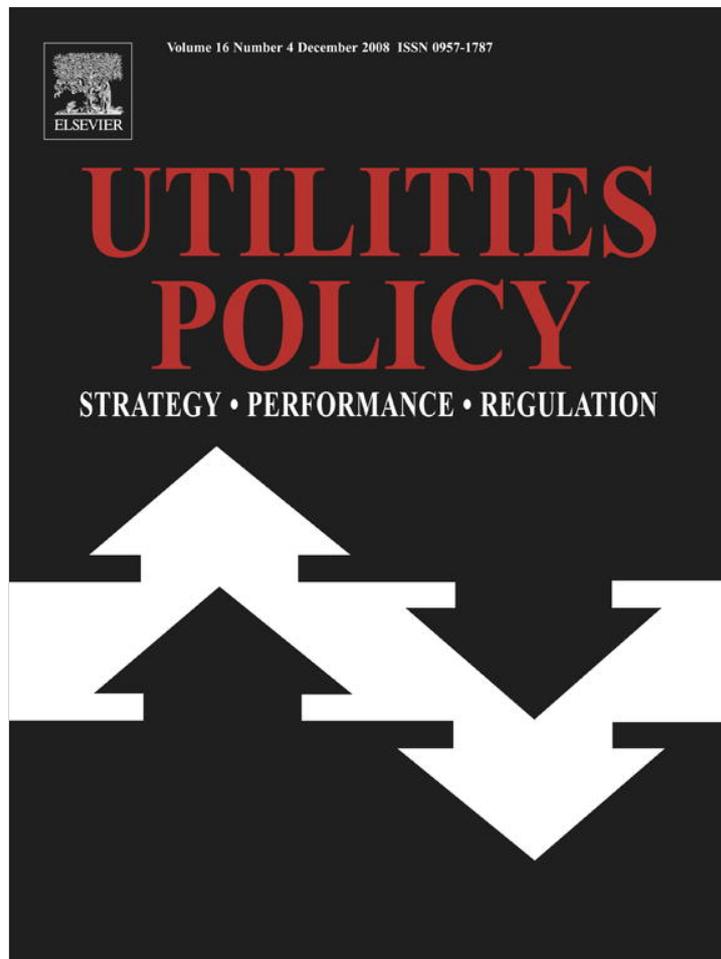


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Regulatory practice and politics: Lessons from independent regulation in Indian electricity

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Abstract

Although independent regulatory agencies are emerging worldwide, there remains little understanding about how they operate in practice, particularly in developing countries. This paper seeks to examine the practice of electricity regulation in India, using case studies of three state-level electricity regulators. Based on documentary analysis and interviews with regulators, government, utilities and stakeholders, the paper examines how regulation is shaped by institutional and political context, how regulators make decisions in practice, and how they engage with stakeholders and with what effects.

Based on the Indian experience, we suggest that in a rapidly changing electricity sector, the separation between the political and economic content of regulatory decisions, as is often advocated, may not be feasible or indeed desirable. Instead, we suggest a more proactive regulatory approach where governments give regulators the latitude to proactively steer the sector. For this approach to be viable, regulators need to build adequate technical capacity, institutional legitimacy, and democratic legitimacy in their dealings with stakeholders. This approach entails a bolder, and more challenging vision of regulation, but one that promises greater transformational potential than does the model of technocratic and apolitical regulation.

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1. Introduction

Over the preceding two decades, the independent regulatory agency has emerged worldwide as an important institution governing utilities. The growth in regulators has been explosive. One study (including but not limited to utilities) found that the number of new regulators created per year burgeoned from less than 5 between the 1960s and 1980s to more than 20 in the 1990s to 2002 (based on a study of 49 country and 16 sectors), with a peak of almost 40 new agencies a year from 1994 to 1996 (Jordana et al., 2006). Although regulators have spread fast, this proliferation has neither been led nor

rapidly followed by growing understanding of how regulators operate in practice, particularly in the developing world. This paper contributes to filling this gap, with a focus on electricity regulation in India.²

The motivation for establishment of independent regulators in developing countries is often located within the principal-agent framework of transaction cost economics (Levy and Spiller, 1994). A government chooses to delegate authority to a regulator to resolve credible commitment problems, overcome information asymmetries, and deflect blame for unpopular decisions (Thatcher and Stone Sweet, 2002). Others view the rise of regulators within a more sociological framing, suggesting that regulatory agencies spread through a process of isomorphism, as the institution becomes a way of signalling

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² This paper is based on a larger study conducted by the authors and published as *The Practice and Politics of Regulation: Regulatory Governance in Indian Electricity*. Macmillan, New Delhi, 2007.

credibility in decision making (Thatcher and Stone Sweet, 2002; Jordana et al., 2006).

From either perspective, there are good reasons to pay attention to the national political and institutional context within which regulators are embedded as a factor in shaping regulatory outcomes (Levy and Spiller, 1994; Minogue and Carino, 2006; Berg, 2000). The robustness of existing political institutions, the reliability and credibility of the judiciary, national administrative capacity, institutional norms and practices and other related factors will all shape both regulatory design and process. Context is important not only for *ex ante* matters of regulatory design and feasibility, but also for *ex post* considerations of regulatory process and decision-making.

Context is arguably even more important in developing countries, where governments have adopted external models of the independent regulator for sectors in the midst of reform and often with dominant entrenched interests (Minogue and Carino, 2006). To understand the impact of independent regulators in the developing world, it is necessary therefore to understand how regulators are embedded in local soil once transplanted, through attention not only to formal legal structures, but also to informal norms, institutional networks, and existing institutions and practices. While technical aspects of regulation are undoubtedly important, such as tariff setting methodologies and their implementation, we are concerned here with exploring the implications of larger contextual factors for the effective functioning of independent regulators.

