The Effects of Employment Protection Legislation on Indian Manufacturing

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THE EFFECTS OF EMPLOYMENT PROTECTION LEGISLATION ON INDIAN MANUFACTURING

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Abstract. This paper summarizes and extends my earlier critique (Bhattacharjea, 2006) of the empirical literature on labour regulation and industrial performance in India. I now focus only on the impact of legal restrictions on temporary layoff, permanent retrenchment and plant closures. After summarizing my earlier paper, I describe in detail the variability of employment protection regimes across Indian states attributable to court judgments, a key factor which other authors have ignored. I hypothesize that firms may adapt to restrictions on labour flexibility thru fragmentation and outsourcing, a phenomenon that has not been recognized in the literature. I then draw attention to features of the official industrial statistics which undermine many of the conclusions of earlier studies, and propose an alternative methodology to test the new hypotheses while avoiding these pitfalls. The results of this empirical exercise are inconclusive, but reinforce my skepticism about the literature that tries to relate legal restrictions on labour flexibility to industrial outcomes.

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I. INTRODUCTION

This paper summarizes and carries forward my critical survey of the empirical literature on labour market regulation and industrial performance in India (Bhattacharjea, 2006). I now focus only on the industrial performance impact of employment protection legislation (EPL), in particular the controversial provisions in chapter V-B of the 1947 Industrial Disputes Act (IDA) which require government permission for layoff and retrenchment\(^1\) of workers and closures of industrial establishments.

When it was originally inserted into the IDA by an amendment passed by Parliament in 1976, chapter V-B (according to its section 25(K)) applied to industrial establishments employing an average of 300 or more workers per working day, excluding establishments “of a seasonal character or in which work is performed only intermittently”. An amendment to section 25(K) in 1982 (brought into effect in 1984) reduced this employment threshold to 100. One strand of the earlier literature, following from Fallon and Lucas (1993), treats these years as structural breaks which can be exploited for “before and after” comparisons of employment in manufacturing in order to assess the impact of EPL. Another strand, following from Besley and Burgess (2004) (hereinafter BB), uses cross-state as well as inter-temporal variation in the nature of labour legislation, quantified by coding state-level amendments to the IDA (not just to chapter V-B) as pro-worker, pro-employer or neutral, and assigning scores of +1, -1 and 0 respectively. These scores are cumulated over time for each state to obtain its ‘regulatory measure’ for a particular year, which is used (along with some control variables) to explain various state-level outcomes. Most of these studies find adverse effects of pro-worker legislation on employment, output, investment and productivity in organized manufacturing.

\(^1\) These terms are used idiosyncratically in the IDA, so definitions might be helpful. A layoff “means the failure, refusal or inability of an employer on account of shortage of coal, power, or raw materials or the accumulation of stocks or the breakdown of machinery or natural calamity or any other connected reason to give employment to a workman whose name is borne on the muster rolls of his establishment” (IDA Section 2(kkk)). Layoffs are limited to 45 days on half pay. Retrenchment means the permanent termination of a worker’s service, other than because of retirement, ending of a contractual period, or continued ill-health (IDA, section 2(o)).
A recent contribution in this tradition by Ahsan and Pagés (2007, hereafter AP) employs the BB methodology but subdivides state-level amendments into those that affect the ability of parties to initiate or sustain industrial disputes on the one hand, and those that increase job security and reduce labour flexibility on the other. Within the latter group, AP further distinguish amendments that extended the scope of chapter V-B to smaller firms, and show that such amendments had an especially adverse effect on industrial performance indicators. They also examine the effect of recourse to contract labour, which is not covered by the IDA.2

The centrality of chapter V-B has also been recognized in the first-ever OECD Economic Survey for India (OECD, 2007, ch.4) (hereinafter “Survey”). Applying a standard methodology for assessing the restrictiveness of labour laws, the Survey shows that for fixed term and temporary employment, India’s EPL is only slightly more restrictive than the mean for OECD countries. For regular workers it is stricter than all but two, but would fall to the OECD average were it not for chapter V-B (OECD, 2007, p.122). For collective dismissals, India is far more restrictive than any OECD country (ibid, p.125), again as a result of chapter V-B.

In my earlier paper, I pointed out several problems with the literature as it stood in 2006. Focusing now on chapter V-B alone, I shall elaborate on one of these problems, point out some new ones, comment critically on aspects of Ahsan and Pagés (2007) and the OECD Survey (2007), and undertake a limited empirical exercise of my own. In Section I, I summarize my earlier paper in order to make the present one self-contained. Section II expands upon a point made briefly in the earlier paper regarding High Court judgments that brought about considerable interstate variation in the implementation of chapter V-B. Section III discusses some new hypotheses regarding firms’ adaptation to changes in EPL, notably subdivision and outsourcing in order to evade the application of chapter V-B. Section IV highlights significant data limitations which most previous

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2 It is important to remember that in the context of Indian industry, contract labour refers to workers hired through a contractor, not workers hired directly by the firm on fixed-term contracts.
studies have not addressed. Section V outlines an empirical methodology to test the hypotheses developed in Section III while exploiting the variation highlighted in Section II and avoiding the data problems discussed in Section IV. Section VI summarizes the results of this empirical exercise and Section VII concludes the paper.

I. SUMMARY OF MY 2006 PAPER

In Bhattacharjea (2006), I had reviewed some studies which showed that labour flexibility in organized manufacturing had actually increased after chapter V-B was introduced in 1976 and also when it was tightened in 1984. I also drew attention to the fact that sections of chapter V-B were inoperative for various periods in different states after being struck down by the Indian Supreme Court and some High Courts, and were restored—again at different times in different states—by legislative amendments and reversal of the High Court decisions on appeal. The 1976 and 1982/84 amendments cannot, therefore, be treated as structural breaks in the EPL regime at the national level for “before and after” comparisons. I discuss this issue in greater detail in Section II below.

