Does Court Speed Shape Economic Activity? Evidence from a Court Reform in India

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This article investigates the impact of quick courts on firms' contracting behavior and economic performance. In 2002, the Code of Civil Procedure Amendment Act was enacted in India to facilitate speedy disposal of civil suits. Some State High Courts had already enacted some of the amendments contained in this reform a long time ago. This spatial variation in the reform's implementation is used to identify the effect of court speed on firms' behavior. Using data on small firms, I find that the reform led to fewer breaches of contract, encouraged investment, and facilitated access to finance. (*JEL K0, K12, K40, K42,O12, O17, L14, D23, C72*)

1. Introduction

Slow courts[1] may significantly influence the contracting behavior of firms. First, incentives to cooperate in a contractual agreement may weaken because slower courts make the discounted value of punishment from deviation lower. Second, incentives to invest might decrease if there is a possibility of postcontractual opportunistic behavior by a firm's partner once the investment costs are sunk (Klein et al. 1978). Third, slow enforcement increases the opportunistic behavior of borrowers; creditors might respond to this strategic behavior by reducing the availability of credit (Jappelli et al. 2005). However, individuals often find ways of altering the terms of their formal and informal contracts to avoid the adverse effects of weak contracting institutions (Acemoglu and Johnson 2005). Thus, the magnitude of the impact of slow courts on economic outcomes is an empirical matter.

1. In India, it takes an average of 2 years to dispose of any case (author's calculation). Data from 2000 indicated that there were 3.1 million cases pending in High Courts and 20 million in subordinate courts. Extreme examples of judicial slowness refer to cases taking 47 years to be resolved by which time the plaintiff had died.

This article provides new evidence on the impact of slow courts on economic performance using a unique data set assembled after a major Indian court reform implemented in 2002. The existing literature does not provide a clear assessment of the empirical effects of slow courts on economic activity because it is hard to find a source of variation in court speed that would help to identify the impact on firms' behavior. The Indian court reform studied in this article (subsequently called the 2002 Amendment Act) seeks to simplify and shorten the procedural handling of court cases as specified in the Code of Civil Procedure. It is composed of 88 Code amendments all of which have been carefully examined and classified in this article. Several amendments had previously been implemented at the state level due to the states' rights to locally amend the Code of Civil Procedure. Thus, cross-state variation in reform implementation can be used to isolate the impact of the courts on economic activity. The cross-state variation in reform implementation is related to the contracting behavior of more than 627,000 small nonagricultural firms measured in detail in four rounds of India's National Sample Survey (2000, 2001, 2002, and 2005). A difference-in-differences approach allows a comparison of outcomes of both courts and firms prior to and after 2002 in states which have passed several of the 2002 Act's amendments, and states which have not. The amendments of the 2002 Amendment Act intending to simplify procedures reduced the occurrence of breach of contract, increased investment, and reduced shortage of capital. These results are not driven by preexisting differential trends.

Much of the literature attempting to measure the impact of courts on economic performance exploits spatial variation in the quality of a particular institution in order to identify its effect on economic activity. Jappelli et al. (2005) presented a model of the effect of judicial enforcement on credit markets and then test it using panel data from Italian provinces. The authors found, among other things, that the duration of civil trials (measured by actual duration in the past), as well as the stock of pending civil trials per inhabitant, were negatively correlated with loans granted to domestic companies and positively correlated with measures of credit constraints. Cristini and Powell (2001) related differences in judicial efficiency across Argentinean provinces to the size of provincial credit markets. Castelar and Cabral (2001) performed a similar analysis in Brazil. Safavian and Sharma (2007) interacted country-level court efficiency and changes in legal protections of creditors and showed that they are strong complements. However, it may be, for example, that provinces or states having generally better policies are also more likely to have efficient judiciaries. If this is the case, judicial efficiency merely reflects better economic policies and in itself may be insignificant in driving better economic outcomes.

In addressing these endogeneity concerns, Djankov et al. (2003) have made an important contribution to the study of courts. They measured judicial formalism in 109 countries around the world. They found judicial formalism greater in countries with civil, rather than common, law systems and that it is associated with a lack of consistency, honesty, and fairness in judicial decisions. Endogeneity concerns were addressed by using legal origin as an

instrument for judicial formalism. Acemoglu and Johnson (2005) used the same data to relate judicial efficiency to economic outcomes using legal origin as an instrumental variable. They found that contracting institutions had no impact on economic performance once property rights institutions are controlled for. This article differs from Acemoglu and Johnson (2005) as it uses a within-country analysis of India. By limiting myself to one country and conducting the analysis at the firm level, I am able to control for a range of factors and influences that cannot be as convincingly controlled for in cross-country data. This allows me to identify the effect of court speed independently from that of laws, legal origins, and other country-wide characteristics.

The methodology of this article is similar to the evaluation of debt recovery tribunals carried out by Visaria (2009). A difference-in-differences strategy based on two sources of variation (the monetary threshold for claims to be eligible for these tribunals and the staggered introduction of tribunals across Indian states) is used to show that the establishment of tribunals reduces delinquency in loan repayment by between 3% and 11%. This article differs from Visaria (2009) in two ways. First, I explicitly show the link between the reform and the increased court speed. Second, I relate the reform not only to credit access but also to other outcomes such as the occurrence of contract breaches and investment decisions.

The main findings of this article show that one amendment of the 2002 Amendment Act, which simplified or shortened the procedural handling of court cases, decreased the number of cases pending per judge by 676 in the Lower Courts. This decrease represents half of a workload for a judge and indicates that the reform was successful in reducing case backlog. An additional amendment decreased the probability of experiencing a breach of contract by 1.4% points, increased the probability of investing in plant and machinery assets (as well as transport, equipment, tools, and other fixed assets) by 0.3% points, and decreased the probability to experience shortage of capital by 4% points.

The structure of this article is as follows: Section 2 explores the channels through which court speed affects firms' economic performance. Section 3 describes the 2002 Amendment Act, and Section 4 details the article's identification strategy and the empirical model used. Section 5 provides background on the data used, whereas Section 6 exposes results pertaining to court speed and firms' behavior. Section 7 concludes.

2. Literature Survey

In this section, the theoretical literature on the potential impact of slow courts on firms' contracting behavior is briefly summarized. Three possible mechanisms are described: breaches of contract, investment decisions, and access to credit markets. As India's National Sample Surveys contains detailed firm-level information on these three mechanisms, their empirical relevance will be tested in the empirical section.

2.1 Breaches of Contract

The ideal court system instantly resolves a dispute among two neighbors by a third. In this system, deferred exchanges are made possible, as the rapid enforceability of the contract through the court system encourages cooperation among people. The probability of harsh and immediate punishment in monetary or nonmonetary terms heavily dissuades opportunistic agents to default ex post on previous agreements and, in this way, the court may deter fraud that might be economically more attractive in the short run.

Courts are not the only means by which to enforce contracts. The fear of damaging one's reputation may induce parties to adhere to contracts (Klein and Leffler 1981; Bernstein 1992; Greif 1993). However, this is only true for long-term relationships or in small groups (Dixit 2003). Reputation mechanisms are less important in short-term relationships (or more generally, relationships with an endgame), and in situations with a large pool of partners to choose from. In these cases, the ideal court system still represents the best enforcement mechanism.

Yet courts everywhere deviate from this ideal. Evidence needs to be heard, adjournments may be granted, written records might be kept, claims and counterclaims must be interpreted in the context of existing precedents and laws, and appeals may be allowed. The procedures that dictate the functioning of courts stem from a desire for uniformity of judgments across all members of a society and to curb elite capture. However, a consequence of the uncontrolled procedural proliferation is considerable delay compared to the ideal court system.[2] Slow courts lower the discounted value of punishment, thereby weakening incentives to cooperate. In extreme cases of infinitely slow courts, a typical prisoner's dilemma arises in which no contract is even signed in the first place.

The simple above comparison between the ideal instantaneous court and slower courts shows that quicker courts are associated with fewer breaches of contract. Moreover, as described in Section 2.2, slow courts may have an impact on investment.

