# Do Labor Laws Discourage Borrowers? An Empirical Note


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*The paper assesses the impact of state-level employment protection laws in India on discouraged borrowers. Using data from the World Bank Enterprise Survey for 2013-14, it finds that labor laws in isolation discourage borrowing. When the complementarities between these laws are considered, the discouragement for borrowers is lower. The analysis suggests the need to ensure a holistic assessment of such laws to better understand the behavior of discouraged borrowers.*



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### Introduction

The relevance of labor laws in affecting the behavior of the manufacturing sector has been well analyzed in the literature. A whole gamut of studies convincingly demonstrated that stringent labor regulations are detrimental to the growth of employment and impede productivity and innovation (Heckman & Pages, 2004; Besley & Burgess, 2004; Botero et al., 2004; Griffith &Macartney, 2014).

The majority of the literature treats all labor laws as one category. It makes no distinction among different types of such laws. This assumes relevance since the impact of laws relating to employment protection are likely to differ from those that impact firms' ability to adjust employment levels. The impact of various categories of such laws on borrower behavior remains an open question.

Another strand of literature highlights the role and relevance of various financial constraints facing the SME sector (Beck et al., 2006; Ayyagari et al., 2014). One obstacle that has attracted significant attention has been access to credit. In-

deed, a large body of research has affirmed the role of finance as a key constraint for SMEs (de la Torre et al., 2010; Cowling et al., 2016). However, as Kon and Storey (2003) indicate, SMEs may exercise self-restraint in many cases by not seeking financing owing to fear of denial. These so-called "discouraged borrowers" might be quite substantial (Jappelli, 1990; Freel et al., 2012).[1]

We combine these two strands of literature and assess the role played by labor laws in fomenting borrower discouragement in India. In particular, using cross-sectional data at the state-level, we examine two issues. First, how do different labor laws impact discouraged borrowers? Second, do the complementarities between different labor laws affect discouraged borrowers?

For this, we employ the coding of state-specific labor laws developed by Besley and Burgess (2004) and refined by Ahsan and Pages (2009). In particular, we distinguish between labor laws that address the dispute settlement mechanism between employers and workers and those that influence the flexibility of firms to adjust employment levels. The former is labelled as Dispute Settlement (DS) legislation and the latter as Employment Protection Legislation (EPL). Within the latter, we focus on Chapter 5B (Ch.5B) which prohibits firms with a threshold employment from retrenching workers without prior government permission. Using a case study approach, Agarwala (2012) shows that multiple measures focused on transnational activism have enabled these workers to draw the attention of the state towards local issues and a commitment to empowerment.

**Multiple measures focused on transnational activism have enabled these workers to draw the attention of the state towards local issues and a commitment to empowerment.**

From an empirical standpoint, we utilize cross-section data on SMEs from the World Bank Enterprise Survey for 2014. We integrate this with information on state-level labor laws to assess its impact on discouraged borrowers. The key outcome variable is *Discouraged*, who is "a good borrower, requiring finance, that chooses not to apply because it feels its application will be rejected" (Kon & Storey, 2003). We control for other confounding factors by using both SME-specific (e.g., size, age, ownership, auditing, quality certification and export status, R&D activity) and state-specific (e.g., natural logarithm of state per capita income) and control for 2-digit SIC industry fixed effects as well as state-fixed effects.

The focus on the Indian scenario is important for three reasons. First, India is a federal polity comprising states, each of whom have a democratically elected government. Major public policy decisions are made and implemented at the

[1] Kon and Storey (2003) define discouraged borrowers as "a good borrower, requiring finance, that chooses not to apply because it feels its application will be rejected."

level of states. This makes political parties to compete intensely on the right to govern at the state level. Second, labor is a policy issue that belongs to the Concurrent list – on which both the Federal and state governments can legislate – and therefore state governments focus on the rights of labor to safeguard and enhance their re-election projects. And third, SMEs have long been recognized as a vital fulcrum of industrialization and employment - accounts for close to 50% of the manufacturing output and providing employment to 75 million workers. As a result, the government has undertaken several measures to alleviate constraints on their resource availability, including finance. In this context, it becomes important to understand whether labor laws have had any bearing on this process. In what follows, we briefly provide the theoretical underpinnings, followed by the data and results and conclusions.