My 2006 paper dealt mostly with BB, and several other studies that had used their index of labour regulation in order to explain various indicators of industrial performance. I showed that BB misinterpreted several of the state-level IDA amendments, assigned identical scores to minor procedural amendments and major changes in job security rules, used a misleading summation over time, and ignored hundreds of other state laws, including some whose provisions overlap with the IDA. Although these criticisms show that the BB index was carelessly constructed, from an econometric point of view measurement errors in an explanatory variable do not undermine the results. However, I went on to critique BB’s use of irrelevant control variables and inadequate tests for robustness, the fragility of their key results when state-specific time trends are introduced into the regression, and their omission of other important variables influencing industrial location such as central allocation of industrial
licenses and state-level investment in education.\(^3\) I also critically surveyed five later studies which used the BB index (including an earlier version of Ahsan and Pagés, 2007), and showed that they carried over many of the original mistakes while making a few more. Finally, I reviewed substantial additional evidence to show that although there had been little change in the BB index in the late 1980s and no change in the 1990s, there had been a substantial change in the industrial relations scenario during this period. I presented evidence that included: a sharp fall in the incidence of strikes and lockouts, stagnant or declining real wages, a trend towards pro-employer judicial verdicts, very different rankings of states’ labour regimes according to other surveys of business conditions, widespread reductions in employment by individual firms and also at the aggregate level, and substantial increases in employment in states that were classified as ‘pro-worker’ according to the BB index. All of these effects occurred despite little or no formal change in labour laws, making the BB analysis particularly inadequate for the recent period. I concluded with an expression of agnosticism regarding the impact of labour regulation on industrial performance in India, maintaining that there are sound theoretical arguments on both sides of the debate, but the evidence is inconclusive and the quality of academic analysis leaves much to be desired.

II. INTERSTATE VARIATION IN THE ENFORCEMENT OF CHAPTER V-B

I now take up in greater detail a problem that I discussed briefly in my earlier paper. Besley and Burgess (2004, p.103) assert that the effects of the central amendments of 1976 and 1982/84 are captured by year fixed effects; Ahsan and Pagés (2007) follow the same methodology. This assumes, like the ‘before and after’ studies, that these amendments were enforced simultaneously in all states, which is manifestly incorrect. In some states, implementation was delayed by judicial verdicts, while in others the threshold was reduced by state governments even before the central amendments.

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\(^3\) I would now like to add to this list the geographical distribution of public sector manufacturing units and of existing industrial agglomerations. The importance of both these determinants of industrial location has been nicely demonstrated by Chakravorty and Lall (2007) in their application of the ‘New Economic Geography’ to India.
As I pointed out in my 2006 paper, the Supreme Court held as early as 1978, in its *Excel Wear* judgment, that section 25(O) of the IDA, governing closures, was constitutionally invalid. High Courts in several states then struck down sections 25(M) and (N) (governing layoffs and retrenchments) on similar grounds. Some state governments passed curative amendments to section 25(O) in the early 1980s, and the central government amended all three sections with effect from 1984, only to have the amended section 25(O) also struck down by High Courts in two states. The sections that had been struck down could take effect in those states that passed amendments, but in others only after the Supreme Court eventually reversed all the adverse High Court decisions and upheld the original section 25(N) in 1992, the amended section 25(M) in 1994, and the amended section 25(O) in 2002. None of these crucial developments have been recognized by the earlier literature, which assumes that a law invariably takes effect after it is enacted. (All the relevant judgments are listed in Appendix A.)

Further, four states amended section 25(K) so as to reduce the employment threshold at which chapter V-B applies, even before the central government did so with effect from 1984. Although BB code these state amendments as ‘pro-worker’, they summarize them in identical terms, and they are coded identically by AP, who single them out for separate treatment. However, there were crucial differences in the coverage of these amendments. West Bengal reduced the threshold to 50 workers in 1980; Maharashtra reduced it to 100, but only for section 25(O), with effect from October 1981; Orissa (in February 1982) and Rajasthan (in April 1984) both reduced the threshold to 100 for all of chapter V-B. Apart from these differences in coverage, the impact of reducing the threshold would have been much weaker in two of these states. As Rajasthan’s amendment was followed only four months later by the central one, which erased any difference between states, we can ignore it. Unlike the other states, West Bengal’s amendment reduced the threshold without simultaneously meeting the Supreme Court’s objections in the *Excel Wear* judgment, so the reduced threshold would have
been irrelevant for closures under section 25(O) until the central amendment took effect in 1984.\(^4\)

BB also describe an amendment to section 25(K) which was passed by Karnataka in 1988 in exactly the same terms as they describe those passed by the other states (“Extends rules for layoff, retrenchment and closure to smaller firms”) (BB, 2004, p.130). However, the amendment merely authorized the state government to extend section 25(O) to “industrial establishments of a seasonal character or in which work is performed only intermittently,” subject to the existing employment threshold of 100 workers.\(^5\) Such establishments had been specifically excluded in the central act. Contrary to BB’s reading, no other state extended the section in this way. These five state amendments, although undeniably pro-worker, cannot be assigned identical scores of +1.

On the other hand, the BB index completely overlooks an amendment passed by Uttar Pradesh to its own IDA in 1983, inserting two new sections 6(V) and (W), identical to sections 25(K) and (O) of the central IDA as amended in 1982, except that the employment threshold for permission for closures was set at 300. The Supreme Court later held that this would prevail over the central IDA, noting that the state legislature had passed it conscious of the 1982 central amendment that had lowered the threshold to 100, and the President had signed it.\(^6\) Effectively, the reduction in threshold was legislatively

\(^4\) As the final version of this paper was being edited, I came across Ahsan and Pagés (2008), which revises their 2007 paper and shows that the results continue to hold even after recoding some of these state-level amendments in light of the criticism in Bhattacharjea (2006). In that paper (p.219), I had acknowledged that measurement errors in an explanatory variable bias the estimated coefficient towards zero. The coefficients become larger in the revised AP estimation, confirming that BB’s original coding was erroneous. AP admit that the very large coefficient for chapter V-B now rests on only three state-level amendments and could be partially driven by reverse causality (Ahsan and Pagés, 2008, p.23). They claim, however, that their recoding is based on the recommendations in my paper, which is not the case. If anything, I had questioned the legitimacy of coding disparate amendments as either +1 or –1 regardless of their relative importance. Moreover, AP continue to assign a score of +1 to all the three chapter V-B amendments that they retain (West Bengal, Maharashtra, and Orissa), despite the significant differences in coverage pointed out above. They also do not take cognizance of the further criticisms summarized below, most of which also figured in my 2006 paper.

