics ($F_{j(t-1)}$):* data from Centrale Bilanci (Cerved Group), as reported from the last available financial statements released before quarter *t*, are used to compute aggregate variables describing the operating and financial characteristics of firms. *Bank Debt / Net Debt* is the ratio of a bank debt and total net debt for a firm. *Bank Debt / Total Liabilities* is the firm's bank debt, divided by its total liabilities. *Leverage* is the ratio of firm's total assets and total equity. *Revenue* and *Assets* are total revenues and total assets as reported, respectively. *EBITDA Margin* is the earnings before interests, taxes, depreciations and amortizations, divided by *Revenue*. *Value Added Margin* is the value added divided by *Revenue*. *ROE* is return on equity. *ROA* is return on assets. The last three variables (*Value Added Margin*, *ROE*, and *ROA*) are used only in the robustness checks.

d) *Macroeconomic and exogenous effects*: this group contains control variables used either in the main econometric specification or in the robustness analysis. Quarter times year (*Q·Y*) is a set of binary variable mapping uniquely each quarter from 2009-Q4 to 2014-Q2. *Credit Cycle* is a control variable assessing the credit market conditions as perceived by loan officer and collected in the ECB Bank Lending Survey. *GDP Growth* is the quarterly percentage growth of Italian real gross domestic product. *Inflation* is the quarterly percentage change of National Index of Consumer Prices for Italy. *Unemployment Growth* is the quarterly percentage change of the Italian unemployment rate. *Bank Tier 1 Ratio* is the Core Tier 1 ratio of the Bank according to Basel Rules. The last four variables mentioned (*GDP Growth*, *Inflation*, *Unemployment Growth*, *Bank Tier 1 Ratio*) are used only in the robustness checks.

Appendix B provides comprehensive details on output and input variables meaning, computation and composition, grouped as described.

4.1.3 Descriptive Statistics

Cross-sectional statistics for *Total Exposure at Default* (*EAD*) and *Interest Rate* (*IR*) are presented in Table VII and Table VIII, respectively[3].

The average *EAD* for a credit over the sample period is 139,106 Euro. The *EAD* varies substantially across our sample as the 1st and the 3rd quartile of the distribution are 1,177 and 61,104 Euro, respectively. The median *EAD* is significantly lower than the mean and equal to 14,960 Euro, because the data focuses on SMEs. Heterogeneity in *EAD* across credit characteristics, presented in the lower panels of Table VII, suggests the usual relationships: the average mortgage-backed credit is significantly bigger (542,858 Euro) than the average unsecured credit (122,854 Euro); restructured credits on average tend to be larger (655,436 Euro) than the average credit in the sample, because restructuring is costly and it is thus worth only for more relevant exposures; the average size increases with maturity, but the number of short-term facilities (3,464,627) is by far the largest, constituting more than 50% of the sample; finally, newer facilities are on average smaller (92,358 Euro) than older ones (143,710 Euro).

The average *Interest Rate* in the sample is 3.48%; the dispersion is relevant since in the 1st and 3rd quartile *IR* is 2.20% and 4.59%, respectively. Besides, the interquartile range widens over the sample period. The lower panels of Table VIII reveals heterogeneity in *IR* depending on credit features: secured credits pay on average a lower rate, with the lowest rate in case of mortgage-backed credits (2.74%); short term credits are charged, on average, a significantly higher interest rate (4.19%) than long term facilities (3.08%); newer facilities are on average more expensive (4.55%) than older ones (3.42%). These statistics are consistent with major findings in the literature (Strahan, 1999; Santos, 2011).

[Table VII and Table VIII here]

Table IX and Table X reports time-series summary statistics for *Total Exposure at Default* and *Interest Rate*[4].

Over time, the average *EAD* reduces substantially from 151,865 (2009-Q4) to 131,638 Euro (2014-Q2), which corresponds to a contraction of 13.3%. Most of the contraction happens during 2011 and 2012, when two Bankruptcy Law reforms reducing CRI (2010 and 2012) become fully effective. Unsecured credits, whose statistics are presented in the lowest panel of Table IX, register a reduction in means of 17.9%, which is larger than the overall sample; during the same period, the

[3] Similar summary statistics have been estimated for the output variable *RAD* and *Spread*, but not reported. The comments we present in this section apply to such variables too.
[4] The paper reports statistics only for the ending quarter of each year; additional quarters are available but not disclosed.

number of unsecured facilities in the portfolio dropped from 63.82% (2009-Q4) to 38.60% (2014-Q2). Although we cannot prove any causality at the current stage, this suggests the Bank is shifting towards a more secured portfolio as CRI goes down. Finally, the standard deviation of the *EAD* reduces significantly over the sample period.

The average *Interest Rate* does not apparently move substantially over the sample period, but we need to remember that it grows from 2012-Q4 to 2014-Q2 during a period of monetary expansion and decreasing government bond yield, which implies the Bank increases substantially its spread over time (see Figure 2). Moreover, while average *IR* in the overall sample grows by 12 basis points (henceforth, also "*bps*") between 2009-Q4 and 2012-Q4, the average rate charged to unsecured credits augments by 140 bps over the same time horizon: unsecured credits suffer thus an increase of the average rate 11 times larger than the overall portfolio. Therefore, time-series statistics provides the sense of what is happening to Bank Credit Market in the period of our analysis (from 2009-Q4-2014-Q2).

[Table IX and Table X here]

4.2 Identification Strategy

We cannot investigate the effects of a Bankruptcy Law reform on the credit market's conditions by simply comparing such conditions before and after each reform; indeed, the resulting differences could even reflect unobserved economic states. Therefore, consistently to the theoretical framework, the analysis needs to distinguish firms according to their exposure to the design of bankruptcy proceedings (*Exposure*). The literature identifies two main sources of heterogeneity in such exposure:

(i) firms' heterogeneity with respect to the risk of default: the higher the risk of default, the higher the exposure, because probability of entering a procedure becomes larger as firms approach financial distress (Panetta, et al., 2009; Rodano, et al., 2014);

(ii) firms' heterogeneity with respect to the level of efficiency across courts: the more efficient a court, the faster is bankruptcy resolution and the lower the exposure to the Bankruptcy Law. Creditors lending to firms operating in more efficient judicial districts may apply more favourable credit conditions because, in case of in-court bankruptcy proceeding, their expectation is to resolve bankruptcies faster (Jappelli, et al., 2005; Ponticelli, 2013).

The focus of this paper is on firms' heterogeneity with respect to the risk of default. We use two different measures of risk of default:

(i) rating of each firm (*Rating*): it is estimated by the Banks' officers according to Basel Rules for risk management purposes. *Rating* ranges from 1 to 14; 1 is the best possible rating and

corresponds to the lowest risk of default, while 14 is the worst rating category and represents a defaulted firm, credits to which are classified as "Sofferenza" (see § 4.1.2). Rating classes from 1 to 9 refer to performing credits, while from 10 to 14 to non-performing ones. The higher the rating, the stronger is the risk of default and, therefore, the higher the exposure to Bankruptcy Law reforms;

(ii) probability of default of each firm (*PD*): it represents the probability that a firm defaults in 1 year time, as estimated by the Bank's officer to comply with risk management requirements of Basel Rules. *PD* ranges from 0 (no probability of default) to 1 (firm has already defaulted). The higher the probability of default, the larger the risk of default and thus the exposure to Bankruptcy Law reforms.

Our measures of risk of default are advantageous for several reasons. First, they are determined by the Bank according to international Basel Rules and are predetermined at the time of each reform. Therefore, at the time when each reform is adopted, firms cannot modify their *Rating* or *PD* exploiting anticipated costs or benefits of the same reform. Second, unlike the U.S. credit rating, firms solicit neither *Rating* nor *PD*; moreover, such measures are available for all the SMEs towards which the Bank has credit risk exposure. Thus, there are no firms' strategic involvements in the choice of the exposure variables. Finally, the algorithm for estimating *Rating* and *PD* is consistent across all firms in the sample, because the same lender provides our credit portfolio, and its exact formula is unknown to firms themselves.

[Figure 5 here]

Figure 5 depicts the main characteristics of the *Rating* variable. The left panel plots the average *Interest Rate* (*IR*) against the rating category, for performing credits. We find that there is a strong positive relationship between rating and interest rates. *Rating* equal to 1 is on average associated with *IR* of 3.25%, whereas rating category 9 pays an average interest rate of 3.88%. The right panel plots the same relationship in 4 different periods: before the 2010 reform (2009Q4-2010Q1), between the 2010 and the 2012 reforms (2010Q2-2012Q2), between the 2012 and the 2013 reforms (2012Q3-2013Q2), and from the 2013 reform onward (2013Q3-2014Q2). We observe an upward shift of the curve plotting the relationship between the average *IR* and *Rating* following Bankruptcy Law reforms that reduce creditor rights. This suggests that when the law weakens creditor rights, the price of credit increases. Besides, the upward shift is more evident for more risky firms: the difference in the average *IR* (i) before the 2010 Reform and (ii) after the 2013 Reform is 47 bps for rating 1 category while is 79 bps for rating 9 category. This suggests that the *Rating* may be an accurate proxy for the *Exposure* to B.L. reforms.

4.3 Econometric Specification

The econometric analysis is structured under a difference-in-difference framework, which allows to isolate the effects of changing creditor rights on the Bank Credit Market. We run the analysis according to two different setups: (i) a first setup that captures the "average" effects of a change in creditor rights; (ii) a second setup that estimates separately the effects of each Bankruptcy Law reform in the sample (2010, 2012, and 2013).

4.3.1 Average effect specification

According to the first approach, the estimation takes advantage of CRI as a substitute of the classical dummy variables tracking a treatment (i.e. a reform) under the DID framework. The econometric analysis is set up as follows:

$$Y_{ijt} = \alpha + \beta Exposure_j + \kappa CRI_t + \gamma\left(Exposure_j \cdot CRI_t\right) + \eta\left(Exposure_j \cdot Cycle_t\right) + X_{ijt}\Omega + D_{jt}\Phi + F_{j(t-1)}\Lambda + Q \cdot Y + \varepsilon_{ijt} \quad (1)$$

Y_{ijt} represents the output variable of interests (e.g. *EAD*) for the facility *i* (e.g. loan) with firm *j* at time *t*, defined at quarterly frequency from the last quarter of 2009 to the second quarter of 2014. Each variable represents a distinguishing feature of the Bank Credit Market, assessing both pricing and non-pricing effects: *Total Exposure at Default* (*EAD*), *Recoverable Amount at Default* (*RAD*), *Interest Rate* (*IR*), and *Interest Rate Spread* (*Spread*). Volume variables are in log-terms.

The time-invariant indicator capturing a firm exposure to the reforms ($Exposure_j$) is constructed in two ways, according to the identification strategy. Under the first identification approach, $Exposure_j$ is the firm's rating (*Rating*). According to the second identification, $Exposure_j$ is measured on the basis of the of the firm's probability of default (*PD*). For both the measures of *Exposure*, we acknowledge they are time varying by nature, as they depend on firms' financial / operating conditions and product market competition. In order to capture such variability, we estimate *Rating* and *PD* of each firm as the mean value of its rating and probability of default, respectively, computed over the time horizon for which a given firm is in the sample. In addition, we run the regressions also in a "below / above median" approach, where *Exposure* is set equal to 1 if the firm's average *Rating* and *PD*, respectively, is above the corresponding sample median; otherwise it is equal to 0. The "below / above median" approach may be more extreme, as it splits the sample universe of the firms into two groups: exposed (*Rating* or *PD* above median) and non-exposed (*Rating* or *PD* below median); yet, it should give a better idea of the potential exposure.

The variable capturing the change of creditors' rights over time is CRI_t, which represents the Total CRI across all the four proceedings a lender might have to face if a SME defaulted. The coefficient κ measures the overall average relationship between the level of CRI and the Bank Credit

Market's variable of interest. Theory argues that, as creditors' rights becomes more favourable (i.e. higher CRI), interest rates should decrease, while volumes of credit available in the economy should increase. Therefore, we expect the coefficient to be negative when the output variable is a price effect (e.g. *IR*), and positive when the output is a volume effect (e.g. *EAD*).

The interaction between CRI_t and the firm exposure to the bankruptcy reforms ($Exposure_j$) captures the differential effects of changing creditors' rights. The coefficient (γ) on the interaction is the DID estimate for the *Total CRI*. It identifies the impact on the outcome variable (e.g. *IR*) of changing by one unit the CRI, distinguishing firm's exposure to the reforms, and measures how the difference between the output variable across exposure groups varies relative to the pre-reforms period. We expect the sign of the coefficient to switch, depending on the output variable. In the case of price effects, reforms decreasing CRI should produce a rise of interest rates and thus the corresponding coefficient should be negative. On the contrary, in the case of volumes of credit, reforms decreasing CRI should produce a reduction of volume of credit available to firms; hence, the corresponding coefficient should be positive.

Debtors differentially exposed to the reforms can face time-varying credit conditions driven also by the credit cycle, which represents an alternative channel through which credit conditions apply to borrowers. The analysis controls for this possibility, by incorporating an interaction term between the exposure to each reform ($Exposure_j$) and a time varying measure of credit cycle ($Cycle_t$), in order to separate the effects of B.L. reforms from the potential conflicting effects of the credit cycle affecting all the firms in the economy (Rodano, et al., 2014). The measure of the credit cycle ($Cycle_t$) is based on loan officers expectations of credit standards applied to SMEs in Italy. It is taken from the Bank Lending Survey of the European Central Bank, concerning expected credit standards specifically applicable to Italian SMEs in each quarter following the survey.

The econometric specification includes fixed effects for each period in the sample ($Q{\cdot}Y$), to account for aggregate and macroeconomic shocks that might have affected credit demand and supply despite the reforms. Moreover, as the dataset takes advantage of the paired relationships between a single bank and each borrower, the analysis is not made spurious by effects due to the presence of multiple lenders. This implies that the internal validity of the DID estimators cannot be influenced by common shocks, multiple lenders' behaviour or from time-invariant differences in the firms' exposure to the reforms.

The model controls even for several facility's and firm's specific characteristics. X_{ijt} is a vector containing the characteristics of the facility *i* to firm *j* at time *t*, usually studied in the literature, such as: maturity (*Maturity*), collateral (*Guarantee*), and default status (*Status*). D_{jt} is a vector containing firms' structural characteristics, such as *Industry* and *Province*. $F_{j(t-1)}$ is a vector of firm's financing

and operating characteristics measured in the last available fiscal year prior to the quarter of analysis, such as: bank debt over total net financial debt, log of revenues, and log of asset. The column vectors Ω, Φ, and Λ collect all coefficients for the variables composing vectors X_{ijt}, D_{jt}, and $F_{j(t-1)}$, respectively. Appendix B and § 4.1.2 provide a comprehensive description of all the variables included in the analysis.

Finally, we cluster the error term, ε_{ijt}, at firm level as we acknowledge that shocks at single credit level may be contemporaneous within a debtor.

4.3.2 Individual reforms specification

Under the second specification approach, the econometric analysis separates the effects of each reform in the sample (2010, 2012, and 2013) as follows:

$$Y_{ijt} = \alpha + \beta Exposure_j + \rho\left(Exposure_j \cdot Ref10_t\right) + \gamma\left(Exposure_j \cdot Ref12_t\right) + \delta\left(Exposure_j \cdot Ref13_t\right) + \eta\left(Exposure_j \cdot Cycle_t\right) + \kappa CRI_t + X_{ijt}\Omega + D_{jt}\Phi + F_{j(t-1)}\Lambda + Q \cdot Y + \varepsilon_{ijt} \quad (2)$$

In the equation Y_{ijt} represents the output variable of interests (e.g. *Interest Rate* or *Recoverable Amount at Default*) for the facility *i* (e.g. loan) with firm *j* at time *t* (defined at quarterly frequency), exactly as in the first specification setup. Equally, the time-invariant indicator measuring the firm exposure to a Bankruptcy Law reform ($Exposure_j$) is the same as in the first approach and identifies exposure groups across firms. It thus takes different values according to each of the two identification strategies: *Rating* in the first identification and *PD* in the second identification.

$Ref10_t$, $Ref12_t$ and $Ref13_t$ are time dummies associated with the dates of the reforms, and respectively reforms of 2010, 2012 and 2013. These dummies have a value of zero prior to the reform and one thereafter. For instance, the reform of 2010 is enforced in July 2010; thus, it takes a value of zero before the second quarter of 2010 and one thereafter. The 2012 reform becomes applicable from September 2012; therefore, *Ref12* has a value of zero before the third quarter of 2012 and one from then on. Finally, the reform of 2013 is enacted in August 2013; thus, *Ref13* is equal to one from the 3rd quarter of 2013 onward.

The interaction between reform and exposure indicators discerns the impact of each reform on the output variable (e.g. interest rate). The coefficient on the first interaction, ρ, is the DID estimate for the 2010 reform; it measures how the difference between the output variable across exposure groups changes relative to the pre-reform period. The coefficient on the second interaction, γ, represents the DID estimate for the 2012 reform; it estimates the average differential effect of the 2012 reform on the output variable, before and after the reform itself, across firms with a different risk of default and, consequently, a different exposure to the B.L.. The coefficient on the third

interaction, δ, is the DID estimate for the 2013 reform; it measures the average differential impact of the 2013 reform on the outcome variable's difference across the exposure groups.

We expect the sign of the coefficients to change, according to the output variable. In the case of variables tracking a price effect (namely, *IR* and *Spread*), reforms increasing (decreasing) creditor rights should produce a reduction (increase) of interest rates and thus the corresponding DID coefficients should be negative (positive). On the contrary, reforms weakening (strengthening) creditor rights should produce a reduction (growth) of volume of credit available to firms; as a consequence, when the outcome variables record a quantity effect in the market (*EAD* and *RAD*), DID coefficients should be positive if a reform improves creditor rights and negative if such rights are reduced.

As under the first econometric setting, in all our regressions we control for a number of aggregate ($Exposure_j \cdot Cycle_t$), facility-specific (X_{ijt}), firm-specific (D_{jt} and $F_{j(t-1)}$), and time-fixed ($Q \cdot Y$) effects. Such variables and the related coefficients (η, Ω, Φ, and Λ respectively) have same meaning and computation as under the first specification approach. The setup includes also Total CRI (CRI_t) as a control variable, whose coefficient can be interpreted as in the average effect specification. Finally, we cluster the error term, ε_{ijt}, at firm level. Appendix B and § 4.1.2 describe all the variables used in the analysis.

4.4 Main Results

Our empirical work studies the effects of B.L. reforms both in terms of non-price and price effects. As for the former, the variables of interest are *Total Exposure at Default* (*EAD*) and *Recoverable Amount at Default* (*RAD*). As for the latter, the outcome variables are *Interest Rate* (*IR*) and *Interest Rate Spread* (*Spread*). This section outlines the main results of the paper.

As a preliminary analysis, we run regressions aggregated at national level and at firm level, to assess whether there is a significant relationship between CRI and the output variables of interest.

[Table XI and Table XII here]

Table XI and Table XII report regression results according to equation (1), aggregating data at national level, for average log Total Exposure at Default (*ead*) and Interest Rate Spread (*Spread*), respectively. The findings support the hypothesis that CRI is positively linked to volume of credits, and negatively associated to credit spreads. Indeed, every unitary improvement of CRI is associated with an increase of 0.7-0.8% in the average exposure at default and a decrease of 13.1-13.9 basis points in the spread.

[Table XIII and Table XIV here]

Similarly, we find a statistically and economically relevant relationship between creditor rights and credit conditions, when we combine data at firm-level, as Table XIII and Table XIV report, respectively for *ead* and *IR*. On average, we find that at debtor level the CRI is positively associated to an increase of 0.5-0.6% in the average exposure at default; at the same time, an increase in CRI is linked to a reduction in the annual interest rates, around 5 basis points. More interestingly, DID coefficients (*Exp·CRI*) support the hypothesis that firms more exposed to a reform suffer (benefit) more a reduction (increase) in creditor rights. Indeed, a unitary increase in CRI causes a differential increase of 1.5-2.2% in the exposure at default for riskier companies, relative to those less risky than the median. Correspondingly, interest rates respond to a unitary increase of CRI with a differential reduction around 5 basis points for SMEs riskier than the median; such a reduction for riskier companies is on top of the average relationship between CRI and interest rates.

The next two paragraphs of this section presents the results as follows. First, we discuss the overall findings under the average effect specification (see § 4.3.1). Second, we present the findings by individual Bankruptcy Law reforms according to the second specification we adopt (refer to § 4.3.2). Third, we segment the sample in the least and most risky firms, to see how reforms affect differentially group of firms having a different exposure to the Bankruptcy Law. Fourth, we analyse whether individual reforms have diverse consequences depending on guarantees that collateralize each credit. Finally, we check whether the effects of a reform are more or less pronounced depending on the age of the credits.

The first table in the section reports all the coefficients on the input variables. The subsequent tables, for the sake of the synthesis, focus otherwise only the main coefficients of interests, but all the control variables described in the specification are always included in the analysis. We cannot make causal inferences about the control variables, but note that their impacts and possible interpretation is in line with previous empirical studies (Strahan, 1999; Davidenko & Franks, 2008). The online appendix provides comprehensive tables of the regression results[5].

4.4.1 Non-price effects

A) Average effect specification

Table XV presents the DID regression results for the *Total Exposure at Default* (*EAD*) under the average effect specification. Columns (1) and (3) assume firms' exposure to B.L. is equal to the average *Rating* and PD, respectively; in columns (2) and (4) *Exposure* is equal to 1 where the firm's

[5] The online appendix has not been published yet.

average *Rating* and *PD*, respectively, is above the corresponding sample median; otherwise it is equal to 0.

