
1. How do creditor rights matter for debt finance? A review of empirical evidence

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1. INTRODUCTION

Since the 1990s, economists have begun to pay close attention to the role of law and legal institutions in facilitating economic growth. In particular, the ‘law and finance’ view asserts that laws offering investors effective protection against expropriation are able to stimulate access to finance for firms. In the absence of effective legal protection, firms are forced to rely on informal mechanisms such as reputation in order to secure finance. This creates a barrier to entry, making it difficult for entrepreneurs to access the formal sector of the economy.

Within this tradition, it is argued that effective insolvency law and creditor rights are able to foster access to credit. The most basic creditor right, taken for granted in developed jurisdictions, is to enforce debt contracts following default. Enhancements to debt enforcement may consequently be expected to extend the credit capacity of debtors. The institution of secured credit permits such enforcement against particular assets of the debtor. Extra-judicial enforcement of security can itself enhance debt capacity, and particularly so in countries with limited court capacity. Moreover, secured creditors have an incentive to monitor the debtor’s use of the collateral. Insolvency law can be viewed as an important safety net for business activity, ensuring that when businesses falter or fail, there are appropriate mechanisms either to rescue them, or to maximize the value that is realized from their assets. It also ensures an orderly payment process, avoiding the race by creditors to collect. Unless banks are confident that they will recover their loans in an insolvency

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process, they will only lend to borrowers who present the least risk, which in many countries leads to extensive collateral requirements that small entrepreneurs cannot meet.

Notwithstanding these intuitive theoretical linkages, early literature struggled to find a strong empirical association between creditor rights and credit supply.¹ This may be because this literature initially focused primarily on creditor rights under the formal law, rather than the effectiveness of those rights in practice.² It may also be because the initial literature focused solely on creditor rights in insolvency, and it is clear that the interactions between insolvency law and secured credit, both of which are conventionally understood as affecting ‘creditor rights’, are important for the overall functionality of the regime.³ Put shortly: it is sometimes appropriate for insolvency law to stay secured creditors’ rights, and sometimes appropriate for secured creditors’ rights to substitute for insolvency law.

If insolvency law emphasizes reorganization, strong enforcement rights for secured creditors can undermine the success of the process. ‘Reorganization’ procedures, the model for which is usually the US Chapter 11 bankruptcy procedure, seek to facilitate a restructuring of the debtor’s balance sheet to permit it to continue to operate.⁴ They require for success that secured creditors’ enforcement powers be stayed, so that the business is not dismembered. However, successful reorganization also requires expert and impartial decision-makers (usually judges) to assess whether the company is a viable one to be entering reorganization proceedings at all.

In contrast, extra-judicial enforcement by secured creditors does not depend on the quality of courts. If a single creditor is permitted to take security over the entirety of the assets of the debtor – as with a floating charge or floating lien – then that creditor is, on enforcement, able to take

¹ E.g. Rafael La Porta, Florencio Lopes-de-Silanes, Andrei Shleifer and Robert Vishny, ‘Legal Determinants of External Finance’ (1998) 52 *Journal of Finance* 1131, 1145.

² Katharina Pistor, Martin Raiser and Stanislaw Gelfer, ‘Law and Finance in Transition Economies’ (2000) 8 *Economics of Transition* 325.

³ *Ibid.*; Simeon Djankov, Oliver Hart, Caralee McLiesh and Andrei Shleifer, ‘Debt Enforcement Around the World’ (2008) 116 *Journal of Political Economy* 1105.

⁴ E.g. International Monetary Fund, *Orderly & Effective Insolvency Procedures: Key Issues* (IMF, 1999), <www.imf.org/external/pubs/ft/orderly/> accessed 9 June 2014.

decisions regarding the debtor's business as a whole.⁵ Such a process is known in the UK and other systems adopting it as 'receivership'. It is possible for the business to be sold as a going concern, or liquidated piecemeal. Such security interests are typically taken by commercial banks, which specialize in screening and monitoring business debtors, and hence have appropriate expertise to make decisions regarding the sale of a troubled debtor's business. However, delegating decision-making about troubled businesses to secured creditors in this way builds in conflicts between the interests of the secured creditor – which it may be expected to prefer – and those of the unsecured creditors.⁶ In the absence of sufficiently sophisticated courts, however, an insolvency regime which effectively delegates control to secured creditors in this way may actually function better than a reorganization procedure.⁷ In short, the utility of permitting or restricting enforcement by secured creditors is context-dependent.

This chapter reviews evidence from a new generation of empirical studies, largely focusing on within-country effects, that seek to measure the impact of reforms to creditor rights on access to credit. The studies show that effective reform of creditor rights is associated with a lower cost of credit, increased access to credit, improved creditor recovery, and strengthened job preservation. A country's creditor rights regime plays an important role in mitigating investor risk, which in turn contributes to the improved access and cost of credit and increased financial stability in a country.

The rest of this chapter is structured as follows. Section 2 offers a brief review of methodological issues in the empirical literature. It is intended to provide a non-technical summary that will assist readers in judging how much weight to place on the findings of particular studies. Section 3 then considers the *ex post* effects of reforms to creditor rights, in particular returns to creditors, employment preservation and loan outcomes. Section 4 turns to the *ex ante* effects of reforms to creditor rights, focusing on borrower interest rates and access to credit. Section 5 concludes.

⁵ John Armour and Sandra Frisby, 'Rethinking Receivership' (2001) 21 Oxford Journal of Legal Studies 73.

⁶ Moreover, a bank's incentives to maximize value may be weakened if performance is measured by factors other than its profitability, as may be the position where lending operations are subject to state influence or control: see Jose de Luna-Martinez, *Management and Resolution of Banking Crises: Lessons from the Republic of Korea and Mexico* (World Bank, 2000).

⁷ Djankov et al. (above, n 3).