India represents one important case for exploring the implications of regulatory transplant to different political and institutional contexts. The Indian experience also carries an idiosyncrasy: the use of independent regulators to regulate state-owned entities. While independent regulatory bodies were created in India's utility sectors over a decade ago—notably in telecoms and electricity—they remain little understood. Only recently has discussion of regulation moved beyond narrow questions of alternative instrumental approaches to regulation, to larger questions of regulatory governance including accountability, effectiveness, institutional capacity, and interaction with judiciary and legislature (Planning Commission, 2006). In this paper, we present insights on the internal workings of Indian electricity regulators based on an empirical study of three states.

In the following section, we lay out the background necessary to understand the rise of regulation in Indian electricity. We then describe our theoretical framework and approach to the empirical study. The next three substantive sections contain the body of our findings organized around three categories: institutional and political context, regulation in practice, and engagement with stakeholders. We close with some reflections on the salience of the Indian story for utility regulation in the developing world.

2. Background: Indian electricity regulation in historical context

Independent regulation entered India, as it did many developing countries, as part of a larger program of electricity reform and restructuring. Until 1991, India conformed to the

then-prevailing global model of vertically integrated and publicly owned and operated power. After an initial focus on opening up the generation sector to private investment, by the middle of the decade the focus shifted to the distribution sector, driven by both internal and external factors.³ Internally, the falling quality of supply and dramatically rising financial losses accompanied by alarming levels of theft of electricity called for attention. Externally, a drying up of finance by donor agencies, the emergence of a global model of electricity around private ownership and market competition, and a growing internal fiscal crisis to which the power sector was a major contributor suggested business as usual was no longer viable. These new realities were crystallized and melded into a reform program by the World Bank, which placed an open offer of support to reforming states on the table. The role of independent regulation was a key component of the new approach to electricity reform.

The Indian state of Orissa was the first to undertake distribution reform, supported by a World Bank loan. As a central element of distribution reforms, regulation was intended "... to ensure the sustainability of tariff reform ... *inter alia* to attract sufficient private investment and protect the interests of consumers" (World Bank, 1996, p. 7). To do this, the regulator was "... to insulate Orissa's power sector from the government and ensure its ... autonomy." In other words, the fundamental purpose of electricity regulation was to create an apolitical space for electricity decision making, both to send a signal of credibility to investors and to protect consumers.

Although the results were decidedly mixed, the Orissa approach to regulation spread rapidly to other states, and was adopted more or less intact by the Central Government in the form of an Electricity Regulatory Commissions Act (1998). Since the electricity sector has remained in government hands in most states, India entered uncharted territory by setting up regulatory bodies to regulate state-owned rather than private entities. Thus regulation has been based on the somewhat questionable premise that it is feasible to create an apolitical regulatory sphere simply by legislating one.

In 2003, a sweeping new Electricity Act (2003) retained and extended the same approach.⁴ Regulators have been given a central role in implementing both the incentive based mechanism for discipline introduced by the Act—competition—and the rule based mechanisms revolving around regulating tariffs and quality of service.⁵ In practice, the central and immediate concern for electricity regulators remains to reduce levels of theft and losses and nudge the sector toward commercial

³ This history of electricity reform in the 1990s is summarized in Rao (2004), Dubash and Rajan (2000), Tongia (2006), and Kale (2004).

⁴ A discussion of the Electricity Act is beyond the scope of this paper. For detailed analysis see Phadke and Rajan (2003), Godbole (2003), Godbole and Prayas (2004), Purkayastha (2001), Rao (2003), Sankar (2004), and Ranganathan (2004). For a discussion of the Electricity Act in the context of global reforms see Dubash and Singh (2005).

⁵ Criticisms of the Electricity Act's approach to regulation include that there is inadequate spelling out of the transition to competition and the regulator's role in effecting it, there is lack of clarity on guidelines for tariff setting, and that few measures have been taken to fix well known problems with regulation.

viability. Given the continued salience of regulators, the 2003 Act provides no solution to the larger structural problem; while governments formally commit to tying their hands to the mast by establishing regulators, in practice they use very loose knots.

The spread of regulation is not limited to electricity. Despite an uncertain record with electricity regulators, regulation has also widely spread in other arenas. Electricity is most often compared to the telecom sector, where the Telecom Regulatory Authority of India is widely pronounced a success.⁶ But in addition to these sectors, independent regulators have been established or are planned for ports, airports, petroleum and natural gas, post, and water sectors (Rao and Gupta, 2004; Planning Commission, 2006).

This proliferation has led the Planning Commission of the Government of India to consider development of a cogent national philosophy of regulation (Planning Commission, 2006). As the Planning Commission suggests, questions of democratic accountability, a uniform framework for regulation—institutionally and with regard to powers—concerns over independence, and approaches to competition all require detailed thought and a consistent rather than an *ad hoc* approach.

3. Theoretical framework for analysis of Indian electricity regulators

We have organized this study of Indian electricity regulators around three themes, drawn from the larger body of literature on regulation. Given our emphasis on how regulation works in practice, we focus on literature from the newly emerging area of regulatory governance.

3.1. Institutional and political context

As Levy and Spiller's (1994) landmark paper convincingly argues, the larger institutional context within which regulation is set has considerable implications for the ability for government to signal credible restraints on arbitrary administrative action, and on the form that regulation will take. The relevant institutional contexts include the legislature, judicial institutions, customs and norms, administrative traditions and the like. From a political science perspective, the question becomes why, and under what conditions, governments can be expected to delegate authority to independent agencies (Jordana and Levi-Faur, 2004). In India, the importance of donor agencies in urging regulatory adoption is likely a significant part of the answer to the question of delegation.

As a result, Levy and Spiller's significant insight appears to have been all but forgotten in India, where a unitary institutional model of independent regulation has been uncritically adopted. As a result, there is need to focus attention to the *ex post* question of how regulatory agencies, once established, are shaped by national political cultures and institutional forms. In exploring this issue, Hancher and Moran (1989),

and Thatcher and Stone Sweet (2002) point to the significance of historical timing in shaping regulatory form. In particular, their work suggests attention to factors beyond the formal legal frameworks for electricity regulators across states, which are reasonably consistent, to explore the immediate political context of reform within which regulation is established. Our first set of concerns, therefore, is with how both formal regulatory structures *and* informal regulatory constraints are shaped by the immediate context within which regulators are created, namely that of sector reform.