Consistently with the theory, we observe that Total CRI is on average positively related with the size of credit as measured by the exposure at default. Under rating identification, an increase in one unit of the Total CRI corresponds to an increase of 1.7% of the *EAD*; according to probability of default identification, a unit increase of the Total CRI implies and increase of *EAD* between 1.8% (below vs. above median *PD*) and 2.8% (average *PD*). All these results are both economically and statistically significant.

If firms' exposure to the design of bankruptcy proceeding increases, the quantity of credit in the market towards such firms is more influenced by a change in the creditor rights, after controlling for credit's, firms' and structural characteristics. For instance, in column (1), every category of additional *Rating* causes a positive differential increase by approximately 1.0% in the exposure at default as estimated by the DID methodology; it means that if Total CRI moves positively by one unit, a credit towards a firm with a rating of 6 benefits a growth of the quantity of credit by 1.0% more than a similar credit to a firm with a rating equal to 5. Such an effect is even stronger if we compare firms riskier than the median to those less risky than the median, as in column (2): riskier firms benefit a unitary increase of *CRI* by 4.0% more than comparable safer firms, following a reform. Of course, a reduction of one unit in the creditor rights is conversely associated to negative impacts: riskier firms suffer most the contraction of credit, when creditor rights are weakened.

When *Exposure* is measured by probability of default, similar interpretations are valid. In regression (3), we see that a cross-sectional difference of 10 percentage point in the probability of default between two SMEs, implies an additional growth of the average exposure at default around 1.5%, if Total CRI is enhanced by one. In column (4), results prove that when a firm has a probability of default larger than the median, bank credits towards such firm benefit (suffer) a unitary increase (decrease) of Total CRI by 3.7% more, in terms of quantity of credit available, relative to comparable credits towards firms less risky than the median.

[Table XV here]

The impacts of the reforms being analysed on the *Recoverable Amount at Default* (*RAD*) is presented in Table XVI, which reports the average overall effects of the reforms. Results are coherent to what we conclude about the effects of the reforms on *Total Exposure at Default*. Total CRI is on average positively related to the *Recoverable Amount at Default* of a given credit, after controlling for the usual credit's, firm's and structural characteristics; results are both economically and statistically significant.

[Table XVI here]

The magnitude of the relationship between Total CRI and *RAD* is stronger than that between Total CRI and exposure at default. For instance, column (2) shows that a unitary growth of *CRI* is associated with a greater *RAD* of about 4.3%, which is 2.5 times bigger than the coefficient that relates *CRI* and *EAD* (equal to 1.7% in Table XV). Similarly, under average *PD* identification in regression (3), coefficient on *CRI* is 4.7% compared to 2.8% when exposure at default is the outcome variable of interest. This suggests that creditors care for their rights more in term of recoverable amount at default, rather than exposure at default. A possible explanation is that *RAD* takes into account the recovery rate that the lender expects to get if the borrower defaulted; it is thus a more accurate measure of the effective risk the Bank is taking.

If we look at the interaction between the exposure to the design of B.L. (*Exposure*) and *CRI*, we can confirm the findings we described for *EAD*: the higher a firms' exposure to a reform, the stronger the differential positive (negative) effect of one unit of increase (decrease) of the *CRI* on the recoverable amount of credit. These results are confirmed under any identification and are all highly statistically significant. For example, column (4) presents results under "below / above median" *PD* identification: following an unitary increase in *CRI*, firms whose probability of default is above the median gains a differential increment around 2.8% of the average recoverable amount at default per single credit, compared to less risky – and thus less exposed to reforms – SMEs.

B) Individual reforms specification

Table XVII reports DID regression results for the *Total Exposure at Default* under the individual reforms specification, which allows us to disentangle the effects of each reform on the quantity of credit in the market. Columns (5) and (7) utilize average *Rating* and average *PD* identification, respectively, while columns (6) and (8) adopt the "below / above median" approach, respectively for rating and probability of default. In columns (5) and (6) we observe that the sign of the coefficients of the interaction between the exposure of reforms (*Exposure*) and the time dummies tracking the reforms (*Ref10*, *Ref12*, *Ref13*) is consistent with the theory, after controlling for facility's, company's and structural characteristics: the 2010 and 2012 reforms weaken creditor rights and, consequently, they have a negative differential effect on the amount of credit available in the market; on the contrary, 2013 reform, which stops the decline of Total CRI by improving it slightly, is linked to an augment of the average credit exposure that a lender is willing to take.

[Table XVII here]

The 2010 reform reduces creditor rights; keeping it with the theory, the Bank decreases its average exposure (*EAD*) and the contraction is more pronounced for riskier firms, which are more exposed to the bankruptcy proceedings' features. Regression (6) reports that following the reform and under rating identification, the average difference in the exposure at default between firms riskier than the median one and firms less risky than the median declines by about -8.9%. When measuring *Exposure* as the average *Rating* (column (5)), we see that per each additional rating category, the contraction of credit is stronger by -0.9%: a riskier firm suffers more a negative change in the creditor rights. Similarly, under *PD* identification in column (8), we find that, following the 2010 reform, credits towards SMEs which have a probability of default higher than the median, suffer a differential contraction of -11.0% more than firms with a probability of default below the median.

The 2012 reform is the one that weakens most creditor rights; consistently, the analysis finds that this reform has the strongest impact on the quantity of credit: there is a substantial contraction of the average *EAD* in the quarters post-reform for firms that are more exposed to the Bankruptcy Law. In columns (5) and (6), under average and "below / above median" rating identification, respectively, we find that the DID coefficient for the average exposure at default is negative of about -5.9% per each cross-sectional incremental unit of rating and about -22.6% for above median risky firms. It means, for example, that a firm whose rating is above the median, following the 2012 reform suffers an additional contraction of credit of -22.6% relative to SMEs less risky than the median, whatever the change in the average *EAD* in the market is. Regressions (7) and (8) confirm results under PD identification: with the average PD approach, we report that the reform causes a differential decrease of -7.8% in the *EAD* per each incremental 10 percentage points of probability of default; with the "below / above median" approach, the results show a DID contraction of about -20.1% in the average exposure per credit towards firms whose *PD* is above the median, relative to comparable credits towards firm whose *PD* is less than the median.

The 2013 reform interrupts a season of weakening creditor rights; in fact, Total CRI bounces up by one unit. Consistently, we observe that the DID effect for firms more exposed to the reforms is positive and statistically significant; this seems to be a partial "reversal" of previous reforms. Indeed, following the last reform in the sample, riskier firms benefit from an increase of the average exposure at default. The size of the increase can be relevant: for instance, in column (6) under "below / above median" rating identification, the analysis shows that after the reform, credits towards firms riskier than the median benefits a growth of their average *EAD* by 8.3% more than credits to firms less risky than the median, irrespective of how the market moves overall.

The average relationship between creditor rights and exposure at default is captured by the coefficient on *CRI*. Results are consistent with the theory: the stronger the creditor rights, the larger

quantity of credit a lender is willing to provide. The magnitude of the relationship is close to that under the average identification approach: increase of one unit in *CRI* corresponds to growth of the average *EAD* between 1.2% and 3.1% depending on the identification strategy.

The dataset allows us to isolate the effects of each Bankruptcy Law reform on the *Recoverable Amount at Default* (*RAD*) per each individual credit. Table XVIII suggests that effects are similar to those we find on the exposure at default. Consistently with the theory, when a reform reducing creditor rights become applicable, the Bank decreases the average recoverable amount; moreover, the decrease is not equal across SMEs but is more relevant for the riskier ones.

[Table XVIII here]

The 2010 reform, which weakens creditor rights, is associated with a contraction of recoverable amount under any identification strategy. For instance, according to *Rating* identification, our DID estimate shows that following such reform the average *RAD* shrinks by -2.3% and by -11.3% for firms more exposed to it, under average and "below / above median" methodology (column (5) and column (6), respectively). The size of the coefficients is always bigger for *RAD* than for *EAD* (see Table XVII); this is consistent with the view that banks care more of recoverable amount than of exposure at default.

In 2012, creditors face the strongest drop of their rights. As a response, they reduce the average amount of credit measured as recoverable amount. Our analysis captures the reduction, under all the identification methods and underlines that riskier firms are more affected. For example, under "below / above median" rating identification approach reported in column (6), the DID estimate is -21.9%; it means that, following the reform, a credit towards a firm riskier than the median suffers a differential credit contraction of about 21.9% compared to firms less risky. Likewise, under average *PD* identification presented in column (7), we observe that every disparity of 10 percentage point in the probability of default across firms, implies a negative differential contraction of approximately -9.6% in the average recoverable amount; if a firm has a PD of 20% and another of 30%, the latter has to bear a differential reduction of credit of 9.6%.

Finally, like for the exposure at default, the 2013 reform produces a partial offsetting of the previous reforms' effects on the quantity of credit, which is linked to the increase in the creditor rights. Indeed, following the reform, we observe a growth in the average *RAD* which is more pronounced for riskier firms. For example, according to "below / above median" *Rating* identification, regression (6) shows that average recoverable amount of credit towards firms riskier than the median gains a rise of 18.6% compared to below-median risky firms.

Total CRI is positively related to *RAD*: a unitary augment of *CRI* is associated with approximately 5% growth in the recoverable amount. Besides, the relationship between Total CRI and *RAD* is stronger than that between Total CRI and *EAD*. This result is consistent to those emerging from average effect specification and confirms that a lender, on average, reacts more in terms of recoverable amount than exposure at default, if creditor rights change.

C) Level of risk

Table XIX presents regressions, for the outcome variable *ead*, where we split the sample in credits towards the lowest and highest risk SMEs. Lowest risk SMEs are those whose average rating falls into the first tercile of firms distribution based on *Rating*; highest risk firms are those whose average rating, instead, lies in the third tercile of the *Rating* distribution. The top panel reports results under average effect specification; the bottom panel presents results according to individual reform specification.

[Table XIX here]

The differential average impact, estimated by the DID coefficient on the interaction between *Exposure* and *CRI*, may look similar for the two group of SMEs: it is 0.011 for safest and 0.010 for riskiest. Yet, if we compute the ratio between (i) such coefficients and (ii) the coefficients on *CRI*, we observe that the ratio for least risky firms is 2.22, while that for the most risky is 0.62. This ratio can be interpreted as the "speed" at which a bank adjusts its exposure to firms, as creditor rights change. The "speed" is much faster for the safest firms, suggesting that there is a sort of convexity in the reaction to an exogenous change in creditor rights: as there is a strengthening (weakening) of creditor rights, the Bank increases (reduces) its positions towards low risk firms faster than towards high risk firms. A natural interpretation may be that a bank, ex-ante, has already taken into account the risk of the firms given a certain legislative framework and thus a bank takes a smaller exposure, all else being equal, towards riskier firms. When the legislative environment changes, ex-post, the Bank has to review its position and the credits more affected by the review itself are those towards less risky firms: it might even be the case that the Bank perception of risk changes as creditor rights modify, even though the SMEs fundamentals do not move.

Such an interpretation is confirmed when looking at the consequences of individual reforms: under average rating identification, for instance, the DID coefficients on the two reforms reducing Total CRI (2010 and 2012 reforms) are more negative for safest firms than for riskiest ones; when *CRI* goes up, following 2013 reform, low risk firms benefit from an increase of the quantity of credit (DID coefficient is + 8.5%), while the high risk firms do not benefit at all (indeed, they are still

suffering a credit contraction of -1.2%). Under individual reforms specification, moreover, we find that riskier firms are more sensitive to the level of creditors' rights. In fact, the coefficient on *CRI* for such firms (equal to 0.046) is 1.7 times larger than the corresponding coefficient for lowest risk companies (equal to 0.027), under average rating identification (column (14) and (13)). This is consistent with the view that more risk means more exposure to creditor rights and thus to the Bankruptcy Law.

D) Guarantees

Table XX and Table XX*bis* present regressions, for the outcome variable *ead* and *rad*, where we segment the sample in unsecured and secured credits. Unsecured credits are those without collateral; secured ones, though, have at least one guarantee amongst those tracked by the variable *Guarantee*[6]. The top panel reports results under average *Rating* and *PD* identification, while the bottom panel presents estimates according "below / above median" *Rating* and *PD* identification.

[Table XX and XXbis here]

Unsecured credits suffer most credit contraction following a reform that reduces creditor rights, but do not benefit fully from an increase of creditor rights; symmetrically, secured credits face lower credit contraction, if Total CRI shrinks, and gain more credit expansion, if CRI grows. Results are statistically significant, not for all identification approaches though. According to "below / above median" rating identification, the analysis shows that Total CRI matters 1.75 times more for unsecured facilities relative to secured ones: coefficients on *CRI* is 0.030 for the former and 0.017 for the latter. Consistently, the DID estimates for unsecured credits is more negative following the two reforms which weaken creditor rights: 2010 reform causes a differential contraction of -10.4% for the exposure at default on unsecured credits towards firms riskier than the median (column (22)), compared to a differential contraction of -6.0% for secured credits (column (21)); 2012 is emblematic and the differential effect on unsecured credits towards firms more exposed to the reform (i.e. riskier than the median) is -42.4%, which is ten times bigger than the corresponding DID effect for secured credit, equal to -4.0%. This suggests that the Bank responds to the reforms, by either reducing its exposure towards unsecured credit faster and / or requiring additional guarantees to keep the same amount of exposure. Finally, after the 2013 reform, we observe a positive move in the average *Total Exposure at Default*; yet, the differential impact for unsecured credits (+6.8%) is smaller than for secured facilities (+7.5%). The increase in the quantity of credit is thus larger for secured positions.

[6] Please refer to § 4.1.2 and Appendix B for variables' definitions.

E) New and old credits

Table XXI and Table XXI*bis* present regressions, for the variable *ead* and *rad*, where we segment the sample in new and old credits. New credits are those that have been issued in a given quarter; on the contrary, old credits have been issued before that quarter. The top panel reports results under average *Rating* and *PD* identification, while the bottom panel presents estimates according "below / above median" *Rating* and *PD* identification. Creditor rights appear to be more important for newer than for older credits, because the estimated coefficient on *CRI* is of one order bigger for the former relative to the latter; this is true for all the identification strategies. For example, under "below/above median" rating identification, one unit of increase in *CRI* is on average associated with 15.2% increase in the average *EAD* of new credits, compared to a 1.7% growth of *EAD* for old credits.

[Table XXI and Table XXIbis here]

The analysis provides some evidence that new credits tend to be affected earlier and more than old credits by a reform that reduces creditor rights; asymmetrically, when Total CRI grows, old credits towards more risky firm benefits an increase in the quantity of credits, more than new credits towards similar firms. Yet, it is not always feasible to disentangle clearly the effects of each reform, because a bank holds always the option not to issue new credit at all; as we do not observe credit applications, we are not able to capture such option's consequences. For instance, under average rating identification the estimates provide the following messages: first, 2010 reform, which reduces CRI, affects negatively the average *EAD* of new credits (-0.120) more than of old ones (-0.005), for firms more exposed to the reform itself; second, 2012 reform impacts more old (-0.050) than new facilities (-0.025); third, following the 2013 reform increasing CRI, old credits benefit and augment of the quantity of credit (+0.028) while new ones do not (-0.002).

4.4.2 Price effects

A) Average effect identification

Table XXII presents the DID regression results for the *Interest Rate* under the average effect specification. Columns (1) and (3) assume firms' exposure to B.L. is equal to the average *Rating* and *PD*, respectively; in column (2) and (4) *Exposure* is equal to 1 where the firm's average *Rating* and *PD*, respectively, is above the corresponding sample median; otherwise it is equal to 0.

Consistently with the theory, we observe that Total Creditor Rights Index (*CRI*) is on average negatively associated with the price of bank credit as measured by interest rates (*IR*). Under rating

identification, an increase in one unit of the Total CRI corresponds to a reduction of *IR* between 6.4 bps (average rating) and 8.7 bps (below / above median rating). Similarly, according to PD identification, a unitary rise of the Total CRI is associated to a contraction of *IR* between 8.4 bps (below/above median *PD*) and 10.2 bps (average *PD*).

[Table XXII here]

As the firms' exposure to Bankruptcy Law increases, DID estimation shows that the price of bank credit is more affected by a change in the creditor rights, after controlling for credit's, firms' and structural characteristics. For example, in column (1), every additional category of cross-sectional difference in *Rating* implies a negative differential of approximately 0.8 bps in interest rates, following a positive unitary change of *CRI*; it means that if Total CRI moves up by one unit, a firm with a rating of 6 benefits a reduction of interest rate by 0.8 bps more than a similar firm with a rating equal to 5. Such an effect is even stronger if we compare firms riskier than the median to those less risky than the median, as in column (2): riskier firms benefit a unitary increase of Total CRI with a differential 1.5 bps reduction of *IR* relative to safer firms. Conversely, a reduction of one unit in the creditor rights is associated with negative impacts: riskier firms suffer more the increase in the price of bank credit, when creditor rights are weakened. All these results are both economically and statistically significant. In order to interpret the economic meaning of the DID coefficients, we should consider that a reduction of 10 bps in the average interest rate corresponds to a reduction of 30% in the average baseline cross-sectional difference between firms whose rating is below the median and those with a rating above it.

The effects of the reforms on the *Interest Rate Spread* (*Spread*) are illustrated in Table XXIII, according to the average effect specification. Results are consistent with what we find for interest rates: as *CRI* moves up (down), spread is lower (higher); moreover, credits towards riskier firms are more affected by a change of creditor rights as shown by the DID estimates. It is useful to underline that *Spread* is more sensitive to *CRI*, relative to interest rate; that may be because a bank can control directly the spread it charges to clients, while it has only indirect influence on the prevailing market rate (Euribor). For instance, under average rating identification, column (1) reports a coefficient of -0.116 for *CRI*; such coefficient is almost twice as much as the corresponding coefficient (-0.064) when the output variable is *IR* (see Table XXII).

[Table XXIII here]

B) Individual reform specification

Table XXIV reports DID regression results for the *Interest Rate* (*IR*) under the individual reform specification, allowing us to disentangle the effect of each reform on the price of bank credit in the market. Columns (5) and (7) apply average *Rating* and average *PD* identification strategy, respectively, while column (6) and (8) use the "below / above median" approach, respectively for rating and probability of default. In columns (5) to (7), we observe that the negative sign of the coefficients on the interaction between the exposure to reforms (*Exposure*) and the time dummies tracking the first two reforms (*Ref10*, *Ref12*) is consistent with the theory, after controlling for facility's, company's and structural characteristics; the 2010 and 2012 reforms weaken creditor rights and thus they have a negative effect on the price of credit for SMEs more exposed to the rules of bankruptcy proceedings (i.e. riskier). As for 2013 reform, the analysis captures clearly the benefits of a reduction of interest rates only in the average probability of default identification (column (7)): 2013 reform interrupts the decline of CRI, and is linked to a reduction of the average interest rate at which the Bank is willing to lend. Under other identifications, the estimates do not reflect positive consequences of 2013 reform.

[Table XXIV here]

We know that 2010 reform reduces protection of creditors; as expected in the light of the theory, the Bank increases the average interest rate and the rise of *IR* is more relevant for riskier firms, which in our hypothesis are more exposed to the Bankruptcy Law. In column (6), under "below / above median" rating identification, we observe that the reform provokes a differential increase of 7.3 bps in the interest rate for credits towards SMEs riskier than the median, compared to firms less risky than the median. Such an increase corresponds to a rise of 22% in the average interest rate cross-sectional difference between the two groups of firms. If we identify *Exposure* as the average *Rating*, column (5) shows that per each additional rating category (moving from less to more risky SMEs), the growth of interest rates is bigger by +1.8 bps: a riskier company suffers more a negative change in creditor rights. Likewise, under probability of default identification, column (8) reveals that facilities towards firms riskier than the median deal with an average differential increase in interest rate of +7.7 bps, relative to safer SMEs whose *PD* is less than the median. A similar reasoning applies when we distinguish exposure to the Bankruptcy Law according to firms' average probability of default: column (7) shows that per each 10 percentage point increment in the probability of default's difference across two firms, the Bank charges an additional interest rate of 1.7 bps to the firms with a higher *PD*, following the 2010 reform.

The deepest reduction in creditor rights is caused by the 2012 reform of the Bankruptcy Law; consistently, the analysis finds the strongest impact on the price of bank credit: there is a substantial rise in the average interest rate during the quarters post-reform for the firms that are more exposed to it. Results are consistent according to every identification strategy we adopt. Under average and "below / above median" rating identification, respectively in columns (5) and (6), we find that the DID coefficient is positive and equal to about 3.5 bps per each incremental rating category and of about 6.4 bps for firms whose rating is above the median. It implies, for instance, that a credit toward a firm whose average rating is higher than the median sample (and thus the firm is riskier), following the 2012 reform, suffers an additional rise of interest rate equal to 6.4 bps, relative to a similar credit towards a firm less risky than the median; such a rise corresponds to an increase of approximately 20% in the cross-sectional baseline difference between riskier and safer SMEs. An equivalent interpretation is applicable to results under *PD* identification, which are reported in column (7) and (8).

The 2013 reform stops the phase of contraction in creditor rights that is reflected by one unit growth of Total CRI. Consequently, we should see a reduction in the average interest rate for credits towards SMEs that are more risky and thus more exposed to the reform. Yet, we observe such a reduction clearly only under one identification strategy, average *PD*. Column (7) reports that per each 10 percentage points of increase in the average probability of default cross-sectional difference between firms, there is a 2.2 bps contraction in the interest rates during the post-reforms quarters; it means that if a firm has a PD of 10% and another one a PD of 20%, the latter benefits a differential reduction of 2.2 bps in *IR* on its bank debits, compared to the former.

