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# Creditor Rights and the Credit Market: Where Do We Stand?

by

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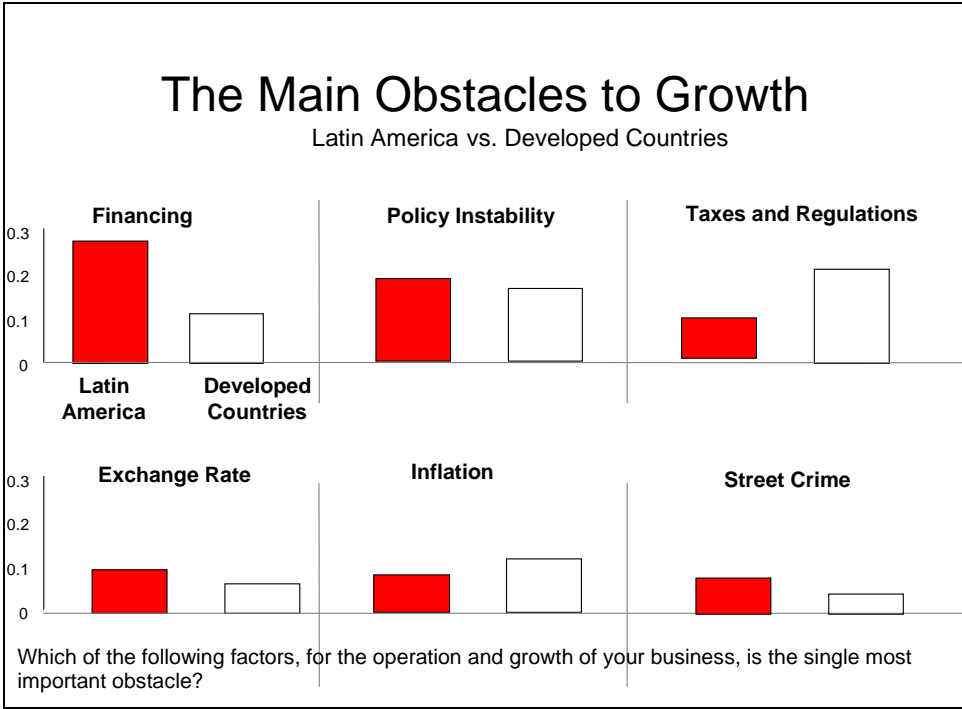
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# 1. Introduction

A recent survey has shown that the major problem faced by firms in Latin American countries is difficulty in accessing financial markets. Figure 1 summarizes the findings of the Business Environment Survey on obstacles faced by firms.

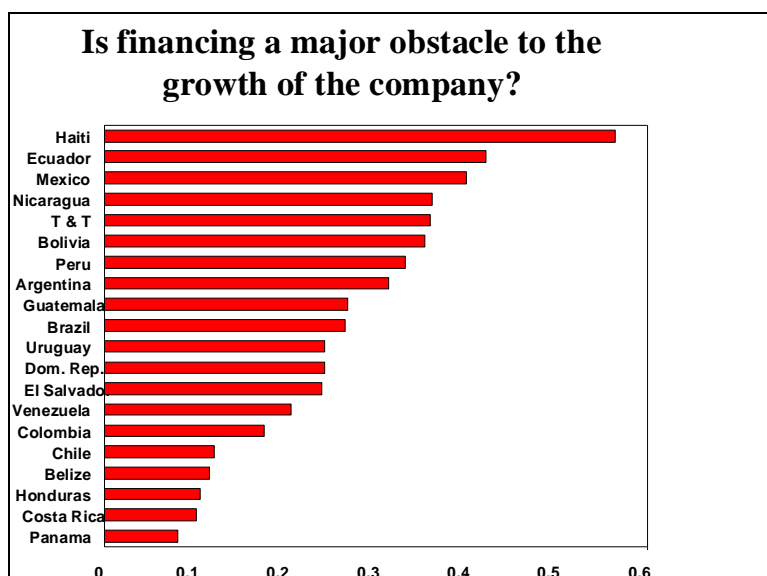
Figure 1.



Source: Business Environment Survey

The degree to which firms face financial constraints varies across countries. In some countries the problem is more pronounced than in others, as shown in Figure 2. However, in 18 out of 20 Latin American countries surveyed, access to credit was reported as the most important concern of entrepreneurs. This concern is completely justified. Using microeconomic data for over 50 countries, Lora *et al.* (2001) have found that the major determinant of a firm’s growth is access to financial markets. In countries where credit constraints are tighter, firms are unable to grow. They find that the elasticity of the average of total assets for the largest 25 firms in each country, with respect to a financial depth measure, ranges between 0.5 and 0.8 and is statistically significant. Their results imply that countries with tighter credit constraints will host firms with severe impediments to expansion.

Figure 2.



Source: Business Environment Survey.

The question of why financial constraints are more pronounced in some countries than others has many facets. Macroeconomic issues such as monetary shocks (Bernanke and Blinder, 1988; Freixas and Rochet, 1998) or productivity shocks (Kiyotaki and Moore, 1997) are most relevant, as well as microeconomic issues related to information asymmetries and the degree of development of information-sharing institutions such as credit bureaus, credit registries and credit-rating agencies (Pagano and Japelli, 1993, 1999). Additionally, more structural aspects such as the institutions that support financial contracts can also help explain the international evidence on financial constraints. As this paper will argue, institutions play a major role in explaining the reduced financial depth of some Latin American countries.