3.2. Regulation in practice

Much of the rich literature on regulatory governance starts from the understanding that a focus on the legal framework for regulation alone is incomplete, and that a fuller understanding of regulation and its impact rests in exploring the practice of regulation. This literature, particularly in the American context, has swung between a somewhat simplistic view of regulation in the public interest, to that of “regulatory capture” (Morgan and Yeung, 2007). An alternative view to capture, and one salient to India, is the “public choice” perspective that regulation is an avenue through which the political elite further their interests and consolidate their power (Cook et al., 2004). More recently, an institutionalist perspective has emerged that explores how regulation operates in specific contexts, keeping in mind both opposing perspectives (Morgan and Yeung, 2007). From this standpoint, technical competence is an insufficient basis for regulatory legitimacy, since many decisions inherently involve judgements and balancing of interests (Prosser, 2004).

This institutionalist perspective is the one we bring to this study, and which allows us to go beyond the limited lens of autonomy—regulatory independence or state capture—to examine the nuances of actual decisions. A central theme of this approach is an understanding and mapping of the larger “regulatory space” which includes not only regulator and regulated, but also the state and the entire cast of supporting characters, including stakeholders (Hancher and Moran, 1989). Also relevant to this view is the everyday routines and customs that regulators and their staff bring, and the sources of those routines, whether an administrative tradition such as the India Administrative Service (IAS), or the historic practices of public utilities. These practices are relevant to the regulatory approach, which can vary from presuming authority and command to a more dialogue-driven approach in which command is only one, relatively small, component of a regulatory repertoire (Ayes and Braithwaite, 1992). In this study we examine regulatory action in particular contexts, with attention to both regulatory space and regulatory style to understand regulation in practice. We examine how regulators make decisions, how they interact with stakeholders, and how they mediate pressures that are brought to bear on their decision making.

3.3. Role of regulation in balancing stakeholder interests

The somewhat simple view of regulatory credibility based on technical competence alone is increasingly being challenged

⁶ Mukherji (2004) argues that this differential result is in part due to a home-grown approach to telecom regulation, but more salient, due to less entrenched politics, particularly around tariffs, in the telecom area.

by a far broader perspective that sees regulatory credibility as rooted in the ability to balance competing stakeholder interests (Prosser, 1999). But balancing multiple interests and sensibly using discretionary powers to do so require that legitimacy be based as much on wide participation as on technical expertise alone. This line of thinking shifts scrutiny of regulators to procedural aspects of their decision making: transparency, participation and accountability. Critically, it also requires attention to the capacity of stakeholders from all backgrounds to represent their interests and/or intervention by regulators to make sure these views are represented. The underlying idea is that better and more legitimate answers to regulatory questions will emerge through informed deliberation through a structured regulatory process (Stewart, 1975; Palast et al., 2003).

Recent work has begun to put flesh on the bones of these ideas, providing ways of measuring regulatory governance. For example, Hira et al. (2005) conduct a review of regulatory procedures in multiple countries, while Nakhoda et al. (2007) develop and apply a “toolkit” approach to governance of electricity, including regulation. To explore this rather more explicitly political dimension of the regulatory process, we examine the ways in which a variety of stakeholders engage the regulatory process, as well as the attitudes and perceptions that both stakeholders and regulators bring to their engagement.

3.4. Approach and methods

In order to explore regulatory practice in depth, we examine regulators in three Indian states. The three cases—Andhra Pradesh, Delhi and Karnataka—were chosen to reflect specific and unique contexts, rather than as “representative” states to permit generalization of our findings.

Andhra Pradesh is widely cited as a leading state in electricity reform, and the Andhra Pradesh Electricity Regulatory Commission (APERC), established in 1999, is considered best practice in Indian electricity regulation. Perhaps the most distinctive feature of the Andhra Pradesh experience is the presence of supportive political leadership. Led by a charismatic and reformist Chief Minister, the state government unbundled and commercialized the sector to prepare for eventual privatization, only for the effort to be abandoned following a change in government. However, under public ownership, the state’s electricity sector has made rapid strides in bringing down loss levels, an achievement for which credit should likely be shared by the political leadership, the utility leadership and the regulator.

Delhi provides one of only two state cases of privatized distribution companies (Orissa is the other). The Delhi Electricity Regulatory Commission (DERC) was established in 1999, prior to a sweeping privatization effected in 2002. The privatization was governed for an initial five-year period by a contractual framework based on benchmarks and incentives for loss reduction targets. The performance of the three privatized companies has been uneven, and despite improvements, the Delhi experience has been shrouded in consumer unrest.

Karnataka provides an example of a regulator operating within a similar reform context to Andhra Pradesh, but with

contrasting performance. It also has a reputation for supporting consumer interests. Established in 1999, the Karnataka Electricity Regulatory Commission (KERC) is notable for being the only Indian regulator to have established an office of consumer advocacy. By contrast with the supportive role of the Andhra Pradesh government and the contract-driven, arms-length relationship in Delhi, the KERC has had to continually engage and negotiate for space with the Karnataka government. As in Andhra Pradesh, privatization was discussed but not completed.

Despite these differences, all three states have commonalities in their regulatory context that enable comparison across them.⁷ They all have sectoral characteristics of entrenched politics, poor management, and lack of an information culture. They were all established with similar policy objectives through state reforms that envisioned or enacted privatization.

For each of the three states we examine:

- Institutional and political context: scrutiny of the design of electricity reforms, the rationale for regulation, and the early history and context of each regulator;
- Regulation in practice: examination of the decision making process and the scrutiny, communication, and judgements of the regulator in several important decision-making areas:
 - Interaction with utilities on validation of utility expected recovery of cost (ERC) filings;
 - Estimation of agricultural consumption;
 - Performance assessment, including an analysis of compliance with regulatory directives;
 - Scrutiny of grid-related investments;
 - Tariff decisions;
 - Generation planning;
 - Regulation making process.
- Role of stakeholders: analysis of stakeholder submissions, regulatory response and perceptions of effectiveness of stakeholder process.

