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**The Problem of Court
Congestion: Evidence from
Indian Lower Courts**

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Abstract

This paper explores the problem of court congestion in Indian lower courts. We use several measures to capture court congestion. These include: caseloads per capita and per judge, the number of cases older than a year per capita and per judge, and congestion rates calculated as the ratio of cases older than a year to cases disposed. We conclude that the Indian state judiciaries differ with respect to the nature and the level of congestion. We can also identify the reasons why some judiciaries are more congested than others. The results show that the large number of judges per capita is negatively related to congestion rates, while judgeship vacancies have a positive effect on caseloads per judge. Court productivity captured by the clearance rates has a significant and negative effect on both caseloads and congestion rates and seems to be crucial for the effectiveness of congestion-reduction programs. Finally, judiciaries with lower litigation rates display a relatively better performance with respect to current caseloads, but are not efficient in addressing the “real” backlogs of cases pending for more than a year.

Kurzfassung

Diese Arbeit untersucht das Problem der Überlastung an indischen Gerichten. Dabei verwenden wir verschiedene Indikatoren gerichtlicher Überlastung, z.B. die Gerichtsfälle pro Kopf und pro Richter, die Anzahl mehr als ein Jahr alter Gerichtsfälle pro Kopf und pro Richter, und Überlastungsraten aus dem Verhältnis von Fällen die älter als ein Jahr sind und abgeschlossenen Fällen. Wir folgern, dass die staatlichen Gerichte in Indien unterschiedliche Überlastungsarten und -niveaus aufweisen. Ebenso legen wir die Gründe dar, warum manche Gerichte überlasteter sind als andere. Die Ergebnisse zeigen, dass eine große Richterzahl negativ mit den Überlastungsraten korreliert ist, während offene Stellen für das Richteramt einen positiven Effekt auf die Gerichtsfälle pro Richter ausüben. Die gerichtliche Produktivität, welche anhand von Bearbeitungsdaten dargestellt wird, hat eine bedeutende negative Auswirkung sowohl auf die Anzahl an Gerichtsfällen, als auch auf die Überlastungsraten. Darüber hinaus scheint sie ausschlaggebend für die Wirksamkeit von Programmen zur Überlastungsverringerung zu sein. Schließlich weisen Richter mit niedrigen Prozessraten eine vergleichsweise bessere Leistung bezüglich aktueller Gerichtsfälle auf, sind jedoch weniger effizient, wenn es darum geht, die tatsächlichen Rückstände von Fällen die älter als ein Jahr alt sind aufzuarbeiten.

1 Introduction

Court congestion, legal costs, and delays are the problems most often complained about by the public in most countries, and thus often perceived as the most pressing (Buscaglia & Dakolias, 1996; Brookings Institution, 1990). India is not an exception. The popular press and court administrators again and again describe the condition of the Indian judiciary as “beyond redemption,” “distressing,” or “a huge problem.” In 2001 the Union Minister of Law commented: “If there is one sector which has kept away from the reforms process, it is the administration of justice.”¹

In India, the administration of both civil and criminal justice is pervaded with congestion and delays. There are about 20 million cases pending in lower courts and another 3.2 million cases in high courts.² According to Nagaraj (1995), a termination dispute that is contested all the way can take up to 20 years.³ In the Principal Labor Court in Bangalore, for instance, 90 percent of termination disputes are not disposed of within a year. Writ petitions in high courts take about 8 to 10 years and in some courts nearly 20 years. The dockets of civil cases have been overcrowded and it may take years to get a trial on merit.

Large backlogs of cases and delays may affect both the fairness and the efficiency of the judicial system, which in turns weakens democracy, the rule of law, and the ability to enforce human rights. To solve the problem, the Indian government has launched a number of judicial reforms. In addition, economists and judicial scholars have paid increasing attention to the problem of court congestion (e.g., Dhawan, 1978; Khan et al. 1997; Rao, 2001). The problem has been, however, the lack of systematic data on court congestion, performance and efficiency. Data of relatively good quality have been available only on the Supreme Court and high courts, while data on lower courts were only presented in a highly aggregated form (e.g., at country level). The lack of relevant data and solid empirical analysis has hampered policy prescriptions, which then invariably tended to lose focus. As a result, the attempts to solve the problem of court congestion have produced half-hearted results. Except for the Supreme Court, where arrears have decreased significantly, the other tiers of justice have only been strained further.

This paper aims to describe, analyze and explain the problem of court congestion in Indian lower courts and to provide data and advice to those designing, undertaking or evaluating

¹ R. N. Malhotra Memorial Lecture on “India’s Judicial Reforms”, at India International Centre, New Delhi, February 14, 2001.

² There are also pending cases in various tribunals. However, the precise number of pending cases in the tribunals is not known.

³ If land is involved, it may take even longer to dispose of a case; a particular land-related case took more than 600 years to be resolved (Debroy, 2000).

legal and judicial reforms. In so doing, it focuses on a distinct set of indicators of judicial performance, including pending cases, clearance rates, and incoming cases. In particular, we have assembled a data set of congestion and performance indicators covering 27 states and union territories (UTs) over the period 1995-99. An important advantage of our data set is that it allows us to abstract from an international platform and to focus on internal differences of a decentralized judiciary. This guarantees a common institutional framework in which the judicial quality is measured instead of different systems.⁴

In India, a lack of judges has generally been cited as the main reason for court congestion and delays.⁵ Indeed, the number of judges per capita has been low compared to other countries. For instance, data on 30 selected countries from the World Bank *Justice Sector at a Glance* database indicate that in 2000 the average number of judges per 100,000 inhabitants was 6.38.⁶ The corresponding number for India is about 2.7 judges.⁷ Without closer analysis, however, one cannot draw the conclusion that the backlogs result from an understaffed or under funded court system. As our analysis shows, the number of judges may be important, but this factor is hardly the only cause for the deficiencies.⁸

Our approach consists of the following steps. First, we construct several measures of court congestion. This allows us to identify the nature and the level of court congestion across the Indian states and to perform a number of checks on our results. Second, we ascertain structural and procedural problems of the court system by examining empirically the relative importance of both supply- and demand-side factors affecting court congestion. This helps to identify the reasons why some state judiciaries face larger caseloads or higher congestion rates than others. Third, having identified the most important determinants of court congestion, we attempt to pinpoint judicial areas in need of decongestion reform, the states and UTs where the need for reforms is most pressing, as well as the substantive nature of reforms that may be useful.

The rest of this paper is organized as follows. Section II presents an overview of the Indian judicial system and reviews the literature on the congestion problem in Indian courts. A discussion of the data, the variables used in the study, conceptual issues related to the variables introduced to measure court congestion, and the econometric analysis is given in Section III.

⁴ Cross-country studies on judicial performance are often subject to criticism, as each country has its own legal framework and legal culture. The main problem is related to the comparability of institutions: the jurisdiction of courts might not be the same in different countries; what is a commercial case in one country might be classified as criminal in another; etc.

⁵ See Section II.B for more on this issue.

⁶ The number of judges per 100,000 inhabitants ranged from 0.13 in Canada to 23.21 in the Slovak Republic, not showing significant correlation with GDP per capita. It should be noted, however, that for some of the countries the statistics covered only the federal court system (excluding the state or provincial court systems).

⁷ The *actual* number of judges is even lower since the calculation is based on the sanctioned judge strength, not accounting for vacancies. This is a point we will return to later (see Section III.A).

⁸ This is in line with Hammergren's (2002) conclusion that in Latin America the traditional, institutionalized remedies have not worked any miracles and occasionally have even made things worse.

Section IV sketches the implications of the empirical analysis for issues of judicial reforms and presents proposals to alleviate the congestion problem. Section V concludes by summarizing the main findings of our analysis and by outlining strategies for further research.

2 Institutional Framework

2.1 Context

In terms of structure and procedure, India's legal system is based on English common law, codified laws, and non-codified religious and customary laws. The judiciary is vertically structured with the Supreme Court at the top. The Supreme Court exercises appellate jurisdiction for final appeals in civil, criminal and administrative matters as well as original jurisdiction in constitutional matters.⁹ The state judiciary consists of a high court and lower courts. The high courts have the appellate jurisdiction for the lower courts in the respective state or assigned union territory.¹⁰ They establish the administrative procedures for the lower courts and, through precedent, outline standards for the interpretation of the *Code of Civil Procedure* and the *Indian Evidence Act* for civil and administrative cases and the *Code of Criminal Procedure* for criminal cases.

