Perspectives and Challenges of EU Electricity Enlargement

The Reform Agenda Ahead

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Main Recent Trends in Private Investment in Infrastructure Worldwide I

- In 2003, investment in infrastructure projects with private participation in developing and transition countries was $49.7 bn
  - Lowest since 1994 and 38% of 1997 peak
- 2003 - Telecom investment 57% of total infrastructure in projects with private participation (1990-2003 = 45%)
- 2003 - Electricity (mainly generation but including some distribution) was 28% (1990-2003 = 28%)
  - Much 2003 electricity investment in a few large East Asian generating projects

Source: World Bank Private Infrastructure PPPS Note No 274 September 2004

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Main Recent Trends in Private Investment in Infrastructure Worldwide II

- End 2003, $86 bn of infrastructure projects with private participation cancelled or in distress
  - Most serious for water (40% of total water projects 1990-2003)
  - Also serious for energy - 11% of all electricity and gas projects (Electricity: Asian PPAs, Argentina, etc)
  - Telecoms only 4% total projects cancelled/distressed
- Big switch (a) to finance from local capital markets and (b) to loan and bond finance – flight from equity (esp international equity)
  - Local and regional investors becoming more important relative to multi/international companies
  - Increased use of management contracts, big decline in divestments – apart from telecoms

Main Recent Trends in Private Investment in Infrastructure Worldwide III

Consequences of downturn in Developing and Transition economies => questions being asked by World Bank and many others on:

1) Prospects for private infrastructure.
2) How far infrastructure industries can be commercialised (let alone liberalised and unbundled with wholesale/retail service competition)
3) How far "independent" regulatory institutions can alleviate risks for private investors

BUT: These issues asked much more for water and railways.

Not a serious problem for telecoms where private finance + competition reform model working well in general across range of middle and low income countries as well as US, EU, etc.

Electricity intermediate case. Private infrastructure fine where starting level of retail prices high (Chile) but not where low (Majority of countries incl all Transition countries)

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Private Infrastructure in Central and Eastern Europe I

Similar picture as in all developing countries particularly in Central European and Baltic (CEB) countries – ***but*** less of an infrastructure private investment boom in late '90s or reduction 2000+

- CEB countries (ie new EU members) account for 62% all private finance in infrastructure 1992-2003 and 64% 2000-03
  - CEB also accounted for 77% infrastructure privatisation revenues 1992-2003
- Loans and bonds dominate private financial sources – "thin equity" model
  - Apart from telecoms, private finance primarily via concessions, leases and increasingly management contracts
  - As elsewhere, emergence of regional investors eg CEZ, RAO UES

Source: EBRD Transition Report 2004

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Private Infrastructure in Central and Eastern Europe II

- Telecoms (all Transition countries) accounted for 40% private infrastructure finance 1992-2003 and 44% 2000-2003
  - Telecoms accounted for 52% infrastructure privatisation revenues 1992-2003
  - Mobile telecom virtually fully privatised, fixed-line substantially (>75% privatised)

- Electricity (all Transition countries) accounted for only 18% private infrastructure investment finance 1992-2003 and 16% 2000-2003
  - Electricity accounted for 19% of infrastructure privatisation revenues 1992-2003
  - Little privatisation in transmission. CEB has had moderate amounts of privatisation (around 25%) in distribution/retail and generation

Transition Report identifies expectations of low tariffs as main impediment to higher PSP in electricity as well as in water and transport

- Commercialisation still limited except for telecoms
- Development of autonomous regulatory institutions has not alleviated this problem even in leading CEB reform countries

Infrastructure Industries and Need for Regulation I

Infrastructure industries vary greatly over need for regulation to sustain commercialised provision with private finance.

- Works much better with some industries than others

Industries with low growth, high capital intensity, major social externalities have high need for regulation ***but*** more difficult to sustain "independent" regulation – particularly if history of low or very low prices for household consumers

- *Problem of finding alternative methods of providing social support other than highly inefficient cross-subsidies and implicit subsidies (low or negative rate of return on assets)*

Industries with high growth, fewer social externalities have much less need for regulation purely to sustain commercial provision

- Regulation may be important but more to support competition and efficiency gains

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Infrastructure Industries and Need for Regulation II

Industry	Rate of Demand Growth	Rate of Growth of Technical Progress	Potential for Competition (Including competition in products and competition between networks)	Degree to which Assets are Sunk	Externalities (including social benefits and relative costs of achieving them)		Overall Importan of Effecti Regulatio
Electricity	Low	Low	Medium	High	High		****
Natural Gas	Medium	Low	Medium	High	Medium		***
Telecoms	High	Very High	High	Medium	Low		**
Water & Sewerage	Low	Low	Very Low	Very High	Very High		*****
Railways	Very Low	Low	Low	Very High	Medium		*****

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Infrastructure Industries and Need for Regulation III

- ***Telecoms*** – Strong growth in demand for income elastic products
  High rates of technical progress => minor sunk asset problem
  Strong competition in products, growing network competition
  Limited social externality issues

  Implication: Regulation to ensure suppliers earn a reasonable rate of return important but not vital for commercialised provision

- ***Water*** : Low growth in demand for highly price and income inelastic products + High capital intensity + High social externality concerns (public health, fire-fighting)

  Implication: Regulation to ensure suppliers earn a reasonable rate of return crucial for sustained commercialised supply ***but*** very hard to achieve

QUESTION: Is electricity more like telecoms or more like water?