To obtain data on the above, we conducted over 70 interviews with stakeholders, including government officials, regulators and regulatory staff, consumer groups and sector experts. We also relied on documentary evidence, including tariff orders, regulations, annual reports, internal memos and correspondence with government. The following three sections summarize the results of the empirical study.

4. The role of institutional and political context in shaping regulatory function

Electricity regulation has been introduced in India at a time of, and as part of, an effort to rapidly turn-around an ill-performing sector. In all three states studied here, reform has been associated with discussion of privatization, although privatization has only actually occurred in Delhi. While this

⁷ In order to generalize across states, it would be necessary to include a broader range of states, including relatively small and low profile states, and poor performing states.

overarching context is similar, as is the macro-legal framework which is common (or only exhibits minor variations across states), the individual state level context results in quite different outcomes. In this section, we focus on how state regulators are constrained or otherwise affected by the immediate state reform debate, and on how their internal institutional structure and capacity is affected by the initial set up period, with long-lasting consequences.

4.1. Context of sweeping reform shapes regulatory autonomy and capacity

Electricity reform inherently requires bold decisions, such as increasing rates of historically subsidized consumers, enforcing reform directives, and exposing entrenched rent-seeking opportunities. As a political decision, the role of defining and laying out a reform trajectory falls to governments. According to conventional thinking, instituting independent regulators as the focal point of reforms is sufficient to ensure that short-run political costs do not trump long-run gains. In practice, the India experience suggests there are substantial flaws in this logic. Instead, the cases suggest that establishing regulation in the context of reform introduces a potential tension between regulator and government, one that can become particularly sharp when reform is aimed at privatization.

The root of this tension is the need for a new regulator to build credibility with the public, which may require regulatory discretion to adjust and adapt to new information and circumstances. However, this responsiveness can introduce a tension with the requirement of predictability and consistency with a government framed reform program. These tensions come out particularly clearly in the Karnataka and Delhi cases.

The Karnataka Electricity Regulatory Authority (KERC) faced under-cutting of its authority by the government in two ways. First, the government developed and implemented a fiscal restructuring plan based on a World Bank loan, which included operational targets for the power companies, such as loss reduction trajectories. In an eventually stalled privatization effort, the government proposed to protect investors from regulatory risk by allowing them to bypass regulators for cost increases. In essence, the government—as owner—was regulating in parallel to the KEREC. Second, on an ongoing basis, government continued to play a strong oversight role in rate filings, investment proposals and appeals, thereby cementing perceptions of the regulator as an extension of government. The government issued orders, stemming from political ends, directly contravening the regulator's exclusive legal powers over tariff setting. For example, it attempted by executive order to change the rate category of information technology (IT) consumers and modify the rates set by the regulator for wind projects.

In Delhi, the government did provide clarity with regard to division of labour, in contrast to Karnataka, through the Policy Directives that governed reform and privatization. In reality, however, it left the sector open to ambiguous and unstated expectations. For example, the government assumed, but did not mandate, a trajectory of tariff increases in its privatization

design, which influenced the subsidy targeted for the reform period. The regulator instead provided a far lower trajectory of increases, being mindful of immediate circumstances—namely widespread opposition to rate increases—and concerns for its credibility. Ambiguous expectations and divided control led to several early tussles between regulator and government.

In Andhra Pradesh, as in Karnataka, government did play a strong role in reform, but with explicit support, rather than undermining, of the regulator. The government hand-picked leaders in both the regulated utility and in the APERC. The reform package included support for five years for a set of international technical consultants to help set up systems, provide training and ongoing technical assistance in regulatory affairs. This explicit commitment to the regulatory institution allowed Andhra Pradesh to side-step the potential tension between reform and credible regulation.

This experience suggests that regulatory outcomes are shaped by the pressures and dynamics of reform, which are driven by state level politics, sectoral idiosyncrasies and socio-economic conditions. For all these reasons, nascent regulators are constrained in acting as active stewards of a reform process.

Regulatory creation, by itself, is only a first step. Once regulators are created, governments need to actively establish and support, and certainly not undermine, regulatory credibility if regulators are to assist with reforms. In particular, governments need to signal this commitment to other departments, notably state-owned utilities, and provide clarity and consistency on their respective roles in reform policy. Without this support, regulators face an uphill battle building their credibility, and consequently may desist from making essential, bold decisions.

4.2. The challenge of building regulatory capacity

With average experience of between 5 and 10 years, Indian electricity regulators are only just emerging from their start-up phase. However, this initial establishment period has been fraught with challenges in building a robust initial structure, which in turn has called into question their legitimacy. The three salient issues are selection of regulators themselves, appointment of staff, and use of consultants.

The Electricity Act of 2003 requires an independent selection process by a search committee,⁸ which shortlists two candidates, from which the government makes the final appointment. However, neither the shortlisting process nor final appointment require public justification or explanation. In practice, the selection criteria provided for in the law are too broad and vague to provide grounds for challenging any candidate's selection, and the entire process is an inadequate safeguard against overt political control.

As a result, direct political control over the regulatory selection process has been the rule rather than the exception,

⁸ According to the Indian Electricity Act (2003), the search committee consists of a High Court Judge (Chair), the Chief Secretary of the State, and the Chairperson of either the Central Electricity Authority or Central Electricity Regulatory Commission.

leading to concerns about regulatory independence. In Karnataka, there were widespread perceptions of direct political influence over appointments and a corresponding concern that regulators would be beholden to those who appointed them. In Delhi, although the law allows for a three person commission, the DERC operated with a single member commission for several years, as a fall-out of internal political conflicts between two senior politicians. In Andhra Pradesh, where the regulators had high credibility, the appointment process was widely seen as politically controlled, although less controversially so, possibly because of the favourable outcomes.

It is also noteworthy that the appointment of retired Indian Administrative Service (IAS) officers, the elite of India's administrators, figures prominently in the regulatory process. Other studies have shown that more than half of the chairpersons of electricity regulatory commissions are retired IAS officers (Prayas, 2003). Of the six chairpersons (two each in three states) examined, six have been retired IAS officers.⁹ While not necessary a problem in itself, there is little doubt that the preponderance of IAS officers limits the regulatory culture to a particular set of experiences, one that arguably lacks practical knowledge of business and consumers and favours a public sector mindset.