The lower judiciary consists of district, subordinate, sessions, and magisterial courts. The first two courts deal with civil cases and the latter two courts handle criminal cases. In addition, there are other types of courts such as specialized tribunals (e.g., labor, land, and tax tribunals), consumer courts, family courts, etc. The tribunals were created because they were thought to be faster than the court system, being free of cumbersome procedures. However, decisions made by tribunals are not final, as there is always scope for appeal to the high courts and the Supreme Court.

The system of alternative dispute resolution is in its nascent stage. In this regard, the system of Lok Adalats is an interesting experiment. The Lok Adalats were initiated in the late 1970s as a system of voluntary organizations for informal dispute resolution to provide cheap legal services for the poor.¹¹ There is also an additional layer of informal rural judiciary. Panchayats are traditional institutions for individual dispute resolution, administrative issues, and allocation of common goods in rural areas. Unfortunately, there is no comprehensive statistical

⁹ The original jurisdiction of the Supreme Court also extends to any dispute between the Union and the states or between the states.

¹⁰ Only six of the high courts (the high courts of Chennai, Delhi, Himachal Pradesh, Jammu and Kashmir, Kolkata, and Mumbai) exercise original jurisdiction, i.e. civil suits can be directly filed in these courts, provided the monetary value of the suit is above a certain amount.

¹¹ The *Legal Services Authorities Act* of 1987 regulates the Lok Adalats as voluntary agencies utilizing arbitration and conciliation.

data on the use of Lok Adalats or Panchayats.¹²

It is also important to note the role of the government as a litigant. Disputes between private parties and the state account for the majority of cases in the Indian court system (Debroy, 2000). An empirical research on commercial litigation in the Bangalore area found that the government was a plaintiff, defendant, appellant or respondent to appeals in about 60 percent of civil cases (Mitra, 1995).¹³ The remarkable government presence in civil litigation may be partly explained as follows. The model of planned economic development required discretionary *ex-ante* government control of individual transactions. This in turn necessitated a legislative structure that conferred vast administrative discretion on the government and contained detailed rules governing transactions at the micro level. This was also the situation in a number of centrally planned economies. What is unique for India, however, is that this economic policy model was implemented within a legal framework based on Anglo-American law, which aims at protection and maximization of individual choices in economic transactions and limiting government intervention in private transactions.

2.2 Literature Overview

Among academic attempts, only Dhawan (1978, 1986) studied extensively the problem of judicial delays in India. However, his work was confined to the Supreme Court and was conducted in the late 1970s and the early 1980s, a period when a considerable backlog of cases existed in the Supreme Court. Recently the Supreme Court has managed to drastically reduce its arrears and now the backlog there is trivial.

Apart from the work of Dhawan, the literature on court congestion is official, i.e. it is compiled in various reports by the Law Commission of India (LCI) and special committees appointed by the Government of India (GOI). Most of these reports tend to expound in detail various procedural aspects that the high courts as well as the cases are subject to. In the process, the reports usually get caught in the quagmire of a myriad of procedural laws. This deters any policy maker who does not have a legal background. Therefore, our primary attempt has been to delineate the legal predicament from the problem of court congestion and to present the enormity of the impasse in simple terms and language.

One of the first government efforts to study the efficient functioning of the judicial system was undertaken by the Civil Justice Committee in 1924, also known as the *Rankin*

¹² Examining court congestion in conjunction with alternative ways to settle disputes could provide valuable insights. However, what happens outside the courts system is hard to measure and is outside the scope of this study. We will just mention here that conciliation, mediation, and arbitration have never taken off in India. One of the problems with conciliation and mediation has been a lack of credible conciliators and mediators. Arbitration, on the other hand, has not been freed from the apron strings of courts. For a more extensive discussion on the alternative dispute resolution mechanisms in India, see Debroy (2000).

¹³ Sometimes the government was a litigant on both sides.

Committee Report. The report contained a “note on causes of delay in civil courts” and listed the insufficient judge strength in some of the high courts as the main cause for delays. The High Court Arrears Committee, set up in 1949 under Justice S. R. Das, recommended that inordinate delays in filling up vacancies in the high court bench should be avoided as much as possible. The committee also advocated an immediate increase in the judge strength of high courts, which had not been commensurate with the existing amount of work.

The LCI was constituted in 1955 to undertake the task of reviewing the system of judicial administration in all its aspects. The *14th Report of the LCI* chided bureaucratic obstacles to an increase of the judge strength posed by the Ministry of Home Affairs, which in its view had led to the accumulation of arrears (LCI, 1958). It advocated a limited role of the state executive with regard to the appointment of judges and also criticized the delays in filling up vacancies in high courts. The High Court Arrears Committee, appointed in 1972 under Justice J. C. Shah, expressed the same views (GOI, 1972). It recommended an increase of the permanent judgeships in high courts and appointment of additional and *ad hoc* judges for clearing the arrears. These observations were reiterated in the *79th Report of the LCI* (LCI, 1979) and in the *31st Report of the Estimates Committee* (GOI, 1986a).

The *121st Report of the LCI* (LCI, 1987) and the *124th Report of the LCI* (LCI, 1988) reiterated the earlier views on filling up vacancies expeditiously, augmenting the judge strength and appointing *ad hoc* judges to tackle the problem of arrears. The *Report of the Arrears Committee* (GOI, 1990), known as the *Malimath Committee Report*, also agreed with these views. It concluded that various reports “in one voice” highlighted the same factors, but “nothing worthwhile appears to have been done, resulting in the worsening of the problem of arrears.”

We can conclude that the main focus of the government reports has been on the supply-side solutions to the problem of court congestion. However, recently increasing attention has been paid to the need to tackle the problem from the demand side by looking at the areas in which litigation is at the maximum, and then devising methods to curtail frivolous litigation. The *Report of Justice Satish Chandra Committee* (GOI, 1986b) and the *Malimath Committee Report* are dealing extensively with reforms that can lead to a decline in the litigation rates. Both reports have identified a host of demand-related reasons for the congestion problem in Indian courts, including the original civil jurisdiction of some high courts, the accumulation of first appeals, the extensive use of second appeals, the granting of unnecessary adjournments, etc.

In summary, the government reports have mainly pointed out the infrastructure bottlenecks associated with dispute resolution as the main problem. However, the reports have not tried to estimate the extent of infrastructure requirements and very little has been said about the congestion problem in lower courts. Next we turn to an empirical estimation of the relative importance of both supply- and demand-side factors identified as the most important causes of court congestion by the government reports.

3 Data and Empirical Results

3.1 Data and Variables

The analysis that follows is mostly based on raw data provided by the Ministry of Law, Justice, and Company Affairs of the Government of India. Data were available for 27 states and UTs during the period 1995-99. We could collect a comprehensive data set of various judicial indicators, including civil and criminal caseloads, civil and criminal litigation, disposed cases, number of judges, vacancies, etc.¹⁴ We were also able to compute indicators of judicial performance, such as clearance rates. Finally, we were able to differentiate among cases based on their duration. In the interest of brevity, only the results of the analysis using the data on civil and total (civil and criminal) cases are presented.¹⁵

Table 1 presents definitions and summary statistics of the variables used in this study. The first problem is how to normalize the variables in order to account for significant variations in population and judicial infrastructure across the Indian states and UTs. In the absence of data on the total number of transactions or disputes, or even the number of legal entities that may be eligible to file these cases, we use both the per capita and per judge numbers as the normalization.¹⁶

We first focus on the dependent variable, i.e., on the court congestion. Of 20 million pending cases in Indian lower courts, criminal cases constitute around two-thirds, while civil cases make up one-third of the total caseload.¹⁷ About 63 percent of the civil cases are more than a year old (31 percent are more than 3 years old), while 59 percent of the criminal cases are more than a year old (25 percent are more than 3 years old). This implies that civil cases tend to be dragged on for a longer time. The main reason is that for various (mostly non-judicial) reasons criminal cases get higher priority. Since most civil cases are commercial disputes, this hampers the settlement of economic disputes, leading to higher transaction costs and general inefficiency in commercial activity.

¹⁴ In India the civil law cases include personal contract and property disputes, rather than just the narrower group of commercial cases.

¹⁵ The analysis based on criminal cases produces qualitatively similar results. These results are available from the authors upon request.

¹⁶ On the problem of normalization for comparative purposes, see Ietswaart (1990).