\(^5\) Details of the amendments are from Radhakrishnaiah (2003), p.190.

\(^6\) Engineering Kamgar Union v. Electro Steel Castings, (2004) 6 SCC 36. This judgment was based on Article 254(2) of the Constitution of India, which provides that when there is a conflict between a state law and a central law on a subject on which both are competent to legislate, the state law will prevail if it
blocked in Uttar Pradesh. Besides, section 6(W) was struck down by the state’s High Court in 1990 in a decision which was reversed by the Supreme Court only in 2002.\(^7\) Thus, Uttar Pradesh repeatedly deviated from other states in respect of the core provisions of chapter V-B, but this is not reflected in the BB index.

Finally, as I pointed out in my 2006 paper (Bhattacharjea 2006, 217), if the BB index purports to measure differences between state labour regimes, then the central amendment which reduced the threshold nationwide in 1984 should also have been encoded as pro-worker for all the states other than the four which had already reduced the threshold, and Uttar Pradesh which refused to reduce it.

In summary, these legislative amendments and judicial interventions in different states in different years show that 1976 and 1984 cannot be treated as natural breaks that changed EPL across the country. In addition, they demonstrate that the BB index (and a fortiori the AP index of changes in chapter V-B alone) understates the true variation in labour regimes. The actual patchwork of arrangements is best appreciated pictorially in Table 1. Although this gives us reason to doubt the findings of the earlier studies, the much greater variability in the enforcement of chapter V-B across different states also presents an opportunity to analyze the impact of varying EPL. I attempt this analysis in Section V. Before that, however, I discuss a range of possible firm responses that is broader than the earlier literature acknowledged.

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\(^7\) Details of these developments are provided in the Appendix to this paper.
### Table 1: Changes affecting chapter V-B in different states

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* 25(N) was also invalid for a few months in 1983-84

** Amendment allowed 25(O) to be extended to establishments with seasonal or intermittent employment

** NOTES: For explanation of the methodology and colour-coding, see the Appendix. The decade of the 1990s, when there were no changes affecting chapter V-B, has been elided in order to fit the chart onto a single page.**
III. Modes of Adaptation to EPL

A tightening of EPL can be viewed as a negative shock to a firm’s discounted present value. Its response can take various forms, of which the existing literature reviewed in Section I above considers the following possibilities: doing nothing, closing down, relocating to another state, downsizing production, and replacing regular with contract labour. The literature has so far not considered the option of subdividing production horizontally amongst nominally independent factories under common control, or outsourcing some inputs previously produced in-house. The latter option may involve vertically subdividing the production process amongst nominally independent units or subcontracting to genuinely independent ones.

The existing literature (for example, BB, 2004, p.105; OECD 2007, p.128, AP 2008, pp.13, 15) does examine whether the adverse effects of EPL on registered (“organized”) manufacturing were mirrored by expansion of the unregistered (“unorganized”) sector, which is outside the purview of most labour legislation.9 The hypothesis is that EPL encourages firms to stay small so as not to have to register. This does not recognize the possibility that an observed increase in size of the unorganized sector could also be a consequence of subdivision by registered factories above the employment threshold for chapter V-B, although fragmentation into such small units would entail a huge sacrifice in terms of feasible technologies and scale economies. Fragmentation or outsourcing within the organized sector itself would not entail as large a sacrifice, but this possibility has also not been recognized in the earlier studies. Factories employing less than 50 workers face no legal restrictions on retrenchment or closure; while those employing between 50 and 100 are covered by chapter V-A, which requires notice and compensation but, unlike V-B, does not require official permission.10

9 Under the Factories Act, any premises in any part of which manufacturing is undertaken and either ten or more workers are employed on any day in the preceding twelve months with the use of electric power, or twenty or more workers without power, must be registered.
10 Many studies blame labour laws for the size distribution of registered factories being skewed towards very small-sized units. They use an inappropriate indicator of size, as I argue in Section IV.B
Fragmenting or outsourcing production to such factories may be a viable strategy if the gains from escaping enhanced restrictions on labour flexibility outweigh the resulting increase in transactions costs. This paper will be the first to explore this hypothesis in the context of firms’ adaptation to Indian labour laws.

One of the indicators used by previous studies to measure industrial performance is the number of factories as reported by the Annual Survey of Industries (ASI). BB (2004, p.109) and AP (2007, p.18) use this to show that states that enacted more pro-worker amendments to the IDA witnessed a reduced net flow of firms\(^{11}\) into registered manufacturing, from which they infer a higher rate of plant closures and reduced capital formation from fresh entry. This inference, however, ignores the possibility that larger units were subdivided vertically or horizontally into smaller ones specifically to drop below the radar of V-B. Similarly, fresh entrants might set up several small units rather than one large one. Hence, states in which EPL became more stringent might witness an increase in the number of factories.

Assessing whether firms actually resorted to fragmentation as a strategy to cope with a tightening of EPL runs into several possible complications. First, even if factory owners respond by fragmentation, the newly spun-off units may be established in other states with weaker EPL, in which case we would not observe an increased number of factories in a state with stricter EPL. In addition, subdivision and relocation would necessarily involve creation of new factories, to which some of the labour and machinery of the old plant would be transferred. The then-pervasive investment licensing regime, which required a license for new unit set-up and relocation, would have dampened this effect. Starting in the mid-eighties, however, such relocation and subdivision would have

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\(^{11}\) As I pointed out in my earlier paper, BB repeatedly use “firms” and “factories” interchangeably, which is incorrect. The reporting units under the ASI are factories, defined as in n. 9 above.
become easier as a result of the liberalizing reforms that delicensed selected industries in 1985-86 and almost all of the remaining industries in 1991.