A credit contract involves three players: the creditor, the debtor, and the institutions that guarantee that each of the other parties will live up to its responsibilities. If institutions are inadequate it is likely that the benefits that the other parties have to gain from renegeing on the debt contract can be pronounced enough to prevent the contract's realization. Hence, the ability of these institutions to align the players' incentives with the clauses of the debt contract can become an engine of promotion of financial breadth. The nature of the rules and regulations that surround financial markets can influence the degree of expansion of credit markets and can also explain the diverse response of different countries' credit markets to similar types of shocks.

Recent papers have explored the roles of regulations on creditors' rights to assets pledged as collateral in bankruptcy events in explaining the breadth of financial markets<sup>1</sup> and in explaining the variety of responses of the credit market to shocks.<sup>2</sup> Creditor rights protection encourages both lenders and borrowers to enter into financial contracts and to abide by their clauses. This paper summarizes the discussion and presents new empirical evidence that strongly supports the importance of effective creditor rights protection.

## **2. The Role of Creditor Rights in Financial Markets: Granting Access to Collateral**

Advocates of creditor rights-oriented regulations claim that if the right to repossess collateral in case of debtor default is not strictly protected, the use of collateral will lose its important role in solving the information asymmetries that can lead to credit rationing and underinvestment. The use of collateral in debt contracts has been deeply analyzed from a theoretical perspective. Collateral helps reduce several types of problems that arise when informational asymmetries between banks and entrepreneurs are present.

Among many uses amply described in Coco (2000), collateral can solve problems derived from asymmetries in valuation of projects, uncertainty about the quality of projects and the riskiness of borrowers, and problems related to the cost of monitoring or supervising borrowers' behavior. When not dealt with, these problems can lead to partial or complete credit rationing. Collateral requirements can solve or at least mitigate the impact of these factors on credit extension. Chan and Kanatas (1985), for example, argue that collateral can reduce asymmetric valuation problems, that is, the conflict that arises when borrowers and lenders disagree about the true value of the project. The main argument is that there is usually less uncertainty about the value of collateral than the expected return of a project that has not been undertaken. Hence, if collateral is pledged, lenders will feel more confident and will charge a lower interest rate than what they would have if the uncertain project itself were the only guarantee.

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<sup>1</sup> See, for example, La Porta *et al.* (1997, 1998), Padilla and Requejo (2000), and Galindo and Micco (2001).

<sup>2</sup> Galindo and Micco (2001) develop a model in which the asymmetry of responses of credit markets to shocks is linked to the institutional set-up, and estimate it using a panel of over 50 countries with information ranging from 1990 to 1999.

Collateral can also reduce credit rationing of the Stiglitz and Weiss (1981) fashion. The seminal work by Stiglitz and Weiss suggests that when information is imperfect the credit market may not clear at a demand and supply equilibrium interest rate; instead, a rationing equilibrium can arise where supply is lower than demand. This happens because credit markets operate under important information asymmetries that lead to the non-market clearing equilibrium and underinvestment. A priori, the lender has very little information to identify the quality of the potential borrower (if she is a creditworthy entrepreneur with a high quality project or not) and the probability of success of the project. If the lender knew the true nature of the borrower and the project he would charge differential interest rates according to risk types, but when uncertainty prevails this is not an option, and the lender may have to choose to ration credit in order to maximize his expected returns.<sup>3</sup>

The Stiglitz and Weiss framework assumes that credit contracts are specified only in the interest rate. Several authors have argued that once collateral requirements are introduced, problems derived from information asymmetries are eliminated or at least partially mitigated. Pledging collateral conveys information about borrowers and about the project itself. Entrepreneurs with riskier projects will prefer not to pledge high amounts of collateral. In this sense, Bester (1985), Besanko and Thakor (1987a) and Chan and Thakor (1987), show that collateral requirements can alleviate problems derived from asymmetric information about project quality. They show that the correlation between the amount of collateral posted and the average riskiness of projects is negative, hence collateral solves selection problems and improves the equilibrium allocation of credit. Collateral can also be used as a screening tool to obtain

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<sup>3</sup> Two main reasons for lenders to ration credit rather than increase the interest rate have been advanced. The first is based on the adverse selection effects on the pool of borrowers of raising the interest rate. If lenders lack information about the true nature of the projects of potential borrowers, but assume a strict positive correlation between project risk and their returns, they can realize that if they increase the interest rate, it is likely that the more risk-averse individuals will exit the borrowing group. The lower the degree of risk aversion the higher the likelihood that the borrower will undertake the riskier project. The second effect is related to the possibility that a rise in the interest rate may induce entrepreneurs to increase the riskiness of their project at the expense of diminishing its expected profitability. This is associated with moral hazard. Under the same set up as above, incentives for borrowers to undertake riskier projects can be set if lenders decide to charge higher interest rates. In both cases, an increase in the interest rates will increase the overall expected bankruptcy probability and will diminish lenders' expected returns. In order to maximize expected returns, it will be optimal to maintain a relatively low interest rate, since this may lower the expected default rate of the portfolio. This, however, implies credit rationing and underinvestment.

information about the quality of different agents and counteract the adverse selection problem as in Bester (1985 and 1987).<sup>4</sup>

Collateral requirements also reduce moral hazard problems. Under the assumption that effort brings disutility, and that monitoring costs are high, borrowers may face incentives that lead them to reduce their efforts to achieve success. Collateral requirements can reduce these moral hazard problems by adding a potential cost to borrowers if they do not make their best effort. Additionally, a borrower can be tempted to engage in opportunistic behavior once a credit has been granted. If the lender cannot monitor the borrower, the latter can choose to invest the funds in a riskier project than that initially agreed upon, at an interest rate that will not compensate the lender for the higher risk. The borrower may be willing to divert funds towards private uses or extract the whole surplus from the project as in Barro (1976) and Black and De Meza (1992). When collateral requirements are in place this perverse incentive is diminished, since that sort of action would increase the chance of losing the assets pledged as collateral.