¹⁷ For criminal cases, the magisterial courts account for about 90 percent of the caseload.

Table 1: Variable Definitions, Sample Means and Standard Deviations

Variable	Definition	Mean	σ
LDT_pc	Total caseload per capita	0.020	0.017
1YT_pc	Number of cases older than a year per capita	0.011	0.010
LDCI_pc	Civil caseload per capita	0.007	0.006
1YCI_pc	Number of civil cases older than a year per capita	0.004	0.004
LDT_pj	Total caseload per judge (in 000)	1.625	1.354
1YT_pj	Number of cases older than a year per judge (in 000)	0.889	0.869
LDCI_pj	Civil caseload per judge (in 000)	0.590	0.421
1YCI_pj	Number of civil cases older than a year per judge (in 000)	0.353	0.285
CNRT	Total congestion rate (the ratio of total cases older than a year to total cases disposed)	0.762	0.567
CNRCI	Civil congestion rate (the ratio of civil cases older than a year to civil cases disposed)	1.244	0.987
JUD	Actual number of judges (the sanctioned judge strength minus vacancies) per 1,000 inhabitants	0.026	0.053
VAC	Vacancy (the ratio of unfilled judicial posts to sanctioned judge strength)	0.080	0.091
CLRT	Total clearance rate (the ratio of total cases disposed to total cases filed)	1.044	0.198
CLRCI	Civil clearance rate (the ratio of civil cases disposed to civil cases filed)	0.993	0.157
LTGT_pc	Total litigation (the number of total cases filed) per capita	0.017	0.018
LTGCI_pc	Civil litigation (the number of civil cases filed) per capita	0.004	0.004
LTGT_pj	Total litigation (the number of total cases filed) per judge (in 000)	1.342	1.228
LTGCI_pj	Civil litigation (the number of civil cases filed) per judge(in 000)	0.354	0.313
Log(GDP)	Logarithm of real Net State Domestic Product per capita	4.595	0.466

Notes: The means and standard deviations are calculated for the pooled data set, i.e. across all Indian states and UTs over the period 1995-99.

In our analysis we use several measures of court congestion. This allows us to identify both the nature and the level of court congestion across the Indian states and to perform robustness checks on our findings regarding the effect of different factors. Standard indicators of court congestion include caseload per capita (LDT_pc, LDCI_pc) and caseload per judge (LDT_pj, LDCI_pj). Although the caseload does not provide information on the delays within the system, this indicator usually reflects the way the situation is perceived by the population. Namely, the more cases are pending in the system, the less a quick decision can be expected. Among the Indian states and UTs used in the study, Gujarat has the highest average backlog of 70 cases per 1,000 inhabitants, followed by Chandigarh and Delhi with pendency figures of 66 and 36 cases respectively (Table A1). With the number of cases per judge varying from about 7 in Arunachal Pradesh to 6,240 in Gujarat, the mean across the sample is 1,625; in the U.S. state courts the mean is 1,164 (Dakolias, 1999).

The measures based on caseload per capita or per judge do not take into account that most cases require a certain minimum timeframe to be disposed. An operational definition of backlog would consider only cases still pending after a certain period of time. We assume that only cases older than a year constitute the “real” backlog and construct two additional measures: the number of cases older than a year per capita (1YT_pc, 1YCI_pc) and per judge (1YT_pj, 1YCI_pj).¹⁸ According to these measures, the problem of congestion is mainly concentrated in Goa, Gujarat, Chandigarh, Maharashtra, and West Bengal.

The last measure we use is the congestion rate (CNRT, CNRCI) which is calculated as the ratio of backlog of cases older than a year to cases disposed. This measure reflects the time it would take a court to dispose of the cases older than a year given its current efficiency and clearance rates.¹⁹ For instance, given the current productivity of courts in Bihar, it would take more than 2 years to dispose of their “real” backlogs, while courts in Mizoram would need less than a month. For civil cases, the expected time to dispose of the “real” backlog ranges from about a month in Mizoram to more than 4 years in Bihar.

Table 2 shows the correlation coefficients of the various measures of court congestion defined above. While the measures based on caseloads and the number of cases older than a year are strongly correlated among each other, their correlation with the congestion rates is much weaker. That is, the states with the highest caseloads do not necessarily have the highest congestion rates. This anticipates the findings of our econometric analysis: the nature and the level of court congestion differ across the states and, therefore, the set of judicial reforms to be considered for each state might also differ.

¹⁸ Additional research is needed to determine what time periods are reasonable for case resolution in the context of Indian judiciary.

¹⁹ The ratio has no units and multiplying it by 12 gives the figures in months.

Table 2: Correlation Matrix for Various Indicators of Court Congestion

Variable		Variable					Variable				
Variable	LDT_pc	1YT_pc	LDT_pj	1YT_pj	CNRT	LDCI_pc	1YCI_pc	LDCI_pj	1YCI_pj	CNRCI	
LDT_pc	1.00	0.89**	0.93**	0.81**	0.18*	0.78**	0.77**	0.73**	0.78**	0.37**	
1YT_pc		1.00	0.87**	0.93**	0.40**	0.69**	0.80**	0.66**	0.82**	0.48**	
LDT_pj			1.00	0.92**	0.24**	0.65**	0.64**	0.78**	0.82**	0.38**	
1YT_pj				1.00	0.42**	0.54**	0.63**	0.67**	0.82**	0.51**	
CNRT					1.00	0.08	0.25**	0.10	0.28**	0.81**	
LDCI_pc						1.00	0.95**	0.86**	0.84**	0.14	
1YCI_pc							1.00	0.78**	0.87**	0.30**	
LDCI_pj								1.00	0.93**	0.18*	
1YCI_pj									1.00	0.37**	
CNRCI										1.00	

Notes: The correlation coefficients are calculated for the pooled data set, i.e. across all Indian states and UTs over the period 1995-99.

** Correlation is significant at the .01 level

* Correlation is significant at the .05 level

Our set of independent variables consists of indicators measuring various aspects of judicial performance. The first independent variable of interest is the number of judges per 1,000 inhabitants (JUD). In particular, we look at the effect of the *actual* judge strength defined as the difference between the sanctioned judge strength (the number of allowable or “desirable” judgeships in the respective courts) and the number of vacancies. Assam, Uttar Pradesh and West Bengal have the lowest number of judges per capita.²⁰

According to the Constitution, the President is vested with the power to appoint judges and to determine the judge strength of high courts. As for the lower courts, the Chief Justice of the respective high court determines the number of judges and this figure is supposed to be calculated based on caseload, case content, case delay and other factors.²¹ This implies that JUD

²⁰ Unfortunately, it is not possible to differentiate between those judges who only deal with civil cases and those who only hear criminal cases.

²¹ The Supreme Court authorizes expansions in lower court judgeships suggested by the Chief Justice. As in other countries, politics plays a role in both the calculation of the number of judgeships by the Chief Justice and the court expansion decisions of the Supreme Court. See de Figueiredo et al. (2000) for interesting findings on how much politics matters in comparison with caseload pressure when it comes to court expansion decisions of the Congress in the USA.

could be endogenous with our measures of court congestion. However, the Hausman test could not confirm any endogeneity and we did not instrument this variable.²² This is understandably so since quantitative data on judicial backlogs and performance were, at least until recently, very poor. Thus, in reality the number of judges could not have been determined based on congestion data.

The second independent variable of interest is the percentage of vacancies (VAC). This is an important variable in the Indian context, since most Indian courts have vacancies and are very seldom at full strength. The problem is most severe in Delhi where almost 40 percent of the judicial posts are unfilled. One of the reasons for vacancies is that many judges are appointed chairmen of various commissions, committees, etc. Another and probably more important reason is the delay in the appointment of judges.²³ In many cases the Chief Justice does not initiate the filling of forthcoming vacancies in advance. Furthermore, district court appointments are the responsibility of the governor of the state, who consults with the Chief Justice. There is a stipulated period of one month for the governor to decide on a candidate and to consult with the Chief Justice, but this deadline is rarely met, nor is there any effort to strictly enforce it.²⁴

The third independent variable is the clearance rate (CLRT, CLRCI), measured as the ratio of cases disposed to cases filed. This indicator is a measure of court productivity in dispute resolution and a determining factor of the growth of pending cases. Only when the clearance rate is higher than 100 percent the courts are able to catch up on case backlogs. The total clearance rate (CLRT) varied significantly across the Indian states and UTs with some of the lowest values calculated for Andaman & Nicobar (70 percent) and some of the highest in Manipur (242 percent). However, for most states the CLRT remained between 90 and 105 percent. Similarly, the United States has a median clearance rate of 97 percent in its state courts. This stands in sharp contrast to many developing countries that have much lower clearance rates and are not able to meet the demand for judicial services.²⁵

The fourth independent variable is litigation (LTGT, LTGCI) which measures the number of new cases filed each year. The number of cases filed per capita or per judge is usually used to determine the demand on the court system, the expected caseload, and the ability of the court system to manage the national docket.²⁶ The situation in India is unique in so far as the courts are slow and overburdened but nevertheless heavily used. The average number of filed cases per judge during the period 1995-99 was about 1,300 which is again comparable to the U.S.