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Development of Autonomous Regulators I

All Transition countries (including CEB) have found it very hard to create and sustain effective, genuinely autonomous regulatory agencies that support commercial operation

- Need to meet EU Directives has been important in CEB countries

- Autonomous regulatory agencies in place for electricity & telecoms but rarely for other infrastructure industries.

  Also

  a) In many cases, regulator still reports to sectoral Ministry and/or Government retains final authority over setting prices

  b) Regulatory decisions frequently over-ruled – 30% of cases

- Lack of autonomy most clearly shown in dismissal rates of regulators
  - ***70% of telecom regulators and 50% of electricity regulators unable to serve their full terms***

Source: EBRD Transition Report 2004 Chapter 3

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Development of Autonomous Regulators II

Telecoms v Electricity Regulators in CEB

- Telecom regulators had high levels of independence (as measured by financial, decision and management independence) - and markedly higher than electricity regulators
- Less difference on accountability and transparency (both measured by publication measures
- Governments more likely to retain control over electricity pricing

Source: EBRD Transition Report 2004, Chapter 3, Also Vagliasindi & Chirmiciu (Mimeo 2004)

Does it matter? Yes - A lot.

Effective and independent regulation much more important in sustaining effective commercial operations in electricity than for telecoms

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Electricity v Telecoms: The Role of Regulation I

1. Telecoms
   - Revenues in CEB and others sufficient to support major increases in both fixed (and especially) mobile telecoms – very largely privately financed
   - Major improvements in technology, range of services, quality, productivity, etc
   - Rates of return on equity 2003 (13%) closer to necessary hurdle rate

Of course, still some problems

- Cross-subsidies in local-trunk-international call prices contribute still pervasive
- Mobile-fixed substitution significant
- Incumbent operators still frequently maintain high interconnection prices and control access

BUT, overall commercialisation + private finance model working well at delivering improving service at reasonable prices

Regulation most important for sustaining competition

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Electricity v Telecoms: The Role of Regulation II

2. Electricity
   - Revenues insufficient to support sustainable commercialised operation with private finance – prices still below cost recovery levels in most CEB countries and rates of return on equity remain low (<7% in 2002 – highest yet achieved)

     Among CEB entrants to EU only Hungary and Poland had residential household prices > 7 cents/kWh
   - Among CEB entrants to EU, private participation in generation only > 25% in Czech Republic, Poland and Hungary and only >50% in Hungary
   - Among CEB entrants to EU, private participation in distribution only > 25% in Czech Republic, Hungary, Lithuania, Slovakia (100%)
   - Incumbents still possess very considerable market power (Czech Republic, Slovenia)

- ***Regulation crucial for setting network and final retail prices but regulators unable to do so.***
- ***Position only tolerable because no requirements <u>yet</u> for major new capacity expansion***
- ***Unclear whether and when CEB countries will achieve full commercial sustainability for electricity***

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Conclusions on CEB Electricity Reforms 1990-2004

- CEB Electricity industries semi-commercialised rather than fully commercialised
  - Prices still low, retail prices in some countries lower in real $ terms than 10 years ago
  - Prices and revenues insufficient to support sizeable investment programmes without explicit or implicit government support
- Competition limited not least because many small countries with limited interconnection and market integration with neighbouring countries
  - High concentration in generation, opening of access slow in practice, strong “national champion” policy stance in some countries
- Regulatory agencies still have only limited independence

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Implications for Reform Agenda I

- ***CEB electricity reform picture not dissimilar to that of many middle income countries in Latin America and Asia***
  - or some EU 15 countries (Greece? Others?)

Does it "matter" ? Probably not - at least for system viability.

- Little danger of CEB supply shortages in forseeable future given electricity demand, expected GDP growth and composition
- Required capacity expansion still likely to slow
- Capacity refurbishment to meet environmental obligations likely to be main investment cost burden (eg Large Combustion Plant Directive, etc).

  BUT, EU and national environmental funds likely to cover large % of investment costs of this. (Also, CEB countries will benefit financially from emission trading regime)

There are costs to electricity consumers (firms and households) in terms of low energy efficiency, low technical and production efficiency, high losses, etc but these do not threaten sustainability of system.

Lights unlikely to go out

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Implications for Reform Agenda II

Three final questions:

1) ***Would CEB countries benefit from adopting more commercialised interpretation of EU electricity model with a more pro-competitive stance?***

   Yes, but trading and efficiency benefits arise more in larger markets => need for more electricity trade and market integration for most CEB countries to achieve benefits from more radical, pro-competitive reform

2) ***Can "independent regulation" effectively enforce more radical reform.***

   No – given the evidence of the last 10 years of CEB and elsewhere

3) ***Can current CEB semi-commercialised electricity system continue and maintain supplies for next 5-10 years?***

   Almost certainly – but whether that is a good thing or a bad thing, I leave to others to answer.

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