The average relationship between creditor rights and interest rates is captured by the coefficient on *CRI*. Results are in line with the economic theory: the stronger the creditor rights, the lower the price of credit a lender is willing to charge. The magnitude of such relationship is comparable to that we report according to the average effect specification: increase of one unit in *CRI* is associated to a decrease of the average *IR* between 6.2 and 10.3 bps.

We can finally isolate the effects of each Bankruptcy Law reform on the *Interest Rate Spread* (*Spread*) per each credit. Results are reported in Table XXV and are perfectly comparable to those we find for interest rates.

[Table XXV here]

C) Level of risk

Table XXVI presents regressions, for the output variable *IR*, where we split the sample in credits towards the lowest and highest risk SMEs. Like for the non-price effect, lowest risk SMEs are

those whose average *Rating* falls into the first tercile of firms distribution based on rating, while highest risk firms are those whose average *Rating* lays in the third tercile of the distribution. The top panel reports results under average effect specification (see § 4.3.1); the bottom panel presents results according to individual reforms specification (see § 4.3.2).

[Table XXVI here]

On average, riskiest firms are more sensitive to the level of creditors' rights. In fact, coefficient on *CRI* for such firms (equal to -0.174) is 2.8 times the corresponding coefficient for lowest risk companies (equal to -0.061), under average rating identification (column (9) and column (10), respectively). This is consistent with the view that more risk implies a higher exposure to creditor rights and thus to the Bankruptcy Law. The differential average impact, estimated by the DID coefficient on the interaction between *Exposure* and *CRI*, may look contradictory, because it is negative for safest firms while it is positive for riskiest firms. We may interpret these estimates if we consider that *Exposure* and *CRI* might produce two conflicting effects on interest rates. On one side, we have a "risk effect": as risk goes up and thus *Exposure* goes up, interest rates increase; on the other hand, we have a "creditor rights effect": as CRI strengthens, interest rates decreases. Overall, the "creditor rights effect" outweighs the "risk effect"; regressions (1) and (3) exhibit that the coefficient on the interaction between *Exposure* and *CRI* is negative indeed. Similarly, in the case of safest firm, the "creditor rights effect" seems to prevail over the "risk effect" as the coefficient of the interaction between *Exposure* and *CRI* is negative, implying that a positive shift of CRI causes a reduction of interest rates for credits towards firms more risky, compared to firms less risky. Yet, for the riskiest firms, column (10) and (12) exhibit that the "risk effect" outweighs the "creditor rights effect".

D) Guarantees

Table XXVII and Table XXVII*bis* exhibit regressions, for the outcome variable *IR* and *Spread*, where we segment the sample in unsecured and secured credits. Unsecured credits are those that have no collateral; secured ones, though, have at least one guarantee of those tracked by the variable *Guarantee*[7]. The top panel reports results under average *Rating* and *PD* identification, while the bottom panel presents estimates according "below / above median" *Rating* and *PD* identification.

[Table XXVII and XXVIIbis here]

[7] Please refer to § 4.1.2 and Appendix B for variables' definitions.

Total Creditor Rights Index plays a more important role for unsecured than for secured credits; this is confirmed by the coefficient on *CRI* that is more negative for unsecured credits according to all the identification strategies. This may be linked to the fact that guarantees usually survive the beginning of a bankruptcy proceeding, according to the Italian Law and many others developed countries' legal framework. Therefore, the unsecured portion of bank credit usually faces more risk, and higher interest rate to compensate for the additional risk. Our estimates show that *CRI* for interest rate on unsecured credits may be up to twice as much relevant as for the rate on secured facilities: under "below / above median" rating approach, for instance, columns (21) and (22) show that an increase of one unit in *CRI* is averagely associated with a reduction of -14.3 bps in the interest rate on unsecured credits, relative to a reduction of -7.6 bps for secured ones.

The preeminent role of CRI for unsecured facilities is confirmed when investigating the individual reforms. Following both 2010 and 2012 reforms, which decrease creditor rights, unsecured credits towards riskier firms face a stronger growth in interest rate, compared to secured credits to firms with a similar risk. For example, under "below / above median" rating identification, estimates suggest that unsecured credits towards firms riskier than the median suffer a differential increase of interest rate by 7.3 bps and 32.5 bps relative to credits to SMEs safer than the median, following 2010 and 2012 reform respectively (column (22)); conversely, the DID increase for secured credits is lower and equal to 6.5 bps both for 2010 and 2012 reform (column (21)). The strongest cross-sectional difference between unsecured and secured credits shines through the 2012 reform, which has the deepest consequences on creditor rights. As for the 2013 reform, it is not easy to interpret the results of the estimates for the reasons we describe in section B of this paragraph; however, irrespective of the sign, the magnitude of the DID coefficient tend to be larger for unsecured than for secured credits.

E) New and old credits

Table XXVIII and Table XXVIII*bis* present regressions where we segment the sample in new and old credits. New credits are those that have been issued in a given quarter. The top panel reports results under average *Rating* and *PD* identification, while the bottom panel presents estimates according "below / above median" *Rating* and *PD* identification.

[Table XXVIII and Table XXVIIIbis here]

Creditor rights seem to be more relevant for new than for old credits, because the estimated coefficient on *CRI* is larger for the former relative to the latter; this is true for all the identification strategies, but average rating where the coefficients on the two groups are very close. For example, under "below/above median" *PD* identification, one unit of increase in CRI is on average associated

with a reduction in the average interest rate equal to -13.6 bps for new credits (column (31)), compared to a -7.1 bps decrease of *IR* for old credits (column (32)).

The analysis provides some evidence that new credits tend to be affected earlier and more than old credits by a reform that reduces creditor rights. Yet, it is not always easy to disentangle the consequences of each reform distinguishing between the two groups (new and old), because a bank keeps always the option not to issue new credit at all. As we do not observe credit applications, we are not able to capture such option's effects. For instance, according to average rating identification (column (25) and (26)), the DID estimates convey the following messages, although the coefficients are not all statistically significant: first, 2010 reform, which reduces CRI, provokes an increase in the average *IR* of new credits (+13.9 bps) more than of old ones (+1.6 bps), for firms more exposed to the reform itself; second, 2012 reform impacts slightly more new (+3.9 bps) than old facilities (+3.3 bps) by increasing interest rates for riskier firms as a consequence of weakening creditor rights; third, following the 2013 reform increasing CRI, old credits benefit a reduction of *IR* (-0.3 bps) while new ones do not (+5.5 bps).

4.4.3 Principal components regressions

Table XXIX and Table XXX present the results of regressions, where we substitute the Total CRI with the principal components, respectively for the output variable log of Recoverable Amount at Default and Interest Rate Spread; all regressions are run under the main specification (equation 1)[8]. The principal components are those resulting from the PCA analysis on the CRI distinguishing across either the 17 rights or the 4 bankruptcy proceedings (see § 3.2).

[Table XXIX and Table XXX here]

Interestingly, results show that the coefficients on the principal components by individual creditor rights (*PC 1 – Right*, *PC 2 – Right*, and *PC 3 – Right*) have a greater magnitude than the corresponding coefficient on the *CRI*, both for volumes and price of bank credit. This suggests that lenders do not consider equally all their rights, but some rights matter more; besides, some rights have hedging effect on other rights, because their loadings in the principal components are negative. Similarly, the DID coefficients on the interaction between principal components and exposure to the reforms are bigger than the corresponding coefficients for the Total CRI.

When looking at the PCA by different bankruptcy proceedings (Liquidation, Reorganisation, …) we find that the principal components are economically more relevant than the Total CRI, both

[8] We report results only under rating identification, but they hold even under probability of default identification.

for the average and for the DID effect. Therefore, lenders evaluate differently the ability of each proceeding to result in an optimal solution of the distress from the creditors' perspective.

If lenders react differently to the change of different rights or bankruptcy proceedings, it would be important to implement future policies according to these findings in order to increase the probability that a given regulation meets its original aims.

4.4.4 Economic implications

The analysis conveys four main messages. First, creditor rights is statistically and economically related to the quantity and the price of bank credit to SMEs, not only at aggregate level as previous studies show (Djankov, et al., 2007), but even at single credit level and after controlling for cross-sectional credit characteristics. Second, a Bankruptcy Law reform reducing creditor rights also causes a contraction of credit volumes provided by a lender; correspondingly, when a reform strengthens creditor rights, the quantity of credit increases. Third, when creditor rights are weakened, the price of bank credit rises substantially. Fourth, the impact of Bankruptcy Law reforms, either on volume and on price of bank credit, is not equal across credits but is more relevant for credits towards riskier firms and impacts earlier and more unsecured credits.

The magnitude of the differential impacts we have just described, in terms of volume, is equivalent to a change of billions of Euros available in the economy at an aggregate national level, which is highly relevant from an economic standpoint. When investigating how the interest rates modify as a response to a change in creditor rights, we find that, following a reduction in creditor rights, interest rates rise; the magnitude of the rise corresponds to an increase of an order of hundreds of millions Euro, every year, paid as additional interest expenses by SMEs. Therefore, we can conclude that Bankruptcy Law reforms that weaken creditor rights cause a significant credit contraction and a relevant interest rates increase in the Bank Credit Market for SMEs.

We may wonder whether these effects are driven by the demand or the supply of credit. Overall, we find that following the 2010 and 2012 reforms, SMEs face both a contraction of volume and an increase of price of credit; this is linked to an upward shift in the supply curve and is consistent with the main theory about credit rationing (Stiglitz & Weiss, 1981). Conversely, the 2013 reform is associated with a downward shift of the supply curve, because volumes grow while interest rates decrease (depending on the identification strategy). Tables XXXI and XXXII present the results of seemingly unrelated regressions (SUR) where the output variables are *Interest Rate* (*IR*) and log-value of *Total Exposure at Default* (*ead*). Of course, the analysis is feasible only for the subsample of credits whose interest rate is available. This is a limitation because most of the credits in the subsample are loans, whose volume takes more time to renegotiate / adjust than line of credits, because a bank should wait until the end of the contract to modify volumes, and the contract is usually

medium or long term. Therefore, results should be interpret carefully especially with regard to the quantity of credit. We observe that, under rating identification following the 2010 and 2012 reforms, there is simultaneously a drop of volumes, as measured by the exposure at default, and a substantial rise in interest rates: this confirm the upward shift of the supply curve. Similar results are confirmed for the 2012 reform, under average *PD* identification strategy.

[Table XXXI and XXXII here]

A Bank credit "crunch" following a reduction in CRI may increase probability that a firm enters financial distress. This is particularly true when the crunch affects primarily firms closer to default, as results show. Moreover, an increase in the interest rates reduces firms' profitability, thus raising in turn the probability of financial distress. As firms approach / enter financial distress, they face three well-known corporate finance issues:

(i) exacerbation of credit rationing problems: entrepreneurs are not able to (re)finance positive net-present value projects;

(ii) increase of overinvestment issues: entrepreneurs may "gamble for resurrection", in an attempt to continue the business;

(iii) emergence of underinvestment problems: shareholders do not find incentive to invest new funds, even for positive net-present value projects, because benefits accrue to debt-holders.

Such issues might drive entrepreneurs to strategically file for Renegotiation, in an attempt to cut-off debt and continue as a going-concern. If banks anticipate entrepreneurs' move, there is a further credit contraction / increase of interest rate: a vicious cycle might start.

Finally, Bankruptcy Law Reform aiming to facilitate debt renegotiation may suffer from a "last generation" problem: firms financed before the reform might suffer more volumes' contraction and/or increase in interest rates, if they are not able to benefit fully from the reform itself.

4.5 Robustness checks

We run a series of regressions as robustness, both under rating and probability of default identification. All regressions are defined as in the individual reform effects specification (see § 4.3.2); main results are robust to the checks we perform.

As a first set of regressions, whose results are reported in the online appendix, we modify separately what follows relative to the main specification in each regression:

- substituting *Value Added %* with *EBITDA %*;
- including *ROE* as control variable;
- including *ROA* as control variable;

- including *GDP Growth* and *Inflation* as control variables;
- including *GDP Growth* and *Unemployment Growth* as control variables;
- including *Unemployment Growth* and *Inflation* as control variables;
- including *Bank Tier 1 ratio* as control variable;
- excluding *Segment Size* as control variable;
- excluding *Province* as control variable;
- excluding *Industry* as control variable;
- clustering standard errors at *Province* level.

As a second set of regressions, we use CRI in Reorganization instead of Total CRI because major impacts on creditor rights come from the change in the Reorganization's rules during the research period. Consistently, we find that the average relationship between CRI in Reorganization and volume of credit is more negative than that between Total CRI and volume of credit; symmetrically, the relationship between CRI in Reorganization and price of credit is more positive than that between the latter and Total CRI. All other findings are robust to the use of CRI in Reorganization; results are reported in the online appendix.

A third set of regressions studies the reaction of the granted amount of credit (*Granted*) to the modification of creditor rights. This is an alternative measure of the quantity of credit in the market. Consistently with our main findings, results exhibit that Total CRI is positively associated to the amount of credit granted; besides, reforms that reduce creditor rights have a negative DID impact on the granted amount of credit, although such an impact tends to be slower than the corresponding one for exposure at default and recoverable amount at default. The slower pace of adjustment might be the consequence of the time needed to renegotiate the granted amount, which is a nominal amount set a contractual level.

Finally, as a fourth set of regressions, we exclude credits to debtors entering the sample in 2010-Q1, because in that quarter there is an increase in the number of debtors due to the data consolidation process utilized by the Bank. We re-run regressions according to main specification and exclude credits to firms entering the sample in 2010-Q1. Results are robust to such an exclusion. All the results are reported in the online appendix.

5 Conclusions

This paper provides a comprehensive analysis of the within country effects of Bankruptcy Law Reforms on the Bank Credit Market for SMEs, exploiting recent reforms in Italy and a novel dataset collected at single bank credit level.

Our starting point is a new Creditor Rights Index (CRI), replicable for any country, which considers all the proceedings available for SMEs. We use it to assess the effects of Bankruptcy Law reforms on creditor rights. We find that there is a strong positive relation between CRI and volumes of Bank Credit, while there is a significant negative relation between CRI and interest rate. Such relation is not equal across rights and proceedings, but lenders do care more about some individual rights and bankruptcy proceedings.

The analysis provides three main results. First, a Bankruptcy Law Reform reducing creditor rights causes an economically significant contraction of volumes of Bank Credit; correspondingly, when a reform strengthens creditor rights, the quantity of credit increases. Second, when creditor rights are weakened, the price of bank credit rises substantially. Third, the impact of Bankruptcy Law reforms, on both volume and price of bank credit, is not equal across credits but is more relevant for riskier firms and impacts earlier and more unsecured credits.

These findings have relevant implications. The impacts of reducing creditor rights (volume contraction and rise of interest rate) may increase probability of a firm entering financial distress, which in turns might exacerbate three well-known corporate finance problems: credit rationing, overinvestment, and underinvestment. Therefore, regulators should consider carefully the change of Bankruptcy Law, across all the proceedings available to SMEs, either aiming to continuation or to liquidation. In the case of Italy, for instance, nowadays the Government has appointed a committee to review the Bankruptcy Law once again; it is desirable that the committee will take into account the effects of Bankruptcy law from a corporate finance perspective, even looking at what happened in other countries. Otherwise, results document that there may be some unintended consequences in the action of regulators. «Great Expectations» that followed through Bankruptcy Law reforms, implemented in the recent years and aiming to facilitate debt renegotiation, seem actually to be neglected by the credit contraction that SMEs suffered as a consequence of the reforms.

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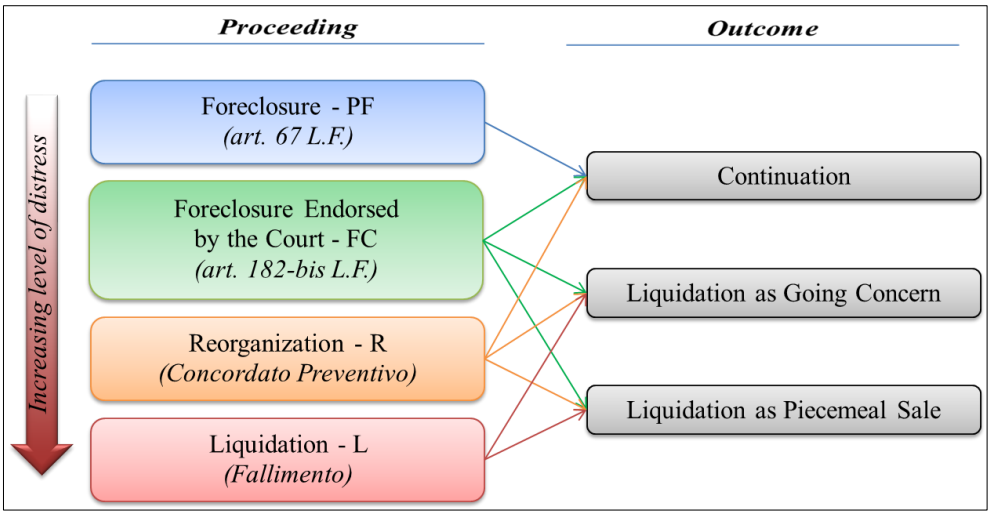
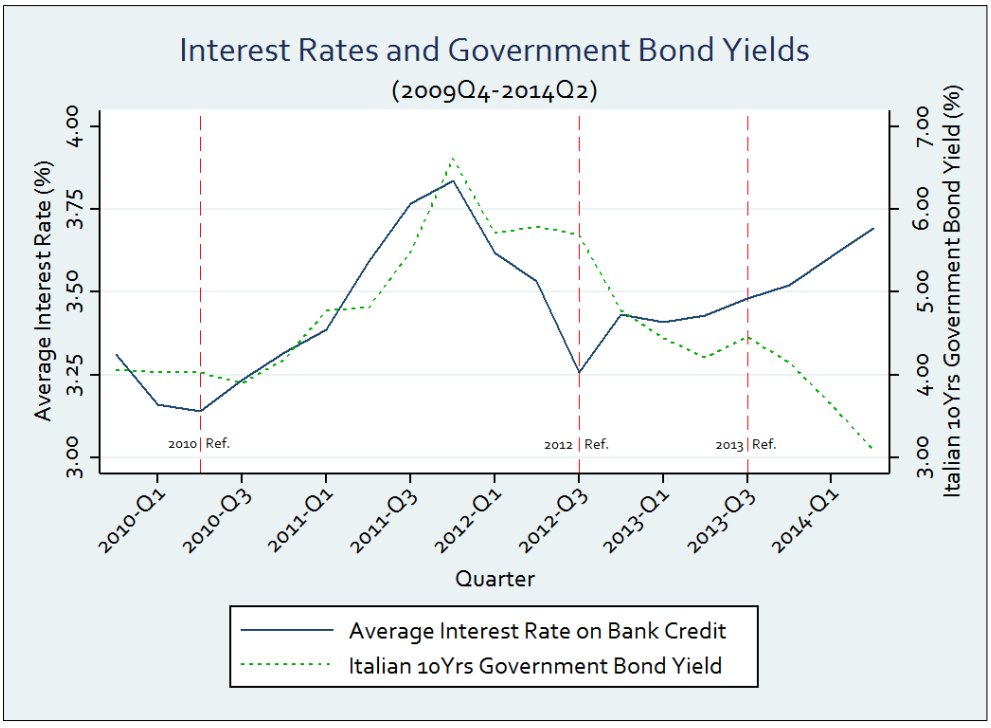
7 Figures

Figure 1- Bankruptcy proceedings for SMEs and possible outcomes



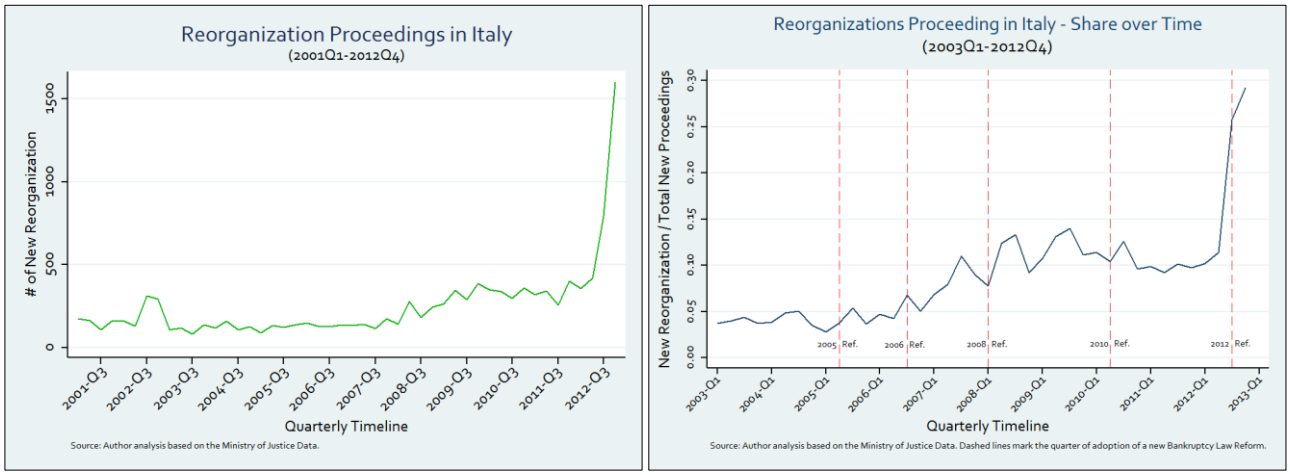
The figure outlines possible outcomes for each bankruptcy proceeding available to SMEs in Italy.

