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The Brazilian bankruptcy law experience

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ABSTRACT

In early 2005, the Brazilian Congress approved a new bankruptcy law. The new legislation increased creditor protection and improved the efficiency of the bankruptcy system. This paper evaluates the empirical consequences of a bankruptcy reform on a poorly developed credit market. Using data from Brazilian and non-Brazilian firms, we estimated, using two different models, the effect of the bankruptcy reform on contractual and non-contractual debt variables. In general, both models yielded similar results. Concerning contractual debt variables, we found a significant increase in the total amount and the long-term debt and a reduction in the cost of debt. For the non-contractual debt variable, we found no effect in the loans' ownership structure.

1. Introduction

Debt in its various forms is an essential instrument to finance most firms. However, in order to make it perform well, the legal environment must be designed so that creditors can enforce repayment efficiently. Bankruptcy laws play a key role in determining whether or not the legal environment enables creditors to do so.

Authors who have formalized theory on private credit argue that when lenders can easily force repayment they are more willing to extent credit at lower prices (see Aghion and Bolton, 1992, Hart and Moore, 1994, 1998; Townsend, 1979). Yet, the theory shows that loan size and price are not the only variables that respond to different legal mechanisms. Others debt characteristics, such as maturity and number of lenders, are also sensitive to creditors' ability to force repayment (see Bolton and Scharfstein, 1996; Diamond, 2004; Gertner and Scharfstein, 1991).

Several empirical papers have examined how institutions such as the bankruptcy law affect credit markets and other economic outcomes (see La Porta et al. (1997, 1998), henceforth LLSV; Djankov et al. (2007, 2008), Levine (1998, 1999) and others). The evidence in the literature indicates the relevance of creditors' legal protection in supporting the development of credit markets. However, as stated by Djankov et al. (2008), institutions that regulate insolvency usually perform poorly, mainly in developing countries. This happens because bankruptcy procedures in these countries are often extremely inefficient (too long and costly) and secured creditors rights are not well protected.

In this paper we focus on the effects of bankruptcy laws reform that have enhanced the efficiency and creditors protection in developing countries. From a policymaker's perspective, it is crucial to understand how law design matters for firms' debt financing and

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the credit market development. We contribute to the literature by documenting and shedding some light on the role of creditor protection in explaining financial deepening in developing countries. To address this issue, we took advantage of Brazilian bankruptcy law reform in 2005 to analyze how it affected contractual and non-contractual debt variables, such as size, maturity, price and loan ownership structure.

Most previous empirical works have looked for cross-country correlations between creditors' rights and financial policies.[1] This approach tends to produce results that are sometimes hard to interpret, mostly due to endogeneity problems and the existence of several omitted factors in cross-country studies.[2] Our paper, in contrast, focuses on a natural experiment that has affected creditors' rights and bankruptcy efficiency and occurred in only one country (Brazil). This narrower scope can work to our advantage, since the analysis of a specific reform makes it easier to identify the causal effect of creditors' protection on financial policies. By comparing the same country in two different periods – each period with a different law regulating bankruptcy procedures – to countries with similar economic environments, we can better control these omitted variables that pose a problem for cross-country studies. Also, the reform helps us to address the challenge of actually measuring creditor rights.

Following a quasi-experimental approach, we compare Brazilian firms (our treatment group) to non-Brazilian firms from Argentina, Chile and Mexico (our control group), with respect to the behavior of debt related variables. This approach helps to control our analysis for shocks in the credit market common to these countries during our sample period.

We start our analysis by looking at the time series of aggregate data on private credit extended to firms and compare its path before and after the bankruptcy law reform, for the Brazilian and non-Brazilian markets. We then move to firm-level panel data and estimate the impact that changes in the bankruptcy law had on contractual and non-contractual debt characteristics. First, we use a difference-in-difference model in which Brazilian firms are the treatment group and non-Brazilian firms compose the control group. To check whether the results were driven by changes in macroeconomic conditions in Brazil instead of the reform, we perform a battery of falsification and placebo tests that replicate our estimation, under slightly different conditions. The falsification tests are based on data from before the reform, which we use to replicate our empirical exercise in counterfactual situations. The placebo tests try to capture possible pre-reform trends through the inclusion of binary explanatory variables for the years before the reform came into effect.