Theoretical findings regarding the role played by collateral in mitigating the problems that lead to credit rationing are based on the presumption that collateral can be repossessed by the creditor in case of default. That is, it is presumed that a third party stands ready to protect and enforce the creditor's rights over the collateral stipulated in the debt contract. The right to repossess collateral, as well as efficiency in doing so, acts as a threat that can ensure that borrowers will not engage in inadequate behaviors. This threat can be good enough to line up the borrower's incentives with the clauses of the contract. If lenders feel that regulations do not protect them, and the chance of taking control over the assets pledged as collateral is at stake, they are likely to prefer not to extend credit since the implicit bankruptcy risk will severely reduce their expected earnings, and credit rationing outcome will resurface. Therefore, according to this line of thought, countries with a higher degree of creditor protection can be expected to enjoy deeper debt markets since they can take advantage of the use of additional non-interest clauses such as collateral to mitigate problems derived from information asymmetries.

Additionally, credit protection can reduce the impact of adverse shocks on the credit cycle. If creditor rights are protected, when the economy faces an adverse shock that increases credit risk, the extent to which credit is contracted will depend on the regulation regarding

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<sup>4</sup> Besanko and Thakor (1987a) analyze this in detail and show that credit may still be rationed, but constraints are reduced when compared to the Stiglitz-Weiss outcome.

collateral repossession. If creditors cannot recover the collateral pledged in case borrowers default, it is likely that the overall increase in credit risk that is faced in a recession is exacerbated by the fact that they will not even be able to recover the collateral. In such cases, the credit market overreacts to the exogenous shock and credit is strongly contracted. The model in Galindo and Micco (2001) provides a detailed explanation of the impact of creditor-protection rules and regulations on market breadth and the credit cycle.

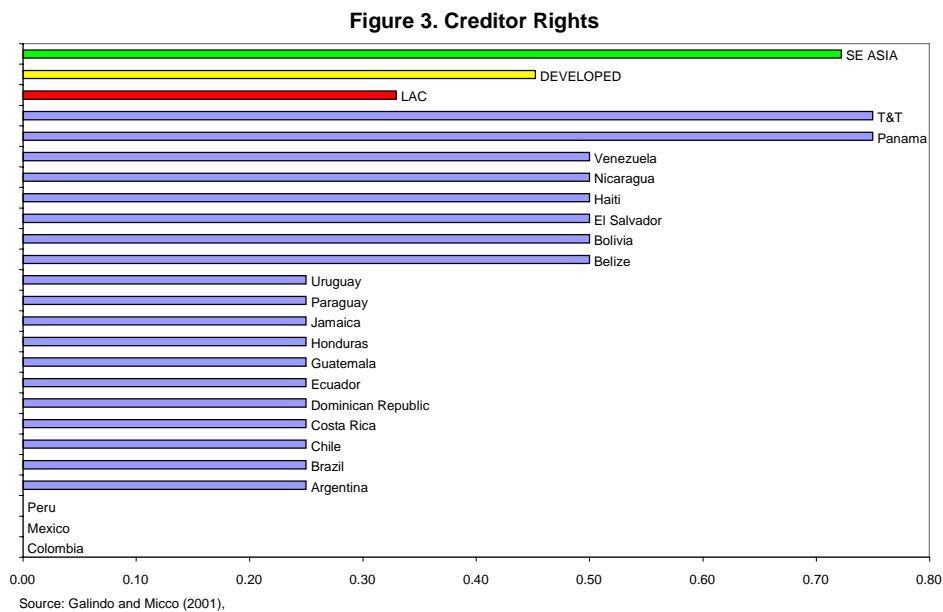
### **3. Rules and Regulations Regarding Access to Collateral**

In order to test the validity of the previous discussion one needs a proper indication of how difficult it can be for a creditor to take over collateral. Recent papers by La Porta, Lopez-de-Silanes, Shleifer and Vishny (1997 and 1998) have given new impetus to the empirical discussion on the importance of regulations regarding the rights of creditors over the assets of borrowers, by providing very valuable data on the state of creditor rights regulations around the world. The La Porta *et al.* (from here on LLSV) study collects information for 48 countries on regulations regarding creditor rights. Their sample roughly includes as many developed as developing countries. LLSV construct an index that summarizes regulations determining creditor rights to control collateral in case firms file for reorganization or bankruptcy. They study: i) if regulations impose an automatic stay on assets in case of reorganization; ii) if secured creditors have the right to be paid first in case of bankruptcy; iii) if regulations force firms to consult with creditors before filing for reorganization; and iv) if regulations force a removal of the firm's management during reorganization. A positive response to each of the four elements of the index is interpreted as creditor rights protection. In short, these regulations provide an adequate picture of how regulation protects creditors. The LLSV study goes beyond collateral repossession exclusively since it focuses on total asset liquidation in case of bankruptcy. In that sense, their discussion is even more general than that of the previous section.

Recently, Galindo and Micco (2001) increased the coverage of the LLSV study to include most Latin American countries. Figure 3 shows the index for Latin American countries and provides information on OECD countries and on South East Asian countries extracted from the LLSV sample.