Figure 2 – Average Interest Rate on bank credit and Government bond yields (2009Q4-2014Q2)



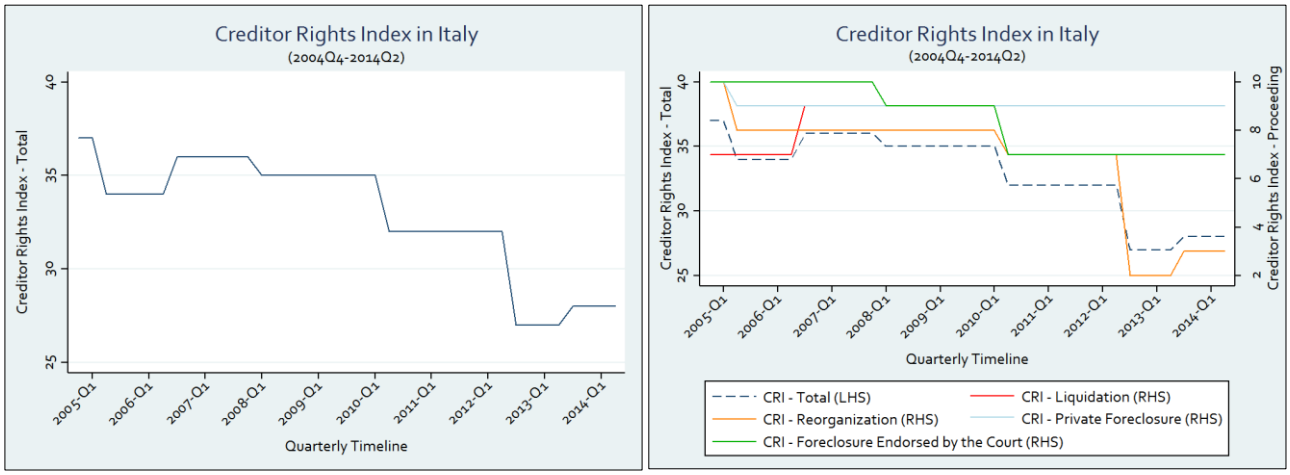
The figure plots the quarterly average interest rate on bank credit (solid line, LHS scale) and the quarterly average yield on 10 years Italian Government bond (dashed line, RHS scale), from 2009Q4 to 2014Q2. The vertical reference lines mark the quarter when 2010, 2012, and 2013 reforms are adopted. Source: for Interest Rate, proprietary database; for Government bond yield, European Central Bank.

Figure 3 – Number of new Reorganization proceedings



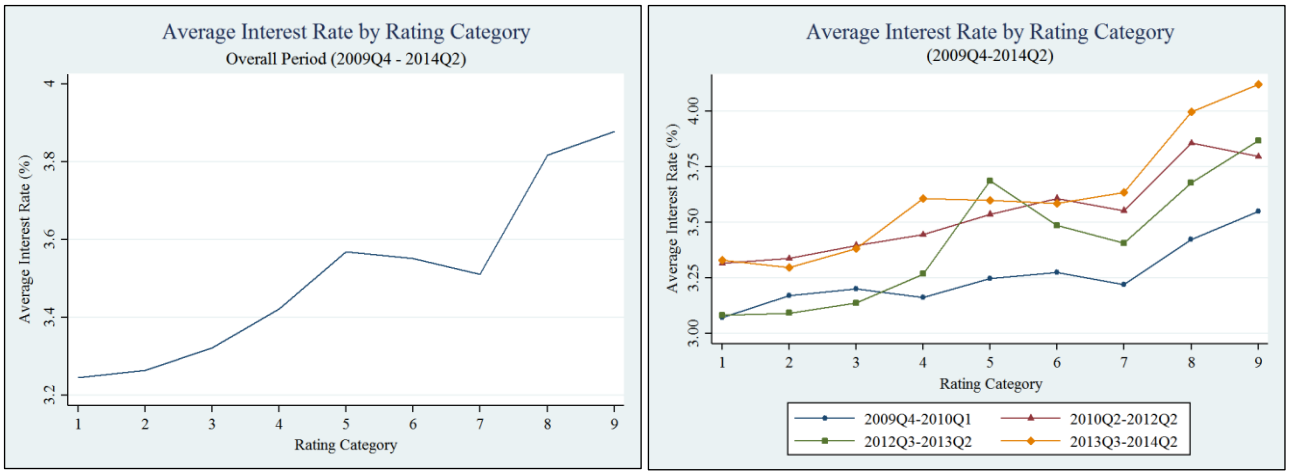
The left panel plots the absolute number of new Reorganization proceedings started in each quarter from 2001Q1 to 2012Q4. The right panel plots the percentage of new Reorganization proceedings over all the new Proceedings (Reorganization and Liquidation) started in each quarter from 2003Q1 to 2012Q4. The vertical reference lines mark the quarter when 2005, 2006, 2008, 2010, and 2012 Bankruptcy Law reforms are adopted. Source: Ministry of Justice.

Figure 4 - Creditor Rights Index



The left panel plots Total Creditor Rights Index from 2004Q4 to 2014Q2. The right panel depicts Total Creditor Rights Index (dashed line, LHS scale), CRI for Reorganization (orange line, RHS scale), CRI for Foreclosure endorsed by the Court (green line, RHS scale), CRI for Liquidation (red line, RHS scale) and CRI for Private Foreclosure (light blue line, RHS scale). Raw data underlying the plots can be recovered from Table IV.

Figure 5 - Average Interest Rate by Rating Category



This figure plots the average *Interest Rate* (*IR*) against the *Rating*. The left panel reports pooled data for the entire sample period. The right panel shows pooled data divided in four sub-periods: before the 2010 reform (2009Q4-2010Q1), between the 2010 and the 2012 reforms (2010Q2-2012Q2), between the 2012 and the 2013 reforms (2012Q3-2013Q2), and from 2013 reform onward (2013Q3-2014Q2). For additional details on variables definition, please refer to Appendix B.

8 Tables

Table I - Structural composition of enterprises in Italy

Size class of people employed	Number of enterprises		Production value		Value added at factor cost		Number of people employed	
	%	*Cum. %*	*%*	*Cum. %*	*%*	*Cum. %*	*%*	*Cum. %*
0-9	95.08%	95.08%	25.00%	25.00%	31.41%	31.41%	47.20%	47.20%
10-19	3.12%	98.20%	9.64%	34.64%	9.99%	41.40%	10.93%	58.13%
20-49	1.23%	99.43%	11.59%	46.23%	10.47%	51.87%	9.80%	67.93%
50-249	0.49%	99.92%	19.18%	65.41%	16.92%	68.79%	12.65%	80.58%
250 and over	0.08%	100.00%	34.59%	100.00%	31.21%	100.00%	19.42%	100.00%

The table reports Italian National Institute of Statistic (ISTAT) figures for non-financial SMEs segmented by size class of employees as of 2011. *%* is the percentage of the overall sample of non-financial SMEs; *Cum. %* represents the cumulative percentage, up to a given size class, of the overall sample of non-financial SMEs. *Number of enterprises* is ISTAT variable n. 11110; *Production value* is ISTAT variable n. 12120; *Value Added at factor cost* is ISTAT variable n. 12150; *Number of people employed* is ISTAT variable n. 16110. Data extracted on 27 October 2014 16:23 UTC (GMT) from I.Stat.

Table II - Main features of bankruptcy proceedings for SMEs in Italy

(comparison as of Law 98/2013)	**Private Foreclosure** *(art. 67)*	**Foreclosure endorsed by the Court** *(art. 182-bis)*	**Reorganization** *(Concordato Preventivo)*	**Liquidation** *(Fallimento)*
Trigger	Debtor	Debtor	Debtor	- Debtor - Creditor - Criminal Court
Type of renegotiation	One-to-one	One-to-one	All creditors	All creditors
Majority approval required	No	Yes, 60% of credits	Yes, 50% + 1 of credits	No
Control rights	Debtor	Debtor	- Continuation: Debtor - Liquidation: Creditors	Creditors
Creditors' Committee	No	No	- Continuation: No - Liquidation: Yes	Yes
Court supervision on execution	No	No	Yes	Yes
Administrator appointed by the court	No	No	- Continuation: No - Liquidation: Yes	Yes
Automatic Stay	No	Yes, 60 days	Yes	Yes
Moratorium *ex lege*	No	Yes, 120 days	Yes	Yes
Cram-down procedure	No	No	Yes	Yes
Super priority financing	Yes	Yes (limited)	Yes (limited)	No
Dilution of secured claims	Not by law	Not by law	Limited	Limited
Repetition in case of subsequent liquidation	No	No	No	-
Subsequent proceedings allowed	All	All	Liquidation	Liquidation

The table lists the bankruptcy proceedings available for SMEs in Italy and compares their main characteristics as of the end of 2013.

Table III - Legislative changes to the Italian Bankruptcy Law (2005-2013)

Reform	Law Type and Number	Issued	Published	Applicable by	Note
2005	D.L. 35/2005	14.03.2005	16.03.2005	17.03.2005	
	L. 80/2005	14.05.2005	14.05.2005	15.05.2005	
2006	D. Lgs. 5/2006	09.01.2006	16.01.2006	16.07.2006	
2008	D. Lgs. 169/2007	12.09.2007	16.10.2007	01.01.2008	
	D.L. 185/2008	29.11.2008	29.11.2008	29.11.2008	(*)
	D.L. 69/2009	18.06.2009	19.06.2009	04.07.2009	(*)
2010	D.L. 78/2010	31.05.2010	31.05.2010	31.05.2010	
	L. 122/2010	30.07.2010	30.07.2010	31.07.2010	
2012	D.L. 83/2012	22.06.2012	26.06.2012	11.09.2012	
	L. 134/2012	07.08.2012	11.08.2012	11.09.2012	
	D.L. 179/2012	18.10.2012	19.10.2012	20.10.2012	(*)
	L. 221/2012	17.12.2012	18.12.2012	19.12.2012	(*)
	L. 228/2012	24.12.2012	29.12.2012	01.01.2013	(*)
2013	D.L. 69/2013	21.06.2013	21.06.2013	22.06.2013	
	L. 98/2013	09.08.2013	20.08.2013	21.08.2013	

The table presents the legislative modifications of the Italian Bankruptcy Law (R.D. 267/1942) from 2005 to 2013. *D.L.* stands for "Decreto Legge" (Decree-Law); *L.* for "Legge" (Law); *D.Lgs.* for "Decreto Legislativo" (Legislative Decree). *Issued* is the date of issue of the law; *Published* is the date when the law is published on *Gazzetta Ufficiale* of the Italian Republic; *Applicable by* is date from when new bankruptcy proceedings are subject to a given law. Modifications marked by *(*)* are not considered in the analysis, because they do not affect directly the creditor rights but have only procedural effects.

Table IV - Creditor Rights Index in Italy from 2004 to 2014

Bankruptcy Proceeding	**Creditor Rights Index (CRI)** *Year*										
	'04	*'05*	*'06*	*'07*	*'08*	*'09*	*'10*	*'11*	*'12*	*'13*	*'14*
Private Foreclosure (PF)	10	9	9	9	9	9	9	9	9	9	9
Foreclosure Endorsed by the Court (FC)	10	10	10	10	9	9	7	7	7	7	7
Reorganization (R)	10	8	8	8	8	8	7	7	2	3	3
Liquidation (L)	7	7	9	9	9	9	9	9	9	9	9
Total CRI	**37**	**34**	**36**	**36**	**35**	**35**	**32**	**32**	**27**	**28**	**28**

The table presents the CRI measured for each bankruptcy proceeding between 2004 and 2014, as of year-end. Total CRI is the sum of CRI across all the proceedings.

Table V - Principal component analysis: distinction of CRI by Bankruptcy Proceeding

Component	Eigenvalue	Difference	Proportion	Cumulative
Component 1 (Comp1)	2.3781	1.5130	0.5945	0.5945
Component 2 (Comp2)	0.8651	0.3401	0.2163	0.8108
Component 3 (Comp3)	0.5250	0.2931	0.1312	0.9420
Component 4 (Comp4)	0.2319		0.0580	1.0000

Variable	Comp1	Comp2	Comp3	Comp4
Liquidation CRI	-0.5065	0.3364	0.7055	0.3641
Reorganization CRI	0.5213	0.4416	0.4574	-0.5692
Foreclosure Endorsed by the Court CRI	0.5468	0.4311	-0.1725	0.6967
Private Foreclosure CRI	0.4155	-0.7113	0.5131	0.2410

The table presents the results of the principal component analysis distinguishing CRI by the kind of proceeding. The upper panel reports, per each principal component, the *Eigenvalue*, the *Difference* between an Eigenvalue and its next, the *Proportion* of variance explained by each component, and the *Cumulative* portion of variance explained up to a certain component. The lower panel reports, per each component, the Eigenvector which contains loading of CRI by bankruptcy proceeding.

Table VI - Principal component analysis: distinction of CRI by individual rights

Component	Eigenvalue	Difference	Proportion	Cumulative
Component 1 (Comp1)	5.7515	2.3783	0.4793	0.4793
Component 2 (Comp2)	3.3733	1.9347	0.2811	0.7604
Component 3 (Comp3)	1.4386	0.7680	0.1199	0.8803
Component 4 (Comp4)	0.6705	0.2130	0.0559	0.9362
Component 5 (Comp5)	0.4575	0.1489	0.0381	0.9743
Component 6 (Comp6)	0.3086	0.3086	0.0257	1.0000

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6
No Automatic Stay	0.2870	-0.0996	-0.4115	0.1919	0.2293	0.8056
Restrictions for going into proceeding	0.2071	-0.4276	0.2926	0.1375	0.0350	-0.0199
No Debtor-in-Possession Financing	0.2796	0.1981	-0.2954	0.5739	0.1965	-0.4186
Early Automatic Stay	0.3731	0.1875	-0.0418	0.3122	-0.0101	-0.2026
Courts direct supervision	0.2555	0.1995	0.2090	-0.4285	0.8122	-0.0887
No Silent Consent	0.3468	0.2503	0.1925	-0.1089	-0.2658	0.1073
Creditors dismiss administrator/supervisor	-0.2697	0.2640	0.4062	0.3609	0.1292	0.2136
No Minimum Payment	0.2071	-0.4276	0.2926	0.1375	0.0350	-0.0199
No automatic loss of judicial mortgage	0.3468	0.2503	0.1925	-0.1089	-0.2658	0.1073
Automatic stay on lawsuit	-0.2697	0.2640	0.4062	0.3609	0.1292	0.2136
No unilateral termination of contracts	0.3468	0.2503	0.1925	-0.1089	-0.2658	0.1073
No restrictions to bankruptcy repetition	0.2071	-0.4276	0.2926	0.1375	0.0350	-0.0199

The table presents the results of the principal component analysis distinguishing CRI by the individual rights composing it. The upper panel reports, per each principal component, the *Eigenvalue*, the *Difference* between an Eigenvalue and its next, the *Proportion* of variance explained by each component, and the *Cumulative* portion of variance explained up to a certain component. The lower panel reports, per each component, the Eigenvector that contains loading of CRI by individual rights. The description of each right is provided in Appendix A. Rights not reported have zero variance in the period 2009Q4-2014Q2.

Table VII - Total Exposure at Default (EAD) cross-sectional summary statistics

Total Exposure at Default (*EAD*)								
Sample	**Obs.**	**Mean**	**Median**	**1st Quartile**	**3rd Quartile**	**Min**	**Max**	**Standard Deviation**
All	6,465,338	139,106	14,960	1,177	61,104	0	250,000,000	1,188,821
By Guarantee:								
Unsecured	3,167,346	122,854	5,900	42	37,050	0	250,000,000	1,438,709
Mortgage	509,918	542,858	143,545	63,184	378,810	0	92,157,144	1,719,163
Pledge	160,375	230,866	38,962	12,020	112,662	0	154,661,808	1,719,805
Confidi	460,172	71,818	31,054	14,142	69,877	0	7,286,187	161,486
Personal	2,704,617	99,830	20,991	4,740	67,611	0	103,320,000	498,539
Other	50,681	372,767	24,928	7,500	109,633	0	59,022,352	1,905,454
By Status:								
Bonis	5,511,499	144,862	14,486	908	62,106	0	250,000,000	1,235,101
Past Due	39,209	72,988	7,823	264	32,493	0	27,531,972	512,018
Restructured	22,856	655,436	77,083	8,998	395,723	0	169,627,664	4,122,570
Incaglio	287,025	119,588	14,884	1,527	57,907	0	154,661,808	899,247
Sofferenza	604,749	80,686	18,259	4,365	54,762	0	44,344,848	386,529
By Maturity:								
Short	3,464,627	83,107	6,842	44	38,202	0	200,186,394	964,159
Medium	1,894,029	114,735	14,935	3,750	44,869	0	250,000,000	1,311,517
Long	1,105,658	355,888	79,342	23,808	214,290	0	165,375,000	1,529,344
n/a	1,024	618,766	74,278	10,402	293,660	0	42,885,453	2,905,759
By New Facility:								
New	625,767	92,358	8,514	261	38,427	0	250,000,000	1,019,234
Old	5,548,997	143,710	15,586	1,385	64,301	0	250,000,000	1,202,029
n/a	290,574	151,865	16,376	1,455	69,062	0	169,627,664	1,269,422

The table reports cross-sectional statistics for the *Total Exposure at Default* (*EAD*). Data are at credit-quarter level and pooled for the period 2009Q4-2014Q2. Monetary values are in Euro. *All* represents the full sample. *Guarantee* is a set of binary variables mapping whether a credit has no collateral (*Unsecured*), is guaranteed by a mortgage (*Mortgage*), a pledge (*Pledge*), a consortium (*Confidi*), a personal guarantee (*Personal*), or any other guarantee (*Other*). *Status* is a set of categorical variables indicating whether a credit is performing (*Bonis*) or is *Non Performing* according to Bank of Italy's categories: *Past Due*, *Restructured*, *Incaglio*, and *Sofferenza*. *Maturity* is a set of binary variables mapping whether the original maturity of a given credit is up to 1 year (*Short Term*), between 1 and 5 years (*Medium Term*), or above 5 years (*Long Term*). *New Facility* is a dummy variable indicating if a credit is newly issued in a given quarter *t*. "*n/a*" stands for "not available". For additional variables' definitions, please see Appendix B.

Table VIII - Interest Rate cross-sectional summary statistics

Interest Rate (*IR*)								
Sample	**Obs.**	**Mean**	**Median**	**1st Quartile**	**3rd Quartile**	**Min**	**Max**	**St. Dev.**
All	1,460,388	3.48	2.92	2.20	4.59	0.00	21.25	1.76
By Guarantee:								
Unsecured	221,911	4.05	3.35	2.43	5.25	0.00	21.25	2.18
Mortgage	433,916	2.74	2.41	1.90	3.05	0.00	16.90	1.27
Pledge	41,642	3.74	3.35	2.54	4.75	0.00	10.40	1.60
Confidi	348,339	3.35	3.00	2.34	4.15	0.00	11.10	1.39
Personal	845,398	3.61	3.08	2.35	4.73	0.00	11.10	1.68
Other	6,936	3.57	3.30	2.50	4.50	0.70	9.60	1.39
By Status:								
Bonis	1,359,862	3.47	2.93	2.20	4.59	0.00	21.25	1.74
Past Due	11,233	4.36	3.58	2.40	6.20	0.00	13.75	2.35
Restructured	3,443	2.23	2.26	1.55	3.00	0.00	6.54	1.00
Incaglio	83,225	3.53	2.85	2.10	4.56	0.00	21.25	2.00
Sofferenza	2,625	3.13	2.65	1.90	3.81	0.00	12.75	1.76
By Maturity:								
Short Term	18,366	4.19	3.97	3.21	4.96	0.00	12.50	1.39
Medium Term	596,313	4.02	3.58	2.65	5.15	0.00	14.00	1.82
Long Term	845,709	3.08	2.55	1.99	3.65	0.00	21.25	1.62
By New Facility:								
New	74,914	4.55	4.40	2.94	5.73	0.00	21.25	2.05
Old	1,342,242	3.42	2.90	2.17	4.50	0.00	20.90	1.73
n/a	43,232	3.31	2.55	2.22	4.10	0.00	9.96	1.61

The table reports cross-sectional statistics for the *Interest Rate* (*IR*). Data are at credit-quarter level and pooled for the period 2009Q4-2014Q2. *IR* values are in %. *All* represents the full sample for which *IR* is disclosed. *Guarantee* is a set of binary variables mapping whether a credit has no collateral (*Unsecured*), is guaranteed by a mortgage (*Mortgage*), a pledge (*Pledge*), a consortium (*Confidi*), a personal guarantee (*Personal*), or any other guarantee (*Other*). *Status* is a set of categorical variables indicating whether a credit is performing (*Bonis*) or is *Non Performing* according to Bank of Italy's categories: *Past Due*, *Restructured*, *Incaglio*, and *Sofferenza*. *Maturity* is a set of binary variables mapping whether the original maturity of a given credit is up to 1 year (*Short Term*), between 1 and 5 years (*Medium Term*), or above 5 years (*Long Term*). *New Facility* is a dummy variable indicating if a credit is new in a given quarter *t*. "*n/a*" stands for "not available". For additional variables' definitions, please see Appendix B.

