Regulation: economic theory, practice, evolution over time and the contribution of Argentina

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Outline

- Regulation in France, UK1, US1
  - Neo-classical welfare economics
- Privatisation, competition & regulation UK2
  - Austrian ideas: market as a discovery process
- Achievements and limitations today
- Energy regulation UK3 – more planning?
- Argentine Public Contest Method
- Negotiated settlements in other countries
  - US2, Canada, UK & Australia airport regulation
- Conclusions

France 1940s – 1990s

- French electricity industry a state-owned monopoly: Electricité de France
- It was run by economists!
- Developed and applied theory of marginal cost pricing and investment rules
    - Boiteux 1940s, 1950s
- EdF appeared to be efficient, successful, with innovative tariffs. Unlike UK

UK1: nationalised industries

- Electric & other utilities nationalised 1940s
- 1967 White Paper economic principles
  - Marginal cost pricing & investment rules (EdF)
- In practice industries ignored these rules
- The industries had different problems
  - Inefficient, excessive operating & capital costs, old products, little innovation, waiting lists (phones)
  - Need to *change* costs & demands, not take as given
- Welfare economic theory had no remedy
- But Austrian economics did

UK2: liberalisation 1980s

- 1979 Mrs Thatcher: UK cannot afford cost of nationalised industries - how to remedy?
- Transfer from public to private ownership
  - Better incentives for industries to find & implement more efficient production methods
  - & to discover & deliver products customers prefer
- And allow competition where possible
  - So others challenge incumbents' prices & products
- Competition as a discovery process: lower costs & prices, new products, innovation

But what if no competition?

- What about industries where entrants have not yet appeared? And monopoly networks?
  - British Telecom (BT) 1983, electricity & gas & water
- Regulation needed to protect customers
- What form of regulation appropriate?
- As in US? Regulation of private utility companies well established there
- But US economists becoming critical of it

US1: utility regulation

- US utility regulation until 1970s
  - Fair and reasonable return on investment
  - Prevents excessive profits
- But it did not encourage efficiency
  - No incentive to reduce costs if prices reduced too
- Concerns about gold-plating of investment
- Thus it did not address the specific problems of UK nationalised industries

UK2: incentive price cap

- UK Brit Telecoms privatisation 1983
  - Regulation needed to address issue of inefficiency
- Basket of prices allowed to rise at RPI-X
  - RPI Retail Price Index to protect BT against inflation
  - X to deliver real price reductions to customers
- Price cap set for 3 years (later 4 or 5 years)
- Keeping gains for 3 yrs gave BT incentive to reduce costs, supply more phones, innovate
- RPI-X accepted, applied other privatisations