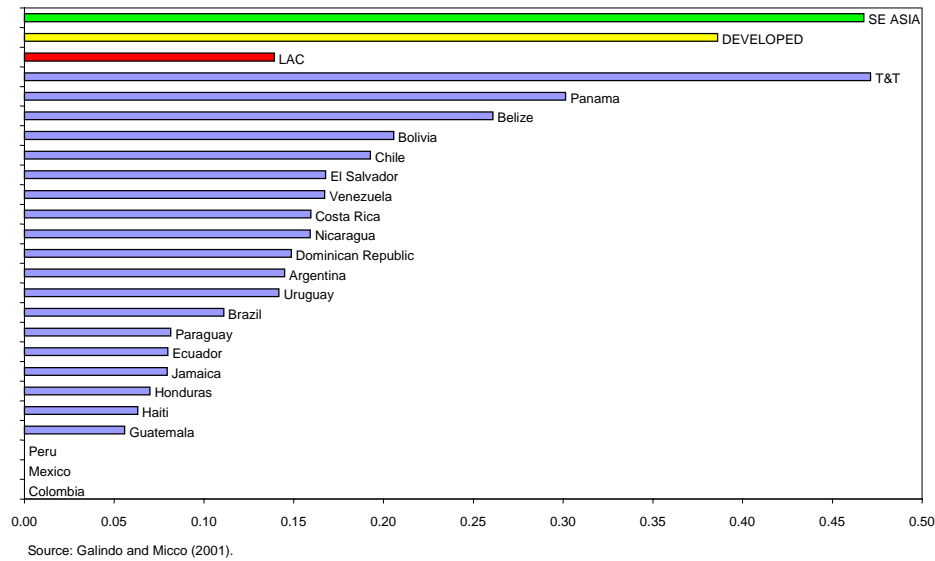


In general, one can see that creditor protection in Latin America is weak. Moreover, when interacted with a measure of country overall law enforcement,<sup>5</sup> one can obtain an indication of effective creditor protection, as shown in Figure 4. If rules and regulations are not enforced, creditor protection will be low regardless of what is written in the bankruptcy procedure law codes. In order to correct for these effects, we normalize the creditor rights protection as well as the law enforcement indicator to the zero-one interval and multiply them. This way we obtain a measure of creditor rights protection corrected by the degree to which, in general, regulations are enforced. As above, higher values imply higher *effective* protection.



<sup>5</sup> The Kaufmann *et al.* (1999) rule of law variable is multiplied by the creditor rights index to obtain the effective creditor rights measure.

**Figure 4. Effective Creditor Rights**



Once law enforcement is taken into account, the difference between Latin America and the rest of the world is magnified. The impact of these regulations on credit markets is studied in the next section.

#### **4. Creditor Rights and Credit Markets: Empirical Evidence**

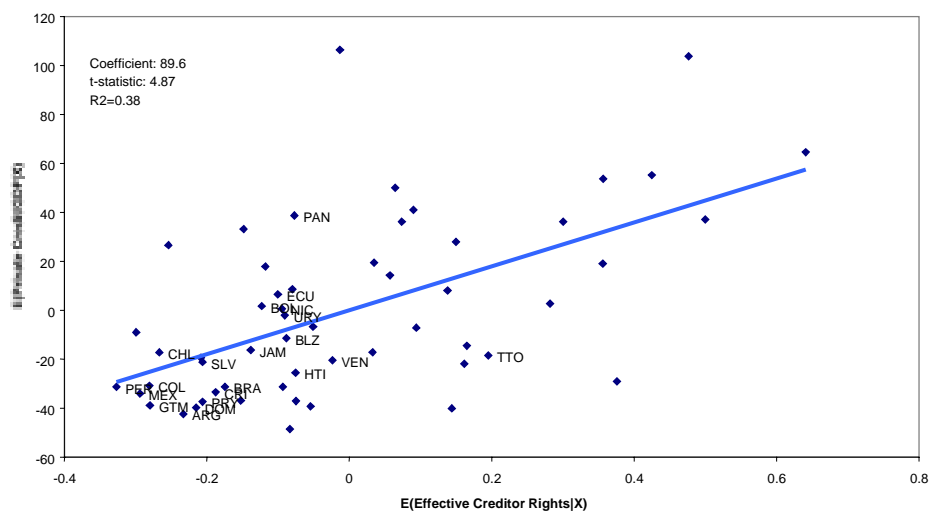
The LLSV index has been used in several studies. Several questions have been addressed. LLSV examine the impact of creditor rights regulations on the size of credit markets and explore also the determinants of creditor rights. With respect to the latter, they find that French origin countries tend to have weaker protection than Anglo Saxon ones. Padilla and Requejo (2000) also use the LLSV data set to further explore the relationship between credit market breadth and creditor protection, and additionally investigate the impact of creditor protection on interest rates, bad loans and loan provisions. Galindo and Micco (2001) explore once again the impact of rules and regulations on credit market breadth using an extended sample, but also explore the role of creditor rights in magnifying or not the impact of economy-wide shocks on credit market fluctuations. This section explores recent empirical evidence regarding the macroeconomic issues.

#### 4.1 Creditor Rights and Credit Markets Breadth

LLSV estimate regressions in which the breadth of the credit market, measured as the ratio of debt to GNP, is explained by a set of controls including GDP growth, the size of the economy and law enforcement, and their measure of creditor rights protection. They find that this last variable plays a significant role in the determination of the size of credit markets. However, when including additional macroeconomic controls, Padilla and Requejo (2000) conclude that the creditor rights index loses its explanatory power, casting doubts on the La Porta *et al.* results.

Galindo and Micco (2001) replicate the LLSV and Padilla and Requejo studies using the extended data set and find significant evidence of the impact of creditor rights regulations on credit market breadth, even when controlling for macroeconomic factors. Figure 5 provides a basic reason for their findings. An apparent positive correlation is observed between the ratio of private credit to GNP and effective creditor rights protection.

Figure 5. Private Credit / GDP vs Effective Creditor Rights



Source: La Porta *et al.* (1997,1998) and Galindo and Micco (2001).