A second concern is with adequate capacity within regulatory staff. Regulators report both demand and supply side constraints in developing adequate regulatory staff. Demand side constraints include rigidities on hiring procedures and government salary limits. For example, the Delhi regulator is required by the government to try to appoint government employees on deputation from other electricity agencies, and only as a last resort appoint staff on contract from the open market. In all cases, regulators have been unable to attract qualified staff outside the public power sector establishment. This is in large part because they cannot compete on salary or prestige with private sector power players or consulting firms in hiring new graduates. On the supply side, regulators are largely limited to hiring staff from the pool of public sector electricity bodies, notably former State Electricity Boards. For example, in Karnataka, the entire staff of 12–13 professionals, with the exception of only one or two staff members, is drawn from the public utility. As a result, regulatory staff frequently share both close networks with utilities, and bring to their job a mindset shaped by a career within the public utility.

A third characteristic of institutional capacity is reliance on consultants to fill capacity gaps. The DERC, which has historically faced an inability to attract staff, relies most heavily on consultants, including by outsourcing preparation of tariff orders. The KERC by contrast, has developed a culture of self-reliance, preferring to build in-house capacity. While this is a laudable aim, in practice the KERC has had to rely on expertise and technical input from other sources, notably the regulated utility, to overcome its own capacity shortfalls. The

APERC represents an intermediate case in the form of on-site consultants, funded by donor agencies. These consultants have undertaken substantial capacity building, a happy situation facilitated by the presence of capable staff. Thus, APERC staff have taken on a growing share of the day to day tasks of the regulator, notably tariff orders.

4.3. Conclusion

Political and institutional context plays a shaping role even in the establishment phase of electricity regulators. Electricity regulation is in many ways an extension of the pre-existing electricity establishment, both through selection of regulators and appointment of staff. Even with fairly thorough selection and screening guidelines, an opaque selection process can allow government influence, which undermines the regulatory institution. Building adequate staff capacity has been hamstrung by both demand and supply side constraints. The existence of an entrenched and strongly networked bureaucracy, including the IAS, immediately serves as a mould through which regulatory culture in India is shaped. Capacity problems can be exacerbated by a reliance on consultants, although APERC suggests a viable model of transition to greater staff responsibility.

5. Regulation in practice

An examination of how regulators make decisions in practice helps illuminate the spaces for the exercise of discretion that exist within the formal legal-administrative structure. It also helps understand the factors that come into play in the exercise of that discretion. We examine regulatory practice by looking at several critical areas of decision making, ranging from scrutiny of tariff filings and approval of power purchase agreements, to rule-making. The themes that emerge are:

- the relative thinness of operating norms and the consequent importance of individuals and individual approaches;
- a continued importance and salience of government pressures in decision making leading to regulatory self-censorship; and
- an effort to portray an apolitical, technical façade to politically sensitive decisions.

5.1. Ambiguous procedures, weak norms, and individual discretion in regulatory tasks

The broad scope of regulatory provisions in the Electricity Act and the lack of specificity or guidance in regulatory procedure and process leave considerable scope for a range of different regulatory approaches. As a result, regulators' approach to their work varies based on the perspectives of key individuals, and on dominant contexts from which regulators and their staff are drawn.

An important illustration of this point is the lack of systematic and sustained procedures in all three states to govern the important technical validation process through which the

⁹ Delhi, where both chairpersons have been non-IAS officers, is the exception that proves the rule. Specifically, the appointment of non-IAS regulators is attributed to the strong bias of a senior political figure against IAS officers as regulators, a view that has led to resentment from within Delhi's IAS ranks.

regulator verifies information submitted by utilities before issuing tariff orders. This entails the frequency and form of interaction with utilities, standardization of formats for data provision, type of staff involved, and public involvement. In its early years, the KERC took an extremely thorough approach, walking through issues in detail during technical validation sessions. However, after a change in chairperson, the style of engagement shifted to a more ad hoc but collaborative relationship, and formal technical validation meetings were stopped altogether. By contrast, Andhra Pradesh set in place a process of regular visits, including field visits by the regulator, and built a relationship of cooperation with the utility.

In yet another example, regulatory response to generation capacity planning has differed considerably across Commissions, over time within Commissions, and even across types of cases placed before them. The most consistent explanatory factor for this variation is the approach and style of individual regulators. For example, the KERC developed a clever, but contentious, legal interpretation to re-open an arbitration panel's decision on a controversial generation project (the Tannir Bavi project), and, based on careful and probing argumentation, denied pass through of its costs to consumers. This controversial decision went far beyond the formal requirements of the KERC, and their actions are widely attributed to a leadership stance that the regulator had to intervene in the public interest, even at the risk of undermining investor confidence. This pro-consumer stance was reinforced by their action in a second project. However, under the next regulator, the KERC has been less assertive. Faced with a major transmission project, the Commission set up an expert committee to review a major transmission proposal, its scrutiny was largely perfunctory and non-substantive, with a stated objective of avoiding the tag of "anti-development."

By contrast, faced with a similar situation of controversial, inherited power purchase agreements, and considerable public pressure, the APERC explored legal avenues, but ultimately concluded it did not have legal scope to re-open concluded PPAs. Instead, the regulator sought to use informal persuasion to re-negotiate, which ultimately failed.

In the absence of clear review criteria, the regulatory approach is driven by shared experiences as government bureaucrats brought by regulators and their staff. With regard to investment approval, for instance, staff bring a detail oriented attitude focused on due diligence, rather than a concern with larger questions about appropriateness or alternatives. In Andhra Pradesh, the staff handling economic affairs who came from the private sector placed greater emphasis on review of the commercial aspects of PPAs than the technical staff who came from utilities. Similarly, in the absence of sufficiently detailed guidelines on transparency and participation, the prevailing public utility mindset of discretionary gate-keeping over regulatory records prevails, with the exception of a few staff in KERC.