²² The Hausman test could not reject the null hypothesis regardless of whether we used the actual or the sanctioned judge strength in our specification.

²³ The Malimath Committee Report deals extensively with various causes of vacancies.

²⁴ Frequently, the governor recommends his own candidate and a new proposal has to be drawn up, delaying the appointment process further.

²⁵ Clearance rates in U.S. state courts vary from 35 to 266 percent (Dakolias, 1999).

²⁶ The number of cases filed per year may not reflect the full demand on the judiciary, however, as it does not account for those disputes not filed because of resource constraints of the parties, lack of confidence in the judicial system or other reasons.

average.²⁷ The courts in Chandigarh have the highest workload with an average 6,000 filed cases per judge.

Since the large backlogs and delays might be an additional incentive for litigants to misuse the court system by fraudulent litigation, the litigation variables could be endogenous.²⁸ Alternatively, as noted by Priest (1989), the extent of congestion could have an important influence on the motivations of the parties to settle or litigate a dispute. Indeed, the endogeneity of the litigation variables was confirmed by the Hausman test and they were instrumented for use in our regressions. We used the following instruments: cases disposed per capita (or per judge), population density, percentage of urban population, literacy rates, and Panchayats per capita.

Finally, since the level of economic development might be an important explanatory variable, we control for per capita income, i.e., the logarithm of per capita Net State Domestic Product in constant 1980 Rupees.

3.2 Econometric Analysis

Our data set combining time series and cross sections calls for a panel analysis. Although the data are available only from 1995-99, the data set includes 27 Indian states and UTs that display considerable variation, thus reducing the risk of spurious results and weak inferences. Tables 3 and 4 report the results of fixed effects regressions.²⁹ The state fixed effects account for unmeasured factors determining court congestion, such as a jurisdiction's local legal culture and its informal rules of litigation behavior. The standard errors are listed in parentheses below the variables. All significance tests are two-sided asymptotic *t*-tests that are consistent in the presence of heteroskedasticity. Since autocorrelation was detected for the pending cases older than a year, the FGLS procedure was used (Greene, 2003) and AR(1) consistent standard errors are listed for regressions (2), (4), (8), and (10).

We first run a set of regressions to examine the effects of independent variables on total caseloads (Table 3). As shown by our estimates, the number of judges per capita appears to offer little in the way of explaining the total caseloads. The coefficient on JUD has a significantly (though only marginally) negative effect only on the congestion rates, while its effect on the other measures of court congestion is insignificant. This allows us to conclude that an increase in the number of judges may not always solve the problem. Similarly, the coefficient on vacancies

²⁷ In contrast, German judges receive only 176 cases per year (Dakolias, 1999).

²⁸ Indeed, the early and very influential study by Zeisel et al. (1959) has been largely criticized for its failure to account for endogeneity of litigation. That is, the authors presumed that the rate that disputes were brought to litigation was exogenous with respect to court congestion.

²⁹ The Hausman test for the fixed and random effects regressions confirmed that the fixed effects model is the better choice.

Table 3: Fixed Effects Estimates for Total Cases

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. Var.	LDT_pc	1YT_pc	LDT_pj	1YT_pj	CNRT	CNRT
JUD	.0042 (.0639)	.0281 (.0634)	-.5144 (5.647)	-1.650 (5.640)	-6.262* (3.882)	-7.344* (3.899)
VAC	.0011 (.0072)	.0003 (.0037)	1.392** (.6326)	.9367*** (.3494)	-.2212 (.4354)	.0487 (.4368)
CLRT	-.0034** (.0015)	-.0011 (.0007)	-.2900** (.1365)	-.1030 (.0674)	-.5315*** (.0921)	-.5039*** (.0942)
LTGT_pc¹⁾	.4013*** (.0750)	.3782*** (.0611)	-	-	-11.70** (4.551)	-
LTGT_pj¹⁾	-	-	.4687*** (.1015)	.1532*** (.0557)	-	-.1969** (.0700)
Log(GDP)	-.0166*** (.0028)	-.0039* (.0024)	-1.210*** (.2452)	-.4619** (.2283)	-.7906*** (.1709)	-.7919*** (.1693)
No. obs.	132	105	132	105	132	132
Adj. R²	.9748	.9778	.9698	.9672	.9156	.9166
$\hat{\sigma}$.0027	.0013	.2353	.1185	.1634	.1625

Notes: In regressions 1, 3, 5 and 6, White heteroskedasticity-consistent standard errors are given in parentheses. Regressions 2 and 4 are estimated by FGLS procedure correcting for autocorrelation and AR(1) consistent standard errors are given in parentheses.

*** indicate significance at the 1% level, ** at the 5 %, and * at the 10% level.

¹⁾ In regressions 1, 3, 5 and 6, the variables have been instrumented to correct for possible endogeneity bias. The instruments used were: cases disposed per capita (or per judge), population density, percentage of urban population, literacy rate, and Panchayats per capita.

is insignificant in most of the regressions. However, eliminating the vacancies seems to be particularly important in jurisdictions with a large number of pending cases per judge.

The clearance rates have a significant and negative effect on caseloads per capita and per judge, as well as on the congestion rates. This means that court productivity is a very important factor in reducing court backlogs and congestion. The effect of CRLT on the backlog of cases

older than a year is insignificant, indicating that the courts are focusing mainly on the new cases filed each year and are not addressing their pending cases. Indeed, during the period 1995-99, the courts tended to adjust their productivity only to the number of cases filed, not to their full caseloads. Such measures make it difficult to reduce the “real” backlogs.³⁰ Other studies (Goerdts et al., 1989; Dakolias, 1999) have also found that an increase in filed cases may cause courts to internally adapt to the change to maintain their rates of case resolution.³¹

As expected, litigation has a positive and significant effect on the caseloads. This is consistent with the argument often raised by litigation economics that there are factors offsetting the effect of delay reduction programs. The negative effect of litigation on the congestion rate again confirms that the courts are adjusting their productivity merely to the number of filings.³²

The negative coefficient on income can be explained by the fact that a higher amount of available resources contributes to a higher clearance rate.³³ Alternatively, the size of the government increases with the per capita income (Mueller, 2003). Thus, a higher per capita income can explain more judges per capita, higher clearance rates, and lower caseloads.

Table 4 presents yet a further effort to explain civil court congestion. The coefficients on JUD and VAC are insignificant, regardless of the measure of congestion used.³⁴ The clearance rates and volume of litigation have similar effects as in the case of total cases. The coefficient on income remains mainly negative and significant.

The results of our empirical analysis imply that the effect of any single reform measure will differ across state jurisdictions as the values of the various measures of court congestion across jurisdictions differ. Thus, for example, a doubling of judges within one jurisdiction may have a substantially different effect from a doubling of judges in another jurisdiction if there are differences between the jurisdictions in their congestion rates. Similarly, even within a single jurisdiction, a reform such as a doubling of judges in one year may have a substantially different effect than a doubling in a different year since the congestion rate changes over the years.

³⁰ The 1924 *Rankin Committee Report* was the first one to mention this problem: “So long as such arrears exist, there is temptation to which many presiding officers succumb, to hold back the heavier contested suits and devote attention to the lighter ones. The turnout of decisions in contested suits is thus maintained somewhere near the figure of institution, while the really difficult work is pushed back into the ground.”

³¹ On the other hand, Priest (1989) argues that there is a reverse causality. According to him, there is some equilibrium level of court congestion. When reforms are implemented and delays decrease, more cases are filed in the courts thereby bringing congestion back toward an equilibrium level.

³² In a separate set of regression, the number of cases filed displayed a robustly positive effect on the disposal of cases. This effect is stronger than the positive effect of the filings on the backlog of cases older than a year, resulting in a negative effect of the filings on the congestion rate.

