

# Creditor Rights and Corporate Labor Policy: Evidence from a Policy Experiment \*

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## Abstract

We study how firms respond to a strengthening of creditor rights by focusing on their choice of inputs of production. Following a legal reform that strengthened the rights of secured creditors in India, we find that there was an increase in the number of workers employed, higher wages for workers, but a reduction in investment in fixed capital and plant and machinery. These results are consistent with stronger creditor rights leading to a higher threat of liquidation for firms, that subsequently substitute secured formal credit for trade credit. The results suggest that firms preemptively substitute capital for labor in their production process in response to stronger creditor rights.

*Key Words:* Creditor Rights, Labor Markets, Corporate Finance, Firms, Employment protection laws, Investor protection laws.

*JEL Classification:* G34, K22, K42

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# 1 Introduction

A fundamental question in financial economics is whether and how do legal rules governing the financial contracting environment in general and the protection of creditor rights in particular affect real decisions of firms ((La Porta, Lopez-de Silanes, Shleifer, and Vishny (1998)). The extant literature examining the impact of creditor rights on real firm outcomes has focused extensively on firms' financing choices and capital investments (Benmelech and Bergman (2011), Roberts and Sufi (2009), Acharya, Amihud, and Litov (2011) Vig (2013), and Gopalan, Mukherjee, and Singh (2016)). However, comparatively little is known regarding the effect of creditor rights on factors of production other than capital and the choice between capital and labor.

There is a growing body of work highlighting the interaction between labor and firm financing. However, much of this literature focuses on the impact of labor market frictions on firm's capital structure decisions (Agrawal and Matsa (2013), Simintzi, Vig, and Volpin (2014)). Benmelech, Bergman, and Seru (2015) is a recent exception who examine the role of financial market imperfections on employment. Thus, the extant empirical evidence regarding the role of financial contracting environment on firm-level employment decisions is scarce. In this paper, we seek to address this gap by examining the impact of strengthening of creditor rights on corporate labor policies, and in particular the choice between labor and capital investment.

In this paper, we exploit a plausibly exogenous increase in creditor rights in India brought about by the passage of Securitization and Reconstruction of Financial Assets and Enforcement of Security Interests Act (SARFAESI from now) of 2002 (Vig (2013), Bhue, Prabhala, and Tantri (2015)) to investigate firm-level responses. SARFAESI allowed the secured creditors to circumvent the lengthy and inefficient judicial process by giving them the power to seize and liquidate the defaulter's assets.

Because SARFAESI was passed throughout India in 2002, the main empirical challenge in

our setting is to construct a valid counterfactual. To circumvent this issue, we exploit cross-sectional variation in firms' access to collateralizable assets to generate variation in exposure to the law. Specifically, we follow Vig (2013) and employ a difference-in-differences strategy that compares the outcomes of firms with a higher proportion of tangible assets (*treatment group firms*) to those firms with lower proportion of tangible assets (*control group firms*). To the extent that tangible assets are more easily securitized, the identifying assumption is that the firms with more tangible assets are more likely to be affected by the passage of SARFAESI that governs secured lending transactions.

Another challenge related to studies examining corporate labor policies is the lack of granular data on firm level employment and wages.<sup>1</sup> To this end, we use detailed establishment level panel data from Annual Survey of Industries (ASI) in India. ASI provides information on employment, wages, capital investment, and furnishes a detailed break up of the number of permanent and contract workers at each establishment along with wage expenses and financial statements.

Using the DID strategy, we find that as a result of SARFAESI, treated firms differentially reduce the amount of secured formal loans compared to control firms. This result is consistent with the evidence presented in Vig (2013). Next, we document a novel result with regards to other sources of firm financing. We find that treated firms differentially increase their reliance on trade credit post-SARFAESI compared to control firms. In essence, post-SARFAESI, treated firms substitute away from secured credit towards trade credit as compared to control firms. To the extent that trade credit is a costly source of finance (Petersen and Rajan (1994), De and Singh (2013)), this evidence is consistent with SARFAESI resulting in a liquidation bias (increasing the threat of liquidation for firms) that raised the effective cost of secured lending for firms.

Since secured debt is generally used to finance capital investment, an increase in the effective cost of secured loans due to higher threat of liquidation, might lead firms to sub-

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<sup>1</sup>For instance wage expense is missing for 90% of Compustat Firm-year observations.

stitute away from investing in capital towards hiring more workers. We find evidence for this channel. We find that treated firms differentially increase the total number of workers, and pay them higher wages compared to control firms as a result of SARFAESI. However, treated firms differentially invest lesser in fixed capital, and plant and machinery relative to control firms. Finally, after SARFAESI, treated firms also have higher EBIT (earnings before interest and taxes) than control firms, and we interpret this as an increase in debt-discipline. Debt-discipline can increase both because of greater threat of liquidation post-SARFAESI and because of the reputational costs associated with defaulting on trade-credit (Fisman and Love (2003), Smith (1987), Ng, Smith, and Smith (1999)).

Next, we examine the dynamic effects of passage of SARFAESI. Consistent with the idea that it takes time to change the production process from capital-intensive to labor intensive, we find that the impact of SARFAESI on firm financing, labor, and capital investments that we discussed above cumulatively increases over time (See figure 1). This suggests that the effect is not transitory and persists over the long-term. Most importantly, we do not observe any pre-trends in the data, which is critical for identification in a difference-in-differences setting.

Next, we exploit cross-sectional variations across space to look at heterogeneous effects of SARFAESI. We use a difference-in-differences-in-differences (DIDID) to examine whether SARFAESI differentially affected treated and control firms across (i) different labor regimes (pro-worker versus pro-employer) and (ii) states with varying levels of pre-SARFAESI judicial efficiency. We find evidence supporting our main results. We find that treated firms as compared to control firms in pro-employer states differentially hire more workers, but find no differential effect on capital investment, post-SARFAESI as compared to before the law change. Finally, we find that in states with lower pre-SARFAESI court efficiency (where the effects of SARFAESI should have been larger) as compared to higher court-efficiency, treated firms differentially hire more workers, invest lesser in plant and machinery, and have larger EBIT, relative to control firms.

Overall, the DIDID tests exploiting cross-sectional heterogeneity further strengthen the causal interpretation of our findings.

From a theoretical perspective, the ex-ante effects of strengthening creditor rights on labor input choice are a priori ambiguous. On one hand stronger creditor rights serve to increase expected debt recovery, thereby both lowering the cost of credit and increasing credit supply (La Porta, Lopez-de Silanes, Shleifer, and Vishny (1998), Djankov, McLiesh, and Shleifer (2007), Visaria (2009), and Haselmann, Pistor, and Vig (2010)). This in turn can spur investments through increased access to capital (Benmelech and Bergman (2011); Gopalan, Mukherjee, and Singh (2016)). To the extent that capital and labor may be complements, this would imply a positive impact on employment as well. However, on the other hand creditor rights could be excessive and may lead to an increase in inefficient liquidation and the likelihood of default (Aghion, Hart, and Moore (1992), Shleifer and Vishny (1992), Assunção, Benmelech, and Silva (2014)). This in turn can increase the effective cost of leverage, thereby dampening the demand for credit and at the same time adversely impacting the investment decisions of firms (Vig (2013), Acharya and Subramanian (2009), Acharya, Amihud, and Litov (2011)). Under the assumption that capital and labor are complements, strengthening creditor rights can indirectly have an adverse impact on employment through its impact on firm level investment.

Capital and labor may also be substitutes (Arrow, Chenery, Minhas, and Solow (1961)) and thus the financing environment of the firm can have diametrically opposite effects on labor and capital (Garmaise (2008)). Specifically, in settings under which creditor rights result in an increase in liquidation bias, firms may find it optimal to substitute capital with labor for at least three reasons, First, since tangible assets are easier to seize and liquidate, firms may choose to substitute tangible assets (for instance, fixed assets such as plant and machinery) with intangible assets (labor). Second, to the extent that capital requires upfront investments and needs to be financed, while labor expenses can at least partially be met ex-post from sales revenue, firms trying to reduce their leverage risk (driven

by liquidation bias) may substitute capital with labor. Finally, Brown and Matsa (2015) find that financial distress adversely effects the ability of firms to attract talent. Thus, if creditor rights are associated with increased risk of liquidation and default, firms may prefer to hoard labor ex-ante to avoid the aforementioned situation in an event that distress ever arises. In our setting, we find that the strengthening of creditor rights led to an increased liquidation bias for treated firms that subsequently hired more workers, and invested less in fixed capital including plant and machinery. In some sense after SARFAESI, the stronger creditor rights had the unanticipated effect of moving firms towards more labor-intensive production processes.

Our study contributes to several strands of literature. First, it contributes to the growing body of work in the area of “labor and finance” that acknowledges and examines the linkages between firm financing and labor. However much of this literature focuses on the impact of labor market frictions on firm’s capital structure decisions. Agrawal and Matsa (2013) find that higher unemployment benefits are associated with an increase in firm leverage. Simintzi, Vig, and Volpin (2014) find that increase in employment protection is associated with a decrease in leverage possibly because labor protection increases the costs of financial distress. Conversely financial contracting environment can also impact firms’ labor input and wage decisions (Benmelech, Bergman, and Seru (2015)). Consistent with this view, Benmelech, Bergman, and Enriquez (2012) and Falato and Liang (2014) find that financial distress and covenant violations are associated with a downward revision in wages and drop in employment respectively. Our paper attempts to further the scholarship in this area by investigating the ex-ante effects of strengthening creditor rights on firm level employment, wages, and capital investment.