A further complication arises from the fact that the definition of a factory in the ASI follows that of section 2(m) of the Factories Act, which covers “any premises … in any part of which a manufacturing process is being carried on.” On the other hand, the threshold in IDA section 25(K) and the layoff and retrenchment provisions (in sections 25(M) and (N)) are all stated in terms of employment in an industrial establishment, while section 25(O) applies to “an undertaking of an industrial establishment.” Section 25(L) of the IDA states that for purposes of chapter V-B, industrial establishments include, apart from mines and plantations, factories as defined in the same clause 2(m) of the Factories Act. The omnibus 1984 amendment also inserted section 2(ka), according to which if only part of the activities of an establishment were industrial, and the rest were severable, then they would not be taken to be part of the establishment.

This finding still leaves room for ambiguity. An old precedent, Associated Cement Company v. Workmen, held that a cement factory and a nearby quarry owned by the same firm and supplying it with limestone constituted a single establishment, notwithstanding their workers were regulated by different authorities. A 1986 case involved closure of a marketing division which also handled the accounts, purchases, and payroll for a manufacturing unit under the same owners, but the bulk of whose business came from marketing the products of another firm. The manufacturing unit was registered under the Factories Act, while the marketing division was located in a different area and registered under a separate act governing shops and commercial establishments. Nonetheless, the Supreme Court, reversing the decision of the state’s Industrial Court, held that their employment would be aggregated to determine whether the closure required permission under section 25(O). It held that a factory can be located in more than one set of premises, an establishment can have more than one undertaking,

12 Associated Cement Companies v Workmen, AIR 1960 SC 56.
functioning in different premises, and an undertaking of an industrial establishment need not be a factory or industrial establishment. The closure of any such undertaking, even though it employed less than 100 workmen, would therefore trigger section 25(O) if the total employment in all undertakings having a “functional integrality” as part of an industrial establishment was not less than 100. The very next year, the Supreme Court held that two factories owned by the same firm, carrying on the same kind of business and located within 200 meters of each other, but having independent licenses, accounts and payrolls, were separate undertakings, and one of them, employing 38 workers, could be closed down independently.14

These findings suggest first, that a firm might be not be able to evade chapter V-B through vertical division, but horizontal division seems more likely to succeed, especially after the liberalization of investment licensing. Second, they also suggest firms might have changed their strategies after these judgments in the mid-1980s. In particular, subdivision might have to give the impression that the separate units have separate owners. Krueger (2007, p.24) and OECD (2007, p.128) cite anecdotal evidence of fictitious partitioning of industrial units amongst different owners (usually members of the same family) to avoid having to register.

Finally, firms may escape EPL requirements by increasing reliance on contract labour, which is outside the purview of the IDA. The extension of the BB analysis by AP (2007, section 6) finds that increasing reliance on contract labour alleviates the adverse effects of pro-worker labour legislation on output, but not on employment levels. Increased reliance on contractors also seems to increase employment independently. The problem, as they note, is that the ASI provides data on contract labour only from 1985 onwards, a period in which there were very few state-level IDA amendments, only one of which affected chapter V-B. However, the delayed enforcement of the provisions of

14 Isha Steel Treatment v. Association of Engineering Workers, (1987) 2 SCC 203. This case actually involved section 25(FFF) of chapter V-A, which requires compensation in case of closure of undertakings employing 50 or more workers.
chapter V-B in some states because of High Court rulings, discussed above, does enable testing for its impact on the use of contract labour.

Apart from these additional modes of adaptation to EPL, the timing of adaptation can be different from what is assumed in the earlier literature. Both the “before and after” and BB approaches look for changes in industrial performance indicators in the years following IDA amendments, applying a lag of one year and sometimes more. As some of the authors acknowledge, stricter EPL discourages both hiring and firing, so the theoretical effect on employment is uncertain. The adverse effects on employment that some researchers have found can then only be attributed to hiring being retarded relative to natural separations. However, if a tightening of EPL is anticipated, the potentially affected firms may begin to cut back on hiring but also resort to retrenchment or closure before the restrictions take effect. Stronger effects would appear before the amendment is brought into force. The two-year lag in the notification of the 1982 amendment provides a good example of an anticipated tightening of restrictions, even though employers did not anticipate the date of notification with certainty.

IV. DATA LIMITATIONS OF PREVIOUS STUDIES

A. Missing Factories

All contributors to the debate who have used the number of factories as reported by the ASI have overlooked an important lacuna in this data, caused by a change in the treatment of ‘non-existing’ factories, that is, factories registered under the Factories Act which were included in the ASI frame but did not submit returns and could not be traced. As pointed out by the EPW Research Foundation’s (EPWRF) thorough review of ASI methodology:

Until 1982-83 and thereafter, the contribution of non-existing units was taken as zero, but the total number of factories included such factories. As a result, the
structural ratios, particularly those derived with the number of factories as the denominator, were underestimated. However, as from 1982-83 and thereafter, the deleted factories were not taken into consideration for purposes of tabulation and for any analysis in the ASI reports. (EPW Research Foundation, 2007, ch.4, “ASI Data: Strengths and Weaknesses, and Varied Uses”, [no page reference given]).

ASI data (see Figure 1) do indeed show a sharp fall in the number of factories in 1982-83.

**Figure 1: Number of Factories 1973 – 2001**

![Graph showing the number of factories from 1973 to 2001](image)

*Source: EPW Research Foundation (2007).*

The decline is attributable almost entirely to the numerically predominant 0-49 employment size class.\(^{15}\) This effect is what one would expect, not only because of the

\(^{15}\) There is also a distinct fall in the number of factories in the 1000+ size classes in 1982-83. These factories could not conceivably have been ‘non-existing’ before 1982, but this fall is an order of magnitude smaller than that of the smallest factories. Moreover, the number of small factories had followed a rising trend that resumed after the sharp fall in 1982-83, while the decline in the number of large factories began in 1981 and continued for several years. Anant et al (2006) attribute it to the restructuring of large industries. The earlier literature also does not recognize that from 1998-99, the ASI excluded government mints, units producing electricity, workshops of the railways and state road transport corporations, and
higher mortality of such units, but also because, up to 1982-83, all ‘non-existing’ factories would have been reported as having zero employment and therefore be assigned to this size class. Their exclusion from 1982-83 onwards creates a problem that BB (2004) and AP (2007) fail to recognize: their econometric analyses would attribute this apparent mass ‘exit’ of factories to the pro-worker amendments to the IDA enacted by various states in the early 1980s.