³³ Indeed, regressions using clearance rates as a dependent variable revealed a significantly positive effect of the per capita income.

³⁴ Note, however, that the coefficients on JUD and VAC have mostly the expected negative signs but have large standard errors. One reason for these insignificant results may be the measurement of the variables. We were not able to obtain data on the number of judges dealing exclusively (or mainly) with civil cases, or to measure the time the judges spend on resolving civil cases.

Table 4: Fixed Effects Estimates for Civil Cases

	(7)	(8)	(9)	(10)	(11)	(12)
Dep. Var.	LDCI_pc	1YCI_pc	LDCI_pj	1YCI_pj	CNRCI	CNRCI
JUD	-0.0135 (.0159)	-.0286 (.0305)	-1.903 (1.733)	-3.787 (2.760)	-7.173 (6.333)	-8.239 (7.151)
VAC	-.0017 (.0018)	-.0016 (.0016)	.2110 (.1920)	.1663 (.1502)	.2468 (.7027)	.5126 (.7922)
CLRCI	-.0012** (.0005)	.0002 (.0005)	-.1199** (.0500)	.0116 (.0459)	-.3107* (.1843)	-.3762* (.2063)
LTGCI_pc¹⁾	.2621*** (.0716)	.1219* (.0707)	-	-	-183.3*** (28.46)	-
LTGCI_pj¹⁾	-	-	.5985*** (.0634)	.0954* (.0557)	-	-.9229*** (.2617)
Log(GDP)	-.0018*** (.0007)	-.0021** (.0011)	-.1769** (.7361)	-.2162** (.1053)	.1126 (.2716)	.2194 (.3038)
No. obs.	132	105	132	105	132	132
Adj. R²	.9863	.9770	.9706	.9437	.9284	.9099
$\hat{\sigma}$.0007	.0005	.0720	.0509	.2650	.2973

Notes: In regressions 7, 9, 11 and 12, White heteroskedasticity-consistent standard errors are given in parentheses. Regressions 8 and 10 are estimated by FGLS procedure correcting for autocorrelation and AR(1) consistent standard errors are given in parentheses.

*** indicate significance at the 1% level, ** at the 5 %, and * at the 10% level.

¹⁾ In regressions 7, 9, 11 and 12, the variables have been instrumented to correct for possible endogeneity bias. The instruments used were: cases disposed per capita (or per judge), population density, percentage of urban population, literacy rate, and Panchayats per capita.

In summary, our estimates help us to move away from the general “one-size-fits-all” remedies for observed deficiencies in the court system and to develop a more focused approach tailored to the needs of individual states and UTs. Thus, while increasing the number of judges might lead to a reduction in congestion rates, this solution is not likely to contribute to an

improvement of the situation in the court systems facing large caseloads. On the other hand, filling of vacancies seems particularly relevant for judiciaries with large caseloads per judge. The clearance rates have a well-defined, negative effect on both caseloads and congestion rates. This suggests that improvements in court productivity are crucial for reducing the congestion in all state judiciaries. Finally, reduction in litigation rates, coupled with an increased emphasis on resolving cases that are pending for a long time, is also likely to assist lower courts in every state to address their backlogs.

4 Discussion and Implications

4.1 Supply-Side Solutions

In India, as in many other countries, solutions to the problem of court congestion have been mainly sought on the supply side, i.e., by improving the available infrastructure for dispute resolution, thus increasing the rate of the case disposal. Supply-side reforms include measures such as hiring temporary judges to resolve backlogged cases, introducing alternative dispute resolution mechanisms, applying case management techniques, and removing inactive cases from the files. This subsection concentrates on three supply-side measures. These include increasing the judicial capacity by filling of existing vacancies, increasing the number of judges through the establishment of temporary courts, and improving court productivity.

We first look at the problem of vacancies. As discussed above, delays in the appointment of judges occur mainly due to the protracted and cumbersome procedure. In addition to the stricter adherence to deadlines, special attention should be paid to the transparency of the procedures in order to avoid cases of nepotism or political influence in the appointment of judges. Our data show that Gujarat, Maharashtra, and Karnataka are states with large backlogs per judge and a significant number of vacancies. These states could achieve significant improvements by implementing measures to reduce judicial vacancies.

In the case that the filling of existing vacancies is not enough to improve the judicial capacity, the establishment of temporary courts may provide additional judges. Temporary courts are particularly useful if the clearance rate is acceptable, but the congestion rate is high. In such cases, retired judges might be brought on temporarily to catch up with the backlog, without requiring a fixed continued future cost.³⁵

We perform a simple simulation to determine the demand for temporary judges. First, we assume that only those cases that are pending for more than a year need to be disposed so that the court congestion is eradicated. Second, we assume that the temporary judges are on average as efficient as the permanent staff and that the cases older than a year are of average complexity and difficulty. Finally, we fix a time frame of five years within which courts could dispose of their pending cases. We begin with criminal cases and calculate the number of additional judges required, as well as the percentage over the sanctioned judge strength that this increase represents.

³⁵ Peruvian judiciary, for instance, has managed to achieve significant improvements through the establishment of temporary courts (Dakolias, 1999).

Based on the assumptions above, we find that only 1,268 additional judges are required. Bihar would need the most additional judges (399), followed by Uttar Pradesh (166) and Maharashtra (135). We repeat the same analysis for civil cases. The demand in this case is 1,456 additional judgeships, with Bihar, Gujarat, Uttar Pradesh and West Bengal being the states that would require more than 100 additional judges.

Overall, 2,724 additional judgeships are required if all criminal and civil pending cases are to be disposed within five years. This represents an increase of 22.3 percent over the total sanctioned judge strength. The maximum increase is needed in Bihar where 848 additional judges are required, representing 52 percent of the sanctioned judge strength. However, these figures do not take into account the existing vacancies. After filling the vacancies, the requirement is only about 1,177 additional posts in the lower courts, which represents an increase of less than 10 percent of the sanctioned judge strength.

The findings of the above exercise are both informative and interesting. Although some of our assumptions might be quite strong, the results suggest that the Indian judiciary is not in such a dismal condition as often claimed by both the popular press and some academic publications (see, e.g., Debroy, 2000). If all vacancies are filled, a relatively small increase (9.6 percent) in judgeships is necessary to dispose of the “real” backlogs within five years. To our knowledge, this is the first attempt to objectively evaluate the present situation of the Indian lower judiciary and to estimate the extent of infrastructure requirements based on statistical data.

Related to the problem of the insufficient number of judges is the insufficient and inefficient administrative personnel. While the sanctioned judge strength has been revised every year, there has been practically no revision in the administrative strength for years. There is also a need for a better training of the administrative personnel.

The third supply-side solution that we explore is the improvement in court productivity. This measure usually includes information technology, training, new case processing designs and cultural changes. Cultural changes in particular can be difficult because they require changes in the way people work. For instance, the working hours in India range from 5.5 hours per day in lower courts to 5 hours only in high courts and the Supreme Court. The corresponding number for Malaysian courts is 6.5 hours per day (Debroy, 2000). In terms of working days per year, the Supreme Court of India is operational only 180 days, high courts 200 to 210 days per annum, while the working days of lower courts range from 240 to 270 days. In Malaysia, the Federal Court operates 220 days and the other courts from 220 to 260 days.

Furthermore, the Indian lower courts do not rely on an extensive use of technical aids, such as computers, dictaphones, and the like. Especially the importance of computerization of courts should not be overlooked. Information technology, for instance, has helped to diminish arrears in the Supreme Court in two important ways. First, the computerized court registry has listed all pending cases in chronological order. Listed matters have been taken up sequentially,

leaving no room for arbitrary decisions. Second, when a judge is absent, the cases are immediately transferred to other judges, making sure that similar cases are assigned to the same judges.³⁶ There are quite a few lessons to be derived from this experience.

While improving productivity may require relatively few resources in comparison with increasing the judicial infrastructure, it necessitates more commitment by the judiciary. In the United States, for instance, many successful delay reduction programs have started with the incentives facing judges (World Bank, 1999). The extent to which improving productivity will be necessary depends on the condition of the judiciary. This reform could be especially effective in the states where the clearance rates are low and the judiciaries are not capable of addressing the number of filed cases. These states and UTs include: Haryana, Himachal Pradesh, Kerala, and Uttar Pradesh (with high backlogs per capita or per judge), as well as Bihar and Andaman & Nicobar (with high congestion rates).