Second, our study also relates to the large body of work that examines the impact of creditor rights and debt enforcement on corporate policies (Acharya, John, and Sundaram (2005), Haselmann, Pistor, and Vig (2010), Acharya and Subramanian (2009)), Bae and Goyal (2009), Acharya, Amihud, and Litov (2011), Gopalan, Mukherjee, and Singh (2016))

and more broadly to the literature on real effects of financial frictions (Campello, Graham, and Harvey (2010), Chaney, Sraer, and Thesmar (2012), Hombert and Matray (2015)). To the best of our knowledge, however, this is the first paper to show that strengthening of creditor rights might lead to an ex-ante firm-level readjustment of labor and capital investment in opposite directions to counteract the increased threat of liquidation.

The rest of the paper is organized as follows. In section 2, we discuss creditor rights in India, followed by a description of the data in section 3. The empirical strategy and results are discussed next in sections 4 and 5 respectively. Finally, section 6 concludes.

## 2 Creditor Rights in India

Historically, regulatory bottlenecks and judicial delays in the recovery of secured assets by creditors were the hallmarks of lender-borrower relationships in India. All loan recovery cases in the event of a default were filed in the civil court system, which had to follow the tedious Code of Civil Procedure Act of 1908. This lengthy judicial process, led to a large depreciation in the value of secured assets held as collateral by the bank.

To fasten the judicial process in debt recovery cases and thereby strengthen creditor rights, the Government of India passed two reforms: (1) The Debt Recovery Tribunal Act of 1993 (DRT Act) and (2) the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interests Act of 2002 (SARFAESI Act).

Debt Recovery Tribunals were specialized courts for loan recovery cases that were set up across India beginning in 1994. To ensure quick recovery on defaulted loans, the tribunals were not required to follow the lengthy Code of Civil Procedure. DRTs set up their own streamlined procedures to expedite the processing of loan default cases. For a more detailed discussion on DRTs, see Visaria (2009), Lilienfeld, Mookherjee, and Visaria (2012), and Gopalan, Mukherjee, and Singh (2016).

However, even after the establishment of DRTs, secured creditors could not seize security of a defaulting firm without a court/tribunal order. Before 2002, the lack of any mechanism outside of tribunal proceedings meant that recovery of security interests was effectively stayed. Kang and Nayar (2003) report that the length of liquidation proceedings was between 10-15 years. Furthermore, the Industrial Disputes Act of 1947, that governs labor laws in India, also made restructuring and liquidation hard by forcing firms with greater than 100 workers to seek prior government approval before closing down. This meant that assets of defaulting firms would depreciate significantly, leading to lower values of recovered secured credit for banks and financial institutions.



The SARFAESI Act of 2002 made creditor rights much stronger than the pre-SARFAESI era by allowing secured creditors to seize the assets of a defaulting firm without having to go through the court/tribunal process. Importantly, the law applied to both old and new contracts, and only covered secured loans leaving unsecured loans outside of its purview. Essentially, after 2002 (SARFAESI Act), if a firm defaulted on its payments for more than 6 months, a secured creditor (bank or financial institution) could seize and liquidate their assets by giving a 60-day notice. Furthermore, an appeal was only possible after the property was seized, and to seek an injunction, the borrower had to deposit 75% of the defaulted amount with a tribunal. Under SARFAESI, the secured creditor had the right to take control of the management of the secured assets and also to sell the secured assets to recover the dues. The Act did not change the priority rights in insolvency, with secured creditors and workmens dues at the top, followed by government dues, and other preferential claims. Note however, that SARFAESI did not consider the rights of unsecured creditors. Batra (2003), Umarji (2004), and Vig (2013) provide a comprehensive discussion of the SARFAESI Act.

In summary, post-SARFAESI creditor rights became much stronger relative to the pre-SARFAESI regime, as secured creditors could bypass the lengthy court/tribunal proceedings and seize and liquidate the assets of the defaulting firm to recover their obligations. This in essence meant that the value of the secured assets depreciated substantially lesser post-SARFAESI as compared to the previous regime.

### 3 Data

Our main data source for the analysis is the Annual Survey of Industries (ASI), conducted by the Ministry of Statistics and Program Implementation (MoSPI) in India. This unique data set provides information about all industrial units covered under Sections 2(m)(i) and 2(m)(ii) of the Factories Act, 1948 which includes all firms employing 10 or more workers using electricity and 20 or more if the unit does not use electricity. This data is particularly well-suited for our study as it provides extensive information on the intensive and extensive margins of labor supply at the firm level i.e. number of permanent workers and contract workers for each firm/ factory. For the purposes of this study, we will use factories and firms interchangeably.

We study data from the ASI over the period 1999 to 2008. The data consists of yearly observations from over 200,000 factories spread all across India. The data set consists of over 500,000 observations. 39.40% of the factories are located in rural areas, while 59.88% are located in urban areas. The data set consists of factories that can be categorized into various types of organizations majorly consisting of individual proprietorship (20.65%), joint family (1.61%), partnership (28.22%), public limited company (18.31% ) and private limited company (26.79%).

The ASI frame is divided into census (surveyed every year) and sample (sampled every few years) sectors. In this data set, 34.75% of the data are from census sector, while around 65.25% are from sample sector. The definition of these two sectors has undergone changes over the years. The census sector covers all firms in five industrially backward states (Manipur, Meghalaya, Nagaland, Tripura and Andaman and Nicobar Islands) and large factories. In the ASI, the definition of a large factory to be covered in the census sector has changed from 200 or more employees (1998-2000) to 100 or more employees (2001 onwards). The rest of the firms are covered in sample sector. A third of these firms are randomly selected in the survey each year. The reference year for the ASI is the accounting year from 1st April

of the previous year to 31st March of the next year. For example, data from 2004 to 05 will include the period from 1st April 2004 to 31st March 2005.

The primary outcome variables of interest are divided into four categories: (i) Debt (ii) Employment (iii) Capital and (iv) Performance. For detailed discussion of the variables considered, refer to the subsection - "Summary statistics" below.

We extend our analysis by interacting SARFAESI law with state labor laws regime prevalent in India. The Industrial Disputes Act (IDA) of 1947, set up by federal government, is considered as the pith of labor laws in India. The IDA is known to handle various labor issues in the formal sector. Although passed by the federal government, IDA was known to be amended several times by the state governments. These amendments have made some states pro-employer while some pro-worker, resulting in different labor regimes across different states. Labor regulation measures used in this paper is based on Besley and Burgess (2004) (BB code henceforth). BB code encodes each state level amendment made to the IDA between 1958 and 1992 as either being pro-worker (+1), neutral (0), or pro-employer (-1). A pro-worker (pro-employment) amendment is one which decreases (increases) a firm's flexibility in hiring and firing of workers while a neutral amendment leaves it unchanged. The cumulated sum of these scores in all previous years would determine the state's labor regime in a particular year. We follow BB and use the following categorizations: "pro-worker states" - West Bengal, Maharashtra, Orissa, "pro-employer states" - Rajasthan, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh and Gujarat and "neutral states" - Punjab, Haryana, Himachal Pradesh, Uttarakhand, Uttar Pradesh, Bihar, Assam, Chhattisgarh, Jharkhand, and Madhya Pradesh. Since this measure is a cumulated sum of scores over years, this labor regulation measure varies both across states and over time. IDA regulations are intended primarily for protecting permanent workers. Hence, firms have more flexibility in hiring and firing contract workers in comparison to permanent workers. This flexibility is further increased due to the lower wages paid to contract workers relative to permanent workers.

We further extend our analysis by interacting SARFAESI law with court efficiency in various states. Court efficiency reflects the speed of the judiciary system in India. The data on court efficiency are obtained at the state-year level from annual "Crime in India" Reports, published by India's National Crime Records Bureau. This is an annual publication of the Ministry of Home Affairs that details the trends and patterns in crime throughout India. The report provides detailed information on the duration of all cases brought before the lower-level courts in each state in any given year. Court efficiency measures used in this paper are based on two sources - Amirapu (2015) (Amirapu henceforth) and Ahsan (2013) (Ahsan henceforth). Amirapu (2015) uses the fraction of trials that are disposed of in less than one year in the District/Sessions court while Ahsan (2013) uses the fraction of trials that are disposed in less than one year in all courts. We use the court efficiency data for the year 2001 based on the passage of the SARFAESI law.

### 3.1 Summary Statistics

The following tables and figures present summary statistics of the main variables used in the analysis. After calculating the pretreatment asset tangibility measure of firms (discussed later in the methodology section) i.e. weighted average of asset tangibility of unique firms prior to the enforcement of the legal reform, and then matching it to the entire sample period of 1999-2008, we end up with over 350,000 observations for the analysis. The summary statistics for the main variables, obtained from the ASI database are shown in Table 1.

The summary statistics are divided into five sections i.e. debt, employment, capital, performance and control. **Debt** variables include STtradecredit, STformalcredit and STDebt. STtradecredit which stands for short term trade credit is defined as working sundry creditors. STformalcredit which stands for short term formal credit is defined as working overdraft. STDebt which stands for short term debt is defined as working total liabilities. **Employment** variables include number of permanent, contract & total workers and wage per worker

for permanent, contract & total worker. **Capital** variables include GVAFC and GVAPM. GVAFC is gross value added to fixed capital while GVAPM is gross value added to plant & machinery. **Performance** variables include EBIT. These four sections of variables consist of the main outcome variables considered in our analysis.