2.2 Investment

Consider the case in which a firm undertakes an investment in order to supply another with a particular asset. As Klein et al. (1978) have emphasized, the possibility of postcontractual opportunistic behavior arises. In order to induce a supplier to invest, a firm can either write a long-term contract whose terms are favorable to the supplier or guarantee exclusivity rights. However, once investment costs are sunk, there is an immediate incentive for the firm to renege on its contract and capture the suppliers' rents. Alternatively, if the search costs for finding new suppliers are high, there is an immediate incentive for the supplier

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2. For example, in India prior to 2002, an unlimited number of adjournments could be granted to litigants. Although clearly designed to give sufficient time to litigants, this could be abused by defendants to indefinitely delay proceedings. As described below, this option was modified by the 2002 Amendment Act.

to use its monopoly power to impose higher prices. These frictions may reduce investment incentives; in such cases, vertical integration will supersede market systems. This might be impossible with imperfect credit markets. Another way of limiting postcontractual opportunistic behavior is through the existence of the ideal instantaneous ideal court system described above. If deviations from a preexisting arrangement are swiftly punished, agents would not experience the hold-up problem. On the contrary, the low discounted value of a remote punishment given by a slow court system does not act as a deterrent against appropriation.

2.3 Access to Credit Markets

It is also possible that slow court systems have an impact on firms' debt contracts. As Jappelli et al. (2005) explain:

> The key function of courts in credit relationships is to force solvent borrowers to repay when they fail to do so spontaneously. By the same token, poor judicial enforcement increases the opportunistic behavior of borrowers: anticipating that creditors will not be able to recover their loans easily and cheaply via courts, borrowers will be more tempted to default. Creditors respond to this strategic behavior of borrowers by reducing the availability of credit.

The ideal court system, by imposing higher discounted values of fines paid by borrowers, fosters credit supply from formal financial institutions or, more generally, from any anonymous lender. In contrast, slow court systems make it difficult for anonymous individuals to lend. In this case, in order to get access to loans, borrowers would turn to relatives, friends, or moneylenders, which would reduce the information asymmetry between the two parties and allow the lenders to better monitor borrowers' actions.

To conclude the literature survey of this article, one expects slow court systems, as opposed to the ideal instantaneous court, to be associated with more breaches of contract, less investments, and more difficulty accessing credit markets. Two comments may be made at this point. First, it is not obvious that quick courts are high quality courts. A negative correlation between speed and good judgment could attenuate the mechanisms presented in this section. Second, there may be interdependencies between the three decisions. For example, firms may access financial markets to make investments, as they know they will suffer less from breaches of contract. The empirical part of the article addresses this concern by looking at the impact of courts on the three outcomes of interest separately as well as jointly.

3. Overview of the 2002 Amendment Act

This article aims to relate court speed to firms' behavior. One cannot simply relate the speed of courts to firms' performance without considering the risk that state heterogeneity might drive the results more than court speed per se.

The 2002 Amendment Act will be used as a source of variation in the speed of courts. I will now describe this reform and then explain how spatial variation in its cross-state implementation may be used to identify the effect of court speed on economic activity.

India's judicial institutions are identical across states. They operate according to three levels: a single Supreme Court at the federal level; High Courts at the state level; and, at lower levels, district judges for civil cases and sessions judges for criminal cases. The Code of Civil Procedure regulates the functioning of civil courts by laying down the rules according to which they are to function. These rules may be summarized as follows: procedures for filing civil cases, court powers to pass various orders, court fees and stamps involved in filing cases, parties' rights to cases (namely plaintiff and defendant), the jurisdiction and parameters within which civil courts must function and specific rules for case proceedings of a case, right of appeal, review or reference. Data from 2000 on cases pending indicated that there were 3.1 million cases pending in 21 High Courts and 20 million in subordinate courts.[3] Examples of courts' slowness are striking:

> the highest court in the country, the Supreme Court, took 11 years to acquit the headmaster of a school on the charge of taking a bribe for signing the salary arrears bill of his school. In another case of judicial delay, the victim was former Union Law Minister, Dr. B.R. Ambedkar. The judgement came in his lifetime but it took 47 years for the Maharashtra government to execute the decree passed in his favour against illegal encroachment of his land by Pakistani refugees. By then he was dead.[4]

To remedy this situation, the Parliament of India enacted the 2002 Amendment Act to the Civil procedure Code of 1908 in order to make litigation more efficient. The reform can be summarized in five main points. First, it encourages out-of-court dispute settlement. According to Section 89, a court may, by itself, proactively refer disputes to alternative dispute resolution methods (arbitration, conciliation, Lok Adalats, mediation) when elements of a settlement, acceptable to both parties in the dispute, appear to exist. Second, judicial discretion in allowing unnecessary delays is restricted. The Amendment Act imposes mandatory time limits on plaintiffs and defendants at each stage of the litigation. An example may be found in Section 27: "Summons to defendants. Where a suit has been duly instituted, a summons may be issued to the defendant to appear and answer the claim and may be served in manner prescribed *on such day not beyond 30 days from the date of the institution of the suit*." The part in italics was added by the 2002 Amendment Act. Third, the 2002

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3. Law's Delays: Arrears in Courts, 85th Report, Department-related parliamentary standing committee on Home affairs, Parliament of India, Rajya Sabha. http://rajyasabha.nic.in/book2 /reports/home_aff/85threport%20.htm.

4. Krishnamoorty, Dasu, *Judicial Delays*, Indolink, editorial analysis, 2003.

Amendment Act reduces frivolous litigation in order to increase court speed. Order 16, Rule 16, Subrule 4 are inserted: "Verification of pleadings.-(4) The person verifying the pleadings shall also furnish an affidavit in support of his pleadings." Fourth, order 26, Rule 4A states that commissions, legal officials sent by the court to collect evidence and declarations in the field, may be sent to interrogate any person within the local limits of a court's jurisdiction. Prior to the amendment, commissions were reserved for persons outside the state or not physically able to attend the court. Fifth, adjournments are reduced. Order 17, Rules 1 and 2 state that the court shall not grant more than three adjournments to either party in the suit. Adjournments shall only be granted once the party requesting the delay shows sufficient cause. In each adjournment, the court shall make an order specifying the costs assumed by the other party as a result of the adjournment. The court may also award higher costs if it deems fit.

The 2002 Amendment Act contains 88 amendments. I examined each one and found 57 amendments that are likely to influence court speed. I coded an amendment as +1 if it is thought to increase court speed and as −1 if it is thought to reduce court speed. This gave me a figure of +38, which allowed me to conclude that the Act is likely to increase court speed overall.

Figure 1 shows the number of cases pending per judge in the lower courts between 2000 and 2006. It shows a sharp reduction in the number of cases pending after 2002. However, this analysis cannot disentangle the Act's effects from other changes having occurred in 2002. I will now describe a particular feature of this reform, which implies that there was some spatial variation in its implementation.
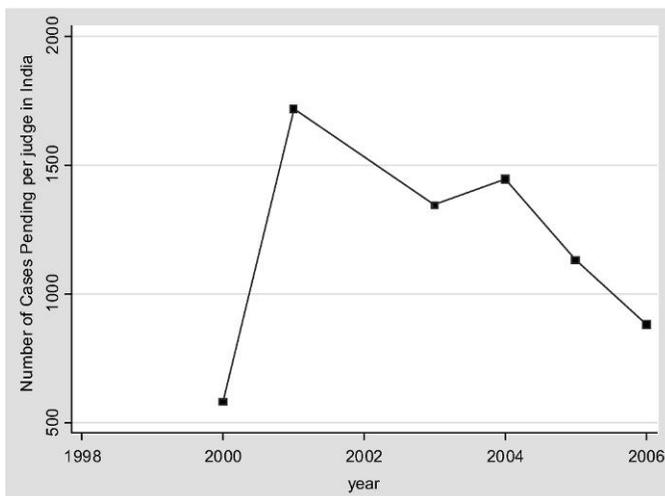
Figure 1. Number of Cases Pending per Judge in Lower Courts in India