## Theoretical Underpinnings & Literature

Labor laws can impact the behavior of borrowers by discouraging them from accessing credit through two possible channels. First, stricter labor laws lower the ability of firms to suitably respond to changes in the business environment. As a result, otherwise good firms might be discouraged to borrow. Consistent with this fact, Simintzi et al. (2015) find that stricter employment protection laws are associated with a decline in leverage.

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The second channel through which labor laws influence borrowers is by rebalancing of adjustment costs. An idiosyncratic shock might induce firms with limited adjustment capability to lower investment and employment (Griffith & Macartney, 2014). Under such circumstances, they might also be discouraged to increase external finance.

The analysis contributes to two important strands of research. First, it intersects the literature on the interlinkage between labor laws and financial policies, but unlike these studies focuses on the role of SMEs (Beck et al., 2008). Second, this paper contributes to the literature on financing challenges for SMEs by exploring a unique demand side issue - their self-imposed financing constraint – and how labor regulations impact these so-called "discouraged borrowers" (Jappelli, 1990; Kon & Storey, 2003).

## Data & Methods

The data is from the World Bank Enterprise Survey (WBES). The data was collected based on a stratified random sample of 9,281 formal private sector businesses with five or more employees, disaggregated by firm size and geographic region. To ensure cross-national comparability, the firms in the WBES are categorized based on full-time employees. These include small (between 5-19 employees), medium (between 20-99 employees) and large (with over 100 employees) firms. The disaggregation by

sector involves manufacturing, services and construction. The sampling frame is derived from the universe of eligible firms, obtained from the statistical office. A harmonized questionnaire is used to obtain responses from business owners and top managers.

The present sample focuses on the Indian case, where the survey was conducted during June 2013-June 2014. After filtering and removing non-manufacturing firms, we have a total of 7,796 firms across 23 states. The data contains information on firm size, age, legal and ownership status as well as related information such as export status, whether the firm employs an auditor and it has an international certification. The outcome variable is Discouraged, which is the response to the question "Did the establishment apply for new loan?". If the response is positive, it is coded as one, else zero. This definition is akin to that used in previous research (Chakravarty & Xiang, 2013).

The key independent variable is labor laws. In this respect, following Ahsan and Pages (2004) and borrowing from Malik (2017), we update the labor laws for 2013-14. Thus, all labor law amendments that enhance (resp., weaken) workers' job security or prolong (resp., shorten) dispute duration is coded as +1 (resp., -1). Provided there are no changes in labor legislation in any year, it is coded as zero. We cumulate these scores for the period to separately obtain the state-level indices on EPL, DS and Ch.5B. In the event that the aggregate value of the changes during this period is greater than (resp., less than) zero, the legislation is classified as pro-worker (resp., pro-employer). Provided that the sum of the changes in labor law amendments during the period equal zero, the legislation is categorized as neutral. This codification of labor laws enables us to combine both the *direction* and *stringency* of their changes.

Table 1 shows the variable definition and summary statistics. As regards the response variable, nearly 9% of the sample borrowers are discouraged, on average. The key independent variable indicates that EPL laws across states were much less restrictive as compared with DS laws. Among the controls, nearly 45% are medium-sized firms, the sample firm is on average 21 years old. Nearly 18% of firms are export-oriented and 20% are women-oriented.

To assess the impact of labor laws on discouraged borrowers, for firm *i* in industry *j* and state *s* we employ the following specification:

$$Discouraged_{ijs}=\alpha+\beta LRs+\gamma F_{ijs}+\delta M_{s}+\lambda_{j}+\mu_{s}+\varepsilon_{ijs}$$

where *Discouraged* is a dummy variable as elucidated earlier. Among the dependent variables, **F** and **M** are a vector of SME- and state-specific controls, $\lambda$ and $\mu$ are industry- and state-fixed effects respectively and $\varepsilon$ is idiosyncratic error. LR is the labor regulation variable, defined variously as DS, EPL and Ch5B and their combinations there of. To facilitate better interpretation, we report the Average Marginal Effect (AME) for the coefficient on LR within each specification.