The diff-in-diff approach works best in an ideal setting, in which both groups display similar behavior in credit variables prior to the bankruptcy reform. However, this is not a straightforward property to attain. And since the identification of average treatment effects using diff-in-diff estimation relies on the assumption that treatment and control units experience common trends (as emphasized by Blundell and Dias (2002)), the use of a standard diff-in-diff method may not consistently estimate the average treatment effect on the treated. Because our sample contains firms from four different countries, it would be unrealistic to assume that all firms are subject to the same macro trends. In fact, differential trends might arise in the evaluation of the bankruptcy reform effect if treated and controls operate in different financial markets, which is exactly our case. Because of this, we use as a second approach a modified version of the basic diff-in-diff model to allow for different firm trends within our treatment and control groups.

Some important conclusions can be drawn from the results. First, our findings from the diff-in-diff model with different trends point to a reduction of approximately 8% in the cost of debt and to increases of 10% and 23% in the amount of both total debt and long-term debt, respectively. Since secured creditors have benefited more from the new law than unsecured ones, the effect is more pronounced on long-term debt, which is known to be more correlated with secured debt. In addition, we found no statistically significant effect on short-term debt. Finally, we found no significant changes concerning loan ownership structure. Thus, our results suggest that policies that strengthen creditors' protection and increase bankruptcy efficiency have a positive impact on lenders' willingness to supply credit, improving firms' access to external finance and expanding firms' investments capability.

Our paper relates to previous studies that investigate the impact of laws and institutions on external financing. In a micro level analysis, Qian and Strahan (2007) and Bae and Goyal (2009) studied the effect of creditor rights on loan contracts characteristics (such as price, size, maturity, etc.) using cross-country differences. Focusing only on distressed companies, Davydenko and Franks (2008) used a sample of small firms in France, Germany and U.K. to study how differences in creditors' rights make banks adjust their lending practices. They showed that the level of collateral requirements varies with banks' ability to realize assets upon default. Giannetti (2003), using a database of unlisted companies from Europe,[3] showed that firms in countries with creditor rights above the average have easier access to loans to finance investments in intangible assets without collateral (e.g., R&D). Also, creditor rights are important for guaranteeing access to long-term debt. Beck et al. (2008) investigates the heterogeneous effect of institutions on firms' financing relative to their size. We should mention that unlike the mentioned studies, our paper deals with an experiment that helps to control for the existence of unobservable factors present in these cross-country studies. This allows us to improve on the existing literature from a methodological standpoint, since we can use the Brazilian experience to identify the causal effect of creditors' protection on firms' financing policies.

This paper also adds to the literature on a macro level. LLSV were the first to stress the important role of both legal protection of creditors and efficiency of debt enforcement in supporting these markets. Djankov et al. (2008) analyzed institutions more deeply by looking at 88 countries and investigating how different legal systems would deal with an identical case of an insolvent firm. As LLSV, they found that efficiency of debt enforcement – measured by its cost, time and asset disposition – is an important factor for the development of debt markets across countries. Djankov et al. (2007) added to LLSV by introducing the effect of information on credit markets. Also in this line, Jappelli and Pagano (2000, 2002), Pagano and Jappelli (1993) and Sapienza (2002) showed the relevance of this factor in determining credit availability. Brown et al. (2009) found evidence of the same effect on

[1] See for example La Porta et al. (1997), Djankov et al. (2007, 2008), Qian and Strahan (2007), Bae and Goyal (2009) and others.
[2] See Mulherin (2007).
[3] The author argues that listed companies have easier access to international financial market, which may bias the results.