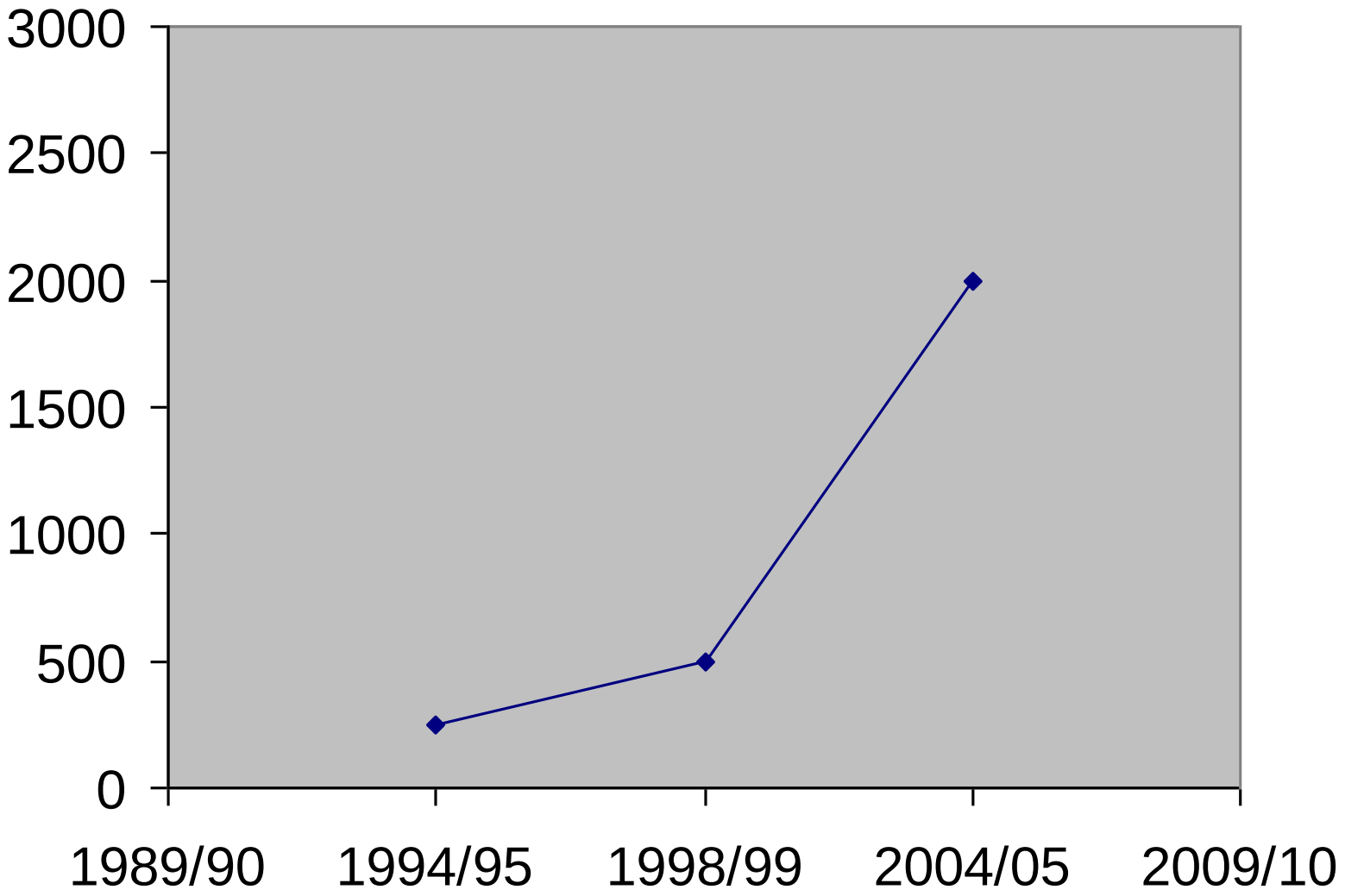
UK2: electricity privatisation 1989

- Need for more competition: restructuring
  - Separate transmission, distribution, generation
  - As in Chile early 1980s, but UK went further
- RPI-X regulation applied to transmission and distribution networks
- Full wholesale and retail competition
  - So no controls on those prices (or soon removed)
- Seemed ultimate pro-market regulatory design? Applied world-wide incl. Argentina

Successes UK electricity networks

- Efficiency increases (1990-2006)
  - Distribution operating costs down 5.5% annually, 3.1% transmission, workforce 1/3 original level
- More network investment (trans + distribn)
  - Annual capex roughly double pre-privatisation
- Prices down over first decade or so
  - Approx 1990-2001 average bill £350 to £250
- Service quality up
  - 11% fewer power cuts, 30% shorter duration
- Similar outcomes in other privatised sectors

Increasing Regulatory Burden



Pages in Offer/Ofgem Distribution Price Control Reviews

Network regulation concerns

- Increasingly complex & burdensome
  - Independent review of Ofwat for Government found: “regulatory burden has increased massively …major cultural change needed on both sides”
  - Information requirements up 10-fold in ten years
- Can regulators discover customers’ needs?
  - Which vary with particular circumstances
- Consistency of regulatory approach limits innovation & learning from experience