Table IX - Total Exposure at Default time series summary statistics (2009Q4-2014Q2)

Total Exposure at Default - Overall Credit Portfolio

(data in Euro)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	151,865	145,356	140,216	131,905	131,485	131,638
Median	16,376	15,900	15,504	13,953	13,286	13,276
1st Quartile	1,455	1,291	1,125	1,092	906	895
3rd Quartile	69,062	65,863	62,085	57,648	56,275	56,692
Min	0	0	0	0	0	0
Max	169,627,664	169,627,664	165,961,840	160,000,000	170,233,744	170,304,112
Standard Deviation	1,269,422	1,208,906	1,202,714	1,086,256	1,103,669	1,068,872
# of Observations	290,574	341,343	345,614	351,315	342,762	342,779

Exposure at Default - Performing Credits

(data in Euro)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	161,551	153,010	146,753	135,862	133,674	133,081
Median	16,654	16,038	15,494	13,072	11,842	11,848
1st Quartile	1,197	1,056	788	832	596	604
3rd Quartile	73,946	69,531	64,325	56,798	53,257	53,493
Min	0	0	0	0	0	0
Max	160,000,000	160,000,000	160,000,000	160,000,000	170,233,744	170,304,112
Standard Deviation	1,308,522	1,240,963	1,238,157	1,125,320	1,164,243	1,135,221
# of Observations	251,197	298,594	299,683	296,053	282,503	279,472
% of all Obs.	*86.45%*	*87.48%*	*86.71%*	*84.27%*	*82.42%*	*81.53%*

Total Exposure at Default - Unsecured Credits

(data in Euro)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	142,212	126,757	115,945	120,935	117,433	116,800
Median	10,041	5,211	3,996	6,974	6,050	5,750
1st Quartile	200	1	0	153	72	100
3rd Quartile	51,098	37,150	33,017	35,568	33,690	34,069
Min	0	0	0	0	0	0
Max	169,627,664	169,627,664	165,961,840	160,000,000	170,233,744	170,304,112
Standard Deviation	1,432,269	1,425,583	1,441,839	1,355,683	1,400,837	1,344,277
# of Observations	185,433	183,899	174,598	139,113	132,281	132,301
% of all Obs.	*63.82%*	*53.88%*	*50.52%*	*39.60%*	*38.59%*	*38.60%*

The table reports time-series quarterly statistics of *Total Exposure at Default* (*EAD*) for the last quarter of each year in the sample. Observations are at credit-quarter level. Monetary values are in Euro. The top panel presents statistics for the overall credit portfolio. The middle panel reports statistics for the subsample of performing credits. The bottom panel summarizes statistics for the subsample of unsecured credits. *# of Observations* is the number of credits in the dataset in a given quarter. *% of all Obs.* is ratio of (i) *# of Observations* in a subsample (e.g. performing credits) and (ii) *# of Observations* of the all sample (top panel).

Table X – Interest rate time series summary statistics (2009Q4-2014Q2)

Interest Rate - Overall Subsample of Credit Portfolio						
(data in %)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	3.31	3.32	3.84	3.43	3.52	3.69
Median	2.55	2.79	3.40	2.55	2.85	3.33
1st Quartile	2.22	2.34	2.95	1.87	1.75	1.91
3rd Quartile	4.10	3.90	4.50	4.75	5.00	5.14
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	9.96	21.25	21.25	20.90	16.90	16.90
Standard Deviation	1.61	1.44	1.34	2.12	2.05	2.01
# of Observations	43,232	77,241	82,027	86,946	83,424	81,562

Interest Rate - Performing Credits						
(data in %)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	3.30	3.30	3.83	3.43	3.53	3.70
Median	2.55	2.79	3.40	2.59	2.90	3.33
1st Quartile	2.22	2.34	2.95	1.87	1.78	1.95
3rd Quartile	4.10	3.86	4.46	4.75	5.00	5.13
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	9.96	21.25	21.25	20.90	16.90	16.90
Standard Deviation	1.60	1.43	1.33	2.11	2.02	1.97
# of Observations	41,195	73,007	77,323	80,401	75,801	73,951
% of all Observations	*95.29%*	*94.52%*	*94.27%*	*92.47%*	*90.86%*	*90.67%*

Interest Rate - Unsecured Credits						
(data in %)	**2009-Q4**	**2010-Q4**	**2011-Q4**	**2012-Q4**	**2013-Q4**	**2014-Q2**
Mean	3.40	3.38	3.96	4.80	4.53	4.56
Median	2.65	2.80	3.44	4.37	4.23	4.33
1st Quartile	2.05	2.30	3.00	2.22	2.39	2.73
3rd Quartile	4.70	4.04	4.50	6.95	6.00	5.90
Min	0.00	0.00	0.00	0.00	0.00	0.00
Max	9.50	21.25	21.25	20.90	13.80	13.80
Standard Deviation	1.79	1.56	1.66	2.85	2.40	2.25
# of Observations	3,993	11,739	13,295	15,748	12,325	11,451
% of all Observations	*9.24%*	*15.20%*	*16.21%*	*18.11%*	*14.77%*	*14.04%*

The table reports time-series quarterly statistics of interest rate (*IR*) for the last quarter of each year in the subsample, for which *IR* is disclosed. Observations are at credit-quarter level. IR values are in %. The top panel presents statistics for the overall subsample of the credit portfolio. The middle panel reports statistics for the subsample of performing credits. The bottom panel summarizes statistics for the subsample of unsecured credits. *# of Observations* is the number of credits in the dataset in a given quarter. *% of all Observations* is the ratio of (i) *# of Observations* in a subsample (e.g. unsecured credits) and (ii) *# of Observations* of the all sample (top panel).

Table XI – Total Exposure at Default (*ead*) regression results under average effect specification – National Level

Independent Variable	*National Level* *(1)*	*National Level* *(2)*
Creditor Rights Index (CRI)	0.007 ** (0.004)	0.008 ** (0.004)
Exposure (Exp)		
Exp x CRI		
Credit controls (X)	No	No
Firm structural control (D)	No	No
Firm fin. / oper. controls (F)	No	No
Quarter x Year FE	No	No
Credit Cycle control	No	Yes
# of Observations	19	19
Adjusted R-squared	0.160	0.161

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), under average effect specification according to equation (1) in the text. The specification includes only variables that can be aggregated at national level. We aggregate the output variable by summing up all observations in a given quarter. Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XII – Interest Rate Spread (*Spread*) regression results under average effect specification – National Level

Independent Variable	*National Level* *(1)*	*National Level* *(2)*
Creditor Rights Index (CRI)	-0.131 *** (0.023)	-0.139 *** (0.023)
Exposure (Exp)		
Exp x CRI		
Credit controls (X)	No	No
Firm structural control (D)	No	No
Firm fin. / oper. controls (F)	No	No
Quarter x Year FE	No	No
Credit Cycle control	No	Yes
# of Observations	19	19
Adjusted R-squared	0.640	0.660

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), under average effect specification according to equation (1) in the text. The specification includes only variables that can be aggregated at national level. We aggregate the output variable by computing the average value per each quarter. Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XIII – Total Exposure at Default (*ead*) regression results under average effect specification – Firm Level

Independent Variable	Rating Identification (Below/Above Median)			
	(1)	*(2)*	*(3)*	*(4)*
Exposure (Exp)		-0.653 *** (0.035)	-0.688 *** (0.036)	-0.611 *** (0.036)
Creditor Rights Index (CRI)	0.068 *** (0.001)	0.060 *** (0.002)	0.061 *** (0.002)	0.050 *** (0.002)
Exp x CRI		0.015 *** (0.001)	0.016 *** (0.001)	0.022 *** (0.001)
Credit controls (X)	No	No	No	No
Firm structural control (D)	No	No	No	Yes
Firm fin. / oper. controls (F)	No	No	No	Yes
Quarter x Year FE	Yes	Yes	Yes	Yes
Credit Cycle control	No	No	Yes	Yes
# of Observations	2,575,420	2,575,420	2,575,420	1,724,862
Adjusted R-squared	0.004	0.006	0.006	0.272

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), under average effect specification according to equation (1) in the text. The specification includes only variables that can be aggregated at firm level. We aggregate the output variable by summing up all observations in a given quarter within any debtor. Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively. Results are consistent to the use of robust standard errors, as well as to the exclusion of Quarter times Year Fixed Effect (*Q·Y*).

Table XIV – Interest Rate (*IR*) regression results under average effect specification – Firm Level

Independent Variable	Rating Identification (Below/Above Median)			
	(1)	*(2)*	*(3)*	*(4)*
Exposure (Exp)		2.281 *** (0.040)	2.270 *** (0.040)	2.003 *** (0.040)
Creditor Rights Index (CRI)	-0.078 *** (0.002)	-0.053 *** (0.002)	-0.052 *** (0.002)	-0.056 *** (0.002)
Exp x CRI		-0.058 *** (0.002)	-0.058 *** (0.001)	-0.052 *** (0.001)
Credit controls (X)	No	No	No	No
Firm structural control (D)	No	No	No	Yes
Firm fin. / oper. controls (F)	No	No	No	Yes
Quarter x Year FE	Yes	Yes	Yes	Yes
Credit Cycle control	No	No	Yes	Yes
# of Observations	1,073,727	1,073,727	1,073,727	768,876
Adjusted R-squared	0.014	0.038	0.038	0.226

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), under average effect specification according to equation (1) in the text. The specification includes only variables that can be aggregated at firm level. We aggregate the output variable by computing the average value per each quarter within any debtor. Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively. Results are consistent to the use of robust standard errors, as well as to the exclusion of Quarter times Year Fixed Effect (*Q·Y*).

Table XV – Total Exposure at Default (*ead*) regression results under average effect specification

	Rating Identification				Probability of Default Identification			
Independent Variable	*Average*		*Below / above median*		*Average*		*Below / above median*	
	(1)		*(2)*		*(3)*		*(4)*	
Exposure (Exp)	-0.322 ***	(0.029)	-1.303 ***	(0.078)	-5.300 ***	(0.443)	-1.209 ***	(0.076)
Mortgage Guarantee	0.910 ***	(0.034)	0.907 ***	(0.034)	0.909 ***	(0.033)	0.906 ***	(0.034)
Pledge Guarantee	1.136 ***	(0.022)	1.137 ***	(0.023)	1.136 ***	(0.022)	1.135 ***	(0.022)
Confidi Guarantee	0.301 ***	(0.011)	0.301 ***	(0.011)	0.315 ***	(0.011)	0.299 ***	(0.011)
Personal Guarantee	0.502 ***	(0.012)	0.500 ***	(0.013)	0.501 ***	(0.012)	0.498 ***	(0.012)
Other Guarantee	0.552 ***	(0.213)	0.549 ***	(0.210)	0.559 ***	(0.209)	0.554 ***	(0.209)
Non Performing (Sofferenza)	-0.799 ***	(0.096)	-0.885 ***	(0.091)	-0.394 ***	(0.085)	-0.889 ***	(0.088)
Non Performing (Incaglio)	-0.251 ***	(0.052)	-0.320 ***	(0.046)	0.121 ***	(0.034)	-0.326 ***	(0.042)
Non Performing (Restructured)	0.420 *	(0.232)	0.340	(0.223)	0.946 ***	(0.237)	0.347	(0.221)
Non Performing (Past Due)	-0.775 ***	(0.031)	-0.799 ***	(0.029)	-0.579 ***	(0.026)	-0.805 ***	(0.026)
Non Cash	-0.807 ***	(0.062)	-0.812 ***	(0.061)	-0.803 ***	(0.061)	-0.803 ***	(0.061)
New Facility	-0.471 ***	(0.015)	-0.471 ***	(0.015)	-0.469 ***	(0.015)	-0.474 ***	(0.014)
Medium-Term Maturity	0.518 ***	(0.061)	0.520 ***	(0.061)	0.517 ***	(0.061)	0.518 ***	(0.061)
Long-Term Maturity	1.170 ***	(0.062)	1.172 ***	(0.061)	1.171 ***	(0.061)	1.169 ***	(0.062)
Log Revenues	0.004	(0.009)	0.003	(0.009)	0.001	(0.010)	0.004	(0.009)
Log Assets	0.246 ***	(0.018)	0.246 ***	(0.018)	0.248 ***	(0.019)	0.245 ***	(0.019)
Leverage	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
EBITDA Margin	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Bank Debt / Total Liabilities	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
Bank Debt / Net Debt	0.425 ***	(0.043)	0.426 ***	(0.043)	0.429 ***	(0.043)	0.425 ***	(0.043)
Exp x Credit Cycle	0.076 ***	(0.005)	0.245 ***	(0.020)	0.967 ***	(0.069)	0.234 ***	(0.019)
Creditor Rights Index (CRI)	-0.004	(0.004)	0.017 ***	(0.002)	0.028 ***	(0.002)	0.018 ***	(0.002)
Exp x CRI	0.010 ***	(0.001)	0.040 ***	(0.003)	0.149 ***	(0.014)	0.037 ***	(0.003)
Quarter x Year FE	Yes		Yes		Yes		Yes	
Industry Control	Yes		Yes		Yes		Yes	
Facility Nature Control	Yes		Yes		Yes		Yes	
Segment Size Control	Yes		Yes		Yes		Yes	
Province Control	Yes		Yes		Yes		Yes	
# of Observations	3,780,287		3,780,287		3,780,287		3,780,287	
Adjusted R-squared	0.290		0.290		0.291		0.290	

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), under average effect specification according to equation (1) in the text. In columns (1) and (2) the exposure to the reforms is based on rating identification (see § 4.2). In column (1), *Exposure* is the average *Rating* of a firm itself; in column (2), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3) and (4) the exposure to the reforms is defined on the basis of the probability of default (*PD*), as describe in § 4.2. In column (3), *Exposure* is the average *PD* of a firm itself; in column (4), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XVI – Recoverable Amount at Default (*rad*) regression results under average effect specification

Independent Variable	**Rating Identification**				**Probability of Default Identification**			
	Average		*Below / above median*		*Average*		*Below / above median*	
	(1)		*(2)*		*(3)*		*(4)*	
Exposure (Exp)	-0.341 ***	(0.028)	-1.057 ***	(0.080)	-6.011 ***	(0.344)	-0.954 ***	(0.076)
Creditor Rights Index (CRI)	0.021 ***	(0.004)	0.043 ***	(0.002)	0.047 ***	(0.002)	0.044 ***	(0.002)
Exp x CRI	0.010 ***	(0.001)	0.031 ***	(0.002)	0.173 ***	(0.011)	0.028 ***	(0.002)
Credit controls (X)	Yes		Yes		Yes		Yes	
Firm structural controls (D)	Yes		Yes		Yes		Yes	
Firm financial / operating controls (F)	Yes		Yes		Yes		Yes	
Quarter x Year FE	Yes		Yes		Yes		Yes	
Credit Cycle control	Yes		Yes		Yes		Yes	
# of Observations	3,477,603		3,477,603		3,477,603		3,477,603	
Adjusted R-squared	0.283		0.283		0.284		0.283	

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Recoverable Amount at Default* (*rad*), under average effect specification according to equation (1) in the text. In columns (1) and (2) the exposure to the reforms is based on rating identification (see § 4.2). In column (1), *Exposure* is the average *Rating* of a firm itself; in column (2), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3) and (4) the exposure to the reforms is defined on the basis of the probability of default (*PD*), as describe in § 4.2. In column (3), *Exposure* is the average *PD* of a firm itself; in column (4), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are divided in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XVII – Total Exposure at Default (*ead*) regression results under individual reforms specification

Independent Variable	**Rating Identification**				**Probability of Default Identification**			
	Average		*Below / above median*		*Average*		*Below / above median*	
	(5)		*(6)*		*(7)*		*(8)*	
Exposure (Exp)	0.009	(0.006)	0.078 **	(0.033)	-0.562 ***	(0.052)	0.099 ***	(0.019)
Exp x Ref10	-0.009 ***	(0.003)	-0.089 ***	(0.011)	0.081 **	(0.033)	-0.110 ***	(0.010)
Exp x Ref12	-0.059 ***	(0.004)	-0.226 ***	(0.012)	-0.782 ***	(0.063)	-0.201 ***	(0.012)
Exp x Ref13	0.022 ***	(0.002)	0.083 ***	(0.009)	-0.065 *	(0.035)	0.068 ***	(0.010)
Creditor Rights Index (CRI)	0.012 **	(0.005)	0.020 ***	(0.002)	0.031 ***	(0.002)	0.019 ***	(0.002)
Credit controls (X)	Yes		Yes		Yes		Yes	
Firm structural control (D)	Yes		Yes		Yes		Yes	
Firm financial / operating controls (F)	Yes		Yes		Yes		Yes	
Quarter x Year FE	Yes		Yes		Yes		Yes	
Credit Cycle control	Yes		Yes		Yes		Yes	
# of Observations	3,780,287		3,780,287		3,780,287		3,780,287	
Adjusted R-squared	0.290		0.290		0.291		0.290	

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), under individual reforms specification according to equation (2) in the text. In regressions (5) and (6) the exposure to the reforms is based on rating identification (see § 4.2). In column (5), *Exposure* is the average *Rating* of a firm itself; in column (6), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In column (7) and (8) the exposure to the reforms is defined on the basis of the probability of default (*PD*), as describe in § 4.2. In column (7), *Exposure* is the average *PD* of a firm itself; in column (8), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are divided in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XVIII – Recoverable Amount at Default (*rad*) regression results under individual reforms specification

Independent Variable	**Rating Identification**		**Probability of Default Identification**	
	Average	*Below / above median*	*Average*	*Below / above median*
	(5)	*(6)*	*(7)*	*(8)*
Exposure (Exp)	0.011 * (0.006)	0.045 (0.034)	-0.349 *** (0.050)	0.057 *** (0.019)
Exp x Ref10	-0.023 *** (0.003)	-0.113 *** (0.011)	-0.068 * (0.038)	-0.121 *** (0.010)
Exp x Ref12	-0.070 *** (0.003)	-0.219 *** (0.012)	-0.962 *** (0.045)	-0.202 *** (0.012)
Exp x Ref13	0.053 *** (0.003)	0.186 *** (0.010)	0.165 *** (0.036)	0.189 *** (0.010)
Creditor Rights Index (CRI)	0.046 *** (0.005)	0.050 *** (0.002)	0.051 *** (0.002)	0.050 *** (0.002)
Credit controls (X)	Yes	Yes	Yes	Yes
Firm structural control (D)	Yes	Yes	Yes	Yes
Firm financial / operating controls (F)	Yes	Yes	Yes	Yes
Quarter x Year FE	Yes	Yes	Yes	Yes
Credit Cycle control	Yes	Yes	Yes	Yes
# of Observations	3,477,603	3,477,603	3,477,603	3,477,603
Adjusted R-squared	0.284	0.283	0.284	0.283

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Recoverable Amount at Default* (*rad*), under individual reforms specification according to equation (2) in the text. In regressions (5) and (6) the exposure to the reforms is based on rating identification (see § 4.2). In column (5), *Exposure* is the average *Rating* of a firm itself; in column (6), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7) and (8), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), *Exposure* is the average *PD* of a firm itself; in column (8), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are divided in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XIX – Total Exposure at Default (*ead*) regression results splitting the sample according to the firms' level of risk

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*Lowest Tercile*	*Highest Tercile*	*All*	*Lowest Tercile*	*Highest Tercile*
	(1)	*(9)*	*(10)*	*(3)*	*(11)*	*(12)*
Exposure (Exp)	-0.322 *** (0.029)	-0.046 (0.068)	-0.383 *** (0.062)	-5.300 *** (0.443)	13.059 (10.655)	-2.464 *** (0.445)
Creditor Rights Index (CRI)	-0.004 (0.004)	0.005 (0.006)	0.016 (0.016)	0.028 *** (0.002)	0.024 *** (0.003)	0.053 *** (0.004)
Exp x CRI	0.010 *** (0.001)	0.011 *** (0.002)	0.010 *** (0.002)	0.149 *** (0.014)	0.059 (0.352)	0.065 *** (0.014)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	1,268,870	1,033,009	3,780,287	1,268,870	1,033,009
Adjusted R-squared	0.290	0.315	0.311	0.291	0.311	0.310

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*Lowest Tercile*	*Highest Tercile*	*All*	*Lowest Tercile*	*Highest Tercile*
	(5)	*(13)*	*(14)*	*(7)*	*(15)*	*(16)*
Exposure (Exp)	0.009 (0.006)	0.339 *** (0.017)	-0.108 *** (0.010)	-0.562 *** (0.052)	19.874 *** (2.606)	-0.657 *** (0.075)
Exp x Ref10	-0.009 *** (0.003)	-0.033 *** (0.008)	0.045 *** (0.005)	0.081 ** (0.033)	-5.818 *** (1.479)	0.351 *** (0.038)
Exp x Ref12	-0.059 *** (0.004)	-0.089 *** (0.011)	-0.057 *** (0.009)	-0.782 *** (0.063)	-1.964 (1.736)	-0.375 *** (0.065)
Exp x Ref13	0.022 *** (0.002)	0.085 *** (0.011)	-0.012 ** (0.005)	-0.065 * (0.035)	6.511 *** (1.489)	-0.111 *** (0.038)
Creditor Rights Index (CRI)	0.012 ** (0.005)	0.027 *** (0.007)	0.046 *** (0.018)	0.031 *** (0.002)	0.025 *** (0.003)	0.063 *** (0.005)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	1,268,870	1,033,009	3,780,287	1,268,870	1,033,009
Adjusted R-squared	0.290	0.315	0.311	0.291	0.311	0.310