**Table 1 Variable Definition & Summary Statistics**

| Notation | Measurement | N. Obs | Mean (SD) |
|---|---|---|---|
| Dependent | | | |
| Discouraged | Dummy=1, if a borrower is discouraged (defined as borrowers who do not apply for a loan for fear of denial), else zero | 7796 | 0.085 (0.279) |
| Loan | Ln(1+loan outstanding from financial institution) | 1695 | 4.354 (2.259) |
| Independent | | | |
| EPL | All labor amendments during the year which strengthen (resp., weaken) workers job security is coded as +1 (resp., -1). In case of no change, it is coded zero. For each state, the values during the year are added to create a cumulative indicator of net amendments | 7796 | -0.018 (0.076) |
| DS | Akin to EPL, except for the fact that the focus is on labor disputes | 7796 | 0 (0) |
| Ch5B | Akin to DS, except for the fact that the focus is on reforms related to Chapter 5B of labor disputes | 7796 | -0.0006 (0.109) |
| Controls | | | |
| Small | Dummy=1 if a firm is small, defined as those with 5-19 employees | 7796 | 0.323 (0.468) |
| Medium | Dummy=1 if a firm is medium, defined as those with 20-99 employees | 7796 | 0.444 (0.497) |
| Large | Dummy=1 if a firm is large, defined as those with at least 100 employees | 7796 | 0.233 (0.423) |
| Women | Dummy=1 if a SME is women-owned, women-managed or both, else zero | 7746 | 0.200 (0.401) |
| Age | The number of years since incorporation (the regression uses natural logarithm of one plus Age) | 7783 | 21.29 (14.42) |
| Legal | Categorical variable: 1, if a firm is others, 2 if limited liability, 3 if partnership, 4 if shareholding and 5 if proprietorship | 7794 | 3.752 (1.293) |
| Owner | Categorical variable: 1 if private, 2 if foreign, 3 if government, 4 if others and 5 if mixed (owned equally by government and private) | 7796 | 1.015 (0.205) |
| Export | Dummy=1 if a firm has a positive export-sales ratio, else zero | 7796 | 0.177 (0.382) |
| Certification | Dummy=1 if a firm has a certification from a recognized international agency, else zero | 7796 | 0.434 (0.496) |
| R&D | Dummy=1 if a firm has a positive R&D, else zero | 7796 | 0.353 (0.478) |
| Auditor | Dummy=1 if a firm has a certification from an external auditor, else zero | 7796 | 0.830 (0.376) |
| Cellphone | Dummy=1 if a firm uses a cellphone in operations, else zero | 7796 | 0.943 (0.232) |
| State-level variables | | | |
| PCNSDP | Ln (per capita state income, at constant prices) | 7796 | 11.308 (0.55) |

**Table 2 Main results – Impact of Employment Laws on Discouraged Borrowers**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| EPL | 0.171*** | | | 0.271*** | |
| | (0.020) | | | (0.029) | |
| AME | [0.037***] | | | [0.059***] | |
| DS | | 0.181*** | | 0.276*** | 1.090*** |
| | | (0.022) | | (0.021) | (0.064) |
| AME | | [0.040***] | | [0.061***] | [0.239***] |
| Ch. 5B | | | 0.759*** | | 2.930*** |
| | | | (0.091) | | (0.182) |
| AME | | | [0.167***] | | [0.642***] |
| EPL*DS | | | | 0.177*** | |
| | | | | (0.011) | |
| AME | | | | [0.039***] | |
| Ch.5B*DS | | | | | 0.209*** |
| | | | | | (0.026) |
| AME | | | | | [0.046***] |
| Firm controls | Y | Y | Y | Y | Y |
| State controls | Y | Y | Y | Y | Y |
| Test EPL=DS | | | | 0.89 | |
| State FE | Y | Y | Y | Y | Y |
| Industry FE | Y | Y | Y | Y | Y |
| Observations | 6823 | 6823 | 6823 | 6823 | 6823 |
| Adj. R-sq. | 0.082 | 0.082 | 0.082 | 0.083 | 0.084 |

***p<0.01; ** p<0.05; *p<0.10; (): clustered standard errors

## Discussion

Table 2 presents the estimation findings. In column 1, the AME equals 0.037, suggesting that stringent employment protection laws are 3.7 percentage points more likely to increase borrower discouragement. In a similar vein, DS laws are 4 percentage points more likely (column 2) and Ch.5B is 17 percentage points more likely (column 3) to increase borrower discouragement. The next two columns explore complementarities between different labor laws and their impact on discouraged borrowers. The results suggest that such complementarities actually lower borrower discouragement: in column 5 for example, the estimates show that SMEs are nearly 5 percentage points less likely to be discouraged from borrowing. This finding can be explained by the fact that strengthening of job security legislations enhance the bargaining power of workers within the firm: faced with increasing adjustment costs, they are even more discouraged from borrowing.