RPI-X@20

- Ofgem network regulation review 2009-2011
- Significant achievements as noted – BUT:
- Are customers sufficiently involved in the regulatory process to get the investment and quality of service that they want? No
- Tomorrow's world will be different
  - Low carbon, renewables, smarter technologies
  - How can regulator know what investment is required?
- Is RPI-X regulation still fit for purpose? No

UK3: Ofgem's solution: RIIO

- "a new way to regulate energy networks"
  - **R**evenue set for **I**ncentives, **I**nnovation & **O**utputs
  - Regulator will set Outputs reflecting enhanced engagement with customers, with incentives for timely & efficient delivery & for innovation
- If customers support company plans, light regulatory challenge & fast track process
- If not, strong challenge & slow track
  - 2011 review 4 UK transcos, all tried for fast track
  - 24 Oct: 2 transcos still on fast track, 2 no longer

Govt concerns about market

- Energy security concerns
  - Is there enough investment? Will market produce right energy fuel mix? Or too dependent on overseas fuel?
- Is market really competitive?
  - Average elec bill now £500, fuel bill (elec+gas) £1300
  - Fuel price increases & renewables? Or market power?
- Concerns about fuel poverty
  - When fuel costs > 10% of income
  - 1996 26% popln, 2003 6%, 2009 18% and increasing

UK3: Government policy

- Renewables 7% to 30% elec supply 2030
- Carbon emissions halved by 2025
- Government to set carbon price floor
- Encourage renewables & low-carbon plant
  - Subsidies, feed-in tariffs, long-term contracts
- Govt also to facilitate new nuclear plant
- Tough emissions standards on fossil plant
- Capacity mechanism for backup plant

UK3: Smart meters

- All residential customers to have smart meters for electricity & gas: 50m meters
  - Roll-out 2014 - 2019
- Cost £10.9bn = £218 per meter
  - Installation £6bn, communications £2bn, IT £1bn
- Benefit (20 years) £16bn = £319 per meter
  - Consumers: reduced energy consumption £5bn
  - Suppliers: avoided site visits & inquiries £9bn
- Net benefit £100 per meter over 20 years
- £5 per meter per year (AR$34)??

UK3 Regulatory policy

- Ofgem wants more competitive market
  - Both retail and wholesale
- Ofgem wants simpler retail tariffs: Ofgem to set fixed charge for all companies
  - So that customers can better compare prices
  - Thereby easier to switch between suppliers
- Ofgem to oblige generators/suppliers to auction 20% of capacity at intervals
  - To increase liquidity & encourage new entry

Interim evaluation of UK3?

- Costly: KPMG £108bn (renewables £34bn)
  - About £4000/customer (AR$27,000)
- Substantial proposed increase in planning
  - by State & regulator
- What will be left of the market?
- And of independent regulation?
- Can a regulator run a discovery process?
- Previous experience provides a warning:
  - government planning, excessive or over-ambitious regulation & political influence are problematic

Argentina electricity privatisation

- Argentina electricity privatisation 1992
  - Restructuring & competition per UK
  - More generating companies than in UK
  - Existing transmission grid: RPI-X price cap
- Government concerned to avoid excessive investment in transmission
  - Previous political pressures to over-invest, feared that companies would be happy to do so, and regulator would not prevent it

The Public Contest Method

- Govt advisers designed a new scheme: known as the Public Contest method
- Major new investment proposals had to be proposed, voted for & paid for by users
- Area of Influence method specified beneficiaries of each investment
- Construction, operation & maintenance put out to tender to determine cost and fees

The Fourth Line

- Apparent problem with first major proposal
  - A “much needed” Fourth Line from Comahue to BsAs was voted down
- Taken as evidence that method didn’t work
  - Did transactions costs prevent working together
  - In fact the line was uneconomic at the time
- Later, parties agreed a better design
  - 4 bidders, 13 bids including innovative technologies
  - Cost per km about half pre-reform costs
- Delay was beneficial, method successful

Transmission expansion methods

1994-2002	No. projects	Value $m
Pub Contest (Big)	3	454
Pub Contest (Small)	13	84
Contract btw Parties	45	217
Minor expansions	118	70
Article 31 (private)	7	12
Total	186	837