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), splitting the sample between lowest risk (*Lowest Tercile*) and highest risk (*Highest Tercile*) credits. Top panel reports results under average effect specification, according to equation (1) in the text. Bottom panel presents results under individual reforms specification, according to equation (2) in the text. In regressions (1), (5), (9), (10), (13), and (14), the exposure to the reforms is based on rating identification (§ 4.2), where *Exposure* is the average *Rating* of a firm itself. In columns (3), (7), (11), (12), (15) and (16) the exposure to the reforms is based on the probability of default (*PD*), where *Exposure* is the average *PD* of a firm itself (§ 4.2). Regressions (1), (3), (5), and (7) are run on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*ead*). Regressions (9), (11), (13) and (15) subsample credits towards lowest risk firms, whose *Rating* falls into the bottom tercile of the rating distribution. Regressions (10), (12), (14), and (16) subsample credits towards highest risk firms, whose *Rating* lies in the top tercile of the rating distribution. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XX – Total Exposure at Default (ead) regression results splitting the sample according to credits' guarantees

	Average Rating Identification			Average Probability of Default Identification		
Independent Variable	*All*	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(5)	*(17)*	*(18)*	*(7)*	*(19)*	*(20)*
Exposure (Exp)	0.009 (0.006)	-0.009 * (0.005)	0.008 (0.011)	-0.562 *** (0.052)	-0.538 *** (0.068)	-0.551 *** (0.078)
Exp x Ref10	-0.009 *** (0.003)	-0.015 *** (0.005)	-0.004 (0.004)	0.081 ** (0.033)	-0.058 (0.063)	0.047 (0.048)
Exp x Ref12	-0.059 *** (0.004)	-0.004 (0.004)	-0.095 *** (0.007)	-0.782 *** (0.063)	-0.198 *** (0.061)	-0.977 *** (0.094)
Exp x Ref13	0.022 *** (0.002)	0.025 *** (0.003)	0.013 *** (0.004)	-0.065 * (0.035)	0.080 ** (0.036)	-0.168 ** (0.072)
Creditor Rights Index (CRI)	0.012 ** (0.005)	0.029 *** (0.006)	0.006 (0.007)	0.031 *** (0.002)	0.021 *** (0.002)	0.046 *** (0.003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	2,301,161	1,479,126	3,780,287	2,301,161	1,479,126
Adjusted R-squared	0.290	0.378	0.218	0.291	0.379	0.218

	Below / above median Rating Identification			Below / above median Probability of Default Identification		
Independent Variable	*All*	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(6)	*(21)*	*(22)*	*(8)*	*(23)*	*(24)*
Exposure (Exp)	0.078 ** (0.033)	0.003 (0.017)	0.069 (0.059)	0.099 *** (0.019)	-0.002 (0.018)	0.116 *** (0.042)
Exp x Ref10	-0.089 *** (0.011)	-0.060 *** (0.017)	-0.104 *** (0.024)	-0.110 *** (0.010)	-0.066 *** (0.017)	-0.141 *** (0.025)
Exp x Ref12	-0.226 *** (0.012)	-0.040 *** (0.012)	-0.424 *** (0.026)	-0.201 *** (0.012)	-0.031 *** (0.012)	-0.413 *** (0.024)
Exp x Ref13	0.083 *** (0.009)	0.075 *** (0.011)	0.068 *** (0.020)	0.068 *** (0.010)	0.063 *** (0.010)	-0.003 (0.021)
Creditor Rights Index (CRI)	0.020 *** (0.002)	0.017 *** (0.002)	0.030 *** (0.003)	0.019 *** (0.002)	0.016 *** (0.002)	0.028 *** (0.003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	2,301,161	1,479,126	3,780,287	2,301,161	1,479,126
Adjusted R-squared	0.290	0.378	0.219	0.290	0.378	0.218

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), splitting the sample between secured credits (*Secured*) and unsecured credits (*Unsecured*). Regressions follow the individual reforms specification, according to equation (2) in the text. In regressions (5), (6), (17), (18), (21), and (22), the exposure to the reforms is based on rating identification (see § 4.2). In columns (5), (17), and (18), *Exposure* is the average *Rating* of a firm itself; in columns (6), (21), and (22), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7), (8), (19), (20), (23), and (24), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), (19), and (20), *Exposure* is the average *PD* of a firm itself; in column (8), (23), and (24), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (5), (6), (7), and (8) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*ead*). Regressions (17), (19), (21) and (23) subsample secured credits. Regressions (18), (20), (22), and (24) subsample unsecured credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XX*bis* – Recoverable Amount at Default (r*ad*) regression results splitting the sample according to credits' guarantees

Independent Variable	**Average Rating Identification**			**Average Probability of Default Identification**		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(1)	*(13bis)*	*(14bis)*	*(3)*	*(17bis)*	*(18bis)*
Exposure (Exp)	-0.341 *** (0.028)	-0.122 *** (0.027)	-0.522 *** (0.036)	-6.011 *** (0.344)	-2.716 *** (0.444)	-7.142 *** (0.466)
Creditor Rights Index (CRI)	0.021 *** (0.004)	0.014 ** (0.004)	0.040 *** (0.005)	0.047 *** (0.002)	0.029 *** (0.002)	0.075 *** (0.003)
Exp x CRI	0.010 *** (0.001)	0.003 *** (0.001)	0.016 *** (0.001)	0.173 *** (0.011)	0.066 *** (0.014)	0.209 *** (0.014)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,477,603	2,170,368	1,307,235	3,477,603	2,170,368	1,307,235
Adjusted R-squared	0.283	0.345	0.210	0.284	0.346	0.210

Independent Variable	**Below / above median Rating Identification**			**Below / above median Probability of Default Identification**		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(2)	*(15bis)*	*(16bis)*	*(4)*	*(19bis)*	*(20bis)*
Exposure (Exp)	-1.057 *** (0.080)	-0.436 *** (0.082)	-2.094 *** (0.147)	-0.954 *** (0.076)	-0.412 *** (0.082)	-2.310 *** (0.136)
Creditor Rights Index (CRI)	0.043 *** (0.002)	0.022 *** (0.002)	0.069 *** (0.004)	0.044 *** (0.002)	0.022 *** (0.002)	0.068 *** (0.003)
Exp x CRI	0.031 *** (0.002)	0.012 *** (0.003)	0.063 *** (0.005)	0.028 *** (0.002)	0.011 *** (0.003)	0.070 *** (0.004)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,477,603	2,170,368	1,307,235	3,477,603	2,170,368	1,307,235
Adjusted R-squared	0.283	0.345	0.210	0.283	0.345	0.210

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Recoverable Amount at Default* (*rad*), splitting the sample between secured credits (*Secured*) and unsecured credits (*Unsecured*). Regressions follow the average effect specification, according to equation (1) in the text. In regressions (1), (2), (13*bis*), (14*bis*), (15*bis*), and (16*bis*), the exposure to the reforms is based on rating identification (see § 4.2). In columns (1), (13*bis*), and (14*bis*), *Exposure* is the average *Rating* of a firm itself; in columns (2), (15*bis*), and (16*bis*), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3), (4), (17*bis*), (18*bis*), (19*bis*), and (20*bis*), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (3), (17*bis*), and (18*bis*), *Exposure* is the average *PD* of a firm itself; in column (4), (19*bis*), and (20*bis*), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (1), (2), (3), and (4) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*rad*). Regressions (13*bis*), (15*bis*), (17*bis*) and (19*bis*) subsample secured credits. Regressions (14*bis*), (16*bis*), (18*bis*), and (20*bis*) subsample unsecured credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXI – Total Exposure at Default (*ead*) regression results distinguishing between new and old credits

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*New*	*Old*	*All*	*New*	*Old*
	(5)	*(25)*	*(26)*	*(7)*	*(27)*	*(28)*
Exposure (Exp)	0.009 (0.006)	0.028 (0.023)	0.018 *** (0.006)	-0.562 *** (0.052)	-0.271 (0.304)	-0.446 *** (0.052)
Exp x Ref10	-0.009 *** (0.003)	-0.120 *** (0.025)	-0.005 (0.003)	0.081 ** (0.033)	-0.838 ** (0.338)	0.109 *** (0.034)
Exp x Ref12	-0.059 *** (0.004)	-0.025 *** (0.007)	-0.050 *** (0.004)	-0.782 *** (0.063)	-0.432 *** (0.104)	-0.681 *** (0.065)
Exp x Ref13	0.022 *** (0.002)	-0.002 (0.007)	0.028 *** (0.003)	-0.065 * (0.035)	-0.345 ** (0.157)	-0.028 (0.033)
Creditor Rights Index (CRI)	0.012 ** (0.005)	0.097 *** (0.017)	0.019 *** (0.005)	0.031 *** (0.002)	0.178 *** (0.006)	0.024 *** (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	408,776	3,371,511	3,780,287	408,776	3,371,511
Adjusted R-squared	0.290	0.492	0.285	0.291	0.491	0.286

Independent Variable	Below / above median Rating Identification			Below / above median Probability of Default Identification		
	All	*New*	*Old*	*All*	*New*	*Old*
	(6)	*(29)*	*(30)*	*(8)*	*(31)*	*(32)*
Exposure (Exp)	0.078 ** (0.033)	0.230 *** (0.061)	0.097 *** (0.037)	0.099 *** (0.019)	0.272 *** (0.060)	0.113 *** (0.021)
Exp x Ref10	-0.089 *** (0.011)	-0.531 *** (0.070)	-0.068 *** (0.013)	-0.110 *** (0.010)	-0.631 *** (0.067)	-0.084 *** (0.011)
Exp x Ref12	-0.226 *** (0.012)	-0.041 (0.026)	-0.209 *** (0.012)	-0.201 *** (0.012)	-0.020 (0.026)	-0.175 *** (0.013)
Exp x Ref13	0.083 *** (0.009)	0.011 (0.026)	0.112 *** (0.010)	0.068 *** (0.010)	-0.053 ** (0.026)	0.116 *** (0.010)
Creditor Rights Index (CRI)	0.020 *** (0.002)	0.152 *** (0.006)	0.017 *** (0.002)	0.019 *** (0.002)	0.144 *** (0.006)	0.019 *** (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,780,287	408,776	3,371,511	3,780,287	408,776	3,371,511
Adjusted R-squared	0.290	0.492	0.285	0.290	0.492	0.285

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Total Exposure at Default* (*ead*), splitting the sample between new credits (*New*) and old credits (*Old*), where *New* is a dummy variable tracking whether a credit is issued in a given quarter. Regressions follow the individual reforms specification, according to equation (2) in the text. In regressions (5), (6), (25), (26), (29), and (30), the exposure to the reforms is based on rating identification (see § 4.2). In columns (5), (25), and (26), *Exposure* is the average *Rating* of a firm itself; in columns (6), (29), and (30), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7), (8), (27), (28), (31), and (32), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), (27), and (28), *Exposure* is the average *PD* of a firm itself; in column (8), (31), and (32), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (5), (6), (7), and (8) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*ead*). Regressions (25), (27), (29) and (31) subsample new credits. Regressions (26), (28), (30), and (32) subsample old credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXI*bis* – Recoverable Amount at Default (r*ad*) regression results distinguishing between new and old credits

Independent Variable	**Average Rating Identification**			**Average Probability of Default Identification**		
	All	*New*	*Old*	*All*	*New*	*Old*
	(1)	*(21bis)*	*(22bis)*	*(3)*	*(25bis)*	*(26bis)*
Exposure (Exp)	-0.341 *** (0.028)	-0.608 *** (0.058)	-0.268 *** (0.028)	-6.011 *** (0.344)	-7.193 *** (0.999)	-5.494 *** (0.352)
Creditor Rights Index (CRI)	0.021 *** (0.004)	0.077 *** (0.011)	0.034 *** (0.004)	0.047 *** (0.002)	0.146 *** (0.005)	0.049 *** (0.002)
Exp x CRI	0.010 *** (0.001)	0.016 *** (0.002)	0.008 *** (0.001)	0.173 *** (0.011)	0.189 *** (0.031)	0.160 *** (0.011)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,477,603	344,524	3,133,079	3,477,603	344,524	3,133,079
Adjusted R-squared	0.283	0.366	0.290	0.284	0.362	0.291

Independent Variable	**Below / above median Rating Identification**			**Below / above median Probability of Default Identification**		
	All	*New*	*Old*	*All*	*New*	*Old*
	(2)	*(23bis)*	*(24bis)*	*(4)*	*(27bis)*	*(28bis)*
Exposure (Exp)	-1.057 *** (0.080)	-1.548 *** (0.166)	-0.808 *** (0.083)	-0.954 *** (0.076)	-1.805 *** (0.166)	-0.617 *** (0.077)
Creditor Rights Index (CRI)	0.043 *** (0.002)	0.129 *** (0.006)	0.048 *** (0.002)	0.044 *** (0.002)	0.129 *** (0.006)	0.051 *** (0.002)
Exp x CRI	0.031 *** (0.002)	0.040 *** (0.005)	0.024 *** (0.003)	0.028 *** (0.002)	0.047 *** (0.005)	0.019 *** (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,477,603	344,524	3,133,079	3,477,603	344,524	3,133,079
Adjusted R-squared	0.283	0.363	0.290	0.283	0.365	0.290

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Recoverable Amount at Default* (*rad*), splitting the sample new credits (*New*) and old credits (*Old*), where *New* is a dummy variable tracking whether a credit is issued in a given quarter. Regressions follow the average effect specification, according to equation (1) in the text. In regressions (1), (2), (21*bis*), (22*bis*), (23*bis*), and (24*bis*), the exposure to the reforms is based on rating identification (see § 4.2). In columns (1), (21*bis*), and (22*bis*), *Exposure* is the average *Rating* of a firm itself; in columns (2), (23*bis*), and (24*bis*), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3), (4), (25*bis*), (26*bis*), (27*bis*), and (28*bis*), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (3), (25*bis*), and (26*bis*), *Exposure* is the average *PD* of a firm itself; in column (4), (27*bis*), and (28*bis*), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (1), (2), (3), and (4) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*rad*). Regressions (21*bis*), (23*bis*), (25*bis*) and (27*bis*) subsample new credits. Regressions (22*bis*), (24*bis*), (26*bis*), and (28*bis*) subsample old credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXII – Interest Rate (*IR*) regression results under average effect specification

Independent Variable	**Rating Identification**				**Probability of Default Identification**			
	Average		*Below / above median*		*Average*		*Below / above median*	
	(1)		*(2)*		*(3)*		*(4)*	
Exposure (Exp)	0.369 ***	(0.033)	0.929 ***	(0.096)	2.271 ***	(0.622)	1.141 ***	(0.096)
Creditor Rights Index (CRI)	-0.064 ***	(0.004)	-0.087 ***	(0.002)	-0.102 ***	(0.002)	-0.084 ***	(0.002)
Exp x CRI	-0.008 ***	(0.001)	-0.015 ***	(0.003)	-0.036 *	(0.019)	-0.023 ***	(0.003)
Credit controls (X)	Yes		Yes		Yes		Yes	
Firm structural control (D)	Yes		Yes		Yes		Yes	
Firm financial / operating controls (F)	Yes		Yes		Yes		Yes	
Quarter x Year FE	Yes		Yes		Yes		Yes	
Credit Cycle control	Yes		Yes		Yes		Yes	
# of Observations	1,063,856		1,063,856		1,063,856		1,063,856	
Adjusted R-squared	0.546		0.541		0.531		0.540	

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), under average effect specification according to equation (1) in the text. In columns (1) and (2) the exposure to the reforms is based on rating identification (see § 4.2). In column (1), *Exposure* is the average *Rating* of a firm itself; in column (2), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3) and (4) the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (3), *Exposure* is the average *PD* of a firm itself; in column (4), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXIII – Interest Rate Spread (*Spread*) regression results under average effect specification

Independent Variable	**Rating Identification**				**Probability of Default Identification**			
	Average		*Below / above median*		*Average*		*Below / above median*	
	(1)		*(2)*		*(3)*		*(4)*	
Exposure (Exp)	0.369 ***	(0.033)	0.929 ***	(0.096)	2.271 ***	(0.622)	1.141 ***	(0.096)
Creditor Rights Index (CRI)	-0.116 ***	(0.004)	-0.139 ***	(0.002)	-0.154 ***	(0.002)	-0.136 ***	(0.002)
Exp x CRI	-0.008 ***	(0.001)	-0.015 ***	(0.003)	-0.036 *	(0.019)	-0.023 ***	(0.003)
Credit controls (X)	Yes		Yes		Yes		Yes	
Firm structural control (D)	Yes		Yes		Yes		Yes	
Firm financial / operating controls (F)	Yes		Yes		Yes		Yes	
Quarter x Year FE	Yes		Yes		Yes		Yes	
Credit Cycle control	Yes		Yes		Yes		Yes	
# of Observations	1,063,856		1,063,856		1,063,856		1,063,856	
Adjusted R-squared	0.568		0.563		0.554		0.562	

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), under average effect specification according to equation (1) in the text. In columns (1) and (2) the exposure to the reforms is based on rating identification (see § 4.2). In column (1), *Exposure* is the average *Rating* of a firm itself; in column (2), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3) and (4) the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (3), *Exposure* is the average *PD* of a firm itself; in column (4), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXIV – Interest Rate (*IR*) regression results under individual reforms specification

Independent Variable	**Rating Identification**		**Probability of Default Identification**	
	Average	*Below / above median*	*Average*	*Below / above median*
	(5)	*(6)*	*(7)*	*(8)*
Exposure (Exp)	0.109 *** (0.003)	0.377 *** (0.012)	0.956 *** (0.041)	0.340 *** (0.011)
Exp x Ref10	0.018 *** (0.003)	0.073 *** (0.012)	0.170 *** (0.042)	0.077 *** (0.011)
Exp x Ref12	0.035 *** (0.004)	0.064 *** (0.014)	0.236 *** (0.082)	0.092 *** (0.014)
Exp x Ref13	0.001 (0.005)	0.001 (0.012)	-0.225 *** (0.074)	0.023 * (0.012)
Creditor Rights Index (CRI)	-0.062 *** (0.004)	-0.085 *** (0.002)	-0.103 *** (0.002)	-0.081 *** (0.002)
Credit controls (X)	Yes	Yes	Yes	Yes
Firm structural control (D)	Yes	Yes	Yes	Yes
Firm financial / operating controls (F)	Yes	Yes	Yes	Yes
Quarter x Year FE	Yes	Yes	Yes	Yes
Credit Cycle control	Yes	Yes	Yes	Yes
# of Observations	1,063,856	1,063,856	1,063,856	1,063,856
Adjusted R-squared	0.546	0.541	0.531	0.540

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), under individual reforms specification according to equation (2) in the text. In regressions (5) and (6) the exposure to the reforms is based on rating identification (see § 4.2). In column (5), *Exposure* is the average *Rating* of a firm itself; in column (6), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7) and (8), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), *Exposure* is the average *PD* of a firm itself; in column (8), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXV – Interest Rate Spread (*Spread*) regression results under individual reforms specification

Independent Variable	**Rating Identification**		**Probability of Default Identification**	
	Average	*Below / above median*	*Average*	*Below / above median*
	(5)	*(6)*	*(7)*	*(8)*
Exposure (Exp)	0.109 *** (0.003)	0.377 *** (0.012)	0.956 *** (0.041)	0.340 *** (0.011)
Exp x Ref10	0.018 *** (0.003)	0.073 *** (0.012)	0.170 *** (0.042)	0.077 *** (0.011)
Exp x Ref12	0.035 *** (0.004)	0.064 *** (0.014)	0.236 *** (0.082)	0.092 *** (0.014)
Exp x Ref13	0.001 (0.005)	0.001 (0.012)	-0.225 *** (0.074)	0.023 * (0.012)
Creditor Rights Index (CRI)	-0.113 *** (0.004)	-0.137 *** (0.002)	-0.155 *** (0.002)	-0.133 *** (0.002)
Credit controls (X)	Yes	Yes	Yes	Yes
Firm structural control (D)	Yes	Yes	Yes	Yes
Firm financial / operating controls (F)	Yes	Yes	Yes	Yes
Quarter x Year FE	Yes	Yes	Yes	Yes
Credit Cycle control	Yes	Yes	Yes	Yes
# of Observations	1,063,856	1,063,856	1,063,856	1,063,856
Adjusted R-squared	0.568	0.563	0.554	0.562

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), under individual reforms specification according to equation (2) in the text. In regressions (5) and (6) the exposure to the reforms is based on rating identification (see § 4.2). In column (5), *Exposure* is the average *Rating* of a firm itself; in column (6), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7) and (8), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), *Exposure* is the average *PD* of a firm itself; in column (8), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXVI – Interest Rate (*IR*) regression results splitting the sample according to the firms' level of risk

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*Lowest Tercile*	*Highest Tercile*	*All*	*Lowest Tercile*	*Highest Tercile*
	(1)	*(9)*	*(10)*	*(3)*	*(11)*	*(12)*
Exposure (Exp)	0.369 *** (0.033)	0.225 *** (0.078)	-0.218 *** (0.074)	2.271 *** (0.622)	69.048 *** (11.715)	-1.449 ** (0.573)
Creditor Rights Index (CRI)	-0.064 *** (0.004)	-0.061 *** (0.006)	-0.174 *** (0.016)	-0.102 *** (0.002)	-0.068 *** (0.002)	-0.128 *** (0.006)
Exp x CRI	-0.008 *** (0.001)	-0.003 (0.002)	0.009 *** (0.002)	-0.036 * (0.019)	-1.799 *** (0.359)	0.055 *** (0.018)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	351,623	306,587	1,063,856	351,623	306,587
Adjusted R-squared	0.546	0.555	0.561	0.531	0.554	0.560