An advantage of our analysis is that changes in various labor laws are staggered across states. As a result, endogeneity concerns are much less compelling as compared to comparable studies in other countries. However, to rule out the possibility that the findings could be driven by some kind of selection bias, akin to Moro et al. (2017), we re-estimate the model by implementing a Heckman model.

**Table 3 Additional Results – Impact of Employment Laws on Discouraged Borrowers**

| | Model I | | Model II | | Model III | | Model IV | | Model V | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Stage I | Stage II | Stage I | Stage II | Stage I | Stage II | Stage I | Stage II | Stage I | Stage II |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| EPL | 0.172*** | -0.101 | | | | | 0.153* | -0.208** | | |
| | (0.029) | (0.083) | | | | | (0.082) | (0.101) | | |
| AME | [0.036***] | [-0.025] | | | | | [0.023*] | [-0.051**] | | |
| DS | | | 0.161** | -0.106 | | | 0.138 | -1.008*** | 0.449 | -1.209** |
| | | | (0.071) | (0.087) | | | (0.151) | (0.152) | (0.445) | (0.599) |
| AME | | | [0.022**] | [-0.26] | | | [0.027***] | [0.251***] | [0.067] | [-0.536***] |
| Ch. 5B | | | | | 0.679** | -0.448 | | | -1.063 | 2.564*** |
| | | | | | (0.299) | (0.368) | | | (0.362) | (1.127) |
| AME | | | | | [0.072**] | [-0.112] | | | [-0.219] | [0.574***] |
| EPL*DS | | | | | | | -0.064 | 0.521*** | | |
| | | | | | | | (0.071) | (0.069) | | |
| AME | | | | | | | [0.015***] | [0.129***] | | |
| Ch.5B*DS | | | | | | | | | -0.035 | 1.052*** |
| | | | | | | | | | (0.162) | (0.157) |
| AME | | | | | | | | | [0.007] | [0.261***] |
| Firm controls | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| State controls | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Test EPL=DS | | | | | | | 0.02 | | | |
| State FE | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Industry FE | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Observations | 1695 | 1695 | 1695 | 1695 | 1695 | | | | | |
| Wald Chi-sq (p-Val.) | 134.2 | 131.2 | 133.6 | 134.6 | 134.3 | | | | | |
| | (0.00) | (0.00) | (0.00) | | | | | | | |
| Rho | 0.328 | 0.327 | 0.329 | 0.329 | 0.329 | | | | | |

***p<0.01; ** p<0.05; *p<0.10; (): clustered standard errors

In this case, the dependent variable in the first (selection) stage is as earlier whereas in the second (outcome) stage, it is the (natural logarithm of one plus) loan outstanding from an institutional source. To ensure identification, we impose the exclusion restriction of natural logarithm of total sales (in the outcome equation), based on the premise that firms with higher sales will exhibit greater financial needs and therefore, more likely to have positive loan outstanding. In the sample, the natural logarithm of loan outstanding is 3.4. Regression results are presented in Table 3.

In model I, the AME suggests that borrowers are 3.6 percentage points more likely to be discouraged owing to EPL, although there is not much of an impact on the outstanding loan amount. Across models II and III, we find evidence of an impact on the likelihood of being discouraged, but no discernible impact on the loan outstanding owing to the labor legislation. In model IV where we examine possible complementarities between EPL and DS, we find that although their likelihood of having a loan outstanding is lower under the individual laws, it is likely to be nearly 13 percentage points higher when such complementarities are taken on board. On the one hand, tightening of EPL strengthens job security of workers. On the other hand, an improvement in DS addresses the settlement of dispute between employers and workers. As a result, firms are inclined to increase borrowing to fund their business expansion. Similar complementarities are in evidence between dispute settlements and laws relating to worker retrenchment (column 10).

## Conclusion

Using a rich survey data for India, the paper assesses the interlinkage between labor laws and discouraged borrowers. The findings show that although these laws per se raise borrower discouragement, by safeguarding workers' rights, the complementarity between these laws tend to lower discouraged borrowers.

Such evidence provides two interesting policy implications. Prior research on discouragement does not ensure adequate focus on labor laws. In this context, our findings suggest the need to take a closer look at labor laws when focusing on discouraged borrowers. Second, most research in this area treats labor laws as a 'catch-all' category. The findings show that it is important to make a clear distinction between different categories of labor laws and undertake a holistic assessment of such laws to better appreciate their impact on firm behavior.

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