2. METHODOLOGICAL ISSUES

Empirical studies of the efficacy of creditor rights can be *cross-country* or *within-country*. Cross-country studies seek to compare the relationship of differences between countries' legal regimes and access to credit, whereas within-country studies explore the same question 'before and after' a reform in a single country. Early literature focused on cross-country methodology, constructing quantitative indices of creditor rights and seeking correlations between index scores and aggregate measures of private credit to GDP. These studies suffered from a number of weaknesses. First, the individual rights chosen to construct the creditor rights indexes could have been predicted to have a range of different effects, and these effects may have been obscured in the aggregate scores.⁸ Second, as discussed in section 1, it was in any case difficult to construct an index of creditor rights which would be expected to predict an ordinal increase in supply of credit, given the ambiguities of the interaction between insolvency and secured credit.⁹ Third, these early studies relied on country-level data about access to credit. These lack granularity, making it hard to disentangle the effects of creditor rights from other factors. Consequently, more recent studies have made use of firm-level data about borrowing or returns to creditors, which greatly increase the number of observations and consequently statistical power of the study.

A fourth challenge is that there are many potential unobserved variables that might affect results in cross-country studies. As a result, it is difficult to know whether one is comparing 'apples with apples' regarding the significance of legal institutions. This challenge can be met to some degree by using a *panel* of data: cross-country variables which vary over time. With panel data, a dummy variable can be introduced for each country in the study, the coefficient for which then captures all the country-specific differences not otherwise associated with variables measured elsewhere. This 'country fixed effects' specification is only effective in controlling for factors that do not change over time. It is quite plausible, however, that there may be variation in relevant factors over time.

⁸ Stijn Claessens and Leora F Klapper, 'Bankruptcy Around the World: Explanations of Its Relative Use' (2005) 7 *American Law and Economics Review* 253.

⁹ John Armour, Simon Deakin, Priya Lele, and Mathias Siems 'How do legal rules evolve? Evidence from a cross-national comparison of shareholder, creditor and worker protection', (2009) 57 *American Journal of Comparative Law* 579.

This problem with cross-country studies can be avoided by focusing on a single country, and comparing the change in access to credit ‘before and after’ a reform. This approach necessitates firm-level data, as only a single country is studied. Such a study must also face the challenge that other factors affecting the supply of credit might also change over time. The methodological innovation that has been deployed to respond to this concern is to focus not on *absolute* changes in the dependent credit variable (for example, the quantity of credit supplied), but on changes in the *differences* as respects the dependent credit variable between two groups of firms. These groups should be selected such that the members of the first group (the ‘treatment’ group) have characteristics that theory predicts should lead them to be more affected by the reforms than members of the other group (the ‘control’ group), which lack these characteristics. A reform functioning as predicted will increase the difference in the dependent credit variable between the two groups. The groups should be selected such that the difference(s) between the groups should be relevant only to the law reform, and should not be expected to make a difference for changes in other factors affecting the costs of credit. Hence whilst these other factors will affect the absolute quantity of credit supplied, they will not affect the *difference* in the credit supplied between two groups affected differentially by the reform. This methodology, known as ‘difference in difference’, has been widely used in empirical studies of law reform, and offers the ability to provide far stronger inferences about the causal effects of legal reform than do prior techniques.

The effects of the reform of creditor rights can be measured in a variety of ways. Most intuitive is to look at *ex post* effects: creditor recoveries, firm survival, time taken to complete proceedings, the direct costs of those proceedings, and so on. We consider these in section 3. However, improved returns *ex post* may be expected to stimulate creditor lending *ex ante*. In section 4, we turn to these *ex ante* effects.

3. *EX POST* EFFECTS OF REFORMING CREDITOR RIGHTS

This section reviews studies considering the *ex post* effects of reforms to creditor rights. Most of these studies have focused on insolvency law. Consequently sections 3.1 and 3.2, respectively, consider the impact of insolvency law reforms on returns to creditors in insolvency and on job preservation in distressed businesses. However, a few studies have looked at *ex post* effects of reform of other aspects of creditor rights. In section

3.3, we consider the effects on loan outcomes of reforms to creditors' individual enforcement rights.

3.1 Returns to Creditors

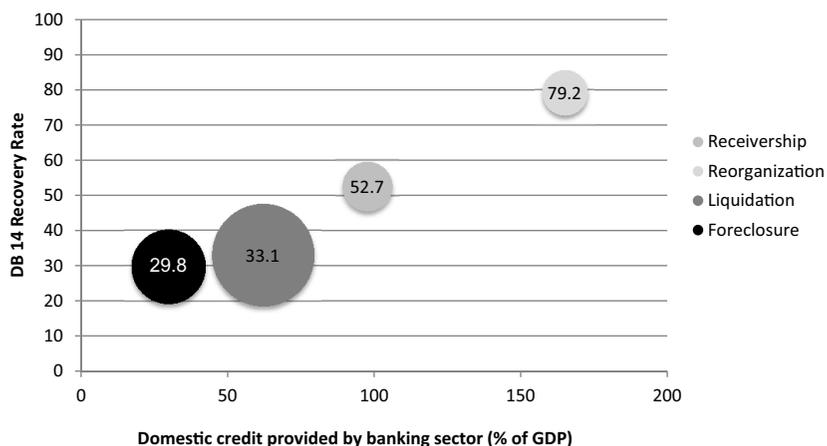
The World Bank Doing Business Report 2014 ('Resolving Insolvency' indicator) suggests that economies with more developed insolvency systems, and specifically those which offer an effective alternative to the piecemeal sale of a financially distressed debtor's assets by a secured creditor (foreclosure) or in a liquidation, ultimately provide higher recovery rates for creditors as compared with other mechanisms. In those countries where such distress is more likely to be resolved by recourse to a reorganization procedure, or by recourse to a receivership procedure,¹⁰ returns are better than in those countries where the debtor would be more likely put in foreclosure or liquidation proceedings, and are positively correlated with higher levels of domestic credit (Figure 1.1).