The further point made in the EPWRF analysis also needs to be emphasized. If the data on the number of factories prior to 1982 are unreliable and non-comparable with those for later years, then so are all ratios formed by dividing aggregates by the number of factories in order to obtain indicators such as average employment or capital per factory (as computed by AP, 2007, p.18). The inclusion of non-existent factories would inflate the denominator while contributing nothing to the numerator.

**B. Inappropriate Employment Thresholds**

To see how establishments responded to the reduction of the threshold of applicability of chapter V-B from 300 to 100 workers, one should ideally look for adaptive behavior by establishments employing 100-299 workers. However, the ASI presents several insuperable obstacles to this comparison. First, it does not identify individual factories, so monitoring their adaptive responses by tracking them over time is not possible. We thus have to infer these responses from changes in the characteristics of different size classes of factories in different states, but this too is problematic, because the distribution of factories by employment size is not available at the state level. Second, the definition of employment in ASI data includes supervisors and managers, whereas the threshold in section 25(K) of the IDA is in terms of ‘workmen,’ explicitly defined in government units providing sanitary, water supply, and gas storage services. Their exclusion would have caused a further drop in the reported number of larger factories, although there were no legislative or judicial changes to the IDA in the immediately preceding years.
section 2(s) to exclude these categories.\textsuperscript{16} ASI does report the aggregate number of workers and other employees separately, but the size distribution is reported only by number of employees, making it impossible to match the IDA thresholds. Third, ASI employment data include contract workers, while factories can exclude them for compliance with the IDA, as they are employees of the contractor. These considerations mean that factories reporting over 100 employees could well be outside the purview of chapter V-B. A fourth factor works in the reverse direction. In reporting data to the ASI, firms would likely have followed the statutory requirement of the Collection of Statistics Act by including only their manufacturing divisions registered under the Factories Act. But in light of the Supreme Court judgment in the \textit{S.G. Chemicals} case (see n.13 above and associated text), their separately located non-manufacturing divisions might well be included as part of their ‘establishment,’ and thus factories with less than 100 workers could fall under chapter V-B.

These considerations vitiate the findings of some recent studies that use distributions in terms of ASI data on employment size classes to arrive at diametrically opposite conclusions. Ramaswamy (2008, p.186) expresses concern about the concentration of factories in the size group below 100 workers, and the ‘missing middle’ in the 100-500 range. On the other hand, Anant et al (2006) show that there was a much larger jump in the proportion of employment and fixed capital in factories in the 100-999 employment classes than in the below-100 classes in the mid-1980s. They are therefore skeptical about the impact of the reduction of the permission threshold to 100 in 1984. But the ASI threshold of 100 \textit{employees} does not correspond to that of chapter V-B because of the problems described above, so these analyses are flawed.

The OECD (2007) \textit{Survey} gets around the first two problems by reclassifying ASI unit record (plant-level) data in terms of number of \textit{workers}, using highly disaggregated (three and five-digit) industry groups to get as close as possible to the individual

\textsuperscript{16} Strictly speaking, it excludes supervisors earning more than Rs 1600 a month, a figure that has remained unchanged since 1984. Wage increases in line with inflation would progressively have taken all supervisors above this level: even an unskilled daily-wage worker now earns much more.
factories. The *Survey* shows that during the period 1998-2004, industry groups with more than 100 workers per plant had lower employment turnover than those with less than 100; net job losses as against net job gains; and rising as against falling capital intensity (defined as the real value of fixed assets per employee). These findings suggest that EPL had adverse consequences. However, I have serious reservations about the study’s methodology and interpretation of data.\(^{17}\) In addition, the *Survey* runs into the other two problems discussed above: contract workers being included in the ASI but not the IDA, and small businesses being subject to chapter V-B by virtue of forming part of a larger establishment. Using a threshold of 100 also ignores the fact that state-level amendments ensured that in West Bengal the threshold was reduced to 50 while in Uttar Pradesh it was retained at 300 (for section 25(O) only).

**V. THE PROPOSED EMPIRICAL TEST**

This section discusses a possible empirical methodology which tests the hypotheses advanced earlier regarding firms’ adapting to EPL by subdivision, outsourcing and employing contract labour, while avoiding the problems described above. I propose to examine changes in variables for which state-level data are readily available from the ASI: the number of factories (to capture exit and subdivision), the ratio of value added to gross value of output (to capture vertical subdivision as well as

\(^{17}\) The *Survey* estimates labour turnover on the basis of changes in employment in disaggregated manufacturing categories. But factories are classified by the ASI on the basis of their principal activity (by value), and thus multi-product factories can move into and out of a category merely because of a change in their activity-mix. This would result in the reclassification of their entire labour force, resulting in changes which the *Survey* would interpret as job creation or destruction in the relevant category. Second, according to the OECD calculations, capital intensity in factories with less than 100 workers fell by nearly 30% in 1999-2000 and rose by an almost equal proportion the following year (OECD 2007, Table 4.3, p.126). Such huge swings cast further doubt on the data and the computations. Even if we accept these at face value, there are problems with the authors’ inferences. The *Survey* itself draws attention to the significantly higher rates of job destruction in publicly as compared to privately owned factories (ibid, pp.126-27). As the former are likely to have been relatively large, the higher job losses in factories with over 100 workers could be due as much to the restructuring of the public sector as the effect of being subject to chapter V-B. And finally, since larger establishments are likely to use more sophisticated technology, requiring labour with firm-specific skills, it is hardly surprising that they exhibit lower labour turnover. (I thank R. Nagaraj for this last observation.)
outsourcing, both of which should cause a fall in the ratio\(^{18}\), and the proportion of contract to total workers (for which data are available only after 1985). I look for atypical changes in these variables in the years immediately preceding and following the effective change in the legal regime in a state, relative to others in which no change took place in the same year. This controls for developments common to all states, such as changes in macroeconomic conditions and other policies. As such, it is the counterpart of the year dummy variables employed in the earlier econometric studies. A full econometric analysis, with appropriate control variables, may be considered as a follow-up to this paper.