Their empirical results are reported in Table 1. Regressions similar to Padilla and Requejo (2000), but for a richer sample, are shown. Padilla and Requejo's specifications are based on LLSV, who regress the ratio of debt to GNP on four variables: the log of current GNP to capture scale effects; average growth rates of the previous decades to capture the fact that financial systems grow much more in more dynamic economies; rule of law; and the creditor rights index. Padilla and Requejo extend the set of regressors to include inflation and

government surplus as measures of policy performance. Galindo and Micco's sample includes nearly 20 more countries than the previous studies. Unlike the Padilla and Requejo study, they find that creditor rights are a significant determinant of the size of credit markets. Column 1 reports the econometric results when including rule of law and the creditor rights index separately. Column 2 uses the effective creditor rights index. The effective creditor rights index appears highly significant, and the creditor rights variable in itself appears significant also. Both of these results confirm the LLSV findings that were previously questioned in the creditor rights empirical literature. Countries with higher creditor protection and with higher law enforcement tend to have deeper credit markets than those where credit protection is low.

**Table 1. Cross Country Regressions**

<b>Dependent Variable: Private Credit / GNP</b>				
<b>Estimation Method: OLS</b>				
<b>Explanatory Variables</b>	<b>PR Extended</b>		<b>PR Extended</b>	
	<b>Sample</b>		<b>Sample with</b>	
			<b>Effective</b>	
			<b>Creditor</b>	
<b>GDP Growth</b>	-0.029		-0.028	
	<i>0.021</i>		<i>0.023</i>	
<b>Log (GNP)</b>	0.076	***	0.111	***
	<i>0.022</i>		<i>0.020</i>	
<b>Inflation</b>	-2.46E-05		-9.64E-05	
	<i>1.18E-04</i>		<i>1.27E-04</i>	
<b>Government Surplus/GDP</b>	0.0128	*	0.012	
	<i>0.0073</i>		<i>0.008</i>	
<b>Effective Creditor Rights</b>			0.479	***
			<i>0.165</i>	
<b>Rule of Law</b>	0.694	***		
	<i>0.158</i>			
<b>Creditor Rights</b>	0.184	*		
	<i>0.105</i>			
<b>Constant</b>	-0.766	***	-0.803	***
	<i>0.218</i>		<i>0.215</i>	
<b>R<sup>2</sup></b>	0.55		0.46	
<b>F test (Whole Regression)</b>	12.06		10.03	
<b>Prob &gt; F</b>	0.00		0.00	
<b>F test (Creditor Rights + Rule of Law)</b>	10.84			
<b>Prob &gt; F</b>	0.00			
<b>Obs</b>	55		55	

\*\*\* Significant at 1%

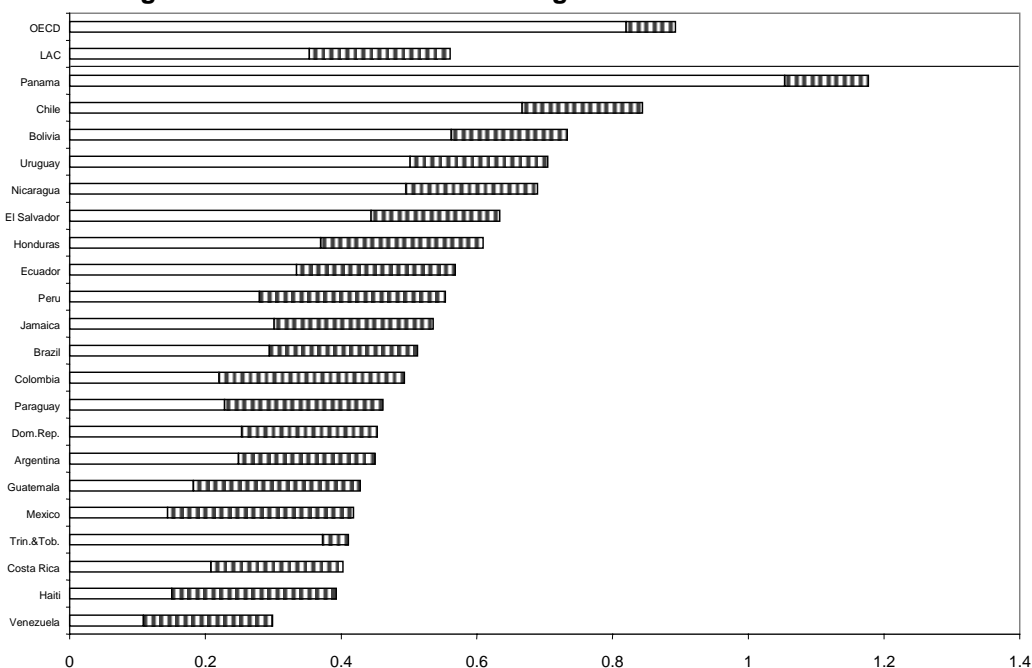
\*\* Significant at 5%

\* Significant at 10%

Source: Galindo and Micco (2001).

In order to provide some intuition about the magnitude of the impact of creditor rights regulations we simulate the impact of increasing creditor effective protection on the credit market. The first set of bars in Figure 6 shows the ratio of credit to GNP in 1999. The second (striped) set of bars shows the contribution to the credit to GNP ratio of improving effective creditor rights to the South East Asia level. The figure also shows the average impact of increasing creditor protection in OECD countries.