For example, the recent financial crisis in Latvia resulted in a decline in gross domestic product and a tripling of non-performing loans (NPLs). Following the implementation of reforms to strengthen Latvia's reorganization framework, the World Bank Doing Business Report 2012 recorded an increase in creditor recovery from 32 to 56 cents on the dollar. This has impacted an estimated amount close to 2 trillion US dollars (\$1,986,347,060) of non-performing loans with an estimated increased creditor recovery of more than \$50 million following the reform.¹¹

The correlation between the type of insolvency proceedings used (as measured by the Doing Business Report) and levels of domestic credit is illustrated in Figure 1.1. Whilst this is a simple cross-country measure using aggregate data, the interpretation of a causal link between the design and operation of insolvency procedures and recoveries in insolvency receives support from within-country studies using firm-level data. For instance, Gamboa-Cavazos and Schneider report that the enactment

¹⁰ Defined for the purpose of the Doing Business survey as a procedure in which the secured creditor can appoint a receiver with power to manage the business for the benefit of the creditor (World Bank, 'Resolving Insolvency' <www.doingbusiness.org/reports/global-reports/~//media/GIAWB/Doing%20Business/Documents/Annual-Reports/English/DB14-Chapters/DB14-Resolving-insolvency.pdf> accessed 10 June 2014). This procedure may enable the sale of the business on a going concern basis.

¹¹ World Bank Group Debt Resolution & Business Exit Impact Model, unpublished.



Note: Size of the bubble shows the number of economies. Number inside the bubble shows average recovery rate.

Figure 1.1 *Insolvency procedures, returns to creditors, and supply of credit*

of a new insolvency law in Mexico in 2000,¹² designed to reduce delay and ensure better filtering of non-viable from viable debtors, increased the average recovery rate for secured creditors from 19 cents on the dollar to 32 cents on the dollar and reduced the duration of proceedings from an average of 7.8 to 2.3 years. The time spent in bankruptcy proceedings is commonly interpreted as a measure of the ‘indirect’ costs of the process, because it is closely correlated with the destruction of the debtor’s goodwill.¹³

In the UK, Armour, Hsu and Walters study the impact of reforms in 2002 which gave unsecured creditors more control in insolvency by replacing receivership with the more collective insolvency procedure

¹² Mario Gamboa-Cavazos and Frank Schneider, ‘Bankruptcy as a Legal Process’ (2007) Working Paper <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=979614> accessed 10 June 2014.

¹³ David M. Cutler and Lawrence H. Summers, ‘The Costs of Conflict Resolution and Financial Distress: Evidence from the Texaco-Pennzoil Litigation’ (1988) 19 *RAND Journal of Economics* 157; Geoff Meeks and J.G. Tulip Meeks, ‘Self-Fulfilling Prophecies of Failure: the Endogenous Balance Sheets of Distressed Firms’ (2009) 45 *Abacus* 22.

(administration).¹⁴ The reforms introduced greater accountability to unsecured creditors, through a combination of voting rights and fiduciary duties for the insolvency office-holder. The authors report that the new law was associated with increased gross levels of returns but also with increased costs for insolvency proceedings. The former is consistent with the reforms having had their intended effect, but the latter suggests that the increased accountability brought with it increased professional fees. The combined effect appeared to be little net change in creditor recoveries, reflecting observations earlier about the possibility that different insolvency procedures may function equally well in circumstances where the enforcing creditor has good incentives to maximize the value of the debtor's business. Armour et al. report that the duration of cases was also reduced, from a median of 602 days (mean 627 days) under the receivership procedure to 358 days (mean 357 days) under administration, the new insolvency proceedings.

3.2 Job Preservation

A well-functioning insolvency law seeks to sort viable, but financially distressed, businesses from non-viable (or economically distressed) businesses. It seeks to offer mechanisms whereby the first category of firm may be rehabilitated in the marketplace – whether through a reorganization of its capital structure or a sale of the business as a going concern – and at the same time to ensure that the second category of firm is closed and liquidated as quickly as possible. However, under a poorly-functioning insolvency law, viable but financially distressed businesses may have no option but to enter liquidation and close. This can lead to a significant unnecessary loss of jobs, as well as value for the creditors.¹⁵ A viable business that can continue as a going concern after having overcome financial difficulties leads to preserved jobs, intact supply chains and retained asset value. Recent studies in the UK, for example, report that the entire workforce is preserved in 65% of insolvency sales of businesses as going concerns achieved after the commencement of

¹⁴ John Armour, Audrey Wen-hsin Hsu and Adrian Walters, 'The Costs and Benefits of Secured Creditor Control in Bankruptcy: Evidence from the UK' (2012) 8 *Review of Law and Economics* 101.

¹⁵ Conversely, a poorly-functioning insolvency law may also permit non-viable firms to continue to operate at the expense of their creditors.

formal administration or receivership proceedings, and in 92% of pre-packaged administrations, and in 73% and 95% of such cases, respectively, three-quarters of the workforce was preserved.¹⁶

Reforms of insolvency law have been shown to be effective in encouraging healthy recovery of financially distressed firms. For example, Giné and Love report that a new corporate reorganization code in Colombia, enacted in 1999, dramatically improved the efficiency with which that country's reorganization proceedings sorted viable from non-viable firms.¹⁷ The duration of the proceedings fell from an average of 34 months to 12 months. Before the reform, there was little difference in the financial health (as measured by the well-known predictor of default, *Z*-score) of firms that liquidated from those that reorganized. A difference in financial health did however appear after the reform, when liquidating firms became unhealthier and reorganizing firms relatively healthier. The authors interpret these results as evidence that the law reform facilitated the sorting of healthy firms to reorganize rather than liquidate, and to do it sooner, while they were still able to recover. After controlling for other changes in the economy (by comparison with a matched sample of solvent firms), reorganized firms were also observed to recover faster under the new law than the old law, and better, enjoying greater equity value.

Similarly, Dewaelheyns and van Hulle report that Belgium's 1997 insolvency law reform was associated with a lower failure rate in small and micro businesses in two sectors: manufacturing and trade.¹⁸ They attribute this change to one component of the insolvency reforms, which strengthened the recognition of reservation of title interests in liquidation. Before the change, suppliers of goods could become distressed if their customers went into insolvency: these 'domino effects' could be reduced by ensuring that the interests of suppliers in goods delivered but not yet paid for would be protected on the customer's liquidation.