**Control** variables include profit and total assets. In establishing a causal relation between the main variables and the law, we also need to take into account that some of the affects might be influenced due to the firm size. To address this issue, we control for size using the above mentioned control variables.

The below table summarizes the **court efficiency** statistics. Amirapu (2015) uses fraction of trials that are disposed of in less than one year in the District/Sessions court while Ahsan (2013) uses fraction of trials that are disposed in less than one year in all courts.

Court Efficiency Statistics					
	Observations	Mean	Standard Deviation	Minimum	Maximum
Amirapu ratio	32	0.213726	0.235898	0	1
Ahsan ratio	34	0.334923	0.206709	0.036992	0.890221

## 4 Empirical Strategy

In this paper, we examine the effect of the passage of the SARFAESI law on firms by employing the Difference-in-Differences (DID) methodology. The DID methodology is felicitous for our study in establishing causal claims since the research design is a quasi-experimental setting. We compare the effect of SARFAESI on groups that are more affected by the law (henceforth, treated) with those that are less affected (henceforth, control). In our case, DID estimates the effect of the policy by comparing the average change after SARFAESI relative to before SARFAESI for outcome variables in the treatment group and compares them to the same difference for the control group. DID is intended to mitigate the effects of any other changes that might affect both the control and treated groups.

Because SARFAESI was a national policy affecting all firms, we use an asset tangibility measure to define our treatment and control groups following Vig (2013). Asset tangibility is defined as the ratio of fixed assets to total assets (Rajan and Zingales (1995)), and can be thought of as a measure of collateralizable assets. In India, only tangible assets can be used as collateral for loans, therefore a policy that strengthens creditor rights should differentially affect firms with a higher proportion of tangible assets as compared to those with a lower proportion. Hence, we divide our sample into terciles (top 33%, middle 33% and the bottom 33%) based on the pretreatment average measure of asset tangibility. We define the highest tercile as the treated group and the lowest tercile as the control group.

To evaluate the effect of the SARFAESI law, we estimate the following regression specification using firm-level data:

$$Y_{ijt} = \nu_i + \delta_{jt} + \beta_0 Law_t + \beta_1 Treatment_i + \beta_2 Law_t \times Treatment_i + \beta_3 X_{ijt} + \epsilon_{ijt} \quad (1)$$

where  $i$  indexes firm,  $j$  indexes industry and  $t$  indexes year.  $Y_{ijt}$  refers to the *dependent variable* of interest for firm  $i$  in industry  $j$  in year  $t$ , and  $\nu_i$  and  $\delta_{jt}$  are firm and 3-digit industry-year fixed effects respectively. The firm fixed effects control for any time-invariant unobserved heterogeneity at the firm level.  $Law_t$  is an indicator variable that takes on a

value of 1 in years in which the law is in place (2002-2008), and 0 otherwise (1999-2001), and  $Treatment_i$  is an indicator variable that takes on a value of 1 if the firm belongs to the treated group (high tangibility group) and 0 if it belongs to the control group (low tangibility group). Note that  $Law_t$  will be completely absorbed by industry-year (firm) fixed effects,  $\delta_{jt}$ , while  $Treatment_i$  will be completely absorbed by firm,  $\nu_i$ .  $X_{it}$  refers to the *control variables* (profit/total assets and log(total assets)), and  $\epsilon_{idt}$  is the error term. The coefficient on the interaction term  $Law_t \times Treatment_i$ ,  $\beta_2$  captures the differential impact of the law on *treatment group* relative to the *control group* and hence is the parameter of interest.

The standard DID specification controls for any possible omitted variable bias arising out of pre-treatment time-invariant differences between treatment and control group as well as aggregate time trends. However, one may still be worried that the passage of SARFAESI is correlated with time-invariant or time-varying differences across different industry clusters. This is particularly worrisome if our treatment and control group firms belong to different industry clusters. We address this concern by including 3-digit industry-year fixed effects in our regression specifications. This is a nonparametric way of controlling for time-varying industry-specific shocks. This implies that the regression estimates are identified through both within-firm and within-industry variation in our outcomes variables of interest around the passage of the law. At the same time industry-year fixed effects also controls for industry specific time trends. We cluster standard errors at the firm level.

In addition to estimating the baseline DID regression equation (1) which compares the average differential response to SARFAESI (Post-SARFAESI vs Pre-SARFAESI) by the treatment relative to the control group, we also analyze the inter-temporal dynamics of debt, employment and investment responses. Specifically, we estimate the following distributed lag model:

$$Y_{ijt} = \nu_i + \delta_{jt} + \alpha_0 Treatment_i + \sum_{n=1999}^{2008} \beta_n I_n \times Treatment_i + \sum_{n=1999}^{2008} \theta_n I_n + \alpha_1 X_{ijt} + \epsilon_{ijt} \quad (2)$$

Following Agarwal and Qian (2014), the results can be interpreted as an event study.  $I_n$  is a dummy variable that identifies the year  $n$ . The coefficient  $\beta_{2002}$  measures the immediate DID effect of SARFAESI law on the dependent variable. The *marginal* coefficients  $\beta_{2003}, \dots, \beta_{2008}$  measure the *additional* marginal responses one year, ..., six years after the implementation of the SARFAESI law respectively. Similarly, coefficients  $\beta_{1999}, \beta_{2000}, \beta_{2001}$  capture the difference of trends for each of the dependent variable between the treatment group and the control group in each of the three pre-treatment years.

Next we explore cross-sectional heterogeneity by running difference-in-difference-in-differences (DIDID) specifications. First, we look at the differences in treatment effects between firms in the treated group (high tercile of asset tangibility) compared to firms in the control group (low tercile of asset tangibility) located across pro-worker and pro-employer states. We run regressions of the form:

$$\begin{aligned}
Y_{ijst} = & \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Pro-worker}_s + \beta_3 \text{Pro-employer}_s \\
& + \beta_4 \text{Law}_t \times \text{Treatment}_i + \beta_5 \text{Pro-worker}_s \times \text{Treatment}_i + \beta_6 \text{Pro-employer}_s \times \text{Treatment}_i + \\
& \beta_7 \text{Pro-worker}_s \times \text{Law}_t + \beta_8 \text{Pro-employer}_s \times \text{Law}_t + \beta_9 \text{Pro-worker}_s \times \text{Law}_t \times \text{Treatment}_i \\
& + \beta_{10} \text{Pro-employer}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{11} X_{ijt} + \epsilon_{ijst}
\end{aligned} \tag{3}$$

where  $i$  indexes firm,  $t$  indexes time,  $j$  indexes industries, and  $s$  indexes state.  $Y_{ijst}$  refers to the *outcome variable* of interest for firm  $i$ , in year  $t$ , in state  $s$ , and in industry  $j$ ;  $\nu_i$  and  $\delta_j t$  are firm and industry-year fixed-effects respectively; *law*, and *treatment* are defined similar to the DID specification above. We use labor regulation measures from Besley and Burgess (2004) - (BB code) who code each state-level amendment made to the Industrial Disputes Act between 1958 and 1992 as being pro-worker (+1), neutral (0), or pro-employer (-1). Based on this cumulative score, a state is then assigned to one of the three groups pro-worker, pro-employer, or neutral. Hiring and firing of permanent workers is easier in pro-employer states, followed by neutral states, and pro-worker states. The Industrial Disputes Act, however, does



not apply to contract workers (temporary workers). Based on the BB measure we define *Pro-worker* as an indicator variable that takes on a value of one if a state is pro-worker and zero otherwise. *Pro-employer* is an indicator variable that takes on a value of one if a state is pro-employer and zero otherwise.  $X_{isjt}$  refers to the *control variables* (e.g., profit/total assets and  $\log(\text{total assets})$ ), and  $\epsilon_{idt}$  represents the error term. The coefficient on the triple interaction terms,  $\beta_9$  and  $\beta_{10}$  capture the DIDID effects and hence are the parameters of interest. Note that the omitted category in this regression is firms in neutral states.

Next, we focus on the responsiveness to SARFAESI of firms in the treated and control groups located in high court-efficiency states compared to low court-efficiency states before and after the policy. We use two measures of court efficiency, (i) from Amirapu (2015) who calculates the fraction of trials disposed off in less than one year in the District/Sessions court in the state, and (ii) from Ahsan (2013) who uses the fraction of trials that are disposed off in less than one year in all courts in the state. SARFAESI should affect firms in the treated and control groups differentially based on whether they are located in high court-efficiency states versus low court-efficiency states. Firms in states with low court-efficiency were used to slower and lengthier legal procedures and experienced a differentially larger shock with the advent of SARFAESI. This is in contrast to the experience of firms in states with high court-efficiency that were used to faster court procedures.

