Electricity Restructuring in the Developing World

results from PESD’s Comparative Study of: Brazil, China, India, Mexico and South Africa

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Five-Country Study: Overview of my Comments

1. Causes of Reform
   - From state-centered to market-oriented power systems

2. Pace and Character of Reform

3. Outcomes
1. Causes of Reform

• In the advanced industrialized nations
  – Goal: economic efficiency
  – Expected outcome: tariff *reductions*

• In these five developing countries
  – Goal: financial solvency and *investment*
    • Statist system inefficient; tariffs politicized
  – Realistic outcome: tariff *increases*
  – Need for *politically viable coalitions*
# Reform Strategies: No Textbook Model

<table>
<thead>
<tr>
<th>Country</th>
<th>Strategy</th>
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<tbody>
<tr>
<td>Brazil</td>
<td>Privatization of distribution and generation companies to raise money; allowance for IPPs; creation of hydro system operator; independent regulator</td>
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<tr>
<td>China</td>
<td>Reform at the margins (IPPs) and corporatization of state enterprises to raise money; nascent independent regulator</td>
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<tr>
<td>India</td>
<td>Reform at margins (IPPs and guaranteed returns for national power corporation) then seek private management of distribution; independent regulator.</td>
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<tr>
<td>Mexico</td>
<td>Reform at the margins (IPPs); reforms stalled due to political and constitutional barriers; independent regulator</td>
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<tr>
<td>South Africa</td>
<td>Aggressive electrification; redrawing of boundaries for distributors; corporatization of utility; independent regulator; IPPs expected</td>
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2. Pace and Character of Reforms

- Electricity Reforms depend on other reforms
  - Finance
    - The single most important factor
    - State sector finance; soft budget constraints
  - Factor Markets
    - Labor; fuels
  - Judicial
    - Independent regulators
  - Corporate Governance and accounting
    - Essential for regulatory oversight and private investment
  - Competition Policy
    - No evidence yet—no markets
  - Contrast w/ OECD
    - reform with “rule of law,” market institutions, and independent financial sectors already in place
3. Implications for Industrial Organization and Regulation

- Emergence of “dual markets”
  - Partially state-controlled
    - Soft budgets; tariffs
    - Highly political allocation of rents
  - Partially market
    - Project and concession bidding
    - Market experiments
      - E.g., Six provinces in China (1999-2001)
  - Not a transient outcome, but stable equilibrium

- Unsolved Problem of Regulatory Credibility
  - Regulation rooted in weak institutions
  - SOE reform more important than merchant competition
  - Developing country regulators learn more from each other than from OECD “capacity building”
Assets squeezed of rents and equity

“Regulatory Squeeze”

Solvent, productive enterprises

Privatization

State-owned system

Productive assets

“Asset sorting and shifting”

Insolvent assets

Pre-Reform

Privately owned power
Supply & delivery system

Assets squeezed of rents and equity

“Regulatory Squeeze”

Solvent, productive enterprises

Failed private investment

Viable private units

State-owned system

Productive assets

“Asset sorting and shifting”

Insolvent assets

Integrated generation & Supply system

Unbundling and partial reforms

Grid customers

Legend:
- Flow of capital and assets
- Flow of Electricity
- Regulatory & administrative decision-making

“Normal Private Firms”

“Dual Firms”

“The State”

“Self-Generators”

Time (and increasing fragmentation)
3. Implications... (cont)

- **Industrial Organization**
  - **Fragmented Ownership and Control**
    - Isolated pockets of profitability: listed corporations & FDI
    - Pervasive under-performing: retained by the state
  - **Hybrid financing**
    - Hard financing; equity squeeze; pervasive state “safety nets”
  - **Who has the competitive edge?**
    - “dual firms”—combine political assets with modern management
      - Political assets: to assure control over rents and to enforce convenient contracts
      - Modern management: to avoid dysfunction of most SOEs
    - Examples
      - Brazil: Petrobras
      - China: Huaneng, CLP
      - India: Reliance, Tata, NTPC
      - Mexico: ??
      - South Africa: Eskom
Final Observations

• Central role for “non-electric” reforms
  – Especially financial and judicial reforms
• Importance of building coalitions for reforms
  – E.g., “tunneling through” opposition
    • APDRP in India
• Independent regulators as substitutes for government
  – To create confidence and stability
• Regulators overseeing “dual markets,” not textbook markets
  – Key issues: governance, transparency, IPP tenders
  – Lesser issues: market power, congestion