Experience & evaluation

- The PC method generally worked well
  - 3000 km High Voltage lines 1992-2002
  - Users were able to work together
- Shift to system control investments
  - More economic: better use of existing lines
  - Improved quality of service until 2002
- Bidding competitive: usually 2-4 bidders
  - Generally won by new independent companies

Argentina since 2002

- 2002 Argentina economic crisis
- Federal Transmission Plan re-launched
  - Large-scale transmission investments
  - Reflecting Government/political pressures rather than realistic economic appraisals & user support
- But Public Contest method still used
  - By beneficiaries themselves as originally designed
  - And by Federal Council to identify useful expansions and shares of payment to beneficiaries
- Public Contest idea recently used in USA

US2: energy regulation

- US federal energy regulators encouraged parties to settle (to address 1960s backlog)
- Different process led to innovation
    - 3-5 year rate freezes – more certainty for utilities and users, and better efficiency incentives
- Now 95% of rate cases settle
    - Faster and more certain than regulation by litigation
- Energy regulator takes pro-active role
    - Staff make counter-proposals & lead discussions

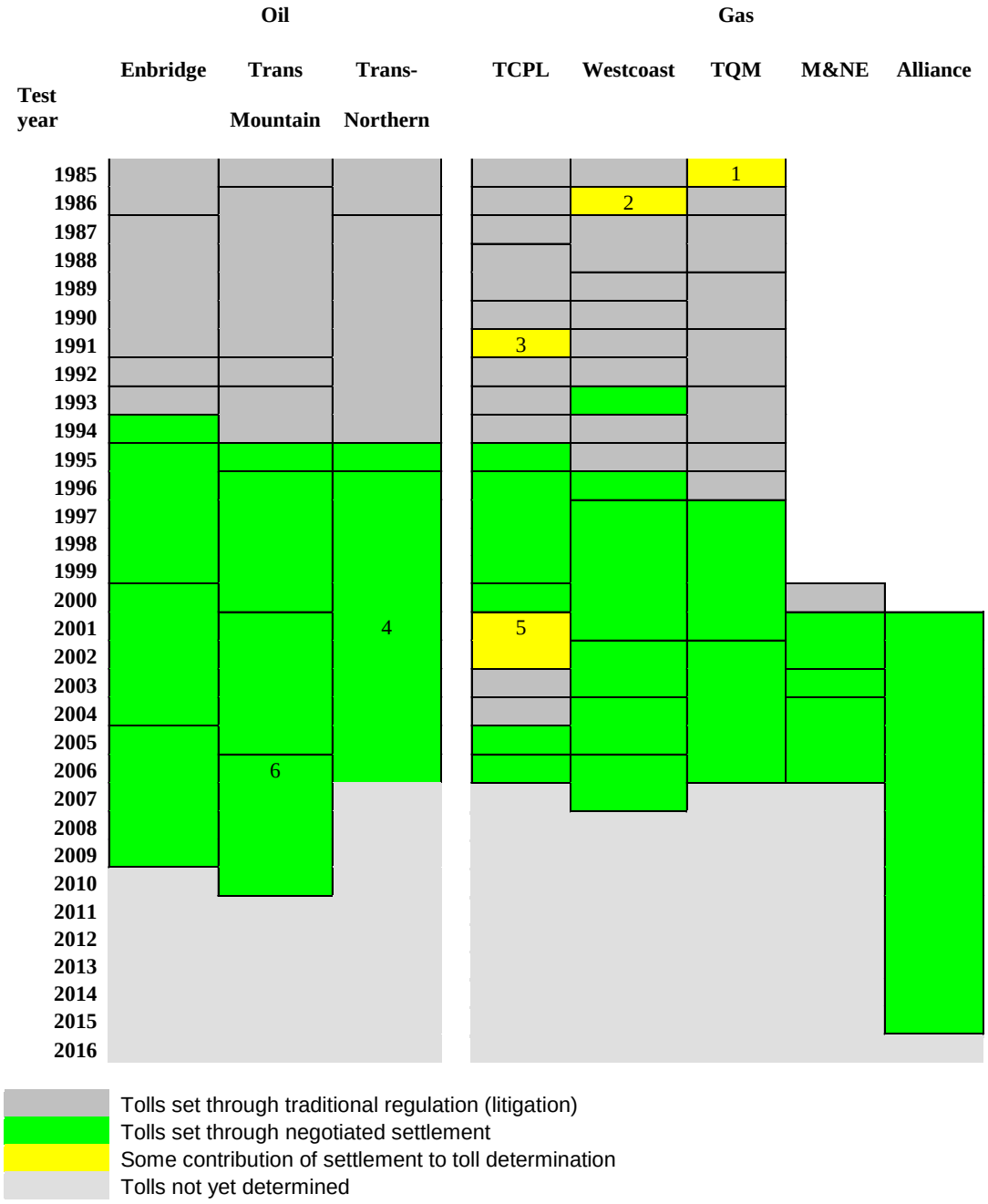
US2: state regulation Florida

- Public Service Commission is regulator
- But consumer advocate (Public Counsel) has negotiated settlements with utilities
  - Electricity: over ¾ total rate reductions worth $4bn
  - Customers preferred this to building reserves
- Utilities got greater accounting flexibility
- And revenue-sharing efficiency price freezes instead of rate of return control

Pipelines in Canada

- Before: National Energy Board long hearings
- Since 1997 almost all rate cases settled
  - Especially multi-year incentive systems
  - Also provision of info, quality of service provisions
  - Better info and customer relationships in industry
- Set cost of capital formula to aid negotiation
- Policy: if process sound, accept outcome
  - Don’t substitute own view of public interest

Settlement activity since 1985



Source: NEB toll decisions

UK3: Civil Aviation Authority

- 2004 Constructive Engagement at airports
- If airports and airlines can agree
  - Traffic projections, capital expenditure additions & desired quality of service
- Then CAA will include this in price controls
- 2006 parties did reach agreement (just)