**Figure 6. Contribution of Increasing Effective Creditor Protection**



The average impact of increasing effective creditor protection in Latin American and the Caribbean is close to 20 points of the ratio of credit to GNP respectively, that is, from nearly 35% to 56% (a 59% increase in the ratio). In other words, the average size of credit markets would increase by over half if effective creditor protection were enhanced. This happens mainly because, in general, law enforcement is extremely low in Latin American countries. According to Kaufmann *et al.* (1999), the average value for the rule of law variable for Latin America and the Caribbean once it has been normalized to the 0-1 range is 0.42, while taking values of 0.83 and 0.63 for OECD countries and South East Asia, respectively. It is worthwhile noticing that these results come from a regression that controls for growth, the size of the economy, and additional

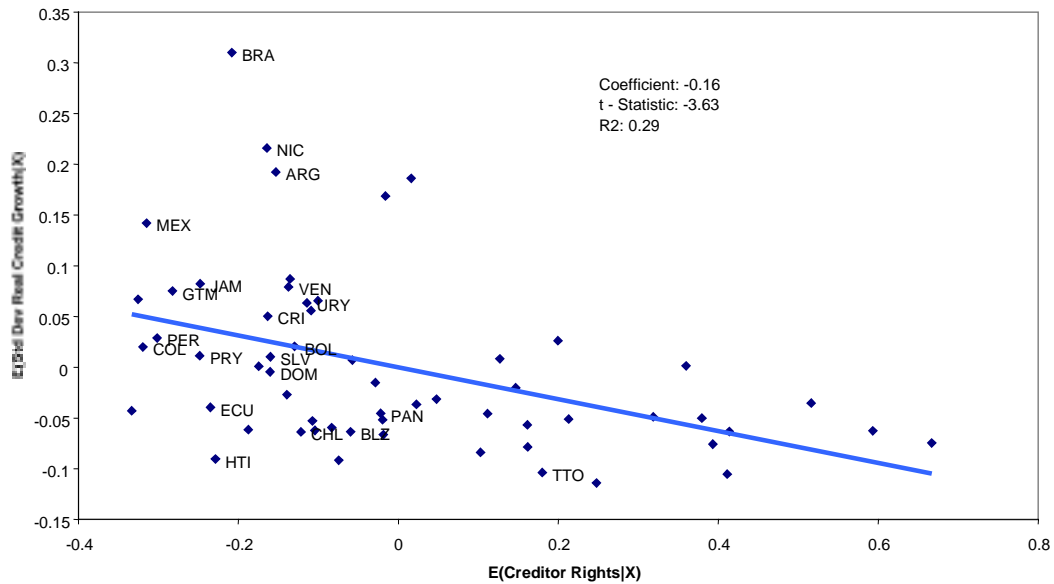
macroeconomic imbalances such as inflation and fiscal deficits, which are also important determinants of financial depth.

In countries with extremely low effective creditor protection such as Colombia, Haiti, Mexico, Guatemala, Paraguay and Venezuela, the effect of increasing creditor protection and law enforcement simultaneously is to nearly double their credit market's size. Our results suggest that most of the difference between the size of credit markets in Latin America and developed countries comes from institutional issues.

#### 4.2 Creditor Rights and the Credit Cycle

Galindo and Micco also explore the impact of creditor protection on the volatility of credit. The motivation for their analysis is shown in Figure 7. As can be seen, there is a strong correlation between the volatility of credit and the effective protection of creditor rights.

**Figure 7. Volatility of Real Credit and Effective Creditor Rights**



Source: Galindo and Micco (2001).

The model derived in Galindo and Micco (2001) suggests that the credit cycle is smoother in countries with higher creditor rights than in those with low protection. The intuition, as reported above, is that weak creditor protection can exacerbate the increase in credit risk that comes naturally in recessions. To test the validity of this proposition, they construct a panel of information for the 1990-1999 period for 55 countries.

Their theoretical model suggests that the elasticity of credit growth with respect to overall shocks is a function of creditor protection. They proxy the state of nature by using a measure of foreign shocks equal to the weighted growth rate of GDP of trading partners. In order to capture the changing nature of the coefficient across different legal regimes they interact the state of the economy proxy variable with the creditor rights variable, as predicted by the model. To expand the empirical model they also include additional controls such as the change in the rate of inflation and the government's surplus in their specification. Table 2 reports their results. Columns 1 and 3 show their findings using the effective aggregate index of creditor rights conditions. Column 3 includes the additional macro controls. Their results suggest that an increase in "effective" creditor rights reduces the amplitude of the real credit cycle.

Columns 2 and 4 report similar results considering the creditor rights index and the rule of law index separately. Their results stand up even when controlling for macroeconomic conditions. An increase in creditor protection reduces the impact of shocks on the credit market.

**Table 2. Panel Data Results**

Estimation Method: OLS								
Dependent Variable: $\Delta\text{Ln}(\text{Real Private Credit})$								
Explanatory Variables	I		II		III		IV	
Foreign Shock	6.44	***	10.17	***	6.84	***	11.50	***
	1.95		3.35		2.17		3.84	
Foreign Shock*Cred_Index	-6.16	***			-7.37	***		
	2.11				2.30			
Foreign shock*Creditor Rights			-1.14	*			-1.16	*
			0.63				0.69	
Foreign shock*Rule of Law			-5.20	*			-7.31	***
			2.93				2.78	
$\Delta\text{Ln}(\text{Inf})$					-0.10	*	-0.10	*
					0.05		0.05	
Gov Surplus/GDP					6.48E-03	***	6.35E-03	***
					1.76E-03		1.70E-03	
Constant	0.03	***	0.03	***	0.05	***	0.05	***
	0.01		0.01		0.01		0.01	
$R^2$	0.02		0.02		0.09		0.10	
F test (Whole Regression)	7.07		4.78		9.06		7.42	
Prob > F	0.00		0.00		0.00		0.00	
F test (Creditor Rights + Rule of Law)			3.85				4.69	
Prob > F			0.02				0.01	
Obs	568		568		421		421	

\*\*\* Significant at 1%

\*\* Significant at 5%

\* Significant at 10%

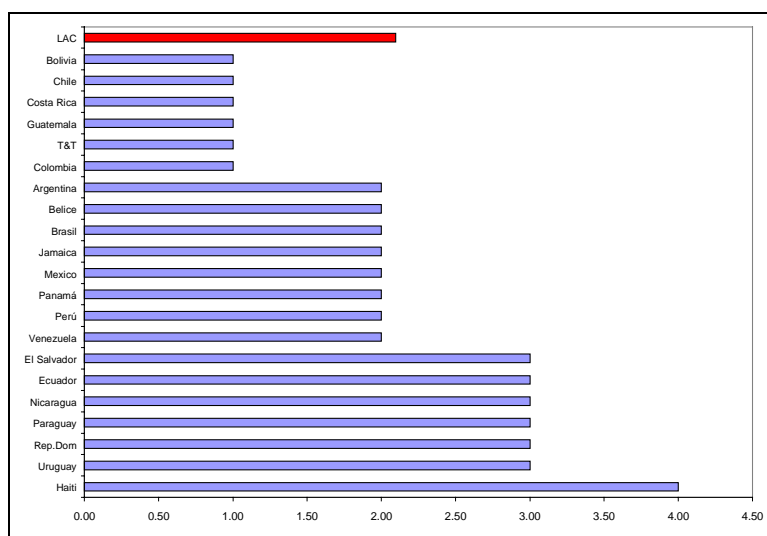
Source: Galindo and Micco (2001).

## 5. Additional Considerations

The discussion above refers to creditor rights, that is to the ability of banks to take over the assets of the debtor in case she defaults. In that sense the previous analysis deals with an important facet of the role of regulations in credit extension. Once collateral is pledged, can it be repossessed in case of default (in particular of bankruptcy/reorganization)? This, however, is not the only channel through which regulation affects the ability of collateral to reduce problems derived from information asymmetries. Another important role of regulation is concerned with how it limits the set of assets that may be used as collateral. A priori, one would suspect that the type of goods should not be restricted, and that regulation should be directed to expand the family of assets that can be pledged as a credit guarantee.

Interestingly enough, this variety of goods is restricted in many Latin American countries. Figure 8 shows an index based on a survey conducted recently by the Inter-American Development Bank and (IDB) and the Federacion Latinoamericana de Bancos (FELABAN). The information plotted measures restrictions to collateral use in Latin American countries. The index is made up of four components: i) the existence of restrictions regarding the types of assets that can be pledged as collateral, ii) restrictions on the use and location of the assets, iii) the obligation to register guarantees legally, and iv) the non-development of alternatives to physical assets as collateralizable. The Appendix summarizes the findings on each of these fronts.

**Figure 8. Restrictions on Collateral Use**



Source: IDB-FELABAN Survey.



In general one can see that there are diverse restrictions to the use of collateral. Unfortunately, this information is available for only a few Latin American countries and does not allow for extensive econometric analysis. For econometric purposes we rely on the LLSV type indexes which have world coverage, knowing in advance that they reflect deeper issues regarding collateral use and expropriation, at least for Latin American countries.

## **6. Conclusions**

Creditor protection in Latin American countries is low. Following the methodology developed by La Porta *et al.* we construct a creditor rights index for most Latin American and Caribbean countries. We show that creditor protection in Latin America is low when compared to international standards, especially when compared to Southeast Asian countries. In order to obtain a measure of *effective* creditor protection, the creditor rights index is interacted with a measure of overall law enforcement. After doing this, the difference between Latin America and other regions of the world is exacerbated, which means that comparatively creditors in Latin America are unprotected not only because of lack of proper regulations, but also because of overall low law enforcement.

This paper reviews empirical evidence on the impact of creditor rights regulations on credit market breadth and the credit cycle. It confirms results that were questioned regarding the impact of creditor rights regulations on the size of credit markets, and shows that the degree to which creditors are protected has a significant impact on the potential size of credit crunches. Simulations suggest that the average credit to GDP ratio for Latin America could be doubled if creditor rights regulations were put in place and law enforcement increased to developing country levels.

Additionally, this paper reviews new evidence on the impact of regulations on credit cycles. It shows that creditor rights play an important role, by exacerbating credit risk in countries where creditor rights are not protected, and hence inducing an over-reaction of credit markets to exogenous shocks.

## References

- Barro, R. 1976. "The Loan Market, Collateral, and the Rate of Interest." *Journal of Money, Credit and Banking* 8: 839-856.
- Bebchuk, L.A., and J. Fried. 1998. "The Uneasy Case for the Priority of Secured Claims in Bankruptcy: Further Thoughts and a Reply to Critics." NBER Working Paper W6472. Cambridge, United States: National Bureau of Economic Research.
- Bernanke, B., and A. Blinder. 1988. "Credit, Money and Aggregate Demand." *American Economic Review* 78(2): 435-39.
- Besanko, D., and A. Thakor. 1987a. "Collateral and Rationing: Sorting Equilibria in Monopolistic and Competitive Credit Markets." *International Economic Review* 28: 671-89.
- . 1987b. "Competitive Equilibria in the Credit Market under Asymmetric Information." *Journal of Economic Theory* 42:167-82.
- Bester, H. 1985. "Screening vs. Rationing in Credit Markets with Imperfect Information." *American Economic Review* 75: 850-855.
- . 1987. "The Role of Collateral in Credit Markets with Imperfect Information." *European Economic Review* 31: 887-899.
- Black, J., and R. de Meza. 1992. "Diversionary Tactics: Why Business Loans are so Safe." Discussion Papers in Economics No. 9/92. Exeter, United Kingdom: University of Exeter.
- Chan, Y., and G. Kanatas. 1985. "Asymmetric Valuation and the Role of Collateral in Loan Agreements." *Journal of Money, Credit and Banking* 17(1): 84-95.
- Chan, Y., and A. Thakor. 1987. "Collateral and Competitive Equilibria with Moral Hazard and Private Information." *Journal of Finance* 42: 345-64.
- Coco, G. 2000. "On the Use of Collateral." *Journal of Economic Surveys* 14(2): 191-214.