To observe the difference in response of high and low court efficient firms to the SARFAESI law, we exploit cross-sectional heterogeneity in our treatment and control groups using a difference-in-difference-differences (DIDID) specification. We estimate the following regression:

$$\begin{aligned}
Y_{ijst} = & \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Court-efficiency}_s + \beta_3 \text{Law}_t \text{ X Treatment}_i \\
& + \beta_4 \text{Law}_t \text{ X Court-efficiency}_s + \beta_5 \text{Court-efficiency}_s \text{ X Treatment}_i + \\
& \beta_6 \text{Court-efficiency}_s \text{ X Law}_t \text{ X Treatment}_i + \beta_7 X_{ijt} + \epsilon_{ijst}
\end{aligned} \tag{4}$$

where  $\text{court-efficiency}_s$  is an indicator variable that takes on a value of zero if a state is

considered to be highly efficient (if the Amirapu/Ahsan court efficiency measure is above the median) and one if it is less efficient (if the Amirapu/Ahsan court efficiency measure is below the median). The rest of the terms are similar to equation (3). The coefficient on the triple interaction terms,  $\beta_6$  captures the DIDID effect and is the parameter of interest.

## 5 Results

We begin by investigating the impact of SARFAESI on debt, employment, investment, and profits using the baseline difference-in-differences, equation (1) and report the results in tables 2 to 5. After discussing the main results, we discuss the heterogeneous effects of SARFAESI on of firms in the treated and control group located across different labor regimes and across regions with varying court efficiency using triple differences specification (DIDID) in tables 6 to 12. We control firm fixed effects in all regressions. For further robustness, we control for time-varying industry-specific shocks by controlling for 3-digit industry-year fixed effects. Note that industry-year fixed effects also controls for time-varying aggregate economic shocks and trends.

### 5.1 Debt

First, we consider whether the passage of SARFAESI in 2002, differentially affected firms in the treated and control groups with respect to the amount and source of short-term debt. A strengthening of creditor rights (SARFAESI) could have two opposing effects on the amount of secured debt demanded by firms. Since the value of collateral increased post-SARFAESI, secured creditors should have been willing to lend more. However, as discussed earlier, if firms experience a higher threat of liquidation after SARFEASI, they should contract out of secured debt and move towards unsecured/informal sources of debt. Both of these effects should be larger for firms with a higher fraction of collateralizable assets (treatment group). In Table 2, we look at the impact of SARFAESI on short-term debt variables. In columns 1 through 4, we look at the effect on total short-term debt. In Columns 1 (without controls) and 2 (with controls), we find that SARFAESI led to the overall amount of short-term debt for firms in the treated group to increase by 7.7%-16.9% as compared to firms in the control group. We also confirm this result by focusing on the ratio of short-term debt to total assets in columns 3 and 4. Next, we focus on the effects of SARFAESI on short-term trade credit

(amount owed to sundry creditors) in columns 5 through 8. We find a statistically significant increase in trade credit by 11.6%-20.3% in columns 5 and 6. Columns 7, and 8 show similar results for the ratio of short-term trade credit to total assets. These results show that as a result of SARFAESI, firms in the treated group differentially accessed more short-term trade credit than firms in the control group. Short-term trade credit is generally unsecured loans that firms owe to sundry creditors/suppliers. Finally, in columns 9 to 12, we focus on short-term formal credit. This includes over draft, cash credit, and other short-term loans from banks and financial institutions. We find in columns 9, and 10 a significant decline (22.5%-31.6%) in the amount of short-term formal credit taken by firms in the treated group as compared to the control group. Columns 11, and 12 corroborate these results. Taken together, we find that SARFAESI led to a move from formal secured debt towards unsecured trade credit by firms in the treated group relative to those in the control group. Note however, that total short-term debt increased for treated firms compared to firms in the control group. These results are consistent with Vig (2013), and provide evidence that the passage of SARFAESI led to an increase in the threat of liquidation faced by firms and caused them to substitute away from formal credit towards unsecured trade credit.

This SARFAESI-induced liquidation bias should have also impacted inputs of production, as firms generally need debt financing for investing in capital and machinery, but labor expenses can at least partially be met from sales revenue. We focus on employment, and investment in machinery next.

## 5.2 Employment

In Table 3, we focus on the impact of SARFAESI on firm-level employment. The **employment** variables include number of permanent, contract & total workers and we also look at wages per worker for permanent, contract & total workers. In columns 1 and 2 (with controls), we find that firms in the treated group hire 6.8%-7.9% more permanent workers than

firms in the control group post-SARFAESI as compared to before SARFAESI. In columns 3 and 4, we find similar increases (7.4%-8.2%) in the number of contract workers. These are workers (often temporary in nature) who are hired through outside contractors and are not on the payrolls of the firm. Columns 5 and 6, confirm that the total number of workers (the sum of permanent and contract) also increase for firms in the treated group as compared to the control group. In columns 7 through 12, we look at the impact of SARFAESI on the wages of permanent, contract, and total workers. Similar to the results on employment, we find that wages of workers increase substantially in firms in the treated groups relative to the control group.

### 5.3 Capital

In table 4, we look at the impact of SARFAESI on investment by firms. We investigate GVAFC (gross value of additions to fixed capital), ratio of GVAFC to total workers, GVAPM (gross value of additions to plant and machinery), and the ratio of GVAPM to total workers. In columns 1 and 2, we find that SARFAESI led to an 8.8%-18.1% reduction in GVAFC for treated firms relative to control firms. Columns 3 and 4 confirm these results for the ratio of GVAFC to total workers. In columns 5 and 6, we find that firms in the treated group reduced their GVAPM by 7%-14.5% relative to the control group, and this is corroborated by the results for the ratio of GVAPM to total workers in columns 8 and 9.

We interpret the results in tables 3 and 4, as a response to SARFAESI by firms in the treated group to hire more workers and reduce their fixed capital investment relative to the control group. This is consistent with firms in the treated group differentially experiencing a higher threat of liquidation post-SARFAESI and substituting away from formal secured credit to unsecured credit. In essence, after SARFAESI, the firms with the highest threat of liquidation substitute away from investing in capital towards hiring more workers.

## 5.4 Performance

Next, we study the impact of SARFAESI on the performance of firms in the treated and control groups in table 5. We look at gross value added (EBIT - earnings before interest and tax) and the ratio of EBIT to total assets. In columns 1 through 4, we find that firms in the treated group increased their EBIT by 10.3% to 11.4%, compared to the control group.

The improved performance of firms in the treated group could be related to the increased debt-discipline after the strengthening of creditor rights post-SARFAESI. Alternatively, a default on the trade-credit which is provided by the firm's suppliers may have immediate adverse repercussions for the firm. In countries with weak judicial enforcement trade creditors may develop superior mechanisms for debt enforcement (Fisman and Love (2003)). First, a firm's suppliers are likely possess better information regarding the profitability of the debtor firm (Mian and Smith (1992)). This allows them to better monitor the firm. Second, given that trade creditors are from a related industry, they have a natural advantage with regards to liquidating the firm's assets/inventory. Finally, defaulting on a supplier credit may entail huge reputational costs for the firm (Smith (1987), Ng, Smith, and Smith (1999)), and may have immediate spillover effects on the firm's relationship with both its other suppliers as well as its customers. Thus, a greater reliance on trade credit can potentially discipline the firm resulting in greater profitability. This is consistent with the evidence in Fisman and Love (2003), who find that, in countries with less developed financial markets, firms in industries that are more dependent on trade credit financing have higher growth rates.

## 5.5 Distributed Lag Model

In addition, we investigate the dynamic evolution of debt, employment and investment measures' response during the pre-law and post-law years in our sample period i.e. three years prior to the law until six years post the implementation of the law. Figure 1 graphs the entire paths of cumulative coefficients  $b_s$ ,  $s = 1999, 2000, \dots, 2007, 2008$ , and the dotted

lines depict the corresponding 95 percent confidence intervals. Standard errors of the cumulative effects are calculated based on the standard errors of the marginal coefficients in the regressions, which are clustered at the firm level. The results can be interpreted as an event study, with year 2002 being the implementation of the SARFAESI law. In essence, this graph plots the coefficients on the DID regressions that show the difference between the firms in the treated group and the control group over time. All these coefficients are relative to the year 2001, which therefore is omitted. As is visually clear from figure 1, before 2002 (passage of SARFAESI), there was no statistically significant difference between the treated and the control firms. This in essence confirms the parallel pre-treatment trends assumption needed for our DID estimates. Post-2002, we see a statistically significant difference between the treated and control firms. We show that trade credit, total short-term debt, and total number of workers increase after the passage of SARFAESI, whereas formal credit, GVAPM, and GVAFC significantly decline. This is the crux of our argument and confirms our DID estimates.

## 5.6 Interaction with Labor Law Regimes

In the baseline results presented so far, we empirically established that firms with a higher proportion of collateralizable assets (in the treated group) face a higher liquidation bias after the passage of SARFAESI and take on less formal credit and move towards unsecured trade credit, compared to the firms in the control group. We also showed that these treated firms also differentially hire more workers and invest in fixed capital lesser relative to firms in the control group. In the next set of results, we check for cross-sectional heterogeneity using DIDID specifications. Essentially, we look at the difference in outcomes (employment, wages, investment, and performance) for firms in the treated group located across different labor regimes (pro-worker, neutral, and pro-employer) compared to firms in the control group before and after the passage of SARFAESI.

We look at firms in the treated and control groups located across pro-worker, pro-employer, and neutral states. In these DIDID regression specifications, firms in neutral states are the omitted category. If post-SARFAESI firms in the treated group hire more workers than the control group, we would expect to see a differential response by these firms located across labor regimes in the hiring of different kinds of workers (permanent or contract workers). This is because in pro-worker states, hiring and firing of permanent workers is the hardest, followed by neutral, and pro-employer states. However, there are no such regulations on the hiring and firing of contract workers.