Finally, Gujarat, Maharashtra, Haryana and Uttar Pradesh are states that are experiencing significant court congestion regardless of the measure used to capture the congestion. These states may consider a combination of all the reforms mentioned above. Filling of existing vacancies combined with temporary courts and productivity improvements will allow the courts in these states to address the high demand placed on them.

4.2 Procedural and Substantive Law Reforms

The previous subsection dealt with the supply-side solutions to the problem of court congestion. We have shown that with a reasonable increase in the infrastructure or in the productivity of the judges, the current backlog of pending cases would be resolved within a realistic timeframe of five years. However, as the results of our econometric analysis show, institution of new cases is an important determinant of the congestion in the Indian court system. Indeed, increasing the number of judges, their productivity, or their working hours, will help only in the short run, if the real problem is one of over-litigation. Therefore, the demand-side solutions to the problem also need to be taken into account, particularly the solutions leading to the eradication of unnecessary and frivolous litigation.³⁷

As noted by Bebchuk and Chang (1996), plaintiffs may bring frivolous suits if litigation costs are sufficiently small relative to the amount at stake. This is applicable to the situation in

³⁶ When similar cases are assigned to the same judge, this allows the development of greater judicial expertise and leads to faster disposal of cases. In India, except for the Supreme Court, allocation and reallocation of judges to a certain case seem arbitrary.

³⁷ The literature is still not clear on whether higher litigation rates are better or worse than lower litigation rates. In fact, the major hypothesis used in relation to litigation rates is that, with economic development, litigation rates should increase because markets become more complex and more people transact with each other but cannot rely on informal enforcement mechanisms (Clark, 1990; Milgrom et al. 1990). However, higher rates of *frivolous* litigation are clearly worse than lower rates.

India where free legal aid is offered to all members of scheduled casts and tribes, women, and persons with an income below a certain level. In fact, a large majority of the population is eligible for free legal aid. Although lawyers tend to refuse to take such cases or demand payment, the number of cases instituted each year indicates that litigation costs are a negligible constraint to file suits.

In addition to the low litigation costs, the discrepancy between slow and congested courts on the one hand and high litigation rates on the other indicates that the system tends to be misused by frivolous litigation. This has been also confirmed by our empirical analysis. Namely, the endogeneity of the litigation variable suggests that there might be greater incentives to file suits in courts that are more congested (and therefore face longer delays) and thus to misuse the system.

We do not have data that will allow us to estimate the extent of frivolous litigation. Instead, based on the assumption that longer delays could induce more frivolous litigation, we try to identify the areas and reasons for delays and recommend adoption of procedurally and substantively efficient rules to eliminate delays. Due to the nature of these issues and lack of relevant data, we rely mainly on qualitative analysis in this subsection.

Let us first look at procedural law. If the procedural law is inefficient and time consuming, no matter how good the substantive law is, the legal system will lack credibility. Before going into the details of reforms in procedural laws, one needs to investigate where the institutions of new cases are and where the accumulation of arrears has taken place. For this purpose, we have gone through the court records of completed civil cases in both high and lower courts in seven Indian states and UTs.³⁸ First, we have enumerated the stages at which delays occur. Then, within each stage we have explored the reasons for delays. In the process, we have tried to identify the main aspects of procedural reform.

Procedural delays occur at four stages: before the trial begins, during the trial, at the appellate stage and in the execution proceedings. Pre-trial delays include:

- Delays in the service of summons. Summons is served by bailiffs attached to courts and, according to some anecdotal evidence, often bribed by defendants to avoid service.³⁹
- Delays due to the filing of written statements and documents. In general, each party has to produce a list of documents that will be submitted as evidence. However, as this stage is open-ended and the presiding judge usually does not set a date by which the affidavits of documents must be filed, the parties rarely file them.⁴⁰

³⁸ These include: Andhra Pradesh, Chandigarh, Delhi, Karnataka, Madhya Pradesh, Maharashtra, and West Bengal.

³⁹ Conversely, if the plaintiff wants summons to be served, he can decide to bribe the bailiff.

⁴⁰ Even when such affidavits are available, there are delays in obtaining copies of the documents.

The Problem of Court Congestion: Evidence from Indian Lower Courts

- Delays due to the framing of issues. There is no stipulation about issues being framed within a certain time period after the date of first hearing. In addition, if a party is dissatisfied with the way issues have been framed, appeals can be filed with higher courts. This slows the process considerably.

Some proposals for improvement in the pre-trial stage would involve use of registered mail instead of the bailiff route, and pre-trial meetings to simplify and restrict the issues as well as to decide on the admissible evidence. Significant delays also occur during the trial stage. These include:

- Non-attendance of witnesses;
- Non-appearance of lawyers;
- Lengthy oral arguments;
- Arbitrary adjournments;
- Delayed judgments, i.e. judgments are often written 15 months after arguments.

To alleviate the delay problem during the trial stage, court administrators could consider: stricter enforcement of punitive actions against those witnesses who do not show up though duly served; limiting the length of oral arguments; placing a limit on the number of adjournments; and stricter enforcement of stipulated deadlines.

At the appellate stage, the main reason for delays is the possibility for an extensive use of appeals. In general, a litigant has the right of a first appeal on matters of fact or matters of law to lower courts, and a second appeal to high courts on matters of law only. That is, the high court should only look at the claim that the lower court has not followed the correct procedure or framed the question of law incorrectly. In reality, however, many high court judges do allow new evidence, which is a cause for further appeals.⁴¹ In addition, if the appeal to higher courts is heard by a single judge, the party can file a further appeal known as letters patent appeal to a division bench of the respective high court. Subject to caveats, appeals can be made directly to the Supreme Court.

In addition, a large amount of government litigation seems to be in the form of appeals against lower court judgments. This mainly reflects the procedure followed in appealing. Appeals are actually automatic. The decision to appeal is made at the bottom of the government's decision-making hierarchy. However, the decision not to appeal has to go all the way to the top. This points to a serious incentive for lower level officials to appeal. The removal of this incentive would enable the targeting of institutional improvements to cases that render higher social benefits than these appeal cases.⁴²

⁴¹ In several Supreme Court judgments, the apex court has castigated the high courts for being unable to distinguish between questions of facts and law.

⁴² Some courts have already imposed penalties on the government for making frivolous appeals.

Finally, delays also occur in execution proceedings. For instance, in eviction cases related to urban property, delays are caused by successive attempts to obstruct delivery.⁴³ Courts tend not to pay attention to the execution of decrees, because the execution does not count towards the standard case disposal. However, court decisions that are not backed up with a threat of being enforced by the state in a timely manner do not give any incentive for compliance, which ultimately undermines the court system.

We now explore the need for reforms in statutory laws. Under Article 246 of the Constitution, there is a Union List, a State List and a Concurrent List. This means that both the center and the states can legislate. As a result, there are around 3,000 central statutes only, out of which about 450 are connected, directly or indirectly, with commercial decision-making. Given the enormity of statutory legislature, a detailed discussion of the need for a substantive law reform is beyond the scope of this paper. Nevertheless, we can identify four broad areas where statutory law reforms are needed. These include eliminating old and dysfunctional legislation, introducing legislation where none exists, unifying and harmonizing legislation, and reducing unnecessary state intervention and over-legislation.

India does not have a system of desuetude so that statutes do not become invalid after a period of time. They continue on the statute books unless the LCI or another authority identifies them for repeal. As a result, many statutes go back to the 19th century. Logically, they should have no or only limited relevance more than 150 years after their enactment. On the other hand, there are areas where necessary legislation does not exist. Examples are credit cards, automatic teller machines (ATMs), hire purchase and leasing, electronic data interchanges, etc. The law needs to evolve so that such gaps are removed.⁴⁴

There is also a need for harmonization and unification of laws. For instance, there are 165 pieces of legislation (including 47 central acts) that directly deal with labor. Within these, the term ‘wage’ has been defined in 11 different ways (Hazra, 1999). Finally, examples of over-legislation and under-governance abound. Over-legislation is closely correlated with the problem of reducing unnecessary state intervention in the economy. It is important that efforts are focused on necessary adjustments to specific areas of law that are of greatest relevance to the market-oriented reform program. These adjustments could be implemented while avoiding additional legislation as much as possible and within the framework of the Constitution as well as the relevant decisions of the Supreme Court and high courts.