5.2. Arms length approach to regulatory scrutiny

The dominance of utility insiders within regulatory staff has provided regulators with considerable knowledge of public

utility systems. This background and experience has provided the basis for a detail-oriented approach to tasks of regulatory scrutiny. At the same time, it has led to self-imposed curbs on regulatory functioning, either because of explicit self-censorship or internalized norms related to authority and relationship with government.

The detail-oriented approach of filling data and analysis gaps has yielded results, both in terms of transparency and substantive outcomes. For example, a persistent problem of Indian electricity is a lack of data on agricultural consumers, largely because of a process of de-metering that followed populist schemes of free electricity provision to farmers. In both Andhra Pradesh and Karnataka regulators made substantial gains in eroding, if not eliminating, these data gaps on farmer consumption of electricity through sample surveys. In another example, scrutiny of investment plans by the Delhi regulator has led to considerable reductions in approved investment levels. Oversight of power purchase agreements provides a third example; regulatory review and approval has introduced a measure of transparency that has contributed to real gains in particular cases, particularly in Andhra Pradesh.

However, regulators have stopped short of asking larger questions that potentially place them in conflict with entrenched and politically connected interests. One form of evidence of this is their reluctance to exercise their strongest powers. Regulators have the powers of a civil court in India, which enable them to summon officials, search and seize data at utility sites, conduct hands-on field investigations, and issue penalties for non-compliance with their directives. In all three states, barring one case of a nominal penalty imposed by DERC, none of these powers have been exercised. While all regulators have issued detailed, thoughtful, and forceful directives, in many cases directives have not been complied with, and regulators have not enforced compliance. For example, the KERC threatened but failed to follow through on a threat to withhold tariff increases until directives issued in its first order were complied with. In Delhi, anomalies in consumption data were allowed to continue over multiple years without active investigation by the Delhi regulator. Regulators cite the meagre penalty allowed in the law as an insufficient deterrent, the risk of undermining relations with the regulated utility, and the futility of fining a government entity that would only ultimately pass on costs to the public.

Regulators carry out capital investment review from the perspective of cost effectiveness and implementation feasibility, but without querying larger issues of project necessity, choice or viability. This judgement is influenced both by external pressures to desist from 'micro-management', and self-driven concerns of appearing 'anti-development.' This puts a technical façade on review, but allows politically driven investment choices to escape scrutiny of regulators and stakeholders.

In scrutiny of generation projects with a high public visibility, this technical façade took the form of a quasi-judicial approach of listening to various views, and making decisions based on the credibility of sources. The result was an appearance of caution and defensibility, with recourse to citing the opinions of other, mostly governmental sources, rather than

exercising independent judgement. For example, in reviewing the requirement for four gas-fired independent power projects, the APERC solicited the opinion of the federal Central Electricity Authority, which issued a controversial adjustment to the system reserve margin that justified the capacity additions.

There is a case for regulators to shift from their current hands-off and quasi-judicial style to a more explicitly investigative style. While a balance needs to be struck between regulatory micro-management and regulatory laxity, this evidence suggests that regulators in India may be erring too far on the side of laxity. At the same time, to credibly undertake a proactive approach to regulation requires a regulator with a minimum threshold of staff, competence and credibility.

5.3. An apolitical regulatory facade

Regulators face not only decisions in which politics are embedded—such as those around investment, performance, and generation—but also conspicuously political decisions such as tariff setting and implementation of open access policy. Nonetheless, regulators strive to project their performance on these issues as technical and free of politics, in keeping with the theoretical conception of regulators as implementing, rather than policy-making, bodies. The evidence presented here suggests that this fiction is hard to sustain, and may even be counter-productive.

Tariff setting is perhaps the most closely watched indicator of whether regulation is apolitical. However, in all three states there are clear indications that regulators certainly factor in public sentiment. For example, Karnataka and Andhra Pradesh display a pattern of early tariff hikes followed by flat tariffs. In all three states there are instances of creative regulatory measures that could be interpreted as valiant efforts to limit tariff hikes and are often so interpreted. Thus, Andhra Pradesh has used an efficiency target in addition to other specific efficiency-enhancing measures such as loss reduction targets, that, for several years, has enabled the regulator to avoid tariff increases. Karnataka has deferred unforeseen power purchase costs through a true-up in future years to avoid tariff increases. Delhi similarly created a regulatory asset as well as other accounting devices. These examples suggest regulators feel they cannot avoid the political implications of their decisions. Indeed, this is a reasonable conclusion; public perception of whether increases in quality and increasing costs warrant a tariff increase are salient to the regulatory process.

As with tariff-setting, the regulators' rule-making function is constructed as an apolitical and technical role. However, many regulatory rules create substantial winners and losers, and are therefore unquestionably political decisions. Regulatory rules governing open access to the grid are a good example. The Indian policy framework specifies that open access be allowed, but only on payment of a surcharge to compensate the public system for loss of the cross-subsidy paid by lucrative industrial customers. The methodology for surcharge collection is to be determined by the regulator. All three regulators held consultations, which did expose clearly the opposing interests, but without leading to a reconciling of those

interests. In Andhra Pradesh, the regulator chose to support a methodology for open access surcharge that would limit the burden on the incumbent utility, explicitly citing the state government's argument that anything else would undermine the financial viability of the utility. In Karnataka, a similar decision was reached on the grounds that the information on cost of supply did not exist to follow the alternative approach. Political considerations relating to the financial viability of the utility would appear to be behind these decisions, whether explicitly as in Andhra Pradesh, or implicitly as in Karnataka.

These decisions have been passed on to regulators precisely because governments are unable or unwilling to bear their political costs. However, placing them in the regulatory domain does not erase their political content; technical considerations remain at best part of the story. Given this reality, regulators can only avoid succumbing to interest group pressure if they explicitly acknowledge the political content of some of their decisions and embraced their *de facto* role in balancing interests. To accomplish this, regulators and government would have to re-imagine their role and decision-making process away from a doggedly apolitical stance, to one based on a more explicitly deliberative governance process under regulatory auspices.

