Tariff regulation

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IDRC ✳ CRDI

UKaid
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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

Perfect competition	Telecom markets
Perfect information	Significant information asymmetries
No barriers to entry	Licensing; use of scarce resources; large and lumpy investments
Large number of suppliers	In many cases, incumbent with market power exists
Suppliers can act independently of each other	Cannot act independently because of interconnection
Fungible products	More or less; but numbers/addresses make it less so

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