In table 6, columns 1 and 2, we find that as a result of SARFAESI, treated firms differentially hire more permanent workers than control firms in *pro-employer* states as compared to pro-worker states. In columns 3 and 4, we look at the differential response for firms (in treated and control groups) located across labor regimes in the hiring of contract workers. We find that treated firms in *pro-worker* states differentially hire more contract workers relative to pro-employer states. These results make intuitive sense because hiring and firing of permanent workers is easier in pro-employer states than in pro-worker states, whereas these rules do not apply to contract workers. In columns 5 and 6 we find some weak evidence that treated firms differentially hire more workers (permanent + contract) than control firms in pro-employer states as compared to pro-worker states. In columns 7 through 12, we focus on the wages paid to different types of workers. We find no differential effect for treated and control firms located across labor regimes for permanent or total workers. However, we find that treated firms (compared to control firms) in pro-worker states differentially pay higher wages to contract workers than in pro-employer states.

Next, we look at the differential effect on investment across labor regimes for firms in treated and control group in table 7. We find no evidence of differential effects on investment. Finally in table 8, we find that SARFAESI resulted in a differential increase in EBIT (columns 1 and 2), and ratio of EBIT to total assets (columns 3 and 4) for treated firms compared to control firms in pro-employer states relative to pro-worker states.



Taken together, we find that SARFAESI led to a heterogeneous impact on firms in the treated group compared to the firms in the control group located across pro-employer and pro-worker states. There was a differentially larger treatment effect on treated firms compared to control firms in the hiring of permanent workers and total workers in pro-employer states relative to pro-worker states. However, treated firms differentially hired more contract workers in pro-worker states. We find no evidence for differential adjustment on investment in capital but find a differentially larger EBIT, and EBIT/total assets between treated and control firms in pro-worker and pro-employer states post-SARFAESI as compared to before SARFAESI.

## 5.7 Interaction with Court Efficiency

We use two measures of pre-SARFAESI court efficiency: (i) the fraction of cases disposed off in less than one year in the Districts/Sessions court before 2002 (Amirapu measure) and (ii) the fraction of cases disposed off in less than one year in all courts before 2002 (Ahsan measure). The rationale for this analysis is that SARFAESI should have had a larger effect in states that were used to slower legal procedures (thus had lower court efficiency) before the passage of SARFAESI in 2002. In states where the courts were already efficient (in a relative sense) before 2002, SARFAESI should have had a smaller effect. Based on this intuition, we run triple-differences (DIDID) regression specifications, where we look at the differential effect on various outcomes of interest (employment, wages, investment in capital, and firm performance) between firms in the treated and control groups located across states with high (above median) and low (below median) court efficiency, after the passage of SARAFESI compared to the pre-SARFAESI era. In this sense, these DIDID regressions are a strict test for our initial DID findings that treated firms differentially hire more workers and invest lesser in capital compared to control firms after SARFAESI relative to before the law change.

In table 9, columns 1 through 4 (for both Amirapu and Ahsan ratios), we find that treated

firms differentially hire more permanent workers than control firms in states with low court efficiency compared to states with high court efficiency after the policy relative to before SARFAESI. We find no differential effect across these two categories of states for the hiring of contract workers (columns 5-8). In columns 9-12, we find that total workers differentially increase after SARFAESI (compared to before) for treated firms (relative to control firms) in low court-efficiency states relative to high court-efficiency states. This is consistent with our DID results, as SARFAESI should have had a bigger effect in low court-efficiency states. In table 9 columns 13-16 and in table 10 columns 1-8, we do not find evidence for differential effects in wages to workers.

In table 11, we look at the differential effect on investment in capital. In columns 1-8, we do not find any differential effect for  $\log(\text{GVAPM})$  or  $\log(\text{GVAFC})$ . However, when we look at the ratio of GVAPM to total workers and GVAFC to total workers, we do see heterogeneous effects. We find that, in columns 9 and 10 (for Amirapu measure), treated firms differentially invest lesser in fixed capital (as compared to control firms) in low court-efficiency states relative to high court efficiency states after SARFAESI compared to before SARFAESI. We find similar results in columns 13 and 14 (Amirapu measure) for ratio of GVAPM to total workers.

Finally in table 12, columns 1-8, we find that both  $\log(\text{EBIT})$  and the ratio of EBIT to total assets differentially increase for treated firms relative to control firms in low court-efficiency states compared to high court efficiency states after SARFAESI than before SARFAESI.

These results taken together provide strong support to our DID results because we find that in areas where SARFAESI had a bigger bite - we find that treated firms hired more workers, invested lesser in capital, and had higher EBIT.

## 6 Conclusion

There is a well-developed literature in finance and economics focusing on the financial contracting environment and firms' capital investments. More recently, researchers have begun to focus on the effects of financial constraints on firm-level employment decisions as well. However, relatively little is known about how creditor rights affect the firm's choice between capital and labor.

In this paper, we focus on a law change in India that strengthened creditor rights. In our context, the passage of SARFAESI Act in 2002, allowed secured creditor rights to seize and liquidate the assets of defaulting firms thereby bypassing the lengthy judicial process. Consistent with Vig (2013), we first confirm that the law change increased the threat of liquidation for firms with a higher proportion of collateralizable assets (treated firms) and they moved away from secured debt towards unsecured trade credit in the short term. In response to this increased liquidation bias, the treated firms hired more workers and reduced their investment in fixed capital, in essence substituting capital for labor in their production process.

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**TABLE 1: Summary Statistics**

This table reports the descriptive statistics of the various variables considered in the analysis.

	Observations	Mean	Standard Deviation
<b>Debt variables</b>			
STDebt	354,417	6.13E+07	1.86E+08
Log(STDebt)	354,417	14.63233	4.396809
STDebt/total assets	347,784	0.426463	0.341797
STtradecredit	354,417	2.31E+07	7.29E+07
Log(STtradecredit)	354,417	12.9465	5.429473
STtradecredit/total assets	347,784	0.208002	0.220942
STformalcredit	354,417	1.79E+07	6.26E+07
Log(STformalcredit)	354,417	8.61768	7.693994
STformalcredit/total assets	347,784	0.119846	0.165353
<b>Employment variables</b>			
Permanent workers	354,417	93.77016	422.8202
Log(Permanent workers)	354,417	3.125785	1.576977
Contract workers	354,417	31.28878	400.9959
Log(Contract workers)	354,417	0.985464	1.743595
Total workers	354,417	125.0589	609.5965
Log(Total workers)	354,417	3.523171	1.455504
Wage per worker - Permanent	354,417	37687.89	32506.35
Log(Wage per worker - Permanent)	354,417	9.772421	2.479804
Wage per worker - Contract	354,417	8423.778	16016.62
Log(Wage per worker - Contract)	354,417	2.806736	4.562987
Wage per worker	354,417	37109.48	27801.76
Log(Wage per worker)	354,417	10.30072	0.665521
<b>Capital variables</b>			
GVAFC	354,417	2.57E+07	5.53E+08
Log(GVAFC)	354,417	9.857561	6.597042
GVACF per worker	354,417	0.16085	2.746947
Log(GVAFC per worker)	354,417	0.079359	0.234185
GVAPM	354,417	1.50E+07	4.58E+08
Log(GVAPM)	354,417	7.596121	6.94196
GVAPM per worker	354,417	0.082522	1.156923
Log(GVAPM per worker)	354,417	0.044865	0.171132
<b>Performance variables</b>			
EBIT	354,417	3.69E+07	1.21E+08
EBIT/total assets	347,784	0.528757	1.150931
<b>Control variables</b>			
Profit	354,417	2.80E+07	1.01E+09
Total assets	347,838	2.47E+08	2.68E+09
Profit/total assets	347,784	0.08201	0.345915
Log(Total assets)	347,777	16.57137	2.253765

**TABLE 2: Impact of SARFAESI on Debt**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI law on the levels of short term and long term debt at a given establishment. Specifically, we estimate the following panel regression model:

$$Y_{ijt} = \nu_i + \delta_{jt} + \beta_0 Law_t + \beta_1 Treatment_i + \beta_2 Law_t \times Treatment_i + \beta_3 X_{ijt} + \epsilon_{ijt}$$

where  $Y_{ijt}$  refers to the levels of *Short term debt* in firm  $i$  in industry  $j$  in year  $t$  in columns (1) and (2), *Short term debt by total assets* in columns (3) and (4), *ST trade credit* in columns (5) and (6), *ST Trade Credit by total assets* in columns (7) and (8), *ST formal credit* in columns (9) and (10), *ST formal credit by total assets* in columns (11) and (12). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(STDebt)		STDebt/total assets		Log(STtradecredit)		STtradecredit/total assets	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	0.0776** (0.0388)	0.169*** (0.0327)	0.0199*** (0.00392)	0.0213*** (0.00391)	0.116** (0.0511)	0.203*** (0.0467)	0.0202*** (0.00248)	0.0211*** (0.00248)
N	212,080	206,926	206,931	206,926	212,080	206,926	206,931	206,926
$R^2$	0.896	0.920	0.800	0.800	0.851	0.867	0.793	0.794
	Log(STformalcredit)		STformalcredit/total assets					
	(9)	(10)	(11)	(12)				
Law X Treatment	-0.316*** (0.0829)	-0.225*** (0.0813)	-0.00457** (0.00197)	-0.00323* (0.00196)				
N	212,080	206,926	206,931	206,926				
$R^2$	0.786	0.796	0.761	0.763				
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