¹⁶ Sandra Frisby, 'A preliminary analysis of pre-packaged administrations' Association of Business Recovery Professionals (2007) <www.r3.org.uk/uploads/documents/preliminary%20analysis%20of%20pre-packed%20administrations.pdf> 10 June 2014; Andrea Polo, 'Secured Creditor Control in Bankruptcy: Costs and Conflict' (2012) Working Paper <<http://www.econ.upf.edu/docs/seminars/polo.pdf>> accessed 10 June 2014.

¹⁷ Xavier Gine and Inessa Love, 'Do Reorganisation Costs Matter for Efficiency? Evidence from a Bankruptcy Reform in Colombia' (2010) 53 *Journal of Law & Economics* 833.

¹⁸ Nico Dewaelheyns and Cynthia van Hulle, 'Legal reform and aggregate small and micro business bankruptcy rates: evidence from the 1997 Belgian bankruptcy code' (2008) 31 *Small Business Economics* 31.

3.3 Loan Outcomes

Reform to debt enforcement will also affect the incentives of parties to a loan agreement. By making enforcement more credible, such reforms will increase the ‘threat’ value of enforcement to creditors, and consequently the debtor’s willingness to meet their repayment obligations. For example, Visaria studies the effects of the introduction of specialist tribunals (‘DRTs’) for the enforcement of bank debt in India in 1993.¹⁹ Prior to this change, debt enforcement had to be pursued through the ordinary courts, which in India are subject to endemic delays. The DRTs were introduced in different Indian states at different times. Visaria makes use of the staggered roll-out of DRTs to conduct a difference-in-difference study, comparing the differences in probability of payment for loans which had large amounts overdue from those which had only small amounts overdue in states without DRTs with the equivalent difference in states with DRTs. In a regime where enforcement is effective, large overdue payments are more likely to trigger enforcement action than those which are overdue by only a small amount. Consequently, the introduction of effective enforcement was expected to have a greater positive impact on the probability of repayment for large overdue loans. Visaria’s results suggested that the introduction of DRTs had a significant and positive effect on the probability of repayment for large overdue loans, making them 28% more likely to be repaid.

Conversely, reforms which weaken creditor rights may reduce the expected value to them of enforcement. This in turn may be expected to reduce their investment in monitoring debtors’ use of collateral. Monitoring is costly for creditors to perform, and consequently the extent to which they will engage in it may be expected to vary with the amount at stake. Reforms which reduce the value creditors can expect to receive from enforcing security will consequently reduce the value of that collateral to creditors, and consequently the amount of monitoring investment they will be willing to make as respects the collateral. Consistently with this, Cerqueiro, Ongena and Roszbach report that the weakening in 2004 of creditors’ rights in floating lien-type security in Sweden was associated with a reduction in the extent to which such

¹⁹ Sujata Visaria, ‘Legal Reform and Loan Repayment: The Microeconomic Impact of Debt Recovery Tribunals in India’ (2009) 1 *American Economic Journal* 59.

creditors (typically banks) engaged in monitoring their debtors.²⁰ The law in question was largely repealed in 2009.

4. *EX ANTE* EFFECTS OF REFORMING CREDITOR RIGHTS

In this section, we turn to *ex ante* effects of reforming creditors' rights. The reforms considered include both changes to insolvency law and changes to the ability to grant and enforce secured credit. Credit plays a vital role in the functioning of many economies. Credit allows entrepreneurs more easily to enter the market and promotes expansion of successful businesses. Thus, even in the United States, new businesses rely primarily on outside debt finance, especially from banks.²¹ Credit lines also help to ease liquidity shortfalls that businesses inevitably face.²² When credit is in short supply, enterprises face limited growth, and limited ability to take risk due to liquidity concerns. Berkowitz, Lin and Ma report that the introduction of a property law in China in 2007, which permitted debtors to grant security more effectively to creditors and restricted expropriation of private property by local government, was associated with an increase in total credit and permitted firms to invest more extensively in growth opportunities, with less sensitivity to cash flow.²³

The World Bank Group World Development Indicators suggest that credit is a constraint in many parts of the world, as set out in Table 1.1, where in many states, domestic credit (as a percentage of GDP) is below 50% compared with OECD countries, where it is an average of 205%.

²⁰ Geraldo Cerqueiro, Steven Ongena and Kasper Roszbach, 'Collateralization, Bank Loan Rates and Monitoring: Evidence from a Natural Experiment' (2012) Working Paper. <www.riksbank.se/Documents/Rapporteur/Working_papers/2012/rap_wp257_120224.pdf> accessed 10 June 2014.

²¹ Alicia M. Robb and David T. Robinson, 'The Capital Structure Decisions of New Firms' (2014) 27 *Review of Financial Studies* 153.

²² Traci L. Mach and John D. Wolken, 'Examining the Impact of Credit Access on Small Firm Survivability' in Giorgio Calcagnini and Ilario E. Favaretto, *Small Businesses in the Aftermath of the Crisis* (Physica-Verlag, 2012).

²³ Daniel Berkowitz, Chen Lin and Yue Ma, 'The Real and Financial Effects of Property Rights: Evidence from a Natural Experiment' (2013) Working Paper <http://www.be.wvu.edu/econ_seminar/documents/12-13/berkowitz.pdf> accessed 10 June 2014.

Table 1.1 Domestic credit provided by banking sector (% of GDP)

Region	Domestic credit as a percentage of GDP for 2012
Least developed countries: UN classification	29.9%
Middle East & North Africa	37.4%
Europe & Central Asia	62.6%
South Asia	71.1%
Latin America & Caribbean	73.6%
East Asia & Pacific	141.5%
European Union	156.0%
OECD members	205.8%

Source: World Bank Development Indicators (Financial Indicators)

Better protection of creditor rights can facilitate debtors' access to credit in at least two complementary ways. First, they can lower the cost of credit for firms that would previously have been able to access credit. Second, such reforms can embolden creditors to extend debt finance to firms that they might previously have judged too risky. These ways in which debt capacity is enhanced are referred to by economists as the 'intensive' and 'extensive' margins, and we consider evidence relating to them in sections 4.1 and 4.2, respectively.