⁴³ In India it is practically impossible to vacate tenants from a house, even if they breach the rental contract continuously. This leads to a shortage of affordable housing, especially for low-income families.

⁴⁴ In some ways, missing legislation is less of a problem because there is no legacy of “dead wood” and it is possible to draft legislation on the basis of practices in other countries.

5 Conclusion

Long delays in processing cases are common in the Indian judicial system. This problem exists despite the fact that for more than 50 years judges, lawyers, and policymakers in India have experimented with ways to speed the processing of civil and criminal cases. Solutions have usually been sought in such structural reforms as increases in the number of judges and changes in procedures. Most of the delay reduction programs, however, have ended in failure. We argue here that a possible explanation for the failure of these programs is that they tended to give general prescriptions regardless of the nature and level of court congestion facing individual states and UTs.

In this paper, we conduct an empirical analysis of the congestion in Indian lower courts. Econometric analysis of institutions, such as the judiciary, has faced serious criticism since institutions tend to reflect the norms of the society they exist in. However, our data set covering 27 Indian states and UTs over the period 1995-99 guarantees a common institutional framework in which the judicial quality is measured instead of different systems.

We use several measures to capture court congestion. These include caseloads per capita and per judge, the number of cases older than a year per capita and per judge, and congestion rates calculated as the ratio of cases older than a year to cases disposed. We can conclude that the Indian state judiciaries differ with respect to the nature and the level of congestion they face. We can also identify the reasons why some judiciaries are more congested than others. The results show that a large number of judges per capita is negatively related to congestion rates, while vacancies have a positive effect on caseloads per judge. Court productivity captured by the clearance rates has a significant and negative effect on both caseloads and congestion rates and seems to be crucial for the effectiveness of congestion-reduction programs. Finally, judiciaries with lower litigation rates display relatively better performance with respect to current caseloads, but are not efficient in addressing the “real” backlogs of cases pending for more than a year.

Based on our findings, we discuss remedial measures, which can essentially lead into two directions. The first involves improvements in infrastructure and court productivity, while the second involves adoption of procedurally and substantively efficient rules. Besides these remedies, a well-defined program for judicial reform needs to include a host of considerations that we have not attempted to canvas, but that would merit additional research. These include: the redefinition and/or expansion of legal education programs and training for students, lawyers, and judges; increasing the availability and efficiency of ADR mechanisms; the existence of judicial independence (i.e., budget autonomy, transparency of the appointment process, and job security) coupled with a transparent disciplinary system for court officers; etc.

In addition, future research could look into whether the findings of this study are relevant across national legal systems. As emphasized by Posner (1998), legal reform is an important part of the modernization process of poor countries. Probably the most important lesson emerging from our study is that a well-conceived legal reform program should be based on solid empirical evidence. Empirical analysis is also crucial for evaluating the progress in court performance, planning for future needs, and strategizing for new reform efforts. Although every court system is unique, reformers in other countries can look for appropriate data to identify the nature of congestion, highlight potential pitfalls of justice systems, or even suggest new approaches for delay reduction that are suitable for their unique local legal culture.

Finally, future study of courts as agents of legal government could move away from broad macro analysis of congestion, proceed to the micro level and actually examine the types of cases that are being over-litigated and where the accumulation of arrears has taken place. Analyzing court cases, category by category, and exploring the costs and benefits of different types of cases that are litigated are the subject of the next stage of our research.

References

- Bebchuk, L. A. and H. F. Chang (1996): An Analysis of Fee-Shifting Based on the Margin of Victory: On Frivolous Suits, Meritorious Suits, and the Role of Rule 11, *Journal of Legal Studies* 25 (2), pp. 371-403.
- Brookings Institution (1990): *Justice for All: Reducing Costs and Delay in Civil Litigation*. Washington, DC: Brookings Institution.
- Buscaglia, E. and M. Dakolias (1996): Judicial Reform in Latin American Courts: The Experience in Argentina and Ecuador, *World Bank Technical Paper 350*, Washington DC: World Bank.
- Clark, D. S. (1990): Civil Litigation Trends in Europe and Latin America since 1945: The Advantage of Intracountry Comparisons, *Law and Society Review* 24, pp. 549-569.
- Dakolias, M. (1999): Court Performance Around the World: A Comparative Perspective, *World Bank Technical Paper 430*, Washington, DC: World Bank.
- Debroy, B. (2000): Some Issues in Law Reform in India. In: Jean-Jacques Dethier (eds.): *Governance, Decentralization and Reform in China, India and Russia*. Dordrecht, The Netherlands, Kluwer Academic Publishers.
- Dhawan, R. (1978): *The Supreme Court Under Strain: The Challenge of Arrears*. Bombay, M. N. Tripathi Pvt. Ltd.
- Dhawan, R. (1986): *Litigation Explosion in India*. Bombay, M. N. Tripathi Pvt. Ltd.
- De Figueiredo, J. M., G. S. Gryski, E. H. Tiller and G. Zuk (2000): Congress and the Political Expansion of the U.S. District Courts, *American Law and Economics Review* 2(1), pp. 107-125.
- Goerdt, J., C. Lomvardias, G. Gallas, and B. Mahoney (1989): *Examining Court Delay: The Pace of Litigation in 26 Urban Trial Courts, 1987*. Williamsburg: National Center for State Courts.
- Government of India (1972): *High Court Arrears Committee*. New Delhi, Supreme Court of India.
- Government of India (1986a): *The Thirty First Report of the Estimates Committee to the Parliament*, New Delhi, Ministry of Law, Justice and Company Affairs.
- Government of India (1986b): *Report of Justice Satish Chandra Committee*. New Delhi, Ministry of Law, Justice and Company Affairs.

- Government of India (1990): *Report of the Arrears Committee*. New Delhi, Supreme Court of India.
- Government of India (1989-1990 to 1999-2000): *Annual Report of the Ministry of Law, Justice and Company Affairs*. New Delhi, Ministry of Law, Justice and Company Affairs.
- Greene, W. (2003): *Econometric Analysis*. New Jersey, Prentice-Hall Inc.
- Hammergren, L. (2002): *Fifteen Years of Judicial Reform in Latin America: Where We Are and Why We Haven't Made Any Progress*. Forthcoming.
- Hazra, A. K. (1999): Harmonizing Labor Laws. In: Bibek, D. (eds.): *Agenda For Change : The Need for Law Reform. 2, pp. 71-81*, New Delhi, Allied Publishers,.
- Ietswaart, H. F.P. (1990): The International Comparison of Court Caseloads: The Experience of the European Working Group, *Law and Society Review 24 (2)*, p. 571.
- Khan, A. U., P. Sharma and A. Rajagopal (1997): *Identification of Bottlenecks in Judicial Procedure*. New Delhi, Allied Publishers.
- Law Commission of India (1958): *The Fourteenth Report on Reform of Judicial Administration*. New Delhi, Ministry of Law, Justice and Company Affairs.
- Law Commission of India (1979): *The Seventy Ninth Report on Delays and Arrears in High courts and Other Appellate Courts*. New Delhi, Ministry of Law, Justice and Company Affairs.
- Law Commission of India (1987): *The One Hundred and Twenty First Report on a New Forum for Judicial Appointments*. New Delhi, Ministry of Law, Justice and Company Affairs.
- Law Commission of India (1988): *The One Hundred and Twenty Fourth Report on High Court Arrears: A Fresh Look*. New Delhi, Ministry of Law, Justice and Company Affairs.
- Milgrom, P. R., D. C. North, and B. W. Weingast (1990): The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs, *Economics and Politics 2(1)*, pp.1.23.
- Mitra, N. L. (1995): Commercial Disputes. In: Madhava Menon, N.R. and B. Debroy (eds.): *Legal Dimensions of Economic Reforms, pp. 173-121*. New Delhi, Allied Publishers,.
- Mueller, D. C. (2003): *Public Choice III*. Cambridge, NU, Cambridge University Press.
- Nagaraj, V. (1995): Labor Laws. In: Madhava Menon, N.R. and B. Debroy (eds.): *Legal Dimensions of Economic Reforms, pp. 31-80*. New Delhi, Allied Publishers.
- Posner, R. A. (1998): Creating a Legal Framework for Economic Development, *The World Bank Research Observer 13 (1)*, pp. 1-11.
- Priest, G. L. (1989): Private Litigants and the Court Congestion Problem, *Boston University Law Review 69(2)*, pp. 527-559.
- Rao, B. V. (2001): *Crisis in Indian Judiciary*. Hyderabad, Legal Aid Centre.