**TABLE 3: Impact of SARFAESI on Employment**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI law on the number of types of worker at a given establishment. Specifically, we estimate the following panel regression model:

$$Y_{ijt} = \nu_i + \delta_{jt} + \beta_0 Law_t + \beta_1 Treatment_i + \beta_2 Law_t \times Treatment_i + \beta_3 X_{ijt} + \epsilon_{ijt}$$

where  $Y_{ijt}$  refers to the number of *permanent* workers employed in firm  $i$  in industry  $j$  in year  $t$  in columns (1) and (2), *contract* workers in columns (3) and (4) and *total workers* in columns (5) and (6); wages of *permanent* workers employed in firm  $i$  in year  $t$  in columns (7) and (8), *contract* workers in columns (9) and (10) and *total* workers in columns (11) and (12). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

Panel A: Log(Number of Workers)						
	Permanent		Contract		Total	
	(1)	(2)	(3)	(4)	(5)	(6)
Law X Treatment	0.0687*** (0.0110)	0.0796*** (0.0108)	0.0746*** (0.0187)	0.0820*** (0.0190)	0.0798*** (0.00843)	0.0917*** (0.00796)
N	212,080	206,926	212,080	206,926	212,080	206,926
$R^2$	0.923	0.927	0.802	0.803	0.947	0.953
Panel B: Log(Wage per worker)						
	Permanent		Contract		Total	
	(7)	(8)	(9)	(10)	(11)	(12)
Law X Treatment	0.0599** (0.0243)	0.0701*** (0.0246)	0.137*** (0.0502)	0.149*** (0.0510)	0.0403*** (0.00513)	0.0443*** (0.00513)
N	212,080	206,926	212,080	206,926	212,080	206,926
$R^2$	0.816	0.818	0.774	0.775	0.898	0.900
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 4: Impact of SARFAESI on Capitalization by Firms**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on capital additions at a given establishment. Specifically, we estimate the following panel regression model:

$$Y_{ijt} = \nu_i + \delta_{jt} + \beta_0 Law_t + \beta_1 Treatment_i + \beta_2 Law_t \times Treatment_i + \beta_3 X_{ijt} + \epsilon_{ijt}$$

where  $Y_{ijt}$  refers to the levels of *GVAFC* in firm  $i$  in industry  $j$  in year  $t$  in columns (1) and (2), *GVAFC per worker* in columns (3) and (4), levels of *GVAPM* in firm  $i$  in year  $t$  in columns (5) and (6), *GVAPM per worker* in columns (7) and (8). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(GVAFC)		GVAFC/total workers		Log(GVAPM)		GVAPM/total workers	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	-0.181*** (0.0633)	-0.0887 (0.0615)	-0.0834*** (0.0194)	-0.0794*** (0.0197)	-0.145** (0.0709)	-0.0704 (0.0702)	-0.0579*** (0.0105)	-0.0561*** (0.0107)
N	212,080	206,926	212,080	206,926	212,080	206,926	212,080	206,926
$R^2$	0.806	0.813	0.808	0.808	0.770	0.775	0.371	0.371
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 5: Impact of SARFAESI on Firm Performance**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on cost of production and gross earnings at a given establishment. Specifically, we estimate the following panel regression model:

$$Y_{ijt} = \nu_i + \delta_{jt} + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Law}_t \times \text{Treatment}_i + \beta_3 X_{ijt} + \epsilon_{ijt}$$

where  $Y_{ijt}$  refers to the levels of *EBIT* in firm  $i$  in industry  $j$  in year  $t$  in columns (1) and (2) and *EBIT by total assets* in columns (3) and (4). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(EBIT)		EBIT/total assets	
	(1)	(2)	(3)	(4)
Law X Treatment	0.114*** (0.0138)	0.103*** (0.0108)	0.0588*** (0.0117)	0.00271 (0.00887)
N	201,124	196,152	206,931	206,926
$R^2$	0.939	0.961	0.875	0.928
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes

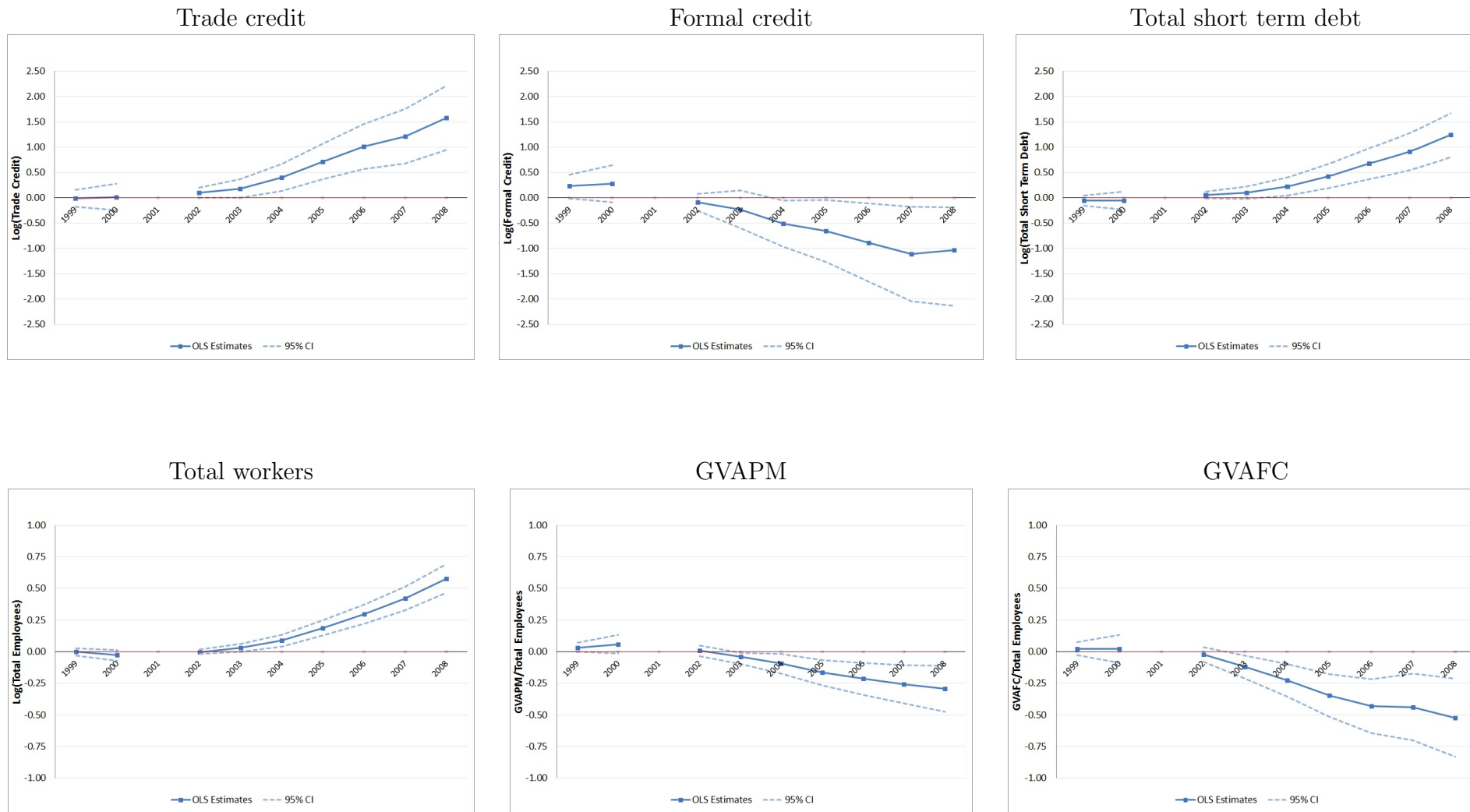


Figure 1: Dynamic Effect graphs

*Notes:* This figure plots the entire paths of cumulative coefficients  $b_s$ ,  $s = 1999, 2000, \dots, 2007, 2008$ , along with their corresponding 95 percent confidence intervals of trade credit, formal credit, short term debt, total workers, GVAFC and GVAPM.

