Tariff regulation

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Agenda

• Theory
• Tariff regulation: means and ends
• Performance on price: voice and broadband
• Regulator’s contribution as indicated by TRE results
  – Forbearance
• If not forbearance, what?
  – Rate base rate of return regulation
  – Price cap regulation
  – Benchmark regulation
  – Proposed solution: banded forbearance
Perfect/well functioning markets are characterized by

- Perfect information
- No barriers to entry and exit
- No market power (multiple buyers, sellers)
- Substitutable products
- Rational market players
## Telecom markets are not perfect

<table>
<thead>
<tr>
<th>Perfect competition</th>
<th>Telecom markets</th>
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<tbody>
<tr>
<td>Perfect information</td>
<td>Significant information asymmetries</td>
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<tr>
<td>No barriers to entry</td>
<td>Licensing; use of scarce resources; large and lumpy investments</td>
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<tr>
<td>Large number of suppliers</td>
<td>In many cases, incumbent with market power exists</td>
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<td>Suppliers can act independently of each other</td>
<td>Cannot act independently because of interconnection</td>
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<td>Fungible products</td>
<td>More or less; but numbers/addresses make it less so</td>
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Operators with market power can set prices too high or too low

• Too high
  – Suppresses demand
  – Deadweight loss to society

• Too low
  – Through cross subsidization, price squeezing or predatory pricing
  – Hinders competition
Therefore regulator intervenes in price setting

• Using various tools/methods
  – Rate of Return regulation
  – Price Cap regulation
  – Benchmark regulation
  – Etc.
But regulation is a means, not the end

• What matters are
  – Tariffs of the services most people use: mobile voice
  – Tariffs of broadband services, especially in countries where mobile voice has hit bottom, are increasingly important
Voice + SMS TCO: Brazil = Bangladesh x 23
Voice, SMS & Internet TCO: Morocco = Sri Lanka x 57

Different business model in sub USD 10 countries?

Budget Telecom Network (BTN) model

Average: USD 11.47
Average with Internet premium: USD 15.05

Source: Nokia total cost of ownership study 2011
Fixed & mobile broadband prices in SE & S Asia, 2011 August: Mobile almost always significantly cheaper

All SEA countries & some SA countries offer speeds higher than 256 kbps
Tariff Regulation scores from 2011 Telecom Policy and Regulatory Environment Survey

Bangladesh  | 2.7 | 2.9 | 3.1
India       | 3.5 | 3.9 | 3.1
Pakistan    | 3.1 | 3.3 | 3.1
Sri Lanka  | 2.9 | 2.8 | 2.9
Indonesia  | 2.7 | 2.9 | 2.2
The Philippines | 2.7 | 2.8 | 2.5
Thailand    | 2.4 | 2.7 | 2.7

IN: best performer
Bangladesh, Pakistan and Sri Lanka also have low prices, but only the Indian regulator is rewarded . . .

• The value of forbearance
  – Many countries included in the TRE studies practice de facto forbearance
  – But the difference between de facto and de jure is that the latter improves certainty
    • There is no likelihood of a tariff being held hostage for extraneous reasons
    • Sensitive marketing decisions will not leak to competitors through the regulatory agency

• But, is forbearance practical only with the lowest HHIs in the world, which India has?
What is HHI (Herfindahl-Hirschman Index)?

• HHI = \( \sum (\text{Market share})^2 \)
• When market has 100 suppliers with equal market share of 1%
  – HHI = 100
• When market has 1 supplier with 100% market share
  – HHI = 10,000
• When market has 4 suppliers with equal market share
  – HHI = ?
India has one of the highest levels of competition

HHI, Sep '08

- India
- Pakistan
- Bangladesh
- Sri Lanka
- Indonesia
- Thailand
- Philippines
- Maldives

HHI, Sep '08
Very competitive (and increasing) even at Circle level

Comparison of Circle-wise HHI 2003-2007

- Delhi
- Mumbai
- Chennai
- Kolkata
- MH
- Gujarat
- AP
- Karnataka
- TN
- Kerala
- Punjab
- Haryana
- UP(W)
- UP(E)
- Rajasthan
- MP
- WB
- HP
- Bihar
- Orissa
- Assam
- North East
- J&K

HHI

- September 2003 - HHI
- March 2007 - HHI
Forbearance is right for Indian retail voice market

• But what about other countries with different market structures?
  – E.g., Maldives: duopoly (80:20 market split)

• What if market consolidation occurs in India ⇒ HHI increases?