From the narrative of legislative and judicial interventions affecting chapter V-B in Section II and the Appendix, we can identify several episodes where one or more states diverged from the rest of the country. These can be classified either as events that loosened EPL for employers (by High Court judgments that invalidated sections of chapter V-B), or those that tightened it (by reversal of these judgments on appeal, or by legislative amendments that overrode them and/or reduced the employment threshold at which the chapter applied). I denote these as L and T events respectively. In a sense that will be made more precise below, I regard events involving amendments as anticipated, because of procedures involved in enacting legislation. Judgments will be regarded as unanticipated. These will be denoted as A and U, respectively. Applying this taxonomy, we get the following nine events concerning the implementation of chapter V-B at the state level:

LU1: Karnataka (September 1985); LU2: West Bengal (September 1988); LU3: Uttar Pradesh (March 1990)—the amended section 25(O) (or its equivalent in Uttar

\(^{18}\) It can be shown that the ratio will necessarily fall, regardless of whether the spun-off units or the suppliers to whom inputs are outsourced figure in the same set of data, i.e. the organized sector within the same state. The magnitude of the reduction will however be different if they are in the unorganized sector or outside the state.
Pradesh) was struck down by the respective High Courts, with no changes in other states in the same years.

TU1: Karnataka (February 1989)—validity of the amended section 25(O) upheld by a division bench, reversing the single judge (LU1 above); no changes elsewhere. This reversal would also have made it possible to bring into effect the tightening amendment introduced in March 1988, authorizing the state government to apply section 25(O) to establishments with seasonal or intermittent activity.

TU2: West Bengal, and TU3: Uttar Pradesh (February 2002)—Supreme Court reversed High Court judgments (LU2 and LU3 above) which had struck down the amended section 25(O); the section was already operational elsewhere because it had not been invalidated by other High Courts.

TA1: Maharashtra (October 1981)—state amendment revised section 25(O) and reduced permission threshold to 100 for that section only.

TA2: Orissa (February 1983)—state amendment revised section 25(O) and reduced threshold to 100 for all of chapter V-B.

TA3: (August 1984)—Central amendment revising section 25(O) to meet the Supreme Court’s objections in *Excel Wear* and reducing the threshold in section 25(K) to 100 brought into force. However, this would have had little or no effect in three states: Maharashtra and Orissa (which had introduced both changes earlier, except that the threshold reduction applied only to section 25(O) in Maharashtra), and Uttar Pradesh (which had already amended the counterpart of section 25(O) in its own IDA in 1983 while maintaining the threshold at 300). On the other hand, stronger effects would be expected in two states. In West Bengal the revival of section 25(O) by the central amendment would have also put into effect the lower threshold of 50 workers, enacted in 1980 by the state legislature but unenforceable for this section because of the *Excel Wear* judgment. An almost simultaneous central amendment in 1984 which revised sections
25(M) and (N) along similar lines would have revived these two sections in Tamil Nadu, where they had been struck down and not revised by the state government.

A priori, I expect a tightening episode to reduce the ratio of value added to gross output (due to increased outsourcing/subcontracting), and raise the proportion of contract workers (because they would not be protected by the IDA). These developments could occur both before and after the event. The number of factories could go either way, as a tightening event could induce exit or relocation to another state (reducing the number) or subdivision (increasing it). The former would be inhibited after the event because the tightening of EPL itself makes closure more difficult, but the latter would not, as EPL does not preclude subdivision or setting up several small units instead of a large one. I would therefore expect an increase in the number of factories after the event. I expect loosening events to have the opposite effects on each of the variables, but there are several reasons why responses may be asymmetric. First, as these events were in the form of High Court judgments which struck down various sections of chapter V-B, they would have an effect only after the judgment. Second, these judgments were subject to reversal by legislatures or the Supreme Court. Firms might therefore have refrained from adapting in ways that are hard to reverse, such as entering the market, amalgamating independent units, or replacing contract with regular workers. Fragmentation in response to strict EPL may be especially hard to reverse if the ‘fragmented’ factories have individually reaped unexpected benefits from specialization, expansion of scale, or development of new sources of demand, labour or input supply.\footnote{Had these gains been expected, then of course the factory would have been fragmented independently of EPL.} Reconsolidating them, on the other hand, may involve costs such as employee friction. Third, the High Court judgments might have been stayed pending appeal to the Supreme Court, although there is no record of this in the judgments. For all these reasons, we might expect to observe weaker responses to loosening as compared to tightening of the same provisions. The direction of change expected for each variable for each kind of event is summarized in Table 2 below.
Table 2: Summary of hypotheses

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<th>After Tightening</th>
<th>After Loosening</th>
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<tr>
<td>Number of Factories</td>
<td>?</td>
<td>+?</td>
<td>?</td>
</tr>
<tr>
<td>Share of Value Added in Output</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Share of Contract Labor in Workforce</td>
<td>+</td>
<td>+</td>
<td>-?</td>
</tr>
</tbody>
</table>

Legislative amendments and court judgments take effect from a specific date, but the industrial data are available for financial years (April to March). We therefore need to specify a rule to determine the periods (‘event windows’) prior to and following a change. For an anticipated event, the period ‘before’ is taken to be the financial year in which it takes place, if it occurs in the second half (i.e. September to March) of the year, otherwise the preceding financial year. I allow the two preceding years in the case of episode TA3, which could have been anticipated two years in advance because the notification bringing the amendment into force was delayed. For both anticipated and unanticipated events occurring in the first half of the year, the period ‘after’ comprises the current and following financial years. For changes occurring in the second half, it is the following two financial years.

Changes in each variable are calculated relative to a base period taken as the preceding two financial years. For example, for amendment TA1 in October 1981, the period ‘before’ is FY80, and the value of the variable in this year is taken as a ratio to its average for the base period FY78 and FY79. The period ‘after’ is FY81 and FY82, and the average of the values for these two years is taken a ratio to the average for FY79 and FY80. Such ‘change ratios’ will be calculated both for the state(s) where an EPL event occurred and for the ‘control’ states (computed as the all-India figure minus that of the
state(s) where the event took place) during the same year(s).\textsuperscript{20} Episode TA3 is again an exception, because as pointed out above, the central amendment had no effect in three states and there were other forces at work in two. In this case, I look for changes in the all-India figures excluding these five states and compare these changes to those in a control group consisting of the three no-change states. For each of the nine EPL events, I compare the sign of the difference in these change ratios between the states with and without EPL changes to the expected direction of change in Table 2.