5.4. Conclusion

A scrutiny of regulation in practice reinforces a view that regulation is more discretionary than codified, as much political as techno-economic. Technical competence is necessary, but it is by no means sufficient. With a thin tradition of regulation in India, judgements rest less on precedent and more on individual idiosyncrasies, often with little justification. The result is widely varying procedures and norms on critical issues such as technical validation, scrutiny of investment, and public hearings. Individual approaches, in turn, are shaped by the cultural content of institutions and networks from which regulators draw their personnel.

These networks operate within a larger regulatory space that continues to be dominated by the government, both as owner and potential beneficiary or loser of votes tied to electricity outcomes. If consideration of the political implications of regulatory decisions, particularly on tariffs, looms large, it is also a subject to be denied in public. The result is a non-transparent and imbalanced negotiation of political pressures rather than a more open discussion of political trade-offs implicit in regulatory decisions.

6. Role of stakeholders

The discussion on regulatory practice above suggests that regulators are regularly called upon to exercise discretionary judgement in regulatory decisions that goes beyond application of their technical knowledge. Given this reality, future regulatory accountability may rest as much on building credibility in exercise of their discretion through public consultation, as it does on consolidating technical competence.

6.1. Procedural transparency, but weak implementation and thin participation

Electricity regulation in India has only taken small steps toward a “stakeholder model” of regulation, in which independence is ensured not through isolation, but through being subject equally to the voice and representation of all stakeholders.

Regulatory procedures for transparency and participation are reasonably sound, but implementation of them is cursory and ineffective. For example, none of the three regulators studied had an indexed database of documents readily available, without which claims of transparency ring hollow. Procedures and practice of transparency in some areas, notably around investment schemes, remains murky, and investment scrutiny in all states falls outside the regular tariff process, and hence outside the consultative process. Hearings are regularly held in all three states, and well attended, but the hearings are structured in a quasi-judicial manner rather than as interactive discussions. Moreover, the one way communication leaves stakeholders no opportunity to query further should they feel their objections are inadequately addressed. The standard of reasoning in response to stakeholder involvement is uneven, and the credibility of the process suffers enormously when stakeholders feel their voices are not acknowledged or responded to, as in one case where an order was produced a mere 24 hours after a public hearing.

Even if procedures and practices within regulators could be improved, the full value of stakeholder engagement requires considerably enhanced capacity to participate in regulatory debates and decisions. Current capacity is extremely thin, and limited to a few groups or individuals in each state representing the full range of consumer interests. Given their greater access to technical ability and resources, it is perhaps surprising that industry did not dominate stakeholder interventions. Industry accounted for 10% of responses in Andhra Pradesh, 17% in Delhi and a high of 43% in Karnataka in 2004–2005. The Chambers of Commerce in each state suggest that only a few of the thousands of members actively participate in discussing and preparing submissions to the regulator. In the two agricultural states of Karnataka and Andhra Pradesh,

Table 1
Number of objections filed

	2000	2001	2002	2003	2004	2005
KERC	110		8455	6133		5170
APERC	78	89	585	119	424	302
DERC		521		78	70	81

For KERC, non-duplicate objections number in the range of 100–400. Farmer groups arranged for representatives statewide to send in duplicate objections. KERC also had an Amendment Order related to power purchase, for which 162 objections were filed. KERC also had 122 objections in 2000 rejected for lack of affidavits. For APERC, the 2002 non-duplicate objections numbered 135; the rest were submitted in duplicate, similar to KERC. Objections in 2003, 2004, 2005 include 45, 329, 117 respectively directed to TransCo. For DERC, all companies receive the same number of objections, as indicated, from the same parties.

Table 2
Composition of objections filed

Category	KERC (%)	APERC (%)	DERC (%)
<i>2001/2002</i>			
Industry	117	24 (41)	153 (29)
Consumer groups		9 (15)	51 (10)
Individuals	247	11 (19)	274 (53)
Public utilities		3	
Farmer representatives	8037	3	2
Political parties/politicians		2	3
Others	54	7	38
Total	8455	59	521
<i>2004/2005</i>			
Industry	47 (43)	15 (10)	12 (17)
Consumer groups	11 (10)	16 (11)	21 (30)
Individuals	19 (17)	35 (24)	23 (33)
Public utilities	18 (17)	19 (13)	3
Farmer representatives	7*	36 (25)	0
Political parties/politicians	7	5	7
Others	0	18 (13)	4
Total reviewed	109	144	70
Actual total	5170	302	70

APERC totals discrepancy in 2004/2005 reflects –45 not discussed in tariff order and 117 directed to TransCo.

*KERC total in 2005 reflects those discussed in the tariff order, the rest mostly duplicates from farmers.

farmers are a formidable presence (see Table 1). In both states, but notably Karnataka, they have adopted a policy of blanketing the regulator with identical petitions to signal their insistence on being heard. In Delhi, organized Resident Welfare Associations have been a prominent voice, although the voice of lower income neighbourhoods such as slum areas has been muted. Finally, in all states, individual representations are substantial, from a low of 17% of submissions in Karnataka to 33% in Delhi in 2004–05. (see Table 2).

For their part, regulators have not proactively sought to enhance stakeholder capacity to engage in regulatory consultation, with the partial exception of Karnataka, who have set up a Consumer Advocate office. Stakeholders, on the other hand, view transparency gains from regulation as an unambiguous positive, but do not, as yet, view regulation as a viable arena within which to ensure their interests are taken into account. Particular incidents often deeply colour perceptions, such as the example of a lengthy order on non-conventional energy issued by the Andhra Pradesh regulator a day after a hearings process, suggesting that input received during the hearings was barely considered. In their perception, regulators hear stakeholders, but respond opportunistically. As a result, stakeholders continue to hedge their bets by keeping open the option of direct political action.

There are few substantive gains across the states that can be attributed to the stakeholder participation process. Most notable is the active scrutiny of power purchase agreements in Andhra Pradesh. In Delhi, stakeholder involvement is seen as having provided consumers an opportunity to point out scope for small but significant adjustment. However, these gains are restricted to relatively marginal issues, while regulators have been impervious to requests to take up more

politically sensitive and substantive issues, such as billing and metering, and reporting against performance standards.