4. Identification Strategy

4.1 Description

The article's identification strategy relies on the fact that several of the 88 amendments of the 2002 Amendment Act had been previously enacted in a number of states. Under Section 122 of the Code of Civil Procedure, High Courts have the power to amend the procedures laid down in Code orders. If a given state had already enacted a particular amendment later contained in the 2002 Amendment Act, then this particular amendment must have had no effect in that state in 2002 compared to the rest of the country. I therefore read every order of the Code of Civil Procedure, and verified whether it had been amended by the 2002 Amendment Act, coded its likely impact on court speed (+1 if thought to increase speed and −1 if thought to reduce speed), and verified whether any of India's states had previously passed the same amendment. The total impact of the 2002 Amendment Act for a particular state is decreased by one if that state had already passed an amendment that increases court speed prior to 2002.[5] A concrete example can be found in Order 26, Rule 4A. Rule 4A was added by the 2002 Amendment Act:

> Commission for examination of any person resident within the local limits of the jurisdiction of the court.-Notwithstanding anything contained in these rules, any court, may in the interest of justice or for the expeditious disposal of the case or for any other reason, issue commission in any suit for the examination, on interrogatories or otherwise, of any person resident within the local limits of its jurisdiction, and the evidence so recorded shall be read in evidence."

The same amendment was passed in the state of Rajasthan in 1973, allowing commissions to be in use for any person resident within the local limits of the court's jurisdiction from 1973 onward. This amendment of the 2002 Amendment Act will have no impact in Rajasthan in 2002 as compared to other Indian states.

Other amendments are less straightforward. A peculiar example is Order 20, Rule 1, which describes when a judgment is to be pronounced. A court must pronounce judgment within 15 days from the date on which the case hearing was concluded or 30 days in exceptional circumstances. The 2002 Amendment Act changed these two numbers to 30 and 60, respectively. This amendment is contrary to the objective of facilitating swift disposal of cases and, thus, is coded as a −1. However, the states of Tamil Nadu, Pondicherry, and Andhra Pradesh passed an amendment in 1930 specifying that no time limits are to be imposed on courts. As the 2002 Amendment Act overrules all previous legislation, the impact in these three states will be positive as time limits are now imposed, whereas the impact of the reform in other states will be negative

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5. The complete example for the state of Uttar Pradesh is shown in Appendix.

as longer time limits are imposed. Therefore, I placed a +2 for these three states in order to specify that the overall impact on them should be positive $(-1 + 2)$ as opposed to all others which received a -1.

Another example is Order 58, Rule 1. This rule specifies the duration of civil prison detention for a judgment-debtor, that is, a person who had to, but did not, satisfy the decree against him. The changes resulting from the 2002 Amendment Act are noted in parentheses and were made to adjust for the depreciation of the Rupee. The judgment-debtor is to be detained for no more than 3 months if the decree requires him or her to pay a sum of money exceeding 1000 Rs. (5000). He or she shall be detained for no more than 6 weeks if the decree requires him or her to pay a sum of money between 500 (2000) and 1000 Rs. (5000). Thus, after the 2002 Amendment Act, some judgment-debtors who would have gone to civil prison under the previous code were no longer required to do so. This encourages judgment-debtors to delay payment of decrees since they will not be sent to prison for doing so; therefore, I coded this amendment as a -1. However, the state of West Bengal enacted an amendment in 1967 that was harsher: a judgment-debtor is to be detained for 6 months if his or her payment decree exceeds the sum of 50 Rs. and 6 weeks in other cases. As the 2002 Amendment Act overrules previous amendments, its impact in West Bengal will be even more negative than in the rest of the country, which had softer laws. I therefore added a -1 to West Bengal compared to the other states.

These three examples provide a sense of the spatial variation in the impact of the 2002 Amendment Act. Figure 2 shows the cumulative impact of the amendments already adopted by each State prior to the 2002 Amendment Act. An amendment was coded as +1 (-1) if it increases (decreases) court speed. Figure 3 illustrates the identification strategy by showing the same graph for hypothetical States 1 and 2. State 1 had previously implemented some of the amendments that are part of the 2002 Amendment Act as opposed to State 2 that had not implemented any prior amendments. This figure shows that, therefore, the impact of the 2002 Amendment Act will be lower for State 1 than for State 2. Figure 4 depicts the hypothetical evolution of a particular outcome of interest (e.g., the number of cases pending per judge) for States 1 and 2. Outcomes are not expected to be similar before the reform. Indeed, State 1 enacted amendments likely to have increased court speed. Though State 1 may be systematically different from State 2, the 2002 Amendment Act overrules past litigation, so that the reform should equalize their outcomes. It is therefore possible to isolate the causal impact of the reform by comparing outcomes for States 1 and 2 before and after the reform. The systematic difference between both states is taken into account if the outcome of State 1 is differenced before and after the reform. It is also possible to disentangle the effect of the reform from any coincidental change by differencing between States 1 and 2 after the reform (and before) as both evolve in the same macroeconomic context.

Figure 5 shows the time distribution of the previously enacted amendments. One may note that the previously enacted amendments were, on average, passed in 1969 (standard error of 17 years), and that the last state amendment was
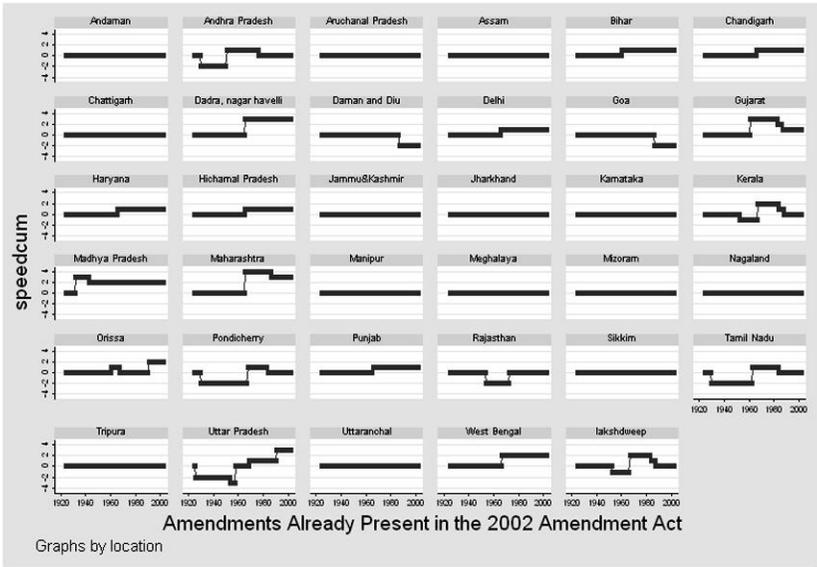
Figure 2. Earlier Adoption of Amendments that Appeared in the 2002 Amendment Act .

implemented in 1994. Thus, these amendments can be considered as predetermined. In other words, the previously enacted amendments were potentially responsive to economic and political conditions of the time, but have no influence on the evolution of court speed in 2002, with the exception of attenuating the impact of the 2002 Amendment Act.