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*Lowest Tercile*	*Highest Tercile*	*All*	*Lowest Tercile*	*Highest Tercile*
	(5)	*(13)*	*(14)*	*(7)*	*(15)*	*(16)*
Exposure (Exp)	0.109 *** (0.003)	0.124 *** (0.011)	0.070 *** (0.007)	0.956 *** (0.041)	10.175 *** (1.855)	0.433 *** (0.053)
Exp x Ref10	0.018 *** (0.003)	0.015 ** (0.008)	-0.007 (0.008)	0.170 *** (0.042)	0.443 (1.277)	-0.121 * (0.065)
Exp x Ref12	0.035 *** (0.004)	0.013 (0.012)	-0.017 (0.011)	0.236 *** (0.082)	5.966 *** (1.601)	-0.085 (0.083)
Exp x Ref13	0.001 (0.005)	-0.004 (0.008)	-0.071 *** (0.009)	-0.225 *** (0.074)	7.512 *** (1.777)	-0.473 *** (0.066)
Creditor Rights Index (CRI)	-0.062 *** (0.004)	-0.060 *** (0.007)	-0.229 *** (0.017)	-0.103 *** (0.002)	-0.065 *** (0.003)	-0.142 *** (0.005)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	351,623	306,587	1,063,856	351,623	306,587
Adjusted R-squared	0.546	0.555	0.562	0.531	0.554	0.561

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), splitting the sample between lowest risk (*Lowest Tercile*) and highest risk (*Highest Tercile*) credits. Top panel reports results under average effect specification, according to equation (1) in the text. Bottom panel presents results under individual reforms specification, according to equation (2) in the text. In regressions (1), (5), (9), (10), (13), and (14), the exposure to the reforms is based on rating identification (§ 4.2), where *Exposure* is the average *Rating* of a firm itself. In columns (3), (7), (11), (12), (15), and (16), the exposure to the reforms is based on the probability of default (*PD*), where *Exposure* is the average *PD* of a firm itself (§ 4.2). Regressions (1), (3), (5), and (7) are run on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*IR*). Regressions (9), (11), (13) and (15) subsample credits towards lowest risk firms, whose *Rating* falls into the bottom tercile of the rating distribution. Regressions (10), (12), (14), and (16) subsample credits towards highest risk firms, whose *Rating* lies in the top tercile of the rating distribution. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXVII – Interest Rate (*IR*) regression results splitting the sample according to credits' guarantees

Independent Variable	**Average Rating Identification**			**Average Probability of Default Identification**		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(5)	*(17)*	*(18)*	*(7)*	*(19)*	*(20)*
Exposure (Exp)	0.109 *** (0.003)	0.102 *** (0.003)	0.129 *** (0.008)	0.956 *** (0.041)	0.875 *** (0.049)	1.019 *** (0.100)
Exp x Ref10	0.018 *** (0.003)	0.015 *** (0.003)	0.020 *** (0.007)	0.170 *** (0.042)	0.195 *** (0.041)	0.042 (0.081)
Exp x Ref12	0.035 *** (0.004)	0.036 *** (0.004)	0.066 *** (0.008)	0.236 *** (0.082)	0.212 *** (0.074)	0.371 *** (0.091)
Exp x Ref13	0.001 (0.005)	0.001 (0.005)	0.098 *** (0.009)	-0.225 *** (0.074)	-0.278 *** (0.071)	1.060 *** (0.156)
Creditor Rights Index (CRI)	-0.062 *** (0.004)	-0.053 *** (0.004)	-0.064 *** (0.008)	-0.103 *** (0.002)	-0.093 *** (0.002)	-0.164 *** (0.004)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	909,009	154,847	1,063,856	909,009	154,847
Adjusted R-squared	0.546	0.542	0.594	0.531	0.528	0.573

Independent Variable	**Below / above median Rating Identification**			**Below / above Probability of Default Identification**		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(6)	*(21)*	*(22)*	*(8)*	*(23)*	*(24)*
Exposure (Exp)	0.377 *** (0.012)	0.347 *** (0.012)	0.396 *** (0.036)	0.340 *** (0.011)	0.309 *** (0.012)	0.360 *** (0.038)
Exp x Ref10	0.073 *** (0.012)	0.065 *** (0.012)	0.073 ** (0.032)	0.077 *** (0.011)	0.067 *** (0.011)	0.085 ** (0.034)
Exp x Ref12	0.064 *** (0.014)	0.065 *** (0.014)	0.325 *** (0.035)	0.092 *** (0.014)	0.106 *** (0.014)	0.382 *** (0.036)
Exp x Ref13	0.001 (0.012)	0.017 (0.013)	0.200 *** (0.033)	0.023 * (0.012)	0.041 *** (0.013)	0.253 *** (0.034)
Creditor Rights Index (CRI)	-0.085 *** (0.002)	-0.076 *** (0.002)	-0.143 *** (0.004)	-0.081 *** (0.002)	-0.071 *** (0.002)	-0.140 *** (0.004)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	909,009	154,847	1,063,856	909,009	154,847
Adjusted R-squared	0.541	0.538	0.588	0.540	0.538	0.588

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), splitting the sample between secured credits (*Secured*) and unsecured credits (*Unsecured*). Regressions follow the individual reforms specification, according to equation (2) in the text. In regressions (5), (6), (17), (18), (21), and (22), the exposure to the reforms is based on rating identification (see § 4.2). In columns (5), (17), and (18), *Exposure* is the average *Rating* of a firm itself; in columns (6), (21), and (22), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7), (8), (19), (20), (23), and (24), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as explained in § 4.2. In column (7), (19), and (20), *Exposure* is the average *PD* of a firm itself; in column (8), (23), and (24), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (5), (6), (7), and (8) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*IR*). Regressions (17), (19), (21) and (23) subsample secured credits. Regressions (18), (20), (22), and (24) subsample unsecured credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXVII*bis* – Interest Rate Spread (*Spread*) regression results splitting the sample according to credits' guarantees

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(1)	*(13bis)*	*(14bis)*	*(3)*	*(17bis)*	*(18bis)*
Exposure (Exp)	0.369 *** (0.033)	0.361 *** (0.026)	0.733 *** (0.053)	2.271 *** (0.622)	1.921 *** (0.546)	4.621 *** (0.636)
Creditor Rights Index (CRI)	-0.116 *** (0.004)	-0.160 *** (0.003)	-0.152 *** (0.007)	-0.154 *** (0.002)	-0.144 *** (0.002)	-0.218 *** (0.004)
Exp x CRI	-0.008 *** (0.001)	-0.008 *** (0.001)	-0.018 *** (0.002)	-0.036 * (0.019)	-0.027 (0.017)	-0.111 *** (0.020)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	909,009	154,847	1,063,856	909,009	154,847
Adjusted R-squared	0.568	0.557	0.638	0.554	0.543	0.620

Independent Variable	Below / above median Rating Identification			Below / above Probability of Default Identification		
	All	*Secured*	*Unsecured*	*All*	*Secured*	*Unsecured*
	(2)	*(15bis)*	*(16bis)*	*(4)*	*(19bis)*	*(20bis)*
Exposure (Exp)	0.929 *** (0.096)	0.938 *** (0.097)	3.050 *** (0.223)	1.141 *** (0.096)	1.228 *** (0.097)	3.057 *** (0.229)
Creditor Rights Index (CRI)	-0.139 *** (0.002)	-0.130 *** (0.002)	-0.198 *** (0.004)	-0.136 *** (0.002)	-0.126 *** (0.002)	-0.197 *** (0.004)
Exp x CRI	-0.015 *** (0.003)	-0.016 *** (0.003)	-0.080 *** (0.007)	-0.023 *** (0.003)	-0.026 *** (0.003)	-0.094 *** (0.007)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	909,009	154,847	1,063,856	909,009	154,847
Adjusted R-squared	0.563	0.553	0.633	0.562	0.553	0.620

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), splitting the sample between secured credits (*Secured*) and unsecured credits (*Unsecured*). Regressions follow the average effect specification, according to equation (1) in the text. In regressions (1), (2), (13*bis*), (14*bis*), (15*bis*), and (16*bis*), the exposure to the reforms is based on rating identification (see § 4.2). In columns (1), (13*bis*), and (14*bis*), *Exposure* is the average *Rating* of a firm itself; in columns (2), (15*bis*), and (16*bis*), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3), (4), (17*bis*), (18*bis*), (19*bis*), and (20*bis*), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as explained in § 4.2. In column (3), (17*bis*), and (18*bis*), *Exposure* is the average *PD* of a firm itself; in column (4), (19*bis*), and (20*bis*), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (1), (2), (3), and (4) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*Spread*). Regressions (13*bis*), (15*bis*), (17*bis*) and (19*bis*) subsample secured credits. Regressions (14*bis*), (16*bis*), (18*bis*), and (20*bis*) subsample unsecured credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXVIII – Interest Rate (*IR*) regression results distinguishing between new and old credits

Independent Variable	**Average Rating Identification**			**Average Probability of Default Identification**		
	All	*New*	*Old*	*All*	*New*	*Old*
	(5)	*(25)*	*(26)*	*(7)*	*(27)*	*(28)*
Exposure (Exp)	0.109 *** (0.003)	0.059 *** (0.020)	0.109 *** (0.003)	0.956 *** (0.041)	0.259 (0.303)	0.975 *** (0.042)
Exp x Ref10	0.018 *** (0.003)	0.139 *** (0.030)	0.016 *** (0.003)	0.170 *** (0.042)	1.393 *** (0.459)	0.127 *** (0.038)
Exp x Ref12	0.035 *** (0.004)	0.039 ** (0.019)	0.033 *** (0.005)	0.236 *** (0.082)	0.287 (0.280)	0.216 ** (0.086)
Exp x Ref13	0.001 (0.005)	0.055 *** (0.017)	-0.003 (0.005)	-0.225 *** (0.074)	1.400 *** (0.405)	-0.266 *** (0.071)
Creditor Rights Index (CRI)	-0.062 *** (0.004)	-0.048 *** (0.010)	-0.055 *** (0.004)	-0.103 *** (0.002)	-0.157 *** (0.007)	-0.092 *** (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	52,551	1,011,305	1,063,856	52,551	1,011,305
Adjusted R-squared	0.546	0.553	0.545	0.531	0.527	0.531

Independent Variable	**Below / above median Rating Identification**			**Below / above median Probability of Default Identification**		
	All	*New*	*Old*	*All*	*New*	*Old*
	(6)	*(29)*	*(30)*	*(8)*	*(31)*	*(32)*
Exposure (Exp)	0.377 *** (0.012)	0.179 *** (0.061)	0.366 *** (0.011)	0.340 *** (0.011)	0.189 *** (0.059)	0.339 *** (0.011)
Exp x Ref10	0.073 *** (0.012)	0.568 *** (0.081)	0.073 *** (0.011)	0.077 *** (0.011)	0.438 *** (0.079)	0.070 *** (0.010)
Exp x Ref12	0.064 *** (0.014)	0.042 (0.060)	0.057 *** (0.014)	0.092 *** (0.014)	0.090 (0.057)	0.085 *** (0.014)
Exp x Ref13	0.001 (0.012)	-0.027 (0.070)	-0.005 (0.013)	0.023 * (0.012)	0.075 (0.070)	0.011 (0.012)
Creditor Rights Index (CRI)	-0.085 *** (0.002)	-0.141 *** (0.007)	-0.074 *** (0.002)	-0.081 *** (0.002)	-0.136 *** (0.008)	-0.071 *** (0.002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	52,551	1,011,305	1,063,856	52,551	1,011,305
Adjusted R-squared	0.541	0.546	0.540	0.540	0.542	0.540

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*), splitting the sample between new credits (*New*) and old credits (*Old*), where *New* is a dummy variable tracking whether a credit is issued in a given quarter. Regressions follow the individual reforms specification, according to equation (2) in the text. In regressions (5), (6), (25), (26), (29), and (30), the exposure to the reforms is based on rating identification (see § 4.2). In columns (5), (25), and (26), *Exposure* is the average *Rating* of a firm itself; in columns (6), (29), and (30), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (7), (8), (27), (28), (31), and (32), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as described in § 4.2. In column (7), (27), and (28), *Exposure* is the average *PD* of a firm itself; in column (8), (31), and (32), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (5), (6), (7), and (8) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*IR*). Regressions (25), (27), (29) and (31) subsample new credits. Regressions (26), (28), (30), and (32) subsample old credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXVIII*bis* – Interest Rate Spread (*Spread*) regression results splitting the sample between new and old credits

Independent Variable	Average Rating Identification			Average Probability of Default Identification		
	All	*New*	*Old*	*All*	*New*	*Old*
	(1)	*(21bis)*	*(22bis)*	*(3)*	*(25bis)*	*(26bis)*
Exposure (Exp)	0.369 *** (0.033)	0.775 *** (0.067)	0.342 *** (0.035)	2.271 *** (0.622)	6.680 *** (1.001)	1.978 ** (0.647)
Creditor Rights Index (CRI)	-0.116 *** (0.004)	-0.156 *** (0.012)	-0.107 *** (0.004)	-0.154 *** (0.002)	-0.223 *** (0.007)	-0.142 *** (0.002)
Exp x CRI	-0.008 *** (0.001)	-0.019 *** (0.002)	-0.007 *** (0.001)	-0.036 * (0.019)	-0.166 *** (0.032)	-0.027 (0.020)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	52,551	1,011,305	1,063,856	52,551	1,011,305
Adjusted R-squared	0.568	0.593	0.565	0.554	0.571	0.551

Independent Variable	Below / above median Rating Identification			Below / above Probability of Default Identification		
	All	*New*	*Old*	*All*	*New*	*Old*
	(2)	*(23bis)*	*(24bis)*	*(4)*	*(27bis)*	*(28bis)*
Exposure (Exp)	0.929 *** (0.096)	1.832 *** (0.244)	0.849 *** (0.098)	1.141 *** (0.096)	2.028 *** (0.242)	1.050 *** (0.098)
Creditor Rights Index (CRI)	-0.139 *** (0.002)	-0.206 *** (0.007)	-0.128 *** (0.002)	-0.136 *** (0.002)	-0.203 *** (0.008)	-0.125 *** (0.002)
Exp x CRI	-0.015 *** (0.003)	-0.038 *** (0.008)	-0.013 *** (0.003)	-0.023 *** (0.003)	-0.046 *** (0.008)	-0.020 *** (0.003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	52,551	1,011,305	1,063,856	52,551	1,011,305
Adjusted R-squared	0.563	0.589	0.560	0.562	0.586	0.559

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), splitting the sample between new credits (*New*) and old credits (*Old*), where *New* is a dummy variable tracking whether a credit is issued in a given quarter. Regressions follow the average effect specification, according to equation (1) in the text. In regressions (1), (2), (21*bis*), (22*bis*), (23*bis*), and (24*bis*), the exposure to the reforms is based on rating identification (see § 4.2). In columns (1), (21*bis*), and (22*bis*), *Exposure* is the average *Rating* of a firm itself; in columns (2), (23*bis*), and (24*bis*), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. In columns (3), (4), (25*bis*), (26*bis*), (27*bis*), and (28*bis*), the exposure to the reforms is defined on the basis of the probability of default (*PD*), as explained in § 4.2. In column (3), (25*bis*), and (26*bis*), *Exposure* is the average *PD* of a firm itself; in column (4), (27*bis*), and (28*bis*), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Regressions (1), (2), (3), and (4) are based on the overall sample and are equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*Spread*). Regressions (21*bis*), (23*bis*), (25*bis*) and (27*bis*) subsample new credits. Regressions (22*bis*), (24*bis*), (26*bis*), and (28*bis*) subsample old credits. All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXIX – Recoverable Amount at Default (*rad*) regression results with principal components

Independent Variable	*Baseline*	**Below / above median Rating Identification** *PCA by individual Creditor Rights*			*PCA by Bankruptcy Proceedings*	
	(2)	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*
Exposure (Exp)	-1.057 *** (0.080)	-0.034 (0.030)	-0.100 *** (0.029)	-0.151 *** (0.029)	0.042 (0.032)	-0.051 * (0.030)
Creditor Rights Index (CRI)	0.043 *** (0.002)					
Exp x CRI	0.031 *** (0.002)					
PC1 - Right		0.079 *** (0.003)				
Exp x PC1 - Right		0.044 *** (0.003)				
PC2 - Right			0.118 *** (0.005)			
Exp x PC2 - Right			0.063 *** (0.005)			
PC3 - Right				0.514 *** (0.018)		
Exp x PC3 - Right				0.090 *** (0.007)		
PC1 - Proceeding					0.149 *** (0.007)	
Exp x PC1 - Proceeding					0.127 *** (0.010)	
PC2 - Proceeding						0.181 *** (0.009)
Exp x PC2 - Proceeding						0.152 *** (0.012)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	3,477,603	3,477,603	3,477,603	3,477,603	3,477,603	3,477,603
Adjusted R-squared	0.283	0.283	0.283	0.283	0.283	0.283

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on log-value of *Recoverable Amount at Default* (*rad*), under average effect specification according to equation (1) in the text and substituting *CRI* with the principal components resulting from the principal component analysis (see § 3.2). All regressions are based on rating identification (see § 4.2), where *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. Regression (2) is the baseline regression and is equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*rad*). Regressions (9), (10), and (11) substitute *CRI* with the first three principal components (*PC1 - Right*, *PC2 - Right*, and *PC3 - Right*) resulting from the principal component analysis run on the *CRI* distinguishing across the 17 individual rights (see Table VI). Regressions (12) and (13) substitute *CRI* with the first two principal components (*PC1 - Proceeding* and *PC2 - Proceeding*) resulting from the principal component analysis run on the *CRI* distinguishing across the 4 bankruptcy proceedings (see Table V). All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXX – Interest Rate Spread (*Spread*) regression results with principal components

Independent Variable	*Baseline*	**Below / above median Rating Identification** *PCA by individual Creditor Rights*			*PCA by Bankruptcy Proceedings*	
	(2)	*(9)*	*(10)*	*(11)*	*(12)*	*(13)*
Exposure (Exp)	0.929 *** (0.096)	0.437 *** (0.011)	0.467 *** (0.009)	0.489 *** (0.011)	0.395 *** (0.016)	0.442 *** (0.010)
Creditor Rights Index (CRI)	-0.139 *** (0.002)					
Exp x CRI	-0.015 *** (0.003)					
PC1 - Right		-0.244 *** (0.003)				
Exp x PC1 - Right		-0.020 *** (0.004)				
PC2 - Right			-0.365 *** (0.004)			
Exp x PC2 - Right			-0.028 *** (0.006)			
PC3 - Right				-1.424 *** (0.016)		
Exp x PC3 - Right				-0.036 *** (0.008)		
PC1 - Proceeding					-0.497 *** (0.006)	
Exp x PC1 - Proceeding					-0.064 *** (0.013)	
PC2 - Proceeding						-0.604 *** (0.008)
Exp x PC2 - Proceeding						-0.076 *** (0.015)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
# of Observations	1,063,856	1,063,856	1,063,856	1,063,856	1,063,856	1,063,856
Adjusted R-squared	0.563	0.563	0.563	0.563	0.563	0.563

The table reports OLS estimation of the effects of the Bankruptcy Law reforms on *Interest Rate Spread* (*Spread*), under average effect specification according to equation (1) in the text and substituting *CRI* with the principal components resulting from the principal component analysis (see § 3.2). All regressions are based on rating identification (see § 4.2), where *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. Regression (2) is the baseline regression and is equal to the regressions identically numbered in previous tables for the corresponding outcome variable (*Spread*). Regressions (9), (10), and (11) substitute *CRI* with the first three principal components (*PC1 - Right*, *PC2 - Right*, and *PC3 - Right*) resulting from the principal component analysis run on the *CRI* distinguishing across the 17 individual rights (see Table VI). Regressions (12) and (13) substitute *CRI* with the first two principal components (*PC1 - Proceeding* and *PC2 - Proceeding*) resulting from the principal component analysis run on the *CRI* distinguishing across the 4 bankruptcy proceedings (see Table V). All regressions include control variables described in the text (§ 4.1.2): credit characteristics (X_{ijt}), firm's structural characteristics (D_{jt}), firm's financial and operating characteristics ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control ($Exposure_j \cdot Cycle_t$). Appendix B provides a detailed description of all the variables. Robust, firm-clustered standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXXI - SUR regression results for Interest Rate (*IR*) and Total Exposure at Default (*EAD*) under rating identification

Independent Variable	**Rating Identification** *Average Rating* *(1)*		**Rating Identification** *Below Median vs. Above Median Rating* *(2)*	
	Interest Rate	***Exposure at Default***	***Interest Rate***	***Exposure at Default***
Exposure (Exp)	0.109 *** (0.002)	-0.037 *** (0.003)	0.376 *** (0.012)	-0.151 *** (0.014)
Exp x Ref10	0.018 *** (0.003)	-0.002 (0.003)	0.073 *** (0.013)	-0.034 ** (0.014)
Exp x Ref12	0.035 *** (0.001)	-0.026 *** (0.001)	0.064 *** (0.006)	-0.027 *** (0.006)
Exp x Ref13	0.001 (0.002)	-0.017 *** (0.002)	0.001 (0.007)	-0.014 * (0.008)
Exp x Credit Cycle	0.023 *** (0.004)	-0.014 *** (0.005)	0.045 ** (0.020)	-0.010 (0.022)
Credit controls (X)	Yes	Yes	Yes	Yes
Firm structural control (D)	Yes	Yes	Yes	Yes
Firm financial / operating controls (F)	Yes	Yes	Yes	Yes
Quarter x Year FE	Yes	No	Yes	No
Credit Cycle control	Yes	Yes	Yes	Yes
# of Observations	1,063,854	1,063,854	1,063,854	1,063,854
R-squared	0.546	0.411	0.541	0.411
Correlation of residuals	0.00260	0.00260	0.00370	0.00370

The table reports seemingly unrelated regressions (SUR) estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*) and log-value of *Total Exposure at Default* (*ead*), under individual reforms specification. The sample is limited to the credits for which both *IR* and *EAD* are available. The exposure to the reforms is based on rating identification (see § 4.2). In column (3), *Exposure* is the average *Rating* of a firm itself; in column (4), *Exposure* is a binary variable indicating whether the average *Rating* of a firm is above the sample median rating. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

Table XXXII – SUR regression results for Interest Rate (*IR*) and Total Exposure at Default (*EAD*) under probability of default identification

Independent Variable	**Probability of Default Identification** *Average PD* *(3)*		**Probability of Default Identification** *Below / average median* *(4)*	
	Interest Rate	***Exposure at Default***	***Interest Rate***	***Exposure at Default***
Exposure (Exp)	0.955 *** (0.030)	-0.455 *** (0.033)	0.340 *** (0.012)	-0.133 *** (0.014)
Exp x Ref10	0.170 *** (0.031)	0.100 *** (0.034)	0.077 *** (0.013)	-0.040 *** (0.014)
Exp x Ref12	0.234 *** (0.016)	-0.391 *** (0.017)	0.092 *** (0.006)	0.004 (0.006)
Exp x Ref13	-0.226 *** (0.020)	-0.264 *** (0.022)	0.023 *** (0.007)	-0.025 *** (0.008)
Exp x Credit Cycle	0.087 * (0.052)	-0.176 *** (0.057)	0.036 * (0.020)	-0.015 (0.022)
Credit controls (X)	Yes	Yes	Yes	Yes
Firm structural control (D)	Yes	Yes	Yes	Yes
Firm financial / operating controls (F)	Yes	Yes	Yes	Yes
Quarter x Year FE	Yes	No	Yes	No
Credit Cycle control	Yes	Yes	Yes	Yes
# of Observations	1,063,854	1,063,854	1,063,854	1,063,854
R-squared	0.531	0.409	0.540	0.410
Correlation of residuals	0.00290	0.00290	0.00370	0.00370

The table reports seemingly unrelated regressions (SUR) estimation of the effects of the Bankruptcy Law reforms on *Interest Rate* (*IR*) and log-value of *Total Exposure at Default* (*ead*), under individual reforms specification. The sample is limited to the credits for which both *IR* and *ead* are available. The exposure to the reforms is defined on the basis of the probability of default (*PD*), as describe in § 4.2. In column (1), *Exposure* is the average *PD* of a firm itself; in column (2), *Exposure* is a binary variable indicating whether the average *PD* of a firm is above the sample median probability of default. Control variables are described in the text (§ 4.1.2) and are grouped in credit characteristics controls (X_{ijt}), firm's structural characteristics controls (D_{jt}), firm's financial and operating characteristics controls ($F_{j(t-1)}$), Quarter times Year Fixed Effect ($Q \cdot Y$), and Credit Cycle control (defined as the interaction between $Exposure_j$ and $Cycle_t$). Appendix B provides a detailed description of all the variables. Standard errors are reported in parenthesis. Significance level: ***, **, and * denote significance at 1%, 5%, and 10% p-value levels, respectively.

9 Appendix A – CRI's constituents

This Appendix details the 17 rights constituting the CRI. Per each right a score of 0 (pro-debtor) or 1 (pro-creditor) is assessed based on the Law. We measure CRI separately for each bankruptcy proceeding available to SMEs: Private Foreclosure (PF), Foreclosure endorsed by the Court (FC), Reorganization (R), and Liquidation (L). The sum of CRI of each proceeding gives the Total CRI. The first four rights are those used by LLVS.

Right	Description
No Automatic Stay	1 = there is no automatic stay when the proceeding starts
	0 = there is automatic stay when the proceeding starts
Secured creditors paid first	1 = secured creditors are paid first when liquidating the collateral
	0 = secured creditors are not paid first when liquidating the collateral
	Excluding Court expenses which are always paid first, if any
Restrictions for going into procedure	1 = management needs creditors consent and/or to fulfil specific requirements to file for starting the proceeding
	0 = management can unilaterally file for starting the proceeding without creditors consent and/or fulfilling requirements
Management does not stay	1 = management must leave the firm when it enters the proceeding
	0 = management can continue to run the firm even after starting the proceeding
No Debtor-in-Possession Financing	1 = it is explicitly not allowed to issue debt more senior to the existing one after starting the proceeding
	0 = it is explicitly allowed to issue debt more senior to the existing one after starting the proceeding
Early Automatic Stay	1 = management is required to file a full / detailed proposal to creditors to start automatic stay on assets
	0 = management can start automatic stay on assets first with a light filing and subsequently submit a full /detailed proposal for the company restructuring/liquidation
Court Direct Supervision when Automatic Stay starts	1 = Court has always the right to appoint an administrator / supervisor when automatic stay starts
	0 = Court does not have always the right to appoint an administrator / supervisor when automatic stay starts
Creditors vote directly	1 = creditors can vote directly on the restructuring/liquidation plan
	0 = creditors can vote in committee or not at all on the restructuring/liquidation plan

No Cram-down Procedure	1 = if voting is required, each creditor can make an independent choice about company's restructuring/liquidation proposal
	0 = if voting is required, there is a kind of cram-down procedure which forces individual creditors to accept what is decided by the majority or by the court
No Silent Consent	1 = if voting is required, no vote is considered a contrary vote
	0 = if voting is required, no vote is considered a positive vote
Creditors approve administrator/supervisor	1 = creditors has the right to approve the appointment of the administrator/supervisor during the proceeding
	0 = only the court, the debtor and/or other participants appoint the administrator/supervisor during the proceeding
Creditors dismiss administrator/supervisor	1 = creditors may dismiss or must approve the dismissal of the administrator/supervisor, if any, during the proceeding
	0 = only the court, the debtor and/or other participants has the right to dismiss the administrator/supervisor, if any, during the proceeding
No Minimum Payment	1 = there is no kind of minimum payment to be guaranteed to unsecured creditors in order to endorse the proceeding
	0 = there is a kind of minimum payment to be guaranteed to unsecured creditors in order to endorse the proceeding
No Automatic Loss of Judicial Mortgage	1 = when a judicial mortgage is legally endorsed, it remains despite the start of a proceeding
	0 = when a judicial mortgage is legally endorsed, it may become automatically ineffective, under certain conditions, upon starting the proceeding
Automatic Stay on Lawsuit	1 = lawsuits against the debtor are automatically stayed upon starting the proceeding
	0 = lawsuit against the debtor continues upon starting the proceeding
No Unilateral Termination of Contracts	1 = the debtor cannot unilaterally terminate a contract when starting the proceeding
	0 = the debtor can, under certain conditions, unilaterally terminate a contract when starting the proceeding
No Restrictions to Bankruptcy Repetition	1 = actions/payments legally executed during the proceeding may be subject to repetition in case of subsequent Liquidation
	0 = actions/payments legally executed during the proceeding are excluded from repetition in case of subsequent Liquidation

10 Appendix B – Variables Definition

The appendix provides a comprehensive list of all the variables used in the paper, with their definitions. Frequency measure of each variable is denoted by *F*: *Q* stands for quarterly frequency of update; *Y* for yearly frequency of update; *K* stands for constant variable with no updating frequency throughout the period 2009Q4-2014Q2. Variables marked with (#) are not used directly in the econometric estimation, but are functional to compute other variables; variables marked with (^) are used only for robustness checks. Log-value and absolute value are used alternatively; yet, they are listed separately in the current appendix for completeness of information. Source of information is the proprietary database, unless otherwise specified.

10.1 Outcome variables (Y_{ijt})

Variable Name	Code	Description	F
Total Exposure at Default (#)	EAD_{ijt}	Total exposure at default, both on and off balance, for facility *i* to firm *j* in the quarter *t*. For credit lines, *EAD* is the present value of the amount effectively withdrawn by the firm, plus any accrued and unpaid interests. For loans, it is the present value of residual payments due by the firm, plus any accrued and unpaid interests. For bank guarantees, it is the amount the bank should pay for the guarantee, in case of firm's default, times the probability of default on that guarantee.	Q
Log exposure at default	ead_{ijt}	Log-value of *Total Exposure at Default* for facility *i* to firm *j* at time *t*.	Q
Recovery rate (#)	RR_{ijt}	Recovery rate for facility *i* to firm *j* at time *t* is the percentage of the euro-value of credit that the Bank is expected to recover in case of debtor's default. It is computed as the one's complement of the loss given at default percentage, according to Basel Rules.	Q
Recoverable Amount at Default (#)	RAD_{ijt}	Euro amount that the Bank is expected to recover on facility *i* to firm *j* at time *t*, in case of debtor's default. It is computed as the product of (i) *Total Exposure at Default* and (ii) *Recovery Rate*.	Q
Log of Recoverable Amount at Default	rad_{ijt}	Log-value of *Recoverable Amount at Default* for facility *i* to firm *j* at time *t*.	Q
Interest Rate	IR_{ijt}	Annual nominal gross interest rate for credit *i* to firm *j* in the quarter *t*.	Q
Interest Rate Spread	$Spread_{ijt}$	Difference between (i) *IR* and (ii) the 3-month average Euribor rate during quarter *t*.	Q
Amount of Granted credit (#)	$Granted_{ijt}$	Amount of credit granted by the Bank for facility *i* to firm *j* in the quarter *t*. For credit lines, *Granted* is the maximum amount the line can be withdrawn up to. For loans, it is the residual value of capital reimbursements to be made on the loan. For bank guarantees, it is the nominal value of the guarantee.	Q
Log-amount of granted credit (^)	$granted_{ijt}$	Log-value of *Granted* for facility *i* to firm *j* in the quarter *t*.	Q

10.2 Input variables

10.2.1 Variables mapping reforms and exposure to reforms (Exp, Ref, and CRI)

Variable Name	Code	Description	F
Exposure to Bankruptcy Law (Identification #1: Rating)	Exp_j	Rating of firm *j*, as assessed by the Bank according to Basel Rules for risk management purposes. Variable scaling is provided in § 4.2.	K
Exposure to Bankruptcy Law (Identification #2: Probability of Default)	Exp_j	Probability of Default of firm *j* in 1 year time, as assessed by the Bank according to Basel Rules. Variable scaling is provided in § 4.2.	K
Applicability of 2010 Reform (#)	*Ref10*	Dummy variable taking the value of 1 from the quarter when 2010 reform of the Bankruptcy Law is applicable (2nd quarter, 2010) and 0 before.	Q
Applicability of 2012 Reform (#)	*Ref12*	Dummy variable taking the value of 1 from the quarter when 2012 reform of the Bankruptcy Law is applicable (3rd quarter, 2012) and 0 before.	Q
Applicability of 2013 Reform (#)	*Ref13*	Dummy variable taking the value of 1 from the quarter when 2013 reform of the Bankruptcy Law is applicable (3rd quarter, 2013) and 0 before.	Q
Exp x Ref10	Exp_j*_Ref10*	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Applicability of 2010 Reform*.	Q
Exp x Ref 12	Exp_j*_Ref12*	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Applicability of 2012 Reform*.	Q
Exp x Ref 13	Exp_j*_Ref13*	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Applicability of 2013 Reform*.	Q
Creditor Rights Index	CRI_t	Total Creditor Rights Index as of the end of quarter *t*. The variable is constructed as detailed in § 3.2.	Q
Exp x CRI	$Exp_j\_CRI_t$	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Creditor Rights Index*.	Q
Reorganization CRI (^)	R_CRI_t	Creditor Rights Index for Reorganization as of the end of quarter *t*. It is assessed as described in§ 3.2.	Q
Exp x R CRI (^)	$Exp_j\_R\_CRI_t$	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Reorganization CRI*.	Q

10.2.2 Variables mapping reforms and exposure to reforms (Exp, Ref, and CRI)

Variable Name	Code	Description	F
Existence of a guarantee	$Guarantee_{ijt}$	Set of binary variables tracking if facility *i* to firm *j* at time *t* is secured.	Q
- No guarantee	$Unsecured_{ijt}$	Dummy variable equal to 1 if a facility is unsecured; equal to 0 otherwise. In the econometric estimation, *Unsecured* is the omitted category of *Guarantee*.	Q
- Mortgage guarantee	$Mortgage_{ijt}$	Dummy variable equal to 1 if a facility is guaranteed by a mortgage; equal to 0 otherwise.	Q
- Pledge guarantee	$Pledge_{ijt}$	Dummy variable equal to 1 if a facility is guaranteed by a pledge; equal to 0 otherwise.	Q
- Consortium guarantee	$Confidi_{ijt}$	Dummy variable equal to 1 if a facility is guaranteed by a consortium which insures banks' credit at expense of debtors; equal to 0 otherwise.	Q
- Personal guarantee	$Personal_{ijt}$	Dummy variable equal to 1 if a facility is guaranteed by a personal guarantee; equal to 0 otherwise.	Q
- Other guarantee	$Other_{ijt}$	Dummy variable equal to 1 if a facility is guaranteed by any guarantees different from the ones listed above; equal to 0 otherwise.	Q
Status	$Status_{ijt}$	Set of binary variables indicating whether credit *i* to firm *j* in quarter *t* is performing or non-performing. Non-performing credits are categorized according to Bank of Italy's supervisory requirements.	Q
- Performing	$Bonis_{ijt}$	Dummy variable equal to 1 if a facility is performing; equal to 0 otherwise. *Bonis* is the omitted category of *Status*.	Q
- Non Performing (Past Due)	$Non\_Perf\_Pst_{ijt}$	Dummy variable equal to 1 if a facility is non-performing and categorized as Past Due; equal to 0 otherwise.	Q
- Non Performing (Restructured)	$Non\_Perf\_Res_{ijt}$	Dummy variable equal to 1 if a facility is non-performing and categorized as Restructured; equal to 0 otherwise.	Q
- Non performing (Incaglio)	$Non\_Perf\_Inc_{ijt}$	Dummy variable equal to 1 if a facility is non-performing and categorized as Incaglio; equal to 0 otherwise.	Q
- Non Performing (Sofferenza)	$Non\_Perf\_Sof_{ijt}$	Dummy variable equal to 1 if a facility is non-performing and categorized as Sofferenza; equal to 0 otherwise.	Q
Non Cash	Non_Cash_{ijt}	Binary variable equal to 1 if a facility *i* to firm *j* at time *t* represents a non-cash exposure (i.e. a bank guarantee); equal to 0 otherwise (i.e. cash credit).	Q
New Facility	New_Fac_{ijt}	Dummy variable equal to 1 if facility *i* to firm *j* in quarter *t* represents a new facility issued in that quarter; equal to 0 otherwise.	Q

Variable Name	Code	Description	F
Maturity	$Maturity_{ijt}$	Set of binary variables mapping whether the original maturity of a given credit *i* to firm *j* is short-term, medium-term or long-term.	K
- Short-term maturity	ST_{ijt}	Dummy variable equal to 1 if a facility has an original maturity up to 1 year; equal to 0 otherwise. *ST* is the omitted category of *Maturity*.	K
- Medium-term maturity	MT_{ijt}	Dummy variable equal to 1 if a facility has an original maturity between 1 and 5 years; equal to 0 otherwise.	K
- Long-term maturity	LT_{ijt}	Dummy variable equal to 1 if a facility has an original maturity of more than 5 years; equal to 0 otherwise.	K
Facility Nature	$SISBA\_Fam_{ijt}$	Set of binary variables mapping the nature of each facility *i* to firm *j* at time *t* (e.g. credit cards, loans, commercial facilities, cash line of credits, …) as classified according to Bank of Italy's regulation requirements (SISBA codification).	Q
Interest Rate Kind (*)	IR_Kind_{ijt}	Set of binary variables mapping the kind of interest rate applied to the facility *i* to firm *j* in quarter *t* (e.g. fixed, floating, option floating/fixed, …). The Bank discloses this variable only for credits whose *IR* is provided.	Q
Log-amount of Granted credit (*)	$granted_{ijt}$	Log-value of *Granted* for facility *i* to firm *j* in the quarter *t*.	Q
(*) = variable included in the specification only when *Interest Rate* or *Interest Rate Spread* is the output variable of interest.			

10.2.3 Variables mapping firm's structural characteristics (D_{jt})

Variable Name	Code	Description	F
Industry	$Industry_{jt}$	A set of categorical variables mapping the Industry in which a firm *j* operates in quarter *t*. Industry classification is based on the Italian Chamber of Commerce coding (ATECO).	Q
Segment Size	$Segment\_Size_{jt}$	A set of binary variables indicating the credit segment size of each firm, according to Bank of Italy's classification requirements to fulfil the Credit Register (Retail Business, Small Business, Corporate, Large Corporate, and Others - residual category for Specialized Lending and "Large Borrowers").	Q
Province	$Prov_{jt}$	A set of binary variables mapping the province where a firm *j* is headquartered at time *t*.	Q

10.2.4 Variables mapping firms' financing and operating characteristics ($F_{j(t-1)}$)

The variables from this section have been collected from Centrale Bilanci, a database provided by Cerved Group, which is commonly used by banks to assess a counterpart credit risk. All the variables, unless otherwise specified, are collected at firm level as reported from the last available annual financial statements released before quarter *t*.

Variable Name	Code	Description	F
Bank Debt (#)	$BDebt_{j(t-1)}$	Total bank debt.	Y
Net Debt (#)	$NetDebt_{j(t-1)}$	Total net financial debt.	Y
Equity (#)	$Equity_{j(t-1)}$	Total equity.	Y
Assets (#)	$Assets_{j(t-1)}$	Total assets.	Y
Total Liabilities (#)	$Liab_{j(t-1)}$	Total liabilities of firm *j*, computed as the difference between (i) *Assets* and (ii) *Equity*.	Y
Bank Debt / Net Debt	$BDebt_{j(t-1)}$ / $NetDebt_{j(t-1)}$	Ratio of (i) *Bank Debt* and (ii) *Net Debt*.	Y
Bank Debt / Total Liabilities	$BDebt_{j(t-1)/}$ $Liab_{j(t-1)}$	Ratio of (i) *Bank Debt* and (ii) *Total Liabilities*.	Y
Leverage	$Leverage_{j(t-1)}$	Ratio of (i) *Assets* and (ii) *Equity*.	Y
Revenues (#)	$Rev_{j(t-1)}$	Total Revenues.	Y
Log Revenues	$rev_{j(t-1)}$	Log-value of *Revenues*.	Y
Log Assets	$assets_{j(t-1)}$	Log-value of *Assets*.	Y
Value Added (#)	$VA_{j(t-1)}$	Value Added.	Y
Value Added Margin (^)	$VA\_Margin_{j(t-1)}$	Ratio of (i) *Value Added* and (ii) *Revenues*.	Y
EBITDA (#)	$EBITDA_{j(t-1)}$	Earning before interests, taxes, depreciations, and amortizations.	Y
EBITDA Margin	$EBITDA\_$ $Margin_{j(t-1)}$	Ratio of (i) *EBITDA* and (ii) *Revenues*.	Y
ROE (^)	$ROE_{j(t-1)}$	Return on Equity.	Y
ROA (^)	$ROA_{j(t-1)}$	Return on Assets.	Y

10.2.5 Variables mapping macroeconomic and exogenous effects

Variable Name	Code	Description	F
Quarter times Year Fixed Effect	$Q \cdot Y$	Set of binary variables mapping uniquely each quarter of the analysis, from 2009-Q4 to 2014-Q2. Omitted category is 2009-Q4.	Q
Credit Cycle (#)	$Cycle_t$	Expected credit conditions applied to Italian SMEs at the beginning of quarter *t*. The information is provided by Italian banks in the *Bank Lending Survey* of the European Central Bank and is specifically focused on credit conditions applied to Italian SMEs. The survey is addressed to senior loan officers and asks the following question: "*Please indicate how you expect your bank's credit standards as applied to the approval of loans or credit lines to SMEs to change over the next three months*". Source: https://www.ecb.europa.eu/stats/money/surveys/lend/html/index.en.html	Q
Exp x Credit Cycle	$Exp_j\_Cycle_t$	Product of (i) *Exposure to Bankruptcy Law* and (ii) *Credit Cycle*.	Q
GDP Growth (^)	GDP_Growth_t	Quarterly percentage growth of the real Gross Domestic Product in Italy between quarter *t-1* and quarter *t*. Source: ISTAT.	Q
Inflation (^)	$Inflation_t$	Quarterly percentage change of National Index of Consumer Prices (NIC) for the whole Italian nation registered between quarter *t-1* and quarter *t*. Source: ISTAT.	Q
Unemployment Growth (^)	$Unemp\_Growth_t$	Quarterly percentage change of the Unemployment Rate for the overall Italian population, registered between quarter *t-1* and quarter *t*. Source: ISTAT.	Q
Bank Tier 1 Ratio (^)	$Tier1_t$	Core Tier 1 Ratio disclosed by the Bank according to Basel Rules as of the end of quarter *t*.	Q