I extract data on the number of factories, output and value added from the ASI database compiled by the EPWRF (2007), Appendix Table I.9, updated for 2003-04 from http://www.mospi.nic.in/mospi_asi.htm, Table 3, after adding depreciation to net value added to get gross value added. I merge data for Uttaranchal and Uttar Pradesh, because the latter’s IDA was applied in Uttaranchal after the state’s separation. I compute the share of contract labour from data on man-days worked by contract workers and by all workers, transcribed from the ASI annual publication \textit{Summary Report on Employment and Labour Cost in the Census Sector} for the available years.\textsuperscript{21}

\textbf{VI. RESULTS}

Unfortunately, results are not available for the impact of any of the anticipated tightening (TA) changes on the number of factories or reliance on contract labour, because the event windows fall in the period when the data were either not compiled (for contract labour) or span the year 1982-83 (when there was a change in the treatment of ‘non-existing’ factories).

\textsuperscript{20} The percentage change can be obtained from the change ratio by subtracting one and multiplying by 100.

\textsuperscript{21} For most of the years included here, the ASI census sector comprised factories with more than 100 workers plus all factories in designated industrially backward states. These were completely enumerated, hence the term “census.” Data for the other variables covers the entire factory sector, which consists of the census sector plus smaller factories from which returns are obtained on a sample basis. In light of the discussion in Section V above, census sector results are closer to the set of factories covered by chapter V-B.
The remaining results, which are reported in Table 3, are very mixed: in some cases, the changes are in the direction predicted by my hypotheses, but not in others.

Table 3: Results

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>NUMBER OF FACTORIES</th>
<th>VALUE-ADDED RATIO</th>
<th>SHARE OF CONTRACT LABOUR</th>
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<tr>
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<td>State(s) with Change</td>
<td>State(s) without Change</td>
<td>Difference</td>
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<tr>
<td>Episode</td>
<td>State Year</td>
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</tr>
<tr>
<td>LU1</td>
<td>Karnataka 1985</td>
<td>1.019</td>
<td>1.028</td>
</tr>
<tr>
<td>LU2</td>
<td>W. Bengal 1988</td>
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<td>Uttar Pradesh 1990</td>
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<td>W. Bengal 2002</td>
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</tr>
<tr>
<td>TU3</td>
<td>Uttar Pradesh 2002</td>
<td>1.003</td>
<td>0.988</td>
</tr>
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<td>Maharashtra 1981</td>
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</tr>
<tr>
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<td>0.946</td>
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<tr>
<td></td>
<td>Before</td>
<td>1.012</td>
<td>0.917</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>1.026</td>
<td>1.086</td>
</tr>
<tr>
<td>TA3</td>
<td>Various 1984</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Before</td>
<td>1.103</td>
<td>0.968</td>
</tr>
<tr>
<td></td>
<td>After</td>
<td>0.956</td>
<td>1.012</td>
</tr>
</tbody>
</table>
I had no strong priors on the effect of unanticipated changes in the labour regime on the number of factories in a state, and the observed changes go in both directions. In both Karnataka and West Bengal, the number of factories increased following the invalidation of section 25(O) by their respective High Courts, but by less (as a proportion) than in the rest of the country in the same year. In Uttar Pradesh, on the other hand, the number of factories increased by a greater proportion than in the rest of the country. A similar divergence is evident following the reversal of the judgments.

The value-added ratio indicates that, quite contrary to my priors, outsourcing seems to have increased in Karnataka and also very substantially in West Bengal after the EPL was liberalized (LU1 and LU2) and decreased slightly after it was tightened (TU1 and TU2). Uttar Pradesh (LU3 and TU3), on the other hand, exhibits the expected changes. For the three TA events, the results are again mixed. The ratio falls (relative to control states) before and after TA1, and after TA2 and TA3, suggesting greater outsourcing, as expected. But contrary to my hypothesis, it increases before the latter two events, suggesting more in-house production in the face of an expected tightening of closure restrictions. However, the value-added ratio exhibits large year to year changes even in years outside the event windows. As a result, attributing fluctuations solely to the changes in the labour regime would be hazardous. A more sophisticated exercise should control for changes in industrial composition and in the relative prices of outputs and intermediate inputs across states; each of these could affect the value added ratios differentially in different states.

Finally, the share of contract labour in the three episodes for which we have data also moves in opposite ways: the share rose as expected (and quite substantially) in a state after a tightening event, but it also rose in two other states, in one of them even more substantially, after a loosening event, both absolutely and relative to the rest of the country in the same years. However, as stated above, loosening may not have much impact if it is expected to be reversed. In addition, the sharp increase in the share of contract labour after LU2 may have been specific to the deteriorating industrial relations scenario in West Bengal.
Thus far, we have looked at state-level changes in EPL, but my hypotheses can be adapted to examine the consequences of two nationwide developments: the introduction of chapter V-B in March 1976, and the Excel Wear judgment striking down section 25(O) in September 1978. As the amendment was rushed through Parliament under the then prevailing State of Emergency, with the normal political process suspended, it can be regarded as unanticipated. In terms of my taxonomy, these two events can be designated TU0 and LU0. These nationwide changes cannot be judged relative to control states, so we have to look for breaks in trends in the years immediately following these events. The problem of missing factories prior to 1982, which would especially affect the 0-49 employment class, is certainly cause for concern, but this would introduce an additional element of randomness into the figures both before and after the event years, unlike the three TA episodes where thousands of factories simply disappeared within the event window.

The following results are obtained by eyeballing the data; no ratios are calculated. The number of factories does seem to exhibit an unusual increase in 1976-77, mainly in the employment size classes below 100 (see Fig. 1). There is no significant fluctuation in 1978-79. Contrary to my hypothesis, the value-added ratio remained rock steady at the national level in 1976-77, halting a declining trend (Fig. 2). In fact, statewise data not reported here show that the ratio rose significantly in that year in nine major states and fell in only three. The striking down of section 25(O) by the Supreme Court did raise the ratio in 1978-79 as expected, although the declining trend resumed the very next year. I should also reiterate that these trends in the ratio at the national level mask wide swings at the level of individual states.