Figure 3.   Illustration of the Identification Strategy

Outcome for state 1 and 2

Figure 4. Outcome for State 1 and 2

4.2 Empirical Model

To explore the impact of the judiciary on firms' behavior, I use four waves of India's National Sample Survey (2000, 2001, 2002, and 2005), focusing on small nonagricultural firms. Regressions of the following form are then performed:

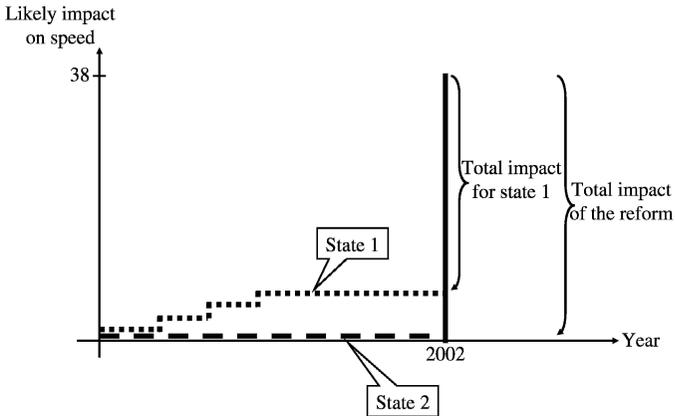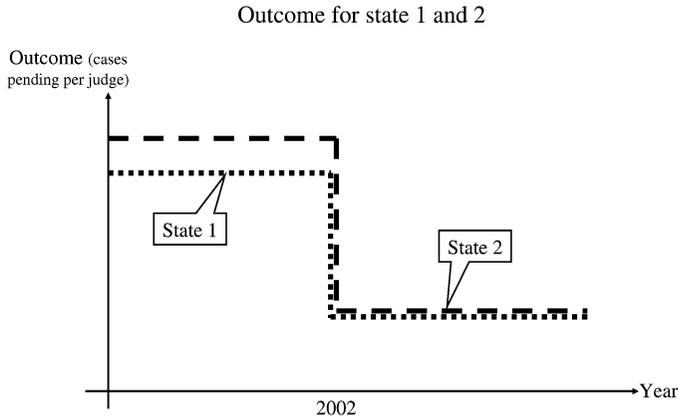$$y_{ijst} = \alpha_s + \beta_t + \gamma_1 2002 \text{ AmendmentAct}_s * \text{Year } 2005_t$$

$$+ \gamma_2 2002 \text{ AmendmentAct}_s * \text{Year } 2002_t$$

$$+ \gamma_3 2002 \text{ AmendmentAct}_s * \text{Year } 2001_t + \delta x_{st} + \phi d_j + \varepsilon_{ijst}, \qquad (1)$$

where i corresponds to the firm, s to the State, t to time, and j the sector of the firm. The variable y_{ist} represents the outcome variable of interest, which will successively be dichotomous variables for the firm's experience of breach of contract, investment, and access to financial markets. Simple probit regressions are used.[6] However, there may be interdependencies between the three decisions. Thus, multivariate probit regressions are also used to take into account the potential relations between these variables.[7] The specification includes State fixed effects (α_s) and year fixed effects (β_t).

The variable 2002 Amendment Act$_s$ is the net impact of the 2002 Amendment Act after taking into account the fact that a number of states had previously enacted some of the amendments in the past. Therefore, this variable varies by state. It is interacted with Year 2005$_t$, a dichotomous variable equal to 1 if the year of observation is 2005, 0 otherwise. The coefficient

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6. Rather than reporting coefficients, I report the change in the probability for an infinitesimal change in each independent variable at the mean.

7. A multivariate probit model is used to estimate the three equations probit model, by the method of maximum simulated likelihood. This method allows for nonzero off-diagonal terms in the variance-covariance matrix of the cross-equation error terms. Results are available upon request.
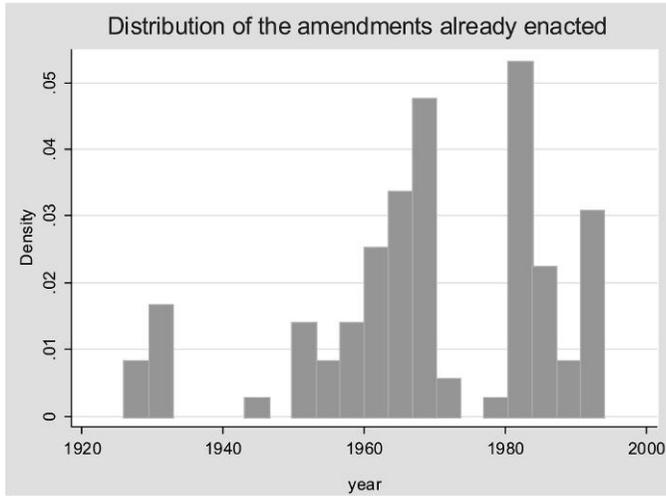
Figure 5. Distribution Over Time of the Amendments Already Enacted

γ_1 thus measures the long-term impact of the reform in 2005. The variable 2002 Amendment Act$_s$ is also interacted with Year 2002$_t$, a dichotomous variable equal to 1 if the year of observation is 2002, 0 otherwise. The coefficient γ_2 measures the short-term impact of the reform, enacted in March 2002.

The empirical model is thus a difference-in-differences estimator that controls for time-constant unobserved state heterogeneity, by comparing states less influenced by the 2002 Amendment Act to the other states, before and after the reform. However, it does not control for time-varying unobserved state heterogeneity. It, thus, relies on the "common time effects" assumption: "treated" and "untreated" states must evolve in a similar fashion for the difference-in-differences estimator to isolate the causal impact of the reform.

However, it is not obvious that this assumption has been met as the states that implemented the previous amendments on their own are most likely on a different time path than the states that had to have a national-level amendment act imposed upon them. One may also hypothesize the direction of the bias according to the following scenario. It is possible that the states that adopted earlier amendments did so because they observed an increase in cases pending in the court system and perceived adverse consequences for firms (in terms of increased breaches of contract, reduced investment, and diminished access to credit markets). Let us now assume that the 2002 Amendment Act and any amendment to the Code of Civil Procedure have no effect on the speed of courts, thus on firms' behavior. In this case, the number of cases pending, and the adverse consequences for firms, kept increasing over time in these states. The 2002 Amendment Act would have no effect on the speed of courts' and firms' behavior in 2002, but a regression would still measure an impact since the time trend implies that states with a low number of 2002 amendments (due to their many past amendments) have more cases pending and adverse consequences for firms in 2002 than in 2001.

This article addresses this concern by performing a falsification exercise. According to the preceding scenario, there should also be more cases pending and adverse consequences for firms in 2001 than in 2000, in the states with a low number of 2002 amendments. Thus, one may perform a similar difference-in-difference analysis 1 year prior to 2002. A significant difference-in-differences estimator in 2001 casts doubts on the validity of the approach as there should be no impact of the 2002 Amendment Act before it is implemented. This article systematically tests for the presence of differing state time trends by evaluating the impact of the reform one period before it is implemented. 2002 Amendment Act$_s$ is thus interacted with Year 2001$_t$, a dichotomous variable equal to 1 if the year of observation is 2001, 0 otherwise. If the coefficient γ_3 is statistically significant, this would mean that the 2002 Amendment Act has an impact before the reform is implemented, pointing to the presence of differing state time trends, and violating the common time effects assumption.

State-level controls (x_{st}) are included to control for coincidental changes in factors that could influence firms' behavior. The main alternative dispute resolution mechanism is the Lok Adalat (people's courts).[8] Therefore, I include the per capita number of cases disposed by Lok Adalats at the state level in the regressions to control for any coincidental improvement in the quality of the Lok Adalats. I also control for police force quality, which may influence contract breaches on the part of firms. I include the number of policemen for every 1000 people and total police expenditure per policemen. To control for developments in the financial sector, I include the state-level ratio of aggregate deposits to the total credit of public sector banks. Finally, I include the growth rate of state-level net domestic product per capita to control for coincidental economic changes.

I also include sector dummies (d_j) to control for sector-specific effects. Multipliers, defined as the inverse of the probability that the observation is included due to the sampling design, are used as weights in the regressions in order to have a representative sample. Standard errors are clustered at the state level to take into account issues of serial correlation (Bertrand et al., 2004). I now briefly discuss the data used in the analyses.

5. Data

To explore firms' behavior, I use three rounds of India's National Sample Survey focusing on small nonagricultural firms[9]: the 55th round collected in 2000, the 57th collected in 2001 and 2002, and the 62nd collected in 2005.

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8. The Lok Adalat were established by the government in 1986 to settle disputes through conciliation and compromise. Their main condition is that the disputing parties must agree on settlement. Lok Adalat decisions are binding and its orders are capable of being executed through the legal process. No appeal lies against Lok Adalat orders, and there are no court fees.

9. The Indian National Sample Survey labels these firms "informal." However, all unincorporated enterprises that operate on either proprietary or partnership basis with <10 employees are considered. A corporation is a legal entity (technically, a juristic person) that has a separate legal

The court reform was implemented in March 2002. One may thus split the 57th round into pre- and postreform samples depending on the time of interview. In the 57th round, only the quarter of the year in which the data were collected is known. The four quarters are July-September 2001, October-December 2001, January-March 2002, and April-June 2002. The first two quarters (in 2001) are classified as happening before the reform and the last two quarters (in 2002) as happening after the reform. The quarter January-March of 2002 is also considered postreform as it includes some observations collected in March of 2002.

The 55th round (2000) and the 2001 quarters from the 57th round allow me to test the common time effects assumption by looking at preexisting differential trends. The 2002 quarters from the 57th round are used to measure the short-term effects of the reform. Even if the implementation of the reform and the data collection are very close, it is possible to measure short-term effects for two reasons. First, the literature survey of this article emphasized the fact that judiciaries influence firms' behavior even when firms fail to make explicit use of them. Firms' behavior is based on the perception firms have of judiciaries. Second, the enactment of the 2002 Amendment Act was highly publicized due to a lawyers' strike[10]; therefore, one may argue that firms were aware that

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personality from its members. One of the defining legal rights and obligations of the corporation is the ability to sue and be sued. This means that the firm owners considered in this sample cannot sue in the name of their firm, but they may still sue or be sued in their own name. The theoretical reasons as to why the judiciary could impact economic outcomes are valid for these firms. There is evidence that firms use the judiciary in India. In a separate data set from the 2001 National Sample Survey focused on consumption, I calculated that 1% of the households paid legal fees in that year. This represents approximately 11 million persons. Additionally, data on the courts from the Annual Ministry Reports show that 3 million cases were filed in 2002. Finally, but on a more anecdotal level, the witnessing of the overcrowded Tis Azari District Court in New Delhi could corroborate this statement. Even if informal firms fail to make explicit use of courts, the theoretical section of the article emphasizes the fact that judiciaries influence firms' behavior through the perception firms have of judiciaries.

10. It is interesting to note that lawyers initially resisted the reform. The 2002 Amendment Act was originally written in 1999 and had even secured presidential assent. However, lawyers opposed to a number of the Act's provisions resisted its notification in February 2000 by resorting to a country-wide strike. Lawyers argued that the amendments would not only increase litigation costs but also increase delays. In New Delhi, lawyers were lathi charged (a lathi is a 6–8 foot long bamboo stick tipped with a metal blunt) during a demonstration. As a result of the protests, the Union Law Minister, Ram Jethmalani, decided to keep the Act in abeyance. The 1999 Act provoked protests mainly because Jethmalani showed little sensitivity to the lawyers' objections. Another criticism was that it facilitated the recording of evidence by commissioners as opposed to the examination of witnesses in open court. As any person could be appointed as a commissioner, be he a retired judicial officer or a practicing lawyer—the 1999 Act did not provide precise criteria—this was an obvious infringement on lawyers' authority. Jethmalani's successor, Arun Jaitley, introduced a fresh amendment Bill later in 2000, taking into account suggestions from bar representatives, political parties, and the Law Commission. The Act was met with little resistance and came into effect in 2002. Resistance was even weaker due to a Supreme Court decision on December 18, 2002, which determined that lawyers had no right to strike, pronounce a boycott, or engage in a token strike since these actions denied the fundamental right of access to justice on the

the implementation of the reform was imminent and modified their behavior from 2002 onward. Finally, to measure the long-term effects of the reform, the 62nd round (2005) is used.

Several characteristics of the data set make it appropriate for use in identifying the impact of court delays on firms' behavior. First, a detailed list of problems experienced by firms was collected. Each firm reported whether or not nonrecovery of service charges, fees, or credit hindered its operation. I interpret this problem as a breach of contract. Second, a detailed questionnaire regarding types of investments that a firm undertook is also available, providing information on whether or not the firm added plants and machinery, tools, transport equipment, or land to its assets. Third, information is provided regarding access to credit markets. Each firm was asked whether or not capital shortfalls hindered its operation. Additionally, a wealth of information on loan sources is reported on whether loans were granted from formal financial institutions (central and state-level term lending institutions; central, state, or local governments; public sector banks or other institutional agencies), money lenders, business partners, suppliers/contractors, or friends and relatives. This wealth of information allows me to test the three mechanisms highlighted in the literature (breaches of contract, investment, and access to credit) through which the judiciary may impact firms' behavior. I now turn to the results of the analyses.

6. Results

Before turning to the economic impact of the 2002 Amendment Act, it is necessary to verify whether the 2002 Amendment Act had an impact on court speed.

6.1 Preliminary Analysis: Impact of the 2002 Amendment Act on Court Speed

The explicit objective of the 2002 Amendment Act was to facilitate the prompt disposal of cases. However, an increase in solved cases might not mean an increase in court speed. When court speed increases, people seek judicial help under the belief that it will be forthcoming. An increase in resolved cases resulting from the reform could be accompanied by an increase in filed cases, which suggests greater public confidence in the judiciary. The impact on backlog and overall duration of case treatment (the variables of interest to economic agents) would be ambiguous. This article thus explores the impact of the reform on the backlog of cases (i.e., the number of cases pending) and on the duration of case treatment.

Data are collected from the yearly Crime in India publications from the National Crime Records Bureau between 1999 and 2006. Analogously to

part of the litigant public. These events show that the 2002 Amendment Act was highly publicized at the time.

equation (1) relating to firms' behavior, regressions of the following form are performed:

$$\text{speed}_{st} = \alpha_s + \beta_t + \gamma 2002\text{AmendmentAct}_s * (\text{post}2002_t)$$
$$+ \delta 2002\text{AmendmentAct}_s * (\text{Year}2001_t) + \varepsilon_{st}, \tag{2}$$

where s corresponds to the State and t to time (between 1999 and 2006). The dependent variable speed_{st} is successively the number of cases pending per judge, the average duration of the cases disposed during the year, and the proportion of cases disposed during the year that had been pending for more than 1 year in 35 states over 8 years (see Table 1 for descriptive statistics). α_s are State fixed effects, β_t year fixed effects. The variable 2002 Amendment Act_s is the net impact of the 2002 Amendment Act after taking into account the fact that a number of states previously enacted some amendments in the past. Therefore, this variable varies by state. It is interacted with post 2002_t, a dichotomous variable equal to 1 if the year of observation is after 2002, 0 otherwise. The coefficient of interest is therefore γ. Additionally, 2002 Amendment Act_s is further interacted with Year 2001_t, a dichotomous variable equal to 1 if the year of observation is 2001, 0 otherwise. If the coefficient δ is statistically significant, this would mean that the 2002 Amendment Act has an impact before the reform is implemented, pointing to the presence of differing state time trends, and violating the common time effects assumption.

Column (1) of Table 2 presents the main result and illustrates the positive impact of the 2002 Act. One extra amendment decreased the number of cases pending per judge by 650 in the Lower Courts, more than half of a workload. This effect is statistically significant at the 10% level and indicates that the reform was successful in reducing case backlog. One may also note that there is no differing time trends between treated states and untreated states prior to the reform as evidenced by the insignificant coefficient of $2002\text{AmendmentAct}_s * (\text{Year } 2001_t)$. This falsification exercise increases confidence in the fact that the common time effects assumption is valid, and that the difference-in-differences estimator isolates the causal impact of the reform.

Columns (2) and (3) test whether the above result depends on the particular set of states studied. A first concern is about the Union Territories (Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi, Lakshadweep, Pondicherry), which are administered by the central government but still possess different High Courts that could amend the Code of Civil Procedure in different ways. Column (2) excludes the Union Territories from the sample and finds that the results remain similar. A second concern is about the North-Eastern states (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura). These states have the same High Court due to their small size and proximity. In column (3), the North-Eastern states are excluded, and the result remains the same.[11] Column

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11. In the microeconomic analysis, proper weights will be used in the data set, effectively dealing with this matter.

Table 1. Table of Means

Variable	Source	Observations	Mean	SD
2002 Amendment Act	Code of Civil Procedure	121	37.39	1.14
Number of judges	Ministry of Law Justice, India	201	326.11	352.18
Number of cases pending per judge in India		172	1242.30	3156.8
Number of IPC cases pending per judge		173	519.67	866.42
Number of SLLs cases pending per judge	Crime in India, National	173	843.32	2840.74
Average duration of cases disposed during the year	Crime Records Bureau	207	1.73	0.92
Proportion of cases disposed that had been pending for >1 year		207	0.61	0.25
Nonrecovery of service charges, fees, credit		627,718	0.06	0.24
Net addition to plant and machinery		627,718	0.04	0.19
assets owned during last 365 days				
Net addition to transport, equipment		627,718	0.03	0.16
assets owned during last 365 days				
Net addition to tools and other fixed		627,718	0.18	0.38
assets owned during last 365 days	National Sample Survey			
Shortage of capital	55th (2000), 57th (2002)	627,718	0.28	0.45
Having obtained a loan	and 62nd (2005) rounds	627,718	0.10	0.30
Loan from a formal institution		627,718	0.06	0.23
(fin. institutions, government, bank)				
Loan from supplier, contractor, business partner		627,718	0.01	0.08
Loan from relatives, moneylender		627,718	0.04	0.20
State-wise number of cases disposed off	Rajya Sabha and Lok Sabha	132	0.001	0.004
in Lok Adalats per capita	questions, collected by			
	www.indiastat.com			
Number of policemen	Crime in India, National	122	2.63	2.01
per one thousand of population	Crime Records Bureau			
Total police expenditure per policemen		122	141,682.90	41,055.20
Growth rate of the state net domestic product	Economic Surveys,	107	4.47	5.82
per capita	http://indiabudget.nic.in/			
Ratio of aggregate deposits to total credit of public sector banks		122	0.43	0.26

Table 2. Impact of the 2002 Amendment Act on Number of Cases Pending per Judge

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent variable	Number of total cases pending per judge				IPC pending per judge	SLL pending per judge	Duration of cases disposed	Properties of cases >1 year
Sample	Whole sample	No. Union territories			No. North-Estern States			
2002 Amendment Act * Post 2002	−650.1839	−802.3011	−675.3134	−1,825.7536	−217.1313	−845.6529	−0.1653	−0.0478
	(1.83)*	(1.69)*	(1.84)*	(1.77)*	(2.26)**	(1.81)*	(1.96)*	(2.39)**
2002 Amendment Act * Year 2001	58.7786	84.1803	180.7312		56.4520	−77.0430	0.0327	−0.0312
	(0.15)	(0.15)	(0.40)		(0.41)	(0.16)	(0.24)	(1.39)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State trends	No	No	No	Yes	No	No	No	No
Observations	167	139	128	128	129	101	128	128
R^2	0.55	0.55	0.55	0.71	0.48	0.64	0.85	0.81

Ordinary least squares regressions. Robust t-statistics in parentheses. *Significant at 10%, **significant at 5%, ***significant at 1%. Number of cases pending and duration of trials obtained from Crime in India, National Crime Records Bureau, for the years 2000–2006. Number of judges obtained from various Rajya Sabha and Lok Sabha questions, centralized by www.indiastat.com. In columns (1), (2), (3), and (4), the dependent variable is the number of total cases pending per judge. The variable 2002 Amendment Act is the net impact of the 2002 Amendment Act once taken into account the fact that some states already enacted some amendments in the past. Therefore, this variable varies by state. The variable of interest is "2002 Amendment Act * Post 2002" and is equal to the interaction between the net impact of the reform and a dichotomous variable equal to 1 if the observation is after 2002, 0 otherwise. The variable of interest is "2002 Amendment Act * Year 2001" and is equal to the interaction between the net impact of the reform and a dichotomous variable equal to 1 if the observation is in 2001, 0 otherwise. This represents a test of the common time effects assumption. State fixed effects and year fixed effects are included in all columns. In column (2), Union Territories are excluded (Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Delhi, Lakshadweep, and Pondicherry). In columns (3)–(8), the North-Eastern states are excluded (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura). In column (4), state trends are included. In column (5), the dependent variable is the number of IPC cases per judge. IPC cases include not only the crimes against body, women, and children but also the economic crimes (criminal breach of trust, cheating counterfeiting) and the crimes against property (robbery, theft). In column (6), the dependent variable is the number of SLLs cases pending per judge. SLL cases fall under such acts as the Copyright Act, the Essential Commodities Act, or the Excise Act. In column (7), the dependent variable is the average duration of the cases disposed during the year. In column (8), the dependent variable is the proportion of cases disposed during the year that had been pending for more than 1 year.

(2) and (3) thus confirm that the main result does not depend on the set of states used. Throughout the rest of Table 2, the North-Eastern States are excluded.

Another way to control for different state time paths is to include state time trends. Column (4) includes state dummies interacted with time trends ($\alpha_s * \text{trend}_t$) in the regressions. The impact of the reform is still statistically significant.

Columns (5) and (6) disaggregate cases according to their nature to show that the reform had an impact on the backlog of criminal cases but also on the backlog of civil cases, which might more directly affect firms. Two broad categories are established by the National Crime Records Bureau. In column (5), the dependent variable is the number of Indian Penal Code (IPC) cases per judge. IPC cases include not only the crimes against body, women, and children but also the economic crimes (criminal breach of trust, cheating, counterfeiting) and the crimes against property (robbery, theft). In column (6), the dependent variable is the number of Special and Local Laws (SLLs) cases pending per judge. SLL cases fall under such acts as the Copyright Act, the Essential Commodities Act, or the Excise Act and may have a more direct impact on firms' behavior. Columns (5) and (6) show that the reform decreased the backlog of both IPC and SLL cases.

Columns (7) and (8) repeat the above analysis with the dependent variables measuring case duration. In column (7), the dependent variable is the average duration of the cases disposed during the year. Column (7) shows that one extra amendment aimed at simplifying procedures reduces the average case duration by 60 days. To show that this result does not depend on this particular measure of case duration, column (8) uses the proportion of cases disposed during the year that had been pending for more than 1 year as the dependent variable. Column (8) shows that one extra amendment of the 2002 Amendment Act reduces the proportion of cases that had been pending for more than 1 year by almost 5%.

This section thus showed that the 2002 Amendment Act had its intended positive effect on court speed. This article will now explore the impact of the reform on economic outcomes.

6.2 Main Results: Impact of the 2002 Amendment Act on Firms' Behavior

The literature survey of this article indicated that court speed affects the probability of experiencing breaches of contract, investment incentives, and access to financial markets. I will now test these three mechanisms using the empirical methodology outlined in Section 4.

Table 3 examines the relationship between the contracting behavior and the 2002 Amendment Act. The dependent variable is the occurrence of contract breaches. It was obtained from a list of problems commonly experienced by firms. The "nonrecovery of service charges/fees/credit' is one such problem. It relates to cases in which a breach of contract had occurred. I thus constructed a dummy variable equal to 1 in cases where the firm experienced this type of problem as one of its main problems, and 0 if it did not. Column (1) in-

Table 3. Impact of the 2002 Amendment Act on the Probability to Experience a Breach of Contract

	(1)	(2)	(3)	(4)
	Nonrecovery of service charges, fees, credit			
2002 Amendment Act * Year 2005	−0.0145	−0.0142	−0.0142	−0.0135
	(2.16)**	(2.10)**	(2.10)**	(1.97)**
2002 Amendment Act * Year 2002	−0.0128	−0.0128	−0.0128	−0.0149
	(3.92)***	(4.03)***	(4.03)***	(4.88)***
2002 Amendment Act * Year 2001	−0.0029	−0.0017	−0.0017	−0.0033
	(0.87)	(0.54)	(0.54)	(0.90)
State dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
NIC2 dummies	No	Yes	No	No
NIC3 dummies	No	No	Yes	Yes
State-level controls	No	No	No	Yes
Observations	627,106	627,075	627,075	599,852