• What about other less competitive markets within telecom sector?
  – E.g., Leased lines, mobile termination?
Rate of Return Regulation (regulated profits)

• 1. Find out costs
  – Prudently incurred; actual; for past accounting period
• 2. Determine reasonable Rate of Return (RR)
  – Based on weighted avg. cost of capital
• 3. Determine Revenue Requirement
  – Function of operating expenses, depreciation, taxes, book value of capital assets, RR
• 4. Set prices so that
  – Sum (expected revenue from all services) = Revenue Requirement
But creates no incentives to be efficient; difficult to implement

- Cost increase → Increase in Revenue Requirement → Increase in Prices
- Cost reduction → excess taken by regulator
- Determining costs not straightforward
  - Cost of CEOs holiday bungalow vs. cost of switching equipment
  - Who has more info? Not regulator
- Requires frequent rate rebalancing
  - Not suitable for fast changing environment (effort, time)
Price Cap Regulation

• Tells how much prices of a basket of services can change in each period (e.g., year)
• Typically, allowed revision = CPI –x
  – X = efficiency factor
  – CPI = consumer price index
• \( \text{PRICE}_{\text{new}} = \text{PRICE}_{\text{previous}} \times (1+(\text{CPI}-x)) \)
• Other variations
Creates incentives for efficiency; but what is X?

• Price is regulated, not profits
  – Incentives to cut costs/be more efficient → keep the profits during approved period

• But how is X calculated?
  – X based on expected efficiency (but is usually negotiated)
  – Information asymmetries
  – E.g., if inflation 27%, x = 2% → prices can increase 25%? In mobile?

• Resource intensive to implement properly
Avoid resource constraint through Asymmetric Regulation

• Asymmetric: treat different operators different
• Regulate prices of Dominant/SMP Operator only
  – Has to file tariff plans; obtain approval
• Not regulate prices of other operators
  – Can do what they like
  – Or just file, but don’t have to wait for approval
But doesn’t solve all problems...

• How to regulate SMP operator’s prices?
  – Pick a method for regulating price (Price Cap? ROR? Benchmark?)
  – Same problems as before

• Leaves SMP operator very unhappy
  – “Everyone except my firm gets to do what they want”

• Needs high level of competition to work
  – Not useful in oligopoly
  – Or if competitors shadow SMP operator’s prices
Solution: Banded Forbearance (part of benchmark regulation)

• Benchmark regulation: Make regulatory decisions based on comparison with others
• Basic idea: Allow prices to freely fluctuate within a pre-determined band
• The band (the benchmark) itself moves over time
1. Pick the right indicator

- For mobile prices
  - A mobile basket, based on OECD (now also ITU) methodology, modified as needed
- For broadband prices
  - Monthly price of service plan at specified speed/download
- Etc.
2. Identify peer group to benchmark against

• Neighbors
  – Culturally similar; belong to regional org.

• Economic peers
  – Similar ability to pay, similar level of development

• Demographic peers
  – Similar number of people (e.g., microstates)

• Geographic
  – Island nations, land-locked countries, mountainous countries
3. Define benchmark period

- I.e., time frame during which the benchmark applies
  - E.g. 1 year; 1 quarter etc

- At the end of the period, the benchmark is recalculated
  - A new target is set
4. Define the band (options available)

- E.g. Benchmark +/- specified amount $x$
5. After the band is designed

- Players completely free to set/move prices within band
  - Just inform regulator
  - Not required to wait for approval as long as within band

- If plans are outside band, regulator investigates
  - Lower than band: investigation on stated predatory/anti-competitive behavior criteria
  - Higher than band: problem with cost structure?
Advantages of banded forbearance

• Once band is set, less resource intensive
• Operators have certainty (less regulatory risk)
  – Rules known beforehand
  – Able to check themselves if price within band
  – Easier planning (less unknowns)
• Can apply to ALL operators including SMP
  – Essentially deregulates incumbent’s prices
  – But provides safeguards
But setting the band is key

- Goal 1: set the band such that most players stay within the band most of the time (less investigations)
- Goal 2: set the band so that over time it moves down (except in countries where it has hit bottom)
Setting the band best done in consultation with all stakeholders

- Less opportunity for unhappiness
- Propose band → open consultations → final band
- Once done, everyone has to play by the rules
For detail, see: