



Creditor protection and banking system development in India

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ABSTRACT

We use cointegration analysis of a new longitudinal legal dataset to show that strengthening creditor rights in India during the 1990s and 2000s led to an increase in bank credit, supporting the view that legal systems can shape financial development.

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1. Introduction

A substantial body of work has been devoted in recent years to the claim that legal systems shape financial outcomes. In particular, the content of laws protecting shareholder and creditor interests has been shown to be associated with cross-national variations in stock market development and private credit respectively (La Porta et al., 1998; Djankov et al., 2007). However, these findings largely rest on the analysis of cross-sectional data. As such, they are subject to a number of limitations, in particular the possibility that changes to legal rules are endogenous to national contexts and macroeconomic trends (Rodrik, 2005).

One of the main obstacles to resolving the issue of endogeneity has, until recently, been the absence of reliable time series. This has now been addressed by the construction of longitudinal datasets which measure changes in the law over several decades (Lele and Siems, 2007; Deakin et al., 2007; Armour et al., 2009). The number of observations in these datasets and the length of the time series involved make it possible to use econometric methods that tackle the problem of endogeneity. In this paper we introduce one of these new

datasets, the creditor protection index (CPI), and analyse it to study the effects of changes in creditor rights in India on banking development.

2. The creditor protection index

The CPI is one of several datasets which have been recently developed to provide a quantitative indicator of legal change over time; others cover the fields of shareholder protection and labour regulation (Armour et al., 2009). They draw on a wider range of legal materials and use a more finely-grained approach to coding than earlier studies. For example, the creditor rights index developed originally by La Porta et al. (1998) and more recently updated by Djankov et al. (2007) consists of four variables: 'restrictions for going into reorganisation', 'no automatic stay on secured assets', 'secured creditors first paid' and 'management does not stay'. These are each coded on a binary (0 or 1) basis and the scores are then aggregated to provide a single indicator ranging from 0 (poor protection) to 4 (strong protection). The CPI constructed by Armour et al. (2009) measures creditor protection laws by reference to three sub-indices which each contain ten or more individual variables. The first sub-index, 'debtor control', refers to laws which restrict the activities of firms while they are going concerns, with a view to safeguarding creditor interests. These include laws setting minimum capital requirements and preventing sales of assets at an undervalue. The

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second category, 'creditor contracts', is concerned with the powers granted by the law to creditors to take and enforce security over the firm's assets. The third group of indicators, 'insolvency law', refers to the circumstances under which a firm can enter into bankruptcy, how far it can thereby be shielded from its creditors, the priority of creditors' interests in insolvency, and the issue of who has control of the firm while the insolvency continues. An algorithm sets out, for each variable, the basis for the coding process. The sources for the coding are the original statutes and decisions of the jurisdictions concerned, and each change recorded in the index can be precisely traced to a primary legal source of this kind (this has not been the case with most of the earlier indices).

The CPI covers the period from the mid-1970s to the present day for five countries: France, Germany, India, the UK, and the USA. The CPI for India can be used to pinpoint legal changes which have taken place in relation to creditor rights in this period. India, as a common law system, inherited from English law a broadly protective approach towards the interests of secured creditors; its score on the law relating to creditor contracts was comparable to those of the UK and USA for the period under review, and considerably higher than those for France and Germany (Armour et al., 2009). Indian law was strengthened at two points (see Armour and Lele, 2009). The Recovery of Debts due to Banks and Financial Institutions Act 1993 set up new bodies, known as Debt Recovery Tribunals, to speed up the debt recovery process for both secured and unsecured loans through a summary procedure. Then in 2002 the Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act gave the banks powers to enforce security interests without the need for a court order. In the CPI these changes were coded by increasing the score on one particular variable, measuring the enforcement of security without a court order, from 0 to 0.5 in 1993 and then from 0.5 to 1 in 2002.

3. Econometric issues, model specification and data

Our empirical investigation has two aims. The first is to examine the direct effect of creditor protection law on banking system development in India, conditioning on variables that previous literature has found to influence banking sector development, such as real income and stock market development.¹ The second aim addresses the issue of causality between banking system development and creditor protection, which can shed light on the question whether legal reform leads or follows financial outcomes.

We address the first aim by examining the statistical significance of the CPI in a cointegrating system for banking system development which allows for the possible endogeneity of the regressors. Besides allowing the CPI to be endogenous, this accommodates all types of causal patterns between finance and growth.² The second aim is addressed by carrying out a weak exogeneity test of the CPI with respect to banking system development.

Our sample consists of 30 annual observations from 1976 to 2005. Formally we estimate the following linear system with four variables in semilogarithmic form (where u_t is an error term), normalised for convenience on banking system development:

$$LBY_t = a_0 + a_1LY_t + a_2LSMC_t + a_3CPI_t + u_t, \quad (1)$$

where LBY is the logarithm of the ratio of private bank credit to nominal GDP, LY is the logarithm of real GDP per capita and $LSMC$ is the logarithm of the ratio of stock market capitalisation to GDP. The data on real GDP, bank credit, and stock market capitalisation were

¹ See, for example, Arestis et al. (2001).

² There is a considerable body of empirical literature starting from Demetriades and Hussein (1996) which suggests that the relationship between finance and growth may be bi-directional. This has been confirmed in the case of India by Demetriades and Luintel (1997).

Table 1
Augmented Dickey–Fuller tests.

ADF Statistic		
Variables	Constant	Constant and trend
LBY	1.3501	3.4626
LY	2.8617	1.8049
CPI	−1.4798	−1.8961
LSMC	−0.2381	−3.8042**
DLBY	−3.3722**	−3.2242***
DLY	−5.1740*	−6.7498*
DCRI	−5.7233*	−5.6776
DLSMC	−5.8199*	−5.1164*

*, **, and *** indicate rejection of the unit root null hypothesis at the 1%, 5% and 10% level respectively.

extracted from the World Bank Financial Structure Data Set (October 17, 2007).

4. Empirical results

Unit root tests reported in Table 1 below suggest that the logarithms of LY , LBY , $LSMC$, and CPI are integrated of order 1 and that their first differences are stationary. Thus Eq. (1) has the interpretation of a cointegrating vector for LBY , in which the regressors are all $I(1)$.

Using Johansen's MLE procedure³, we find evidence of at most one cointegrating vector among the set of variables, using both maximum eigenvalue and trace test statistics (Table 2). The cointegrating vector, normalised on banking sector development, shows a positive relationship between banking system development and creditor protection, as well as a positive output effect. Stock market development is negatively related to banking system development, suggesting a possible crowding out effect. The hypothesis of weak exogeneity cannot be rejected in the case of output and creditor protection. The same hypothesis is rejected in the case of private credit and stock market capitalisation. Hence, there appears to be bi-directional causality between banking system development and stock market development whereas creditor protection is weakly exogenous to the cointegrating vector. Thus, the effects of creditor protection can be interpreted in a causal sense. Given that the coefficient on CPI is significant at the 1% level, these results suggest that enhancements in creditor protection law have had a positive long-run impact on financial development.⁴

By construction, the creditor protection index is made of three sub-indices: debtor control, $DEBT$, creditor contracts, $CREDIT$, and insolvency, $INSOLVENCY$. Further estimations have shown that out of the three sub-indices, $CREDIT$ is the sub-index which appears to be driving the cointegration results reported in Table 2A.⁵ The results using Johansen's MLE procedure and replacing CPI with $CREDIT$ are reported in Table 3. Both the maximum eigenvalue and trace test statistics provide evidence of at most one cointegrating vector among the new set of variables, as was the case with the overall index.

Once again the cointegrating vector, normalised on banking sector development, exhibits a positive relationship between banking system development and creditor contracts, as well as a positive but

³ Estimations were carried out in Eviews. We also obtained similar results using Hendry's dynamic single equation cointegration estimator. We prefer to report the results using Johansen's procedure as it treats all regressors as potentially endogenous.

⁴ It is also worth noting that the qualitative nature of our main finding is robust to using alternative banking system development measures and adding variables such as the real interest rate – which was found to be insignificant – to the system.

⁵ Although the Trace statistic suggests one cointegrating vector with all three sub-indices, the maximum eigenvalue statistic suggests more than one cointegrating vector in the case of the $DEBT$ and $INSOLVENCY$ sub-indices. Moreover, the long run coefficient of $DEBT$ is insignificant.

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