Note that reforms of creditor rights may generate movement on both margins simultaneously. The combined effects may appear counter-intuitive: for example, the average cost of credit in an economy may be observed to go up after an enhancement of creditors' rights. However, this would likely reflect the fact that those debtors now offered credit, who would not previously have had access to credit, are relatively risky and so attract higher interest rates. Depending on the number of new risky debtors accessing credit, the observed average interest rate may actually increase. Hence it is important to separate out movement on the two margins.

4.1 Creditor Rights and Costs of Credit (the ‘Intensive’ Margin)

A number of studies have investigated the impact of reforms to creditor rights on the cost of credit. An early example is Scott and Smith,²⁴ who explore the impact of the passing of the US Bankruptcy Code of 1978 on the cost of credit. The Bankruptcy Code was widely interpreted as having strengthened the rights of debtors *vis-à-vis* creditors. It imposed an automatic stay on enforcement of secured credit in insolvency, and gave the debtor a 120-day period of exclusivity, capable of being extended a further 60 days by a court, over the proposal of a plan of reorganization. Moreover, it introduced a ‘cram down’ voting mechanism whereby dissenting classes of creditors could be required to accept a plan that the court considered provided them with at least as much as they would have got in liquidation. Because of the debtor’s control over the plan formation agenda, and uncertainties about courts’ approach to valuation, this was widely thought to give debtors considerable control over the bankruptcy process, reducing creditors’ expected recoveries.²⁵

Scott and Smith investigate the Code’s impact on loan pricing using survey data on loan financing of small businesses from the National Federation of Independent Businesses (NFIB). This gives details of the terms of loans obtained by small businesses, and the date of origination. The authors compare terms of loans originated before and after the introduction of the Code. They report that interest rates charged were higher for post-Code loans, and that loan refusals had also increased. This is consistent with the predicted effect of the Code. However, the study simply compares loan prices before and after the change, controlling only for general interest rates. Other factors might have caused an increase in reported borrowing costs over this period, so the results are less convincing than more modern studies that utilize a difference-in-difference specification.²⁶

²⁴ Jonathan A. Scott and Terence C. Smith, ‘The Effect of the Bankruptcy Reform Act of 1978 on Small Business Loan Pricing’ (1986) 16 *Journal of Financial Economics* 119.

²⁵ Lynn M. LoPucki, ‘The Debtor in Full Control – Systems Failure Under Chapter 11 of the Bankruptcy Code’ (1983) 57 *American Bankruptcy Law Journal* 99 (Part I), 247 (Part II).

²⁶ It is also unclear whether all the firms in the sample received financing both before *and* after the change. To the extent that firms are included that only obtained finance in one period, the study might be introducing effects along the extensive margin: new borrowers might be borrowing at higher rates.

Davydenko and Franks present cross-country findings on the impact of insolvency laws on the cost of secured finance.²⁷ They use bank data on secured lending in France, Germany and the UK to explore how differences in the treatment of secured creditors in insolvency affect the terms of credit. They report that banks adjust their practices based on their rights in case of default in order to mitigate the expected creditor-unfriendly aspects of the bankruptcy law. The median discounted rates of recovery in bankruptcy were 92% in the UK, 61% in Germany, and 39% in France. After adjusting for other factors, the authors found that the provisions of the French bankruptcy law that were unfavourable to creditors led lenders to require more collateral (and specific forms of collateral) than in the other two countries. However, the study looks only at secured lending, and does not assess the impact of insolvency laws on other sources of finance, so we cannot conclusively draw inferences from it about firms' access to finance. Moreover, their study compares directly across countries. Whilst they take into account many variables which may be expected to affect the terms of credit, the results may potentially be biased by other country-specific factors not measured in the analysis.

Similarly, Brazil introduced a new bankruptcy law in 2005. This introduced a wide range of measures calculated to improve outcomes for corporate insolvencies. First, it restricted the extent to which employee claims were given priority over creditors. Second, it subordinated tax claims (which had previously enjoyed super-priority) to secured claims and some unsecured claims. Third, it provided for more rapid sales of distressed businesses, and abolished a requirement that the buyer of a business in bankruptcy be required to assume labour and tax claims. Finally, it provided for super-priority for credit advanced during the proceedings. The first and second of these measures increased the anticipated returns to secured creditors in liquidation, and the others increased the overall returns anticipated from the sale of distressed businesses. Funchal explores the impact of the reform using firm-level accounting data.²⁸ For a panel of 524 Brazilian firms, he compares interest costs as reported in their accounts, before and after the law reform. He reports that the new law is associated with a 22% reduction in

²⁷ Sergei A. Davydenko and Julian R. Franks, 'Do Bankruptcy Codes Matter? A Study of Defaults in France, Germany, and the U.K' (2008) 63 *Journal of Finance* 565.

²⁸ Bruno Funchal, 'The Effects of the 2005 Bankruptcy Reform in Brazil' (2008) 101 *Economics Letters* 84.

credit costs for these firms, and attributes this to the anticipated improvement in returns to creditors. However, this study has a similar methodological limitation to Scott and Smith,²⁹ in that the author compares absolute borrowing costs before and after. These costs could be influenced by many factors other than bankruptcy law. The author controls for a range of macroeconomic variables, and also uses firm fixed effects, but there is always a risk that other unobserved macro or firm-level variables may have affected interest rates.

Similar reductions in cost of credit have been documented by a number of studies exploring the effect of strengthening other dimensions of creditor rights, in particular debt enforcement. A Brazilian reform in 2004 enhanced the ability of secured lenders to enforce against their collateral.³⁰ Previously, repossessed collateral could not be sold without a court order. Brazilian courts, like those in many emerging markets, suffer from extensive delays, meaning that it typically took two years to get permission to sell. The 2004 law granted secured lenders permission to sell collateral following a borrower's default without needing to get prior court permission. Assunção, Benmelech and Silva study the effects of this reform on the market for automobile purchase loans.³¹ They compare the interest rates charged to borrowers before and after the law reform, controlling for a wide range of borrower and car characteristics and macroeconomic variables, and report that the reform was associated with a significant reduction in interest costs, which is most pronounced for low-quality (as measured by credit risk) borrowers. To meet the concern that unobserved variables might be affecting loan interest rates, the authors run a large number of 'placebo' regressions, comparing the before-and-after effects in years in which the law was *not* reformed. If unobserved variables affect loan interest rates over time, we would expect to see some significant differences in some of these placebo regressions, but we do not.

More recent studies have utilized a difference-in-difference methodology to overcome concerns about unobserved variables. The picture that

²⁹ Above, n 24.

³⁰ The question of possible interaction between this reform and the reform of Brazilian insolvency law in 2005 is not addressed by either of these studies. In keeping with the discussion in section 1, this might be a fruitful avenue for future research. See also *infra* text to nn 36–39.

³¹ Juliano J. Assunção, Efraim Benmelech and Fernando S.S. Silva, 'Repossession and the Democratization of Credit' (2012) NBER Working Paper 17858 <www.nber.org/papers/w17858> accessed 10 June 2014.

emerges, however, is consistent: reform to creditor rights can have a significant impact on the cost of credit.

In 2005–06, Italy comprehensively reformed its corporate insolvency laws. The reforms occurred in two stages. In 2005, a reorganization procedure was introduced. Similar to the US Chapter 11 procedure, this was interpreted as strengthening the rights of debtors *vis-à-vis* creditors. Then in 2006, the liquidation procedure was revised. For firms entering the new liquidation regime, creditor control over the identity and actions of the trustee was increased. Rodano, Serrano-Verlarde and Tarantino study the impact of these reforms on borrowing costs for Italian firms, using loan-level data.³² They utilize a difference-in-difference framework: the ‘control’ group in each case comprises firms with low default risk, for which changes in bankruptcy laws may be expected to have relatively little significance, and the ‘treatment’ group comprises firms with high default risk, for which the reverse is true. The study focuses on how the difference in borrowing costs (for new loans) between these two groups changes before and after each reform; any other factors affecting the *absolute* level of borrowing costs will affect both groups and consequently are ‘differenced out’. The sequencing of the Italian reforms permits the authors to identify the separate effects of each reform. The new reorganization law increases relative borrowing costs of high-risk debtors, whereas the new liquidation law reduces them.

The reform of creditors’ rights in India, as well as providing further evidence on the linkage between creditors’ rights and interest rates, provides some interesting insights into potential side effects of reform. The 1993 introduction in India of Debt Recovery Tribunals (DRTs) for institutional lenders greatly increased the credibility of enforcement for such loans, as discussed above.³³ Whilst this improved outcomes for existing loans,³⁴ von Lilienfeld-Toal, Mookherjee and Visaria report that the introduction of DRTs was associated with an *increase* in interest rates for corporate lending.³⁵ They rationalize this as being a consequence of a short-run constraint on the supply of credit. The law reform stimulated

³² Giacomo Rodano, Nicolas Serrano-Velarde and E. Tarantino, ‘Bankruptcy Law and the Cost of Banking Finance’ (2012) Oxford University Centre for Business Taxation Working Paper <<http://eureka.bodleian.ox.ac.uk/4393/1/WP1218.pdf>> accessed 10 June 2014.

³³ See above, text to n19.

³⁴ See above, section 3.3.

³⁵ Ulf Von Lilienfeld-Toal, Dilip Mookherjee and Sujata Visaria, ‘The Distributive Impact of Reforms in Credit Enforcement: Evidence from Indian Debt Recovery Tribunals’ (2012) 80 *Econometrica* 497.

demand for credit, on their analysis, which banks were unable to meet in the short run, resulting in increased credit rationing. Another possible interpretation is that the result may be driven by a movement along the extensive margin. The authors compare average interest rates before and after the law reform. However, if the law reform means banks are subsequently willing to lend to borrowers who would previously have been deemed 'too risky' – as was the case for the reform in Brazil documented by Assunção et al.³⁶ – this would also explain a rise in average interest rates. Movement along the extensive margin – riskier borrowers now getting credit – would result in an increase in average interest rates, whereas movement on the intensive margin – existing borrowers now getting credit more cheaply – would result in a decrease. The net effect could be an increase or a decrease. As von Liliensfeld-Toal et al. do not take into account borrower risk characteristics, it is hard to disentangle this account from the explanation they offer.

A subsequent Indian reform, the SARFAESI Act of 2002,³⁷ enhanced the enforcement rights of secured creditors. This was a further extension of the reform programme begun with the introduction of the DRTs in 1993, intended to facilitate in particular the use of secured credit.³⁸ The reform permitted institutional creditors (banks and financial institutions) to exercise enforcement rights against collateral without prior recourse to a court or tribunal. Vig studies the impact of SARFAESI's passage on debt finance for Indian firms.³⁹ His main results concern the extent of the use of debt finance,⁴⁰ but he reports also that the cost of debt finance generally reduced by about 0.6% after the introduction of the legislation. However, he notes that this result should be interpreted with care, as SARFAESI also appears to have been followed by a reduction in the amount of secured credit taken, which may in part be due to movement along the extensive margin.

Conversely, reforms which worsen the position of lenders are associated with increases in borrowing costs for borrowers. A Swedish reform in 2004, which weakened the control available to lenders making use of

³⁶ Above, n 31.

³⁷ The full title of which is the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act 2002.

³⁸ As such, it is functionally very similar to the Brazilian reform introduced in 2004 and studied by Assunção et al. (above, n 31).

³⁹ Vikrant Vig, 'Access to Collateral and Corporate Debt Structure: Evidence from a Natural Experiment' (2012) 67 *Journal of Finance* 881.

⁴⁰ Discussed below, section 4.2.

floating charge (lien) type security, was associated with an increase in borrowers' interest rate spreads by on average 27 basis points.⁴¹

4.2 Creditor Rights and Access to Credit: The 'Extensive' Margin

The 'extensive' margin, in relation to a reform of creditor rights, refers to the boundaries of the population of borrowers able to get access to credit – or, put differently, to the location of credit constraints. A movement at this margin following a change in the law means that borrowers who were previously not able to access credit at all may now do so. Usually these borrowers will be ones who are judged to carry a greater risk of default, and consequently their borrowing *costs* may be higher than what was previously the norm. Yet for the borrowers at the extensive margin, this still represents a significant decrease: prior to the reform, credit was either unavailable at all (which could be expressed as an infinite interest rate) or only available at a rate so high they were unwilling to make use of it.

Effective creditor rights enhance predictability and thus lender confidence in loan recovery upon default, which encourages more lending and leads to financial inclusion for more businesses. Whilst effective creditor rights promote access to credit, a weak system can inhibit it. Djankov, Hart, McLeish and Shleifer compare the enforcement of debt contracts, including the effectiveness of insolvency procedures, in 88 countries around the world.⁴² They report that weak debt enforcement is associated with a lower volume of private credit to GDP at the macro level. The authors gather data about the efficacy of debt enforcement by sending a questionnaire to practitioners in each jurisdiction. The questionnaire features a hypothetical business which is in financial distress, and practitioners are asked to state how long they expect enforcement proceedings to last and how much creditors of different classes should expect to receive, given stated assumptions about the hypothetical firm's financing. Clearly, there may be difficulties with the comparability of such data, in addition to the usual methodological problems of cross-country studies. Nevertheless, such a questionnaire goes well beyond simply coding the 'law on the books' as prior cross-country studies had done, and makes a real attempt to capture differences in outcomes.

The World Bank Group Doing Business Report 2014 ('DB2014') (Resolving Insolvency Indicator) uses a similar methodology to identify

⁴¹ Cerqueiro et al. (above, n 20).

⁴² Above, n 3.

weaknesses in countries' existing bankruptcy law and the main procedural and administrative bottlenecks in the bankruptcy process. Specifically, the indicator measures the time, cost and outcome of insolvency proceedings involving domestic entities, using a survey (completed by domestic experts) that is based around the hypothetical developed by Djankov et al.⁴³ The recovery rate for creditors depends on whether the distressed company emerges from the proceedings as a going concern or if its assets are sold piecemeal (where recovery will by definition be lower, as the hypothetical business is worth more on a going concern basis than broken up). The correlation between the indicator's recovery rate for 2014 (excluding foreclosures and no practice economies) and the percentage of domestic credit by the banking sector as a percentage of GDP is 0.70, and is significant at the 1% level. This shows that insolvency systems which have reorganization frameworks, and where businesses can more easily be sold on a going concern basis, are positively associated with higher levels of credit: conversely, less developed systems with weak restructuring tools show lower aggregate domestic credit levels (Figure 1.2).

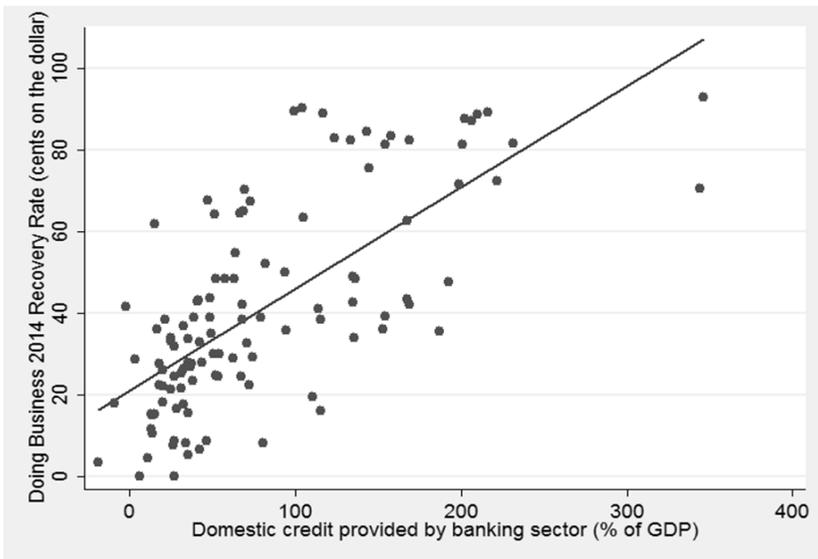


Figure 1.2 *Insolvency recovery rates and supply of credit*

⁴³ Doing Business 2014 <www.doingbusiness.org>.

Consistent with these results, Araujo, Ferreira and Funchal report a significant increase in aggregate private credit in Brazil following the 2005 insolvency law reform discussed above.⁴⁴ This increase was not replicated in Mexico, Argentina and Chile, which did not reform their insolvency laws, but the authors suggest were otherwise similar credit environments. The results of their analysis of the impact of the reform on Brazilian firms compared with those firms in the other jurisdictions (using the difference-in-difference methodology) suggest a 17.8% increase in total debt, a 74.23% increase in long-term debt (with no evidence of change in short-term debt), a significant fall in trade credit (which the authors attribute to the increasing availability of other forms of debt finance) and a 16.7% reduction in the cost of debt financing for Brazilian firms.

Reforms to secured credit and debt enforcement have also had significant impacts on access to credit. However, sometimes the effects are not what might be expected, suggesting that care must be taken in understanding how law reform affects the position of borrowers *compared with before the reform*.

Most of the findings in the literature are indeed in line with intuition. Removing the need for court approval for the enforcement of secured credit in Brazil in 2004 appears to have significantly increased access to credit for higher-risk borrowers. Assunção et al. report that subsequent to the law reform, borrowers who are 'higher risk' – including having lower incomes, or being self-employed – are more readily able to access secured credit for automobile purchases.⁴⁵ In the opposite direction, but similarly intuitive, was the effect of the reform in Sweden in 2004 which weakened creditors' rights in floating charge (lien)-type security, which Cerqueiro et al. report was associated with a reduction in creditors' assessment of the value of collateral, and consequently a reduction in borrowers' debt capacity.⁴⁶ Similarly, more fundamental reforms in China in 2007 – the introduction of clearly defined property rights, and restrictions on the ability of the state to expropriate private property – were associated with an increase in the use of debt finance by publicly traded firms.⁴⁷

⁴⁴ Aloisio P. Araujo, Rafael V.X. Ferreira and Bruno Funchal, 'The Brazilian bankruptcy law experience' (2012) 18 *Journal of Corporate Finance* 994.

⁴⁵ Above, n 31.

⁴⁶ Above, n 20.

⁴⁷ Berkowitz, Lin and Ma (above n 23).