VII. CONCLUSION
In this paper, I tested some old and new hypotheses about the impact of employment protection legislation on firms in India’s organized manufacturing sector, keeping in mind several limitations in the data that were ignored by earlier studies. The empirical results, on the whole, are mixed. Given the limitations of the data and methodology, perhaps this was only to be expected. The main contribution of this paper therefore lies in its critique of the earlier literature. A proper empirical test of the hypotheses advanced by those authors, after correcting their mistakes, as well as tests of the various new hypotheses advanced in this paper, must await another occasion. As in my 2006 paper, I can only conclude that the evidence is inconclusive and my own views on the impact of EPL remain agnostic.
Appendix A: The staggered implementation of chapter V-B provisions across states

Section 25(N) (governing retrenchment) was struck down by the Madras High Court, with jurisdiction over the state of Tamil Nadu, in March 1980, and by the Rajasthan High Court in October 1983, on grounds similar to the Supreme Court judgment in the Excel Wear case (see next paragraph). Rajasthan passed a curative amendment with effect from April 1984, and the central IDA was amended with effect from August 1984 to address the Supreme Court’s concerns. Hence, the Rajasthan decision would have been in effect for just a few months, and is ignored for my empirical study. Section 25(N) is therefore treated as being inoperative only in Tamil Nadu between the Madras High Court judgment and the central amendment of 1984.

Section 25(O) (closures): This section was struck down as unconstitutional by the Supreme Court in 1978 in its Excel Wear decision, on the grounds that it imposed unreasonable restrictions on the right to carry on business, which was guaranteed by Article 19(1)(g) of the Constitution. This right was interpreted as including the right to close down a business, and the section as it stood provided neither procedural guidelines, nor any provision for appeal against the government’s decision. The 1982 amendment, apart from reducing the permission threshold to 100, incorporated several procedural changes in 25(O) so as to meet the Supreme Court’s objections. It was brought into force only in August 1984. In the meanwhile, four states—Maharashtra (w.e.f. October 22

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23 The adverse High Court judgments were reversed on appeal by the Supreme Court in a 1992 decision that upheld the constitutional validity of section 25(N) as originally enacted. See Workmen v. Meenakshi Mills (1992) 3 SCC 336, date of decision: 15 May 1992. The judgment distinguished Excel Wear on the grounds that adequate procedural guidelines were available in the statute for 25(N), and the restriction on retrenchment was reasonable in the interest of protecting employment and maintaining production and industrial harmony. However, this retrospective revalidation is not relevant here.


25 These included a requirement that the appropriate authority undertake an enquiry into the application for closure; afford a hearing to the employer, employees and other interested parties; give reasons in writing for its decision; and pass orders within 60 days, with permission deemed to have been granted otherwise. The amended section also provided that the orders would be in force for one year, and that on a representation from employers or employees, the government could review them and refer them to a Tribunal.
1981), Orissa (February 1983), Madhya Pradesh (October 1983) and Rajasthan (April 1984)—passed curative amendments along the same lines so that 25(O) could take effect. Once again, I ignore the last two as they would not have had a discernible impact before the central amendment was brought into force. On the other hand, the section as amended by the central government was struck down by a single judge bench of the Karnataka High Court in 1985, on the grounds that the modifications did not remove the problems pointed out by the Supreme Court.\(^\text{26}\) This decision was reversed on appeal by a Division Bench of the same court in 1989.\(^\text{27}\) The Calcutta High Court (with jurisdiction over West Bengal) similarly struck down the amended 25(O) in 1988.\(^\text{28}\) The corresponding section 6(W) of the Uttar Pradesh IDA, which overrides the central IDA in that state, was also struck down in 1990 by the Allahabad High Court, having jurisdiction over the state.\(^\text{29}\)

The amended 25(O) of the central Act and 6(W) of the Uttar Pradesh Act were finally upheld by the Supreme Court in 2002,\(^\text{30}\) on the grounds that the amendments had removed the infirmities pointed out in *Excel Wear*, and also applying the ratio of *Meenakshi Mills* (see n. 23 above) regarding the reasonableness of the restrictions.

(This account ignores High Court judgments which upheld various sections of chapter V-B, as they would not have changed the regulatory regime in a state. It also ignores developments with regard to s.25(M) of the chapter, which governs permission for layoffs, because only one High Court (Madras, in 1980) struck it down, having already struck down 25(N) as mentioned above, and the 1984 central amendment reinstated it by making suitable changes to 25 (M) along with (N). The effects of invalidation and revalidation of these two sections are therefore indistinguishable in my empirical

\(^{26}\) *Stumpp Scheule and Somappa Ltd. v. State of Karnataka*, (1985) 2 LLJ 543 (Karnataka), Date of decision: 24 September 1985.

\(^{27}\) *Union of India v. Stumpp Scheule & Somappa Ltd*, (1989) 2 LLJ 4-6 (Karnataka) (DB), Date of decision: 21 February 1989


exercise. Finally, as this paper is concerned with the timing and effect of the adverse judgments, only the barest summary is given of the judicial reasoning they employed.)

A pictorial representation

The complicated situation resulting from the various judgments and amendments can be best appreciated visually from Table 1. Years in which either sections 25(N) or (O) were inoperative in particular states because they had been invalidated by the courts are shaded yellow; years in which different employment thresholds were in force for the applicability of chapter V-B (as determined by state amendments to section 25(K)) are in different shades of blue. To avoid unnecessary clutter, the relevant section of the IDA or the numerical threshold is entered only at the two extremes of each shaded bar; and to accommodate the chart on a single page, the decade of the 1990s (when there were no changes in any state) has been elided. The chronology is in terms of financial years (April to March), to match the ASI data. An amendment or judgment legally taking effect between April and September of a year is assigned to that year, while one taking effect between October and March is assumed to have its impact from the following financial year.
References