6.2. Conclusion

The dominant view in Indian policy debates is that strong and supportive governments offer the route to more effective regulation, as in Andhra Pradesh. However, a regulatory framework buttressed by public engagement and support arguably offers an alternative route, and perhaps one that is more consistent given the enmeshing of Indian electricity within the national political context. However, the evidence suggests regulatory bodies are a long way from this ideal: regulators view participation as perfunctory more than useful; procedures are unevenly implemented and reasoning for decisions are weak. For their part, competent stakeholder groups are few and not growing. However, the stakeholder process has forced into the public domain several policy debates and decisions that took place behind closed doors.

7. Conclusions

Indian electricity regulators operate in a dynamic sector with entrenched interests. This requires them to make bold decisions and support rapid change, while dealing with a high degree of political visibility and citizen scrutiny, low availability of human capacity and regulatory experience, and nascent institutions that have yet to prove themselves. These conditions, in sum or in part, are likely to be reproduced across many other developing countries, making this an important case for both theory and practice worldwide.

Indian electricity regulators were established explicitly to de-politicize the sector, but little thought was given as to whether devolving legal power to regulatory technocrats was a sufficient way to do so. As the three state-level regulatory cases discussed here suggests, statutorily independent regulators were largely unable to separate the economic and political content of decision making. While in two states this outcome was partially tied to state ownership of utilities, the larger point was also true in the case of Delhi, where the utility was privatized. Indeed, the Indian experience leads us to a dominant theme for this paper: in a rapidly changing sector, the separation between the political and economic content of regulatory decisions may not be feasible or indeed desirable. This conclusion reinforces the institutionalist perspective on regulation discussed earlier, which emphasizes the specific institutional forms through which political and economic content is reconciled.

To achieve rapid change and reform, the India case suggests that political interests in the sector likely need to be explicitly confronted. While state governments in India attempted to do this either by establishing a reform trajectory *a priori* or by retaining control over reform issues, in practice the line between reform design and reform implementation, between the political and the technical, remains hard to draw. In particular, to defend and deepen their credibility, regulators needed to be responsive to changing context, which meant examining trade-

offs that had varying political implications. Phrased in more theoretical terms, the problem of delegation identified by political scientists remains a substantial one. For practitioners, a strong lesson that emerges is the need for governments to allow nascent regulators space to develop and deepen their own credibility, rather than under-cut them for short term gains.

In practice, Indian electricity regulators walk a fine line between adequate scrutiny and maintaining the political status quo. In some areas, notably power purchase agreements and to a limited extent investment scrutiny, they have moved the sector in the direction of rationality and transparency. Yet, their reluctance to ask difficult questions, exercise discretion, and enforce decisions has limited their effectiveness. Reflecting on the dominant ideas, this narrative supports a view that the simple dichotomy between capture and the public interest is simplistic. However, it also suggests a modification to the existing literature arising from the unique Indian context of regulators regulating state-owned entities—regulatory behaviour is in part explained by a form of self-censorship or self-regulation, arising from the schizophrenic relationship between regulators and the government. A second practical lesson, however, is that in contexts like India's which combine the need for rapid technological change with high cost and political sensitivity, there is a case for more proactive regulation and scrutiny, notwithstanding a tendency toward a conservative approach to regulation.

To shift toward a proactive regulatory style, as suggested here, requires high levels of technical capacity and institutional legitimacy. Without technical competence, regulators cannot credibly or usefully adopt a more interventionist role. But technical virtuosity alone is insufficient. A proactive regulatory style entails exercising independent judgement and justifying controversial decisions, which realistically can only be expected if they have high levels of legitimacy. Questions of bias in selection, concerns over a mindset limited to civil servants and utility staff, and the lack of continuity that comes with outsourcing key regulatory tasks have all played a role in partially undermining regulatory credibility in India. These observations point to the value of a "regulatory space" approach that takes seriously the historical and institutional context of regulation that influences, if not drives, regulatory outcomes. This context delimits regulators' initial credibility and shapes internal culture, both of which are important to understanding the boundaries within which regulators assert their authority. The India case, therefore, also offers a third operational lesson: proactive regulation requires regulators to deliberately build institutional legitimacy, particularly by changing perceptions of regulators as extensions of government bureaucracy, both structurally and in their decision criteria.

The question of legitimacy lies at the core of long-standing theoretical debates about the powers of specialized agencies that are appointed and not elected. In countries such as India, legally conferred legitimacy is limited by weak institutions and enforcement powers, and exacerbated by thin technical capacity. Under these circumstances, democratic legitimacy may be the only viable option. Democratic legitimacy as used here suggests three minimal conditions: regulatory procedures are

sufficiently robust to afford all interests and stakeholders a voice; those procedures are actually used by a sufficiently broad and informed sample of citizens; and that participants in the regulatory process have confidence that their voices actually influence decision making. Despite some progress in this direction, Indian electricity regulatory processes have not as yet achieved this aim. To the broader theoretical literature linking regulatory with legitimacy, therefore, the Indian case suggests two messages. First, democratic legitimacy through a robust regulatory process, while worth striving for, is not easily achieved. Second, however, given a broader context of weak and thinly legitimate institutions, such as parliaments, a democratically robust regulator stands to offer a highly credible alternative decision-making forum for specialized issues. Arising from these points is a fourth practical lesson: building democratic legitimacy is necessary, which requires a focus not only on robust legal procedures and adequate training of regulators and their staff, but also support for citizen engagement in regulatory process.

Ultimately, the Indian electricity regulatory experience suggests that half-hearted approaches at regulation risk allowing regulators to be absorbed back into the political morass they were intended to transcend. To the extent other developing countries also face contexts of rapid change, high political stakes and capacity challenges, the overarching message is that the only regulation worth doing is one that aims high, based on regulatory independence, strong capacity, a proactive approach, and strong democratic legitimacy.

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