The Problem of Court Congestion: Evidence from Indian Lower Courts

World Bank (1999): Reducing Court Delays: Five Lessons from the United States, *PREMnotes* 34, Washington, DC: World Bank.

Zeisel, H., H. Kalven, and B. Buchholz (1959): *Delay in the Court*. Westport, Conn., Greenwood Press Publishers:

Appendix

Table A1: Means (Standard Deviations) of the Various Measures of Court Congestion across Indian States and UTs over the period 1995-1999

State /UT	LDT_pc ¹⁾	IYT_pc ¹⁾	LDT_pj	IYT_pj	CNRT	LDCI_pc ¹⁾	IYCI_pc ¹⁾	LDCI_pj	IYCI_pj	CNRCI
Andaman & Nicobar ²⁾	1.83 (0.12)	0.97 (0.30)	0.129 (0.02)	0.066 (0.01)	1.175 (0.39)	1.62 (0.14)	0.82 (0.31)	0.114 (0.02)	0.056 (0.01)	1.142 (0.41)
Andhra Pradesh	14.40 (0.77)	7.51 (0.49)	1.430 (0.14)	0.746 (0.08)	0.493 (0.04)	9.52 (1.56)	5.20 (0.99)	0.949 (0.19)	0.519 (0.12)	0.478 (0.05)
Arunachal Pradesh	2.06 (0.41)	0.62 (0.62)	0.007 (0.00)	0.002 (0.00)	0.457 (0.24)	0.30 (0.04)	0.07 (0.04)	0.001 (0.00)	0.000 (0.00)	2.530 (0.28)
Assam	7.39 (0.85)	3.11 (0.40)	0.910 (0.11)	0.383 (0.05)	0.639 (0.15)	1.98 (0.16)	0.92 (0.10)	0.244 (0.02)	0.113 (0.02)	0.808 (0.19)
Bihar	11.49 (0.65)	7.70 (0.40)	0.834 (0.05)	0.559 (0.03)	2.276 (0.35)	2.42 (0.02)	1.81 (0.03)	0.176 (0.00)	0.132 (0.00)	4.281 (0.40)
Chandigarh	65.74 (7.49)	17.62 (4.98)	4.305 (0.28)	1.149 (0.28)	0.188 (0.04)	19.83 (1.87)	10.21 (1.65)	1.308 (0.17)	0.673 (0.12)	0.860 (0.11)
Delhi	36.16 (5.97)	20.55 (3.13)	1.964 (0.30)	1.117 (0.17)	0.585 (0.10)	9.75 (1.14)	7.49 (0.83)	0.530 (0.06)	0.408 (0.05)	1.832 (0.17)
Goa	35.08 (3.37)	26.57 (2.91)	1.518 (0.45)	1.150 (0.34)	1.436 (0.31)	23.48 (1.62)	18.08 (1.54)	1.011 (0.27)	0.780 (0.22)	1.906 (0.46)
Gujarat	70.27 (9.78)	47.37 (9.22)	6.240 (0.96)	4.205 (0.85)	1.344 (0.38)	14.27 (1.26)	11.18 (1.17)	1.267 (0.14)	0.993 (0.13)	2.728 (0.54)
Haryana	24.06 (1.85)	14.23 (1.27)	2.168 (0.13)	1.284 (0.11)	1.091 (0.11)	10.85 (0.64)	6.29 (0.36)	0.981 (0.10)	0.568 (0.05)	0.954 (0.04)
Himachal Pradesh	22.28 (1.60)	11.57 (1.15)	1.723 (0.09)	0.895 (0.08)	0.486 (0.02)	11.68 (0.39)	6.49 (0.36)	0.904 (0.03)	0.502 (0.03)	0.907 (0.07)
Jammu & Kashmir	13.83 (1.01)	2.54 (1.00)	1.038 (0.10)	0.191 (0.08)	1.192 (0.06)	5.21 (0.47)	1.01 (0.09)	0.391 (0.04)	0.075 (0.01)	0.245 (0.04)
Karnataka	24.29 (1.79)	14.42 (1.07)	2.607 (0.28)	1.547 (0.16)	0.949 (0.16)	13.11 (0.23)	8.48 (0.57)	1.404 (0.06)	0.907 (0.05)	1.617 (0.22)

Table A1 (continued)

State /UT	LDT_pc ¹⁾	1YT_pc ¹⁾	LDT_pj	1YT_pj	CNRT	LDCI_pc ¹⁾	1YCI_pc ¹⁾	LDCI_pj	1YCI_pj	CNRCI
Kerala	16.27 (2.20)	6.94 (1.19)	1.477 (0.21)	0.631 (0.11)	0.293 (0.03)	6.31 (0.45)	3.23 (0.28)	0.572 (0.05)	0.294 (0.03)	0.604 (0.07)
Madhya Pradesh	19.77 (1.74)	11.20 (1.02)	1.841 (0.13)	1.044 (0.09)	0.883 (0.07)	5.35 (0.54)	3.24 (0.40)	0.498 (0.04)	0.301 (0.03)	1.108 (0.09)
Maharashtra	35.13 (6.24)	24.42 (4.79)	2.785 (0.37)	1.934 (0.29)	1.036 (0.25)	10.18 (0.63)	7.47 (0.59)	0.810 (0.02)	0.594 (0.02)	1.750 (0.22)
Manipur	4.80 (2.82)	3.24 (2.61)	0.386 (0.20)	0.259 (0.19)	0.869 (0.58)	1.83 (0.14)	0.99 (0.15)	0.151 (0.02)	0.082 (0.02)	1.432 (0.42)
Mizoram	3.31 (0.71)	0.45 (0.14)	0.037 (0.01)	0.005 (0.00)	0.075 (0.02)	2.29 (0.47)	0.30 (0.07)	0.025 (0.01)	0.003 (0.00)	0.084 (0.02)
Orissa	17.75 (1.32)	10.50 (0.99)	1.782 (0.22)	1.052 (0.13)	1.642 (0.40)	3.12 (0.10)	2.15 (0.56)	0.315 (0.04)	0.217 (0.06)	1.912 (0.82)
Pondicherry	15.50 (7.27)	5.63 (2.28)	0.944 (0.54)	0.341 (0.17)	0.159 (0.04)	7.02 (0.82)	3.44 (0.35)	0.419 (0.09)	0.204 (0.04)	0.837 (0.72)
Punjab	15.88 (0.66)	6.88 (0.22)	1.303 (0.06)	0.565 (0.02)	0.501 (0.03)	9.17 (0.64)	4.32 (0.27)	0.753 (0.06)	0.354 (0.02)	0.664 (0.04)
Rajasthan	16.88 (1.01)	11.85 (1.01)	1.454 (0.15)	1.021 (0.13)	1.123 (0.16)	5.54 (0.30)	3.90 (0.23)	0.477 (0.04)	0.336 (0.03)	1.478 (0.07)
Sikkim	3.49 (1.48)	0.79 (0.46)	0.239 (0.09)	0.053 (0.03)	0.101 (0.07)	0.82 (0.18)	0.30 (0.15)	0.057 (0.01)	0.020 (0.01)	0.403 (0.31)
Tamil Nadu	13.40 (0.71)	5.52 (1.18)	1.404 (0.46)	0.558 (0.11)	0.234 (0.06)	8.69 (0.49)	3.30 (1.23)	0.908 (0.28)	0.326 (0.10)	0.356 (0.20)
Tripura	6.78 (0.75)	3.18 (0.73)	0.416 (0.02)	0.194 (0.03)	1.381 (0.11)	1.82 (0.06)	0.64 (0.09)	0.112 (0.01)	0.039 (0.01)	0.431 (0.08)
Uttar Pradesh	19.93 (0.51)	11.65 (0.28)	2.157 (0.10)	1.261 (0.07)	0.974 (0.08)	6.02 (0.18)	3.88 (0.20)	0.651 (0.04)	0.420 (0.03)	1.333 (0.11)
West Bengal ²⁾	18.51 (2.72)	12.31 (2.67)	2.706 (0.34)	1.798 (0.35)	1.154 (0.20)	5.86 (0.16)	4.19 (0.34)	0.859 (0.04)	0.614 (0.06)	3.281 (0.44)

¹⁾ For a better overview, the values have been multiplied by 1,000.

²⁾ Data are available only from 1996-1999.

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