Probit regressions, marginal effects at the mean are presented. Robust z-statistics in parentheses, clustered at the level of the state. *Significant at 10%, **significant at 5%, ***significant at 1%. The dependent variable is the probability to experience a problem of nonrecovery of service charges fees credit. This variable is equal to 1 if the enterprise experienced such a problem, 0 otherwise. The variable 2002 Amendment Act is the net impact of the 2002 Amendment Act once taken into account the fact that some states already enacted some amendments in the past. Therefore, this variable varies by state. State dummies and year dummies are included. In column (2), NIC2 dummies are included. This corresponds to the National Industrial Classification, disaggregated to the second level. 42 NIC2 dummies were included. In column (3), NIC3 dummies are included. This corresponds to the National Industrial Classification, disaggregated to the third level. 119 NIC3 dummies were included. In column (4), state-level controls are included: number of cases disposed of in Lok Adalats per capita, number of policemen per one thousand of population, total police expenditure per policemen, growth rate of the state net domestic product per capita, ratio of aggregate deposits to total credit of public sector banks.

cludes only state fixed effects, year fixed effects, and the variables of interest. The coefficient in front of the variable 2002 Amendment Act$_s$ * Year 2005$_t$ indicates that for every amendment of the 2002 Act that increases court speed, the probability of experiencing a breach of contract decreases by 1.45% points. This coefficient is statistically significant. The coefficient in front of the variable 2002 Amendment Act$_s$ * Year 2002$_t$ indicates that the effects of the reform were felt strongly in the short run and did not disappear in the long run. Interestingly, the coefficient in front of the variable 2002 Amendment Act$_s$ * Year 2001$_t$ is not significantly different from zero, which indicates that there are no preexisting differential state trends. This falsification exercise increases confidence in the fact that the common time effects assumption is valid, and that the difference-in-differences estimator isolates the causal impact of the reform.

Column (2) adds 42 National Industrial Classification dummies, disaggregated to the second level (NIC2), to take into account sector fixed effects. Column (3) adds 119 National Industrial Classification dummies, disaggregated to the third level (NIC3). Results remain similar in columns (2) and (3), showing that they do not depend on the sector-specific trends. Column (4) includes state-level controls, and the coefficient remains similar. This result confirms that the effect on the probability of experiencing a contract breach is caused by procedural reform and not by coincidental changes in the quality

of alternative dispute resolution mechanisms such as the Lok Adalats, police force quality, financial sector development, or economic outlook. Overall, these results indicate that speedier courts are associated with less breaches of contract and suggest a policy implication with respect to the desirability of such a procedural reform.

Table 4 examines the relationship between the reform and the investment. In columns (1)–(4), the dependent variable is the net addition to plant and machinery assets under ownership during the last 365 days. This variable is equal to 1 if the enterprise experienced a net addition to plant and machinery assets, 0 otherwise. An extra amendment likely to increase court speed in the 2002 Act increases the probability of investing in plant and machinery assets by 0.4% points in the short run and in the long run. Adding NIC2 sector dummies in column (2), NIC3 sector dummies in column (3), and state-level controls in column (4) do not affect the results, again increasing confidence in the difference-in-differences estimator. The dependent variable in column (5) concerns the net addition to transport and equipment assets owned during last 365 days (1 if the enterprise made such an investment, 0 otherwise). The 2002 Amendment Act increases the probability to invest in transport and equipment assets by 0.7% points but only in the long run. The dependent variable in column (6) is the net addition to tools and other fixed assets owned during last 365 days (1 if the enterprise made such an investment, 0 otherwise). Results indicate that the procedural reform has a positive impact on investing in tools and other fixed assets, however, there are preexisting state trends as witnessed by the significant coefficient of 2002 Amendment Act$_s$ ∗ Year 2001$_t$, which casts doubt on the validity of this result.

Table 5 examines the influence of the courts on firms' access to credit markets. The dependent variable in column (1) is a dichotomous variable equal to 1 if the firm experienced a shortage of capital as one of its problems, and 0 otherwise. One amendment likely to increase efficiency in the 2002 Amendment Act decreases the probability of experiencing capital shortfalls by 2.7% points in 2002 and 4.6% points in 2005. This result is statistically significant. Columns (2), (3), and (4) add NIC2 sector dummies, NIC3 sector dummies, and state-level controls, respectively. Results remain similar across specifications. Moreover, there are no preexisting differential trends as evidenced by the insignificant impact of the reform before it was enacted.

The dependent variable in column (5) is a dichotomous variable equal to 1 if the firm has an outstanding loan, 0 otherwise. Results indicate that firms obtained more loans in 2005 due to the reform, confirming the theoretical prediction stating that speedier courts increase access to finance. Columns (6)–(8) look at the sources of the loans. Compared to before the reform, less firms obtained loans from relatives or money lenders, whereas more firms obtained loans from a supplier, contractor, or business partner. This lends support to the hypothesis that in the presence of slow courts, borrowers turn to relatives, friends, or moneylenders to reduce information asymmetries. In contrast, speedy courts, which impose higher discounted values of fines paid by borrowers, foster lending among more anonymous parties.

Table 4. Impact of the 2002 Amendment Act on Investment

	(1)	(2)	(3)	(4)	(5)	(6)
	Net addition during last 365 days of assets owned					
	Plant and machinery				Transport and equipment	Tools and other fixed assets
2002 Amendment Act * Year 2005	0.0042	0.0031	0.0031	0.0033	0.0065	0.0203
	(2.32)**	(2.65)***	(2.65)***	(2.53)**	(3.14)***	(1.87)*
2002 Amendment Act * Year 2002	0.0047	0.0035	0.0035	0.0039	0.0027	0.0216
	(2.78)***	(3.22)***	(3.22)***	(2.76)***	(1.17)	(1.90)*
2002 Amendment Act * Year 2001*	0.0009	0.0005	0.0005	0.0010	0.0024	0.0271
	(0.62)	(0.55)	(0.55)	(0.80)	(1.08)	(2.31)**
State dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
NIC2 dummies	No	Yes	No	No	No	No
NIC3 dummies	No	No	Yes	Yes	Yes	Yes
State-level controls	No	No	No	Yes	Yes	Yes
Observations	627,106	625,763	625,763	598,657	598,009	599,852

Probit regressions, marginal effects at the mean are presented. Robust z-statistics in parentheses, clustered at the level of the state. *Significant at 10%, **significant at 5%, ***significant at 1%. The dependent variable in columns (1)–(4) is the net addition to plant and machinery assets owned during last 365 days. This variable is equal to 1 if the enterprise experienced a net addition to plant and machinery assets, 0 otherwise. The dependent variable in column (5) is the net addition to transport and equipment assets owned during last 365 days (1 if the enterprise did such an investment, 0 otherwise). The dependent variable in column (6) is the net addition to tools and other fixed assets owned during last 365 days (1 if the enterprise made such an investment, 0 otherwise). The variable 2002 Amendment Act is the net impact of the 2002 Amendment Act once taken into account the fact that some states already enacted some amendments in the past. Therefore, this variable varies by state. State dummies and year dummies are always included. In column (2), 42 NIC2 dummies are included. In column (3), 119 NIC3 dummies are included. In column (4), state-level controls are included: number of cases disposed off in Lok Adalats per capita, number of policemen per one thousand of population, total police expenditure per policemen, growth rate of the state net domestic product per capita, and ratio of aggregate deposits to total credit of public sector banks.