- 2010 airports & airlines agreed extensions
  - Including capex flexibility for lower charges
- 2011 parties are negotiating new controls

Australian airport regulation

- Privatisation & since 2002 no price control
  - Emphasis on commercially negotiated outcomes
  - Govt guidance – aeronautical pricing principles
  - Regulator monitoring prices, quality, returns
  - Threat of re-regulation if airport misconduct
  - Part IIIA Access regime – regulatory arbitration of airport-airline disputes if airport “declared”
- Need for threat process & access regime?
- Or is it sufficient for airport to accept independent resolution in case of dispute?

General principles emerging

- A regulatory framework does not mean that the regulator has to take all the decisions
- Instead, a new role of regulation is to facilitate negotiations & agreement between parties
- If users can appeal in case of dispute, this removes monopoly power of utility
- Utilities & users can determine outcome
- Parties are in fact willing & able to participate
    - Transactions cost not a problem in practice

Still a role for regulator

- To set timetable & process
- Satisfy itself on who represents customers
- Protect those not at the table
  - Small customers significant for electricity sector
  - Scottish water regulator created a Customer Forum
- Enforce constraints eg government policy
- Enforce rules on information disclosure
- Provide further structure or information
  - Eg Area of Influence, cost of capital, benchmarking
- Fallback appeal process if failure to agree

Advantages of new approach

- Regulation more responsive to users
  - More legitimacy – customers themselves decide
  - Better tailored to local conditions
  - Better local monitoring of investment activity
  - More flexible eg duration & content of contracts
  - Better relationship between customers & companies
- More innovation, more lessons learned
- Possible new applications in future
  - Reduce uncertainty of future network requirements?
  - Users agree some price increases for better quality?

Conclusions

- Regulatory theory & practice have evolved
  - MC pricing to incentive regln & Austrian competition
- Many achievements but now problems
  - Some real, some perceived?
- UK proposes more government & regulation
- Others less regulation, bigger customer role
- Argentina: Public Contest method a pioneer
- Types of negotiated settlements next step forward in the theory & practice of regulation