Freixas, X., and J.C. Rochet. 1998. *The Microeconomics of Banking*. London, United Kingdom: Cambridge University Press.

Galindo, A., and A. Micco. 2001. "Creditor Protection and Financial Cycles." Research Department Working Paper 443. Washington, DC, United States: Inter-American Development Bank, Research Department.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. Vishny. 1997. "Legal Determinants of External Finance." *Journal of Finance* 52(3): 1131-1150.

---. 1998. "Law and Finance." *Journal of Political Economy* 106(6): 1113-1155.

Lora, E., P. Cortés and A. Herrera. 2001. "Los Obstáculos al Desarrollo Empresarial y el Tamaño de las Firmas en América Latina." Documento de Trabajo del Departamento de Investigación 447. Washington, DC, United States: Inter-American Development Bank, Research Department.

Kaufmann, D., A. Kraay and P. Zoido-Lobaton. 1999. "Aggregating Governance Indicators." World Bank Working Paper 2195. Washington, DC, United States: World Bank.

Kiyotaki, N., and J. Moore. 1997. "Credit Cycles." *Journal of Political Economy* 105(2): 211-48.

Manove, M., J.A. Padilla. and M. Pagano. 2000. "Collateral vs. Project Screening: A Model of Lazy Banks." Mimeographed document.

Padilla, A., and A. Requejo. 2000. "The Costs and Benefits of the Strict Protection of Creditor Rights: Theory and Evidence." Research Network Working Paper R-384. Washington, DC, United States: Inter-American Development Bank.

Pagano, M., and T. Japell. 1993. "Information Sharing in Credit Markets." *Journal of Finance* 43(5): 1693-1718.

----. 1999. "Information Sharing in Credit Markets: International Evidence." Research Network Working Paper R-371. Washington, DC, United States: Inter-American Development Bank, Research Department.

Stiglitz, J., and A. Weiss. 1981. "Credit Rationing in Markets with Imperfect Information." *American Economic Review* 71(3): 393-410.

## Appendix: Difficulty of Using and Taking Over Collateral— IDB-FELABAN Survey Evidence

### 1. Does the law impose restrictions on the type of assets used as collateral?

Country	Yes	No	Excluded Assets
Argentina	✓		Family assets.
Bolivia	✓	✓	Family home.
Brazil			
Chile		✓	
Colombia		✓	
Costa Rica		✓	
Ecuador	✓		Family assets. Assets with property limitations. Non commercial assets.
El Salvador	✓		Equity from the same bank, from other banks or from enterprises belonging to the same financial conglomerate
Guatemala		✓	
Mexico	✓		Family assets.
Nicaragua	✓		Equity of firms linked to the bank.
Panama		✓	
Peru	✓		1/50% of deposits CTS; fixed assets of financial sector firms; assets from minors; un-expropriable assets or intangibles appointed by law, equity from the same bank.
Dominican Rep.		✓	
Uruguay		✓	
Venezuela	✓		Own equity.

**2. Does the law impose restrictions on the use or physical location of collateral?**

Country	Yes	No
Argentina		✓
Bolivia		✓
Brazil		✓
Chile		✓
Colombia		✓
Costa Rica		✓
Ecuador	✓	
El Salvador		✓
Guatemala		✓
Mexico		✓
Nicaragua		✓
Panama	✓	
Peru		✓
Dominican Rep.		✓
Uruguay	✓	
Venezuela		✓

**3. Must an asset used as collateral be registered so that the judiciary recognizes it in case of dispute?**

Country	Yes	No
Argentina	✓	
Bolivia	✓	
Brazil	✓	
Chile	✓	
Colombia	✓	
Costa Rica	✓	
Ecuador	✓	
El Salvador	✓	
Guatemala	✓	
Mexico	✓	
Nicaragua	✓	
Panama	✓	
Peru	✓	
Dominican Rep.	✓	
Uruguay	✓	
Venezuela	✓	

**4. Have instruments that substitute for the use of tangible assets as collateral been developed?**

<b>Country</b>	<b>Yes</b>	<b>No</b>	<b>Which</b>
<b>Argentina</b>	✓		
<b>Bolivia</b>	✓		REPO
<b>Brazil</b>	✓		Cédula de crédito bancario, cesión fiduciaria and securitization
<b>Chile</b>	✓		Warrants
<b>Colombia</b>	✓		Fiducia en garantía, bonos de prenda, aceptaciones bancarias (en Colombia REPO).
<b>Costa Rica</b>	✓		Fideicomisos
<b>Ecuador</b>	✓		Fideicomisos
<b>El Salvador</b>		✓	
<b>Guatemala</b>	✓		Fiducia en garantía
<b>Mexico</b>		✓	
<b>Nicaragua</b>		✓	
<b>Panama</b>	✓		Fideicomiso
<b>Peru</b>	✓		Warrant; REPOS; Fideicomisos de garantía; Título de Credito Hipotecario negociable, TCHN
<b>Dominican Rep.</b>		✓	
<b>Uruguay</b>		✓	
<b>Venezuela</b>	✓		Fideicomisos; Reportos