Table 5. Impact of the 2002 Amendment Act on Access to Finance

	(1)	(2)	(3)	(4)	(5)	(6)	(7) Loan from: Formal financial institution	(8) Relative, moneylender
		Shortage of capital			Loan	Supplier, contractor, business partner		
2002 Amendment Act * Year 2005	−0.0463	−0.0415	−0.0415	−0.0374	0.0086	0.0028	−0.0008	−0.0037
	(2.70)***	(2.48)**	(2.48)**	(2.11)**	(2.26)**	(2.27)**	(0.31)	(2.95)***
2002 Amendment Act * Year 2002	−0.0267	−0.0313	−0.0313	−0.0285	−0.0002	0.0039	0.0008	0.0026
	(1.39)	(1.63)	(1.63)	(1.90)*	(0.04)	(1.79)*	(0.36)	(2.01)**
2002 Amendment Act * Year 2001	−0.0101	−0.0157	−0.0157	−0.0087	0.0005	0.0003	0.0009	0.0018
	(0.45)	(0.75)	(0.75)	(0.41)	(0.14)	(0.24)	(0.55)	(1.87)*
State dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NIC2 dummies	No	Yes	No	No	No	No	No	No
NIC3 dummies	No	No	Yes	Yes	Yes	Yes	Yes	Yes
State-level controls	No	No	No	Yes	Yes	Yes	Yes	Yes
Observations	627,106	627,078	627,078	599,855	599,852	592,170	599,852	599,672

Probit regressions, marginal effects at the mean are presented. Robust z-statistics in parentheses, clustered at the level of the state. *Significant at 10%, **significant at 5%, ***significant at 1%. The dependent variable in columns (1)–(4) is a dichotomous variable equal to 1 if the firm experienced a problem of shortage of capital, 0 otherwise. The dependent variable in column (5) is a dichotomous variable equal to 1 if the firm has an outstanding loan, 0 otherwise. In column (6), the dependent variable is a dichotomous variable equal to 1 if the firm obtained a loan from a supplier, contractor, business partner. In column (7), from a formal financial institution (central and state level term lending institutions, government (central, state, local bodies), banks and societies (public sector, commercial, cooperative)). In column (8), from a relative, moneylender. The variable 2002 Amendment Act is the net impact of the 2002 Amendment Act once taken into account the fact that some states already enacted some amendments in the past. Therefore, this variable varies by state. State dummies and year dummies are always included. In column (2), 42 NIC2 dummies are included. In column (3), 119 NIC3 dummies are included. In column (4), state-level controls are included: number of cases disposed off in Lok Adalats per capita, number of policemen per one thousand of population, total police expenditure per policemen, growth rate of the state net domestic product per capita, ratio of aggregate deposits to total credit of public sector banks.

Results indicate that court speed affect firms through the likelihood of breaches of contract, investment, and access to credit markets. Note that multivariate probit regressions were also used to take into account the relations between variables, and results were similar.[12]

7. Conclusion

This article has shown that the court speed in Indian states shape small firms' behavior. My findings are in line with an emerging largely macroeconomic literature (e.g., Acemoglu et al. 2001; Djankov et al. 2003; Rodrik et al. 2004), underlining the importance of institutions on economic performance. The identification strategy in this article allows me to isolate the causal impact of one type of institution, the courts, on firms' outcomes (and behaviors). I use the spatial variation in the implementation of a court reform, the 2002 Amendment Act, which had the objective of facilitating speedy disposal of cases. This spatial variation is due to the fact that a number of states had previously enacted some of the amendments contained in the 2002 Amendment Act and will, therefore, experience a weaker effect of the 2002 Amendment Act in 2002.

Using a difference-in-differences strategy that accounts for unobserved time constant state heterogeneity, I find that this reform was effective in decreasing the number of cases pending per judge and the average case duration. I then use repeated cross sections of firm-level data, which contains extensive information on small nonagricultural firms, to investigate nonrecovery of service charges/fees/credit, investment decisions, capital shortages, and borrowing sources. I find that this reform, and therefore speedier courts, decreases the probability to experience a breach of contract, increases investment, and decreases the probability to experience a shortage of capital. These results indicate that the speed of courts across Indian states plays an important role in shaping economic activity in this important sector of the economy.

An unanswered question concerns whether the effects of slow courts vary across sectors of an economy. One can imagine for example that firms in India's registered or formal manufacturing sector may have fewer contracting problems than the small firms examined in this article. One can also imagine that some economic agents or firms could benefit from slow courts by using it as a way to delay bad outcomes. These vested interests could delay the enactment of such a reform. In future work, I plan to extend my analysis to firms in other sectors of the Indian economy as a means of testing this hypothesis.

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12. Results are available upon request.

Table A1. Coding for Uttar Pradesh

Amendment	Year	Page	Section	Speed	Synopsis
2002 Amendment Act	2002	52	102	1	No second appeal for cases <25,000 Rs (before: 1000, 1976: 3000)
Uttar Pradesh	1954	52	102	0	No second appeal for cases <200 Rs (but superseded by 1976, so no differential impact in 2002)
2002 Amendment Act	2002	56	115 (1)	1	A revision can be made if the order would cause irreparable injury to the party against whom it was made. This disappears in 2002: less quality but more speed
Uttar Pradesh	1991	57	115 (1)	0	The 1991 amendment is the 1976 amendment. No differential impact in 2002
2002 Amendment Act	2002	56	115 (3)	1	A revision is not a stay of suit (more speed because the court cannot use revisions to slow down the process)
Uttar Pradesh	1991	57	115 (3)	0	The 1991 amendment is the 1976 amendment. No differential impact in 2003
Uttar Pradesh	1991	57	115	−1	Revision only for cases >1 lakh rupees (= less revisions!). So negative impact in 2002 with respect to the rest of the country because the 2002 Amendment Act will supersede this amendment and repel this provision.
Uttar Pradesh	1991	57	115	−1	No revision by district court. So negative impact in 2002 with respect to the country because the 2002 Amendment Act will supersede this amendment and repel this provision.
2002 Amendment Act	2002	86	4 (1)	−1	A plaint shall be presented in duplicate to the court.
Uttar Pradesh	1926	86	4 (1)	1	For the rest of the country, it is harder to file a case (it has to be a duplicate). Not so for Allahabad because since 1926 they had to file a case and the copy for service with summons upon each defendant. By comparison, it becomes easier in Allahabad.
2002 Amendment Act	2002	88	5 (2)	−1	The plaint has to accompany the summons (concise statement not allowed = less speed).
Uttar Pradesh	1926	88	5 (2)	1	The concise statement omission was already present in 1926, no change felt in 2002.
2002 Amendment Act	2002	92	5 (9)	1	To summon a defendant, the court can now use post, fax, email.
Uttar Pradesh	1958	92	5 (9)	−1	the post rule is already present here
2002 Amendment Act	2002	92	5 (9)	1	If the defendant refuses to receive the mail, the summons is considered served
Uttar Pradesh	1958	92	5 (9)	−1	If the defendant refuses to receive the mail, the summons is considered served
2002 Amendment Act	2002	97	5 (1)	1	To summon a defendant outside the jurisdiction of a court, the court can send a courier service, fax, email.
Uttar Pradesh	1958	98	5 (21)	−1	This post rule already present for Allahabad
2002 Amendment Act	2002	179	17 (2)	1	The court can impose higher costs for adjournment
Uttar Pradesh	1926	180	17 (2)	0	No adjournment to call a witness. But that stays.
2002 Amendment Act	2002	373	41 (1)	1	Only a copy of the judgement required to file an appeals (not the decree as before) = more speed because it can take time to get a decree
Uttar Pradesh	1969	374	41 (1)	−1	But if the appellate court realizes that the original court did not have time to issue the decree, then it will be ok. No impact of 2002 amendment.

This table lists all the Uttar Pradesh amendments enacted since 1908 which are superseded by the 2002 Amendments Act. First, the amendments contained in the 2002 Amendment Act are summarized. Immediately below that, the past Uttar Pradesh amendment is described. In the column "speed" is written the likely impact on court speed of this amendment. If the row concerns Uttar Pradesh, the number in speed quantifies the impact felt in Uttar Pradesh as opposed to the rest of the country in 2002 due to the interaction of the 2002 Amendment Act and the already enacted past amendment. The sum of these numbers for Uttar Pradesh in this table is −4. This means that the effect of the 2002 Amendment Act in Uttar Pradesh would be smaller than if no past amendment had been enacted. The overall impact of the 2002 Amendment Act is +38. The effect in 2002 will be 38 − 4 = 34 for Uttar Pradesh with respect to the rest of the country. (Page numbers supplied according to "Code of Civil Procedure," 19th edition, 2004, Eastern Book Company.)

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