However, a study of the impact of reform of the enforcement of secured credit in India gives pause for thought. Vig studies the relationship between the 2002 SARFAESI legislation, which facilitated out-of-court enforcement by secured creditors, and the use of debt finance by firms.⁴⁸ He sets up a difference-in-difference framework, making use of the fact that to take security, however good the legal institutions, there have to be some assets to give as collateral. Consequently we would expect firms with high levels of tangible assets, which can readily be sold by a secured creditor, to be affected more extensively by a reform to secured credit enforcement than firms with low levels of tangible assets. These two groups form Vig's treatment and control groups, respectively. Vig reports that, counter-intuitively, SARFAESI's introduction is associated with a significant *reduction* in the use of secured debt by firms with high levels of tangible assets. He suggests that this may be because the expected cost to borrowers of giving security has now increased. Increasing the efficacy of enforcement means that the 'penalty' for default by a debtor will be greater. If this increased expected cost outweighs the benefit to a debtor from the additional finance, their demand for borrowing will reduce after the law reform, consistently with the observed results.

Why should the reform of the enforcement of security have resulted in a reduction in demand for credit in India, but not in other country case studies, most notably in Brazil, where Assunção et al. report an increase in its use?⁴⁹ One plausible answer has to do with the nature of the collateral. Assunção et al. report on the use of security to finance the purchase of automobiles. In this case, the security is used as a PMSI ('purchase money security interest') – the collateral consists of the asset financed with the secured loan. In such a case, the expected loss to the debtor from default and enforcement should not exceed the expected utility of obtaining the loan, because what the debtor gets with the loan (the car) is matched by what is lost (the car) if default occurs.⁵⁰ Matters are different with a business loan for working capital where security is granted over the debtor's assets generally. Here the cost of enforcement might be higher for the debtor.

A second possible difference relates to changes in the success profile of debtors. The introduction of effective enforcement where none was

⁴⁸ Above, n 39.

⁴⁹ Above, n 31.

⁵⁰ The text assumes that the probability of default is lower than the probability of repayment. This seems plausible: were it not so, the creditor would surely not lend.

previously present will add expected costs to debtors that are a function of their expected likelihood of default. More credible enforcement will deter in particular those firms whose owners view them as more likely to fail, but have less impact on firms whose owners are positive about their chances of success. Where, as is likely, borrowers have private information about their likely ability to repay, making enforcement credible can allow the taking of credit to become a signal by the borrower of their quality. This would imply that making enforcement more credible should be associated with two countervailing effects: an *increase* in borrowers seeking credit who have favourable private information, and a *decrease* in those who have unfavourable private information. The aggregate effect of these two components is hard to predict *a priori*.

There is a third possibility. Vig suggests that the reason Indian firms become less willing to borrow following SARFAESI is that they are concerned that secured creditors might liquidate their assets if they default.⁵¹ Where there are complementarities between a debtor's assets, the liquidation of one without the other may destroy value. Granting security would therefore be costly if it facilitated this unfortunate outcome. A basic function of insolvency law is to coordinate the treatment of the debtor's assets, so that such adverse outcomes do not occur: that is, where assets are worth more together than broken up, they are kept together. India long had a notoriously ineffective insolvency law. In the presence of a slow and costly insolvency procedure, increasing the enforcement powers of secured creditors could prompt them to use of these powers pre-emptively so as to avoid the delay of insolvency proceedings.⁵² As we have seen, Brazilian insolvency law was reformed

⁵¹ However, as we have seen from other studies, where the debtor is able to grant security over all its assets, the enforcement of security can serve as a functional substitute for collective insolvency law. SARFAESI included a power for institutional secured creditors to appoint a receiver and manager over the collateral (s 13).

⁵² Interestingly, Von Lilienfeld-Toal et al. (above n 35), who study an earlier enhancement to debt enforcement in India, report the opposite effect from Vig. They find that the introduction of Debt Recovery Tribunals, which facilitated the enforcement of debts by institutional lenders, were associated with an increase in the use of debt finance, which was concentrated on those firms with high levels of tangible assets. The most plausible rationalization is that the Tribunal would impose some sort of check on opportunistic enforcement by creditors to avoid pending insolvency proceedings, whereas for out-of-court enforcement under SARFAESI, there would be no such restriction.

around the same time as the reform of secured credit,⁵³ which could explain the contrast between the findings in India and those for Brazil. Future work can usefully continue to explore the circumstances under which reforms have such unanticipated counter-effects. For now, the clearest implication would seem to be that reform of secured credit and insolvency law must be understood as a complementary package, and that simply to reform one without reference to the other can have unintended consequences.

5. CONCLUSION

Creditor rights matter for debt finance. This is the main message of the empirical studies surveyed in this chapter. Strengthening the taking and enforcement of secured credit increases borrowers' access to credit, and reduces – *ceteris paribus* – their cost of borrowing. Effective insolvency regimes provide a safety net for financially distressed debtors (be they individuals or businesses), and predictability in recovery for lenders. These in turn also stimulate creditors' willingness to advance funds to borrowers. Early cross-country studies ran into difficulties with the heterogeneity of national differences that might affect the use of credit. More recent studies have focused on within-country effects before and after a law reform, exploiting differential impacts on different groups of firms to measure not absolute changes but 'differences-in-difference' between the two groups. The results from such studies hold up across a wide range of countries studied, spanning both developed and emerging markets.

Two notes of caution should be sounded. First, it is clear that secured credit and insolvency law need to be thought of together as a complementary package by policymakers. Cross-country research suggests that enforcement of secured credit covering the entirety of a firm's assets may substitute for effective insolvency laws.⁵⁴ Second, care must be taken in the sequencing. Enhancing the rights of secured creditors in the presence of an ineffective insolvency law may create a *negative* synergy, where creditors rely on their security excessively, so as to avoid being caught up in inefficient insolvency proceedings, as suggested by Vig.⁵⁵

⁵³ Brazilian insolvency law was reformed in 2005, following reforms to the enforcement of secured credit in 2004. See above, text to nn 28–31.

⁵⁴ Djankov et al. (above n 3).

⁵⁵ Above n 39.