**TABLE 6: Impact of SARFAESI: Triple interaction with State laws - Employment**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of state-laws. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Pro-worker}_s + \beta_3 \text{Pro-employer}_s + \beta_4 \text{Law}_t \times \text{Treatment}_i + \beta_5 \text{Pro-worker}_s \times \text{Treatment}_i + \beta_6 \text{Pro-employer}_s \times \text{Treatment}_i + \beta_7 \text{Pro-worker}_s \times \text{Law}_t + \beta_8 \text{Pro-employer}_s \times \text{Law}_t + \beta_9 \text{Pro-worker}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{10} \text{Pro-employer}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{11} X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the number of *permanent* workers employed in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1) and (2), *contract* workers in columns (3) and (4) and *total workers* in columns (5) and (6); wages of *permanent* workers employed in firm  $i$  in year  $t$  in columns (7) and (8), *contract* workers in columns (9) and (10) and *total* workers in columns (11) and (12). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Permanent Worker		Contract Worker		Total Worker	
	(1)	(2)	(3)	(4)	(5)	(6)
Law X Treatment	0.0531*** (0.0172)	0.0744*** (0.0168)	0.0169 (0.0345)	0.0285 (0.0346)	0.0642*** (0.0142)	0.0880*** (0.0134)
Proworker X Treatment	-0.0640 (0.0529)	-0.0367 (0.0506)	-0.370** (0.155)	-0.383** (0.157)	-0.163** (0.0660)	-0.139** (0.0650)
Proemployer X Treatment	-0.0896* (0.0488)	-0.0372 (0.0457)	0.0612 (0.0847)	0.0358 (0.0869)	-0.0372 (0.0355)	-0.0168 (0.0341)
Proworker X Law	-0.0310* (0.0176)	-0.0243 (0.0173)	-0.0225 (0.0336)	-0.0164 (0.0339)	-0.0563*** (0.0145)	-0.0465*** (0.0138)
Proemployer X Law	-0.0783*** (0.0179)	-0.0677*** (0.0179)	-0.00350 (0.0294)	0.00981 (0.0304)	-0.0544*** (0.0136)	-0.0388*** (0.0131)
Proworker X Law X Treatment	0.00465 (0.0269)	-0.00686 (0.0260)	0.144*** (0.0545)	0.134** (0.0546)	0.0367 (0.0230)	0.0214 (0.0216)
Proemployer X Law X Treatment	0.0946*** (0.0244)	0.0813*** (0.0242)	-0.00281 (0.0439)	-0.0127 (0.0446)	0.0373* (0.0191)	0.0201 (0.0182)
N	194,002	188,897	194,002	188,897	194,002	188,897
R <sup>2</sup>	0.926	0.930	0.803	0.804	0.948	0.954
	Wage of Permanent		Wage of Contract		Wage of Total	
	(7)	(8)	(9)	(10)	(11)	(12)
Law X Treatment	0.0714** (0.0364)	0.0841** (0.0365)	-0.0267 (0.0907)	-0.0160 (0.0911)	0.0441*** (0.00839)	0.0490*** (0.00837)
Proworker X Treatment	0.0856 (0.148)	0.0952 (0.151)	-0.837** (0.354)	-0.908** (0.356)	0.0204 (0.0374)	0.0310 (0.0380)
Proemployer X Treatment	-0.0380 (0.112)	0.115 (0.102)	0.124 (0.219)	-0.0117 (0.220)	0.00472 (0.0226)	0.0162 (0.0225)
Proworker X Law	0.0919** (0.0429)	0.0918** (0.0432)	-0.0212 (0.0928)	-0.0179 (0.0938)	0.000836 (0.00902)	0.00321 (0.00895)
Proemployer X Law	0.0179 (0.0373)	0.0194 (0.0382)	-0.00422 (0.0814)	0.00284 (0.0834)	0.0162** (0.00800)	0.0157* (0.00805)
Proworker X Law X Treatment	-0.0917 (0.0600)	-0.0948 (0.0601)	0.365** (0.143)	0.356** (0.144)	-0.00948 (0.0139)	-0.0140 (0.0138)
Proemployer X Law X Treatment	0.0623 (0.0507)	0.0584 (0.0515)	0.0137 (0.116)	0.0150 (0.118)	-0.0107 (0.0114)	-0.00996 (0.0114)
N	194,002	188,897	194,002	188,897	194,002	188,897
R <sup>2</sup>	0.823	0.825	0.777	0.778	0.901	0.903
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 7: Impact of SARFAESI: Triple interaction with State laws - Capital**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of state-laws. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Pro-worker}_s + \beta_3 \text{Pro-employer}_s + \beta_4 \text{Law}_t \times \text{Treatment}_i + \beta_5 \text{Pro-worker}_s \times \text{Treatment}_i + \beta_6 \text{Pro-employer}_s \times \text{Treatment}_i + \beta_7 \text{Pro-worker}_s \times \text{Law}_t + \beta_8 \text{Pro-employer}_s \times \text{Law}_t + \beta_9 \text{Pro-worker}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{10} \text{Pro-employer}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{11} X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the levels of *GVAFC* in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1) and (2), *GVAFC per worker* in columns (3) and (4), levels of *GVAPM* in firm  $i$  in year  $t$  in columns (5) and (6), *GVAPM per worker* in columns (7) and (8). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(GVAFC)		GVAFC/total workers		Log(GVAPM)		GVAPM/total workers	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	-0.116 (0.107)	0.0229 (0.104)	-0.0952* (0.0498)	-0.0877* (0.0498)	-0.197* (0.120)	-0.0675 (0.117)	-0.0846** (0.0332)	-0.0803** (0.0332)
Proworker X Treatment	0.336 (0.412)	0.551 (0.414)	0.260 (0.211)	0.267 (0.211)	1.214*** (0.467)	1.448*** (0.471)	0.190 (0.179)	0.195 (0.179)
Proemployer X Treatment	-0.150 (0.269)	-0.0689 (0.269)	0.139 (0.0923)	0.145 (0.0929)	-0.142 (0.303)	-0.0226 (0.310)	0.109* (0.0577)	0.114* (0.0581)
Proworker X Law	0.0956 (0.120)	0.135 (0.117)	0.0157*** (0.00392)	0.0192*** (0.00416)	0.221* (0.130)	0.273** (0.130)	0.00447*** (0.00146)	0.00641*** (0.00165)
Proemployer X Law	0.205* (0.108)	0.240** (0.107)	0.00673** (0.00325)	0.00902** (0.00358)	0.319*** (0.114)	0.352*** (0.116)	0.00143 (0.00124)	0.00261* (0.00149)
Proworker X Law X Treatment	-0.107 (0.171)	-0.186 (0.164)	0.00196 (0.0839)	-0.00126 (0.0841)	-0.158 (0.196)	-0.248 (0.191)	0.0103 (0.0491)	0.00865 (0.0492)
Proemployer X Law X Treatment	-0.151 (0.144)	-0.184 (0.141)	-0.0287 (0.0586)	-0.0324 (0.0590)	-0.0295 (0.158)	-0.0732 (0.157)	-0.00245 (0.0380)	-0.00480 (0.0383)
N	194,002	188,897	194,002	188,897	194,002	188,897	194,002	188,897
$R^2$	0.813	0.819	0.804	0.804	0.778	0.783	0.344	0.345
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 8: Impact of SARFAESI: Triple interaction with State laws - Performance**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of state-laws. Specifically, we estimate the following panel regression model:

$$\begin{aligned}
 Y_{ijst} = & \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Pro-worker}_s + \beta_3 \text{Pro-employer}_s \\
 & + \beta_4 \text{Law}_t \times \text{Treatment}_i + \beta_5 \text{Pro-worker}_s \times \text{Treatment}_i + \beta_6 \text{Pro-employer}_s \times \text{Treatment}_i + \\
 & \beta_7 \text{Pro-worker}_s \times \text{Law}_t + \beta_8 \text{Pro-employer}_s \times \text{Law}_t + \beta_9 \text{Pro-worker}_s \times \text{Law}_t \times \text{Treatment}_i \\
 & + \beta_{10} \text{Pro-employer}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_{11} X_{ijt} + \epsilon_{ijst}
 \end{aligned}$$

where  $Y_{ijst}$  refers to the levels of *EBIT* in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1) and (2) and *EBIT by total assets* in columns (3) and (4). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(EBIT)		EBIT/total assets	
	(1)	(2)	(3)	(4)
Law X Treatment	0.0238 (0.0240)	0.0476** (0.0188)	0.0329** (0.0141)	-0.0196* (0.0100)
Proworker X Treatment	-0.269*** (0.0883)	-0.190*** (0.0709)	-0.0674 (0.0480)	-0.0776* (0.0454)
Proemployer X Treatment	-0.130** (0.0571)	-0.0748* (0.0453)	-0.0476 (0.0695)	-0.0346 (0.0492)
Proworker X Law	-0.0130 (0.0242)	-0.0174 (0.0187)	0.00508 (0.0150)	-0.0251** (0.0113)
Proemployer X Law	-0.0264 (0.0210)	-0.0136 (0.0163)	-0.0135 (0.0153)	-0.0268** (0.0112)
Proworker X Law X Treatment	0.0962** (0.0405)	0.0522 (0.0318)	-0.0123 (0.0226)	-0.000400 (0.0171)
Proemployer X Law X Treatment	0.105*** (0.0306)	0.0628*** (0.0241)	0.0608** (0.0249)	0.0491*** (0.0186)
N	183,969	179,042	188,902	188,897
$R^2$	0.940	0.962	0.879	0.930
Firm FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes

**TABLE 9: Impact of SARFAESI: Triple interaction with Court efficiency - Employment**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of court efficiency. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Court-efficiency}_s + \beta_3 \text{Law}_t \times \text{Treatment}_i + \beta_4 \text{Law}_t \times \text{Court-efficiency}_s + \beta_5 \text{Court-efficiency}_s \times \text{Treatment}_i + \beta_6 \text{Court-efficiency}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_7 X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the log of the number of *permanent* workers employed in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1),(2),(3) and (4), *contract* workers in columns (5),(6),(7) and (8), *total workers* in columns (9), (10),(11) and (12); log of wages of *permanent* workers employed in firm  $i$  in year  $t$  in columns (13),(14),(15) and (16). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Permanent Workers				Contract Workers			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	0.0380** (0.0147)	0.0540*** (0.0145)	0.0134 (0.0251)	0.0321 (0.0245)	0.0839*** (0.0247)	0.0990*** (0.0253)	0.0647 (0.0420)	0.0828** (0.0420)
Law X Court efficiency	-0.0512*** (0.0146)	-0.0417*** (0.0144)	-0.0656*** (0.0195)	-0.0582*** (0.0192)	0.0566** (0.0236)	0.0637*** (0.0241)	0.0421 (0.0288)	0.0546* (0.0291)
Court efficiency X Treatment	-0.139 (0.108)	-0.115 (0.104)			0.262 (0.173)	0.276 (0.175)		
Court efficiency X Law X Treatment	0.0617*** (0.0211)	0.0481** (0.0207)	0.0680** (0.0270)	0.0568** (0.0263)	-1.40e-05 (0.0365)	-0.0129 (0.0369)	0.0219 (0.0458)	0.0100 (0.0458)
N	204,671	199,637	204,671	199,637	204,671	199,637	204,671	199,637
R <sup>2</sup>	0.923	0.927	0.923	0.927	0.804	0.805	0.804	0.805
	Total Workers				Wage-Permanent			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Law X Treatment	0.0588*** (0.0122)	0.0774*** (0.0116)	0.0350* (0.0198)	0.0578*** (0.0187)	0.0567* (0.0318)	0.0687** (0.0325)	0.0826 (0.0601)	0.0948 (0.0600)
Law X Court efficiency	-0.0387*** (0.0115)	-0.0295*** (0.0109)	-0.0457*** (0.0147)	-0.0359*** (0.0139)	0.0279 (0.0323)	0.0350 (0.0327)	0.00864 (0.0467)	0.0134 (0.0465)
Court efficiency X Treatment	0.0625 (0.0725)	0.0829 (0.0678)			-0.259 (0.256)	-0.233 (0.257)		
Court efficiency X Law X Treatment	0.0455*** (0.0166)	0.0307** (0.0156)	0.0582*** (0.0215)	0.0445** (0.0203)	-0.00710 (0.0455)	-0.0194 (0.0461)	-0.0386 (0.0635)	-0.0465 (0.0634)
N	204,671	199,637	204,671	199,637	204,671	199,637	204,671	199,637
R <sup>2</sup>	0.948	0.953	0.948	0.953	0.819	0.821	0.819	0.821
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes



**TABLE 10: Impact of SARFAESI: Triple interaction with Court efficiency - Employment contd.**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of court efficiency. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Court-efficiency}_s + \beta_3 \text{Law}_t \times \text{Treatment}_i + \beta_4 \text{Law}_t \times \text{Court-efficiency}_s + \beta_5 \text{Court-efficiency}_s \times \text{Treatment}_i + \beta_6 \text{Court-efficiency}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_7 X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the log of wages of *contract* workers employed in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1),(2),(3) and (4) and *total* workers employed in firm  $i$  in year  $t$  in columns (5),(6),(7) and (8). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Wage-Contract				Wage-Total			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	0.159** (0.0679)	0.187*** (0.0696)	0.0729 (0.113)	0.111 (0.113)	0.0318*** (0.00728)	0.0382*** (0.00732)	0.0356*** (0.0114)	0.0418*** (0.0113)
Law X Court efficiency	0.217*** (0.0668)	0.229*** (0.0682)	0.149* (0.0832)	0.182** (0.0840)	0.0156** (0.00683)	0.0180*** (0.00682)	0.0218** (0.00862)	0.0235*** (0.00853)
Court efficiency X Treatment	0.815* (0.815)	0.848** (0.848)			0.0453 (0.0453)	0.0531 (0.0531)		
Court efficiency X Law X Treatment	-0.00475 (0.0985)	-0.0290 (0.0999)	0.0949 (0.123)	0.0663 (0.124)	0.00984 (0.00997)	0.00464 (0.00997)	0.000467 (0.0125)	-0.00256 (0.0124)
N	204,671	199,637	204,671	199,637	204,671	199,637	204,671	199,637
R <sup>2</sup>	0.776	0.777	0.776	0.777	0.900	0.902	0.900	0.902
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 11: Impact of SARFAESI: Triple interaction with Court efficiency - Capital**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of court efficiency. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Court-efficiency}_s + \beta_3 \text{Law}_t \times \text{Treatment}_i + \beta_4 \text{Law}_t \times \text{Court-efficiency}_s + \beta_5 \text{Court-efficiency}_s \times \text{Treatment}_i + \beta_6 \text{Court-efficiency}_s \times \text{Law}_t \times \text{Treatment}_i + \beta_7 X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the log of the levels of *GVAFC* in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1),(2),(3) and (4), *GVAPM* in columns (5),(6), (7) and (8), *GVAFC per worker* in firm  $i$  in year  $t$  in columns (9),(10),(11) and (12), *GVAPM per worker* in columns (13),(14), (15) and (16). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(GVAFC)				Log(GVAPM)			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	-0.287*** (0.0924)	-0.162* (0.0898)	-0.280* (0.146)	-0.151 (0.142)	-0.146 (0.101)	-0.0297 (0.100)	-0.187 (0.168)	-0.0662 (0.164)
Law X Court efficiency	0.0106 (0.0900)	0.0443 (0.0891)	-0.0236 (0.113)	0.0179 (0.112)	0.0270 (0.0970)	0.0743 (0.0981)	0.126 (0.127)	0.168 (0.126)
Court efficiency X Treatment	0.123 (0.731)	0.276 (0.717)			-0.395 (0.843)	-0.248 (0.838)		
Court efficiency X Law X Treatment	0.189 (0.124)	0.112 (0.120)	0.104 (0.160)	0.0531 (0.155)	-0.00225 (0.138)	-0.0925 (0.137)	0.0403 (0.181)	-0.0213 (0.178)
N	204,671	199,637	204,671	199,637	204,671	199,637	204,671	199,637
R <sup>2</sup>	0.809	0.815	0.809	0.815	0.773	0.779	0.773	0.779
	GVAFC/total workers				GVAPM/total workers			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Law X Treatment	-0.0336* (0.0189)	-0.0277 (0.0194)	-0.0797* (0.0456)	-0.0742 (0.0457)	-0.0295** (0.0131)	-0.0269** (0.0134)	-0.0667** (0.0325)	-0.0638** (0.0324)
Law X Court efficiency	0.00934* (0.00559)	0.0110* (0.00594)	-0.00589 (0.00844)	-0.00339 (0.00870)	0.00269 (0.00313)	0.00341 (0.00332)	-0.00579 (0.00581)	-0.00400 (0.00590)
Court efficiency X Treatment	1.179 (1.026)	1.193 (1.040)			0.741 (0.681)	0.749 (0.690)		
Court efficiency X Law X Treatment	-0.121** (0.0472)	-0.125*** (0.0477)	-0.00855 (0.0533)	-0.0104 (0.0536)	-0.0696** (0.0278)	-0.0712** (0.0281)	0.00846 (0.0362)	0.00690 (0.0361)
N	204,671	199,637	204,671	199,637	204,671	199,637	204,671	199,637
R <sup>2</sup>	0.863	0.863	0.863	0.863	0.373	0.373	0.372	0.373
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

**TABLE 12: Impact of SARFAESI: Triple interaction with Court efficiency - Performance**

This table reports the estimates from a panel regression model examining the impact of the implementation of SARFAESI on firms along with the interaction of court efficiency. Specifically, we estimate the following panel regression model:

$$Y_{ijst} = \nu_i + \delta_j t + \beta_0 \text{Law}_t + \beta_1 \text{Treatment}_i + \beta_2 \text{Court-efficiency}_s + \beta_3 \text{Law}_t \text{ X Treatment}_i + \beta_4 \text{Law}_t \text{ X Court-efficiency}_s + \beta_5 \text{Court-efficiency}_s \text{ X Treatment}_i + \beta_6 \text{Court-efficiency}_s \text{ X Law}_t \text{ X Treatment}_i + \beta_7 X_{ijt} + \epsilon_{ijst}$$

where  $Y_{ijst}$  refers to the levels of *EBIT* in firm  $i$  in industry  $j$  in state  $s$  in year  $t$  in columns (1),(2),(3) and (4), *EBIT by total assets* in columns (5),(6),(7) and (8). The data spans the period 1999-2008 and consists of all factory firms in the ASI census survey. Firm-clustered robust standard errors are reported in parentheses. \*, \*\*, and \*\*\* indicate significance better than 10%, 5%, and 1%, respectively.

	Log(EBIT)				EBIT/total assets			
	Amirapu		Ahsan		Amirapu		Ahsan	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Law X Treatment	0.0809*** (0.0195)	0.0992*** (0.0153)	0.0144 (0.0335)	0.0700*** (0.0258)	0.0496*** (0.0175)	0.00226 (0.0133)	-0.0230 (0.0209)	-0.0234 (0.0159)
Law X Court efficiency	-0.00272 (0.0183)	0.0158 (0.0139)	0.00736 (0.0238)	0.0248 (0.0178)	0.00967 (0.0129)	0.00477 (0.00959)	-0.0267** (0.0135)	-0.0174 (0.0107)
Court efficiency X Treatment	-0.0132 (0.203)	-0.0328 (0.175)			0.235* (0.142)	0.106 (0.0868)		
Court efficiency X Law X Treatment	0.0662** (0.0266)	0.0109 (0.0208)	0.118*** (0.0361)	0.0396 (0.0280)	0.0120 (0.0221)	0.00327 (0.0168)	0.0958*** (0.0246)	0.0336* (0.0188)
N	194,185	189,325	194,185	189,325	199,642	199,637	199,642	199,637
$R^2$	0.940	0.962	0.940	0.962	0.878	0.929	0.878	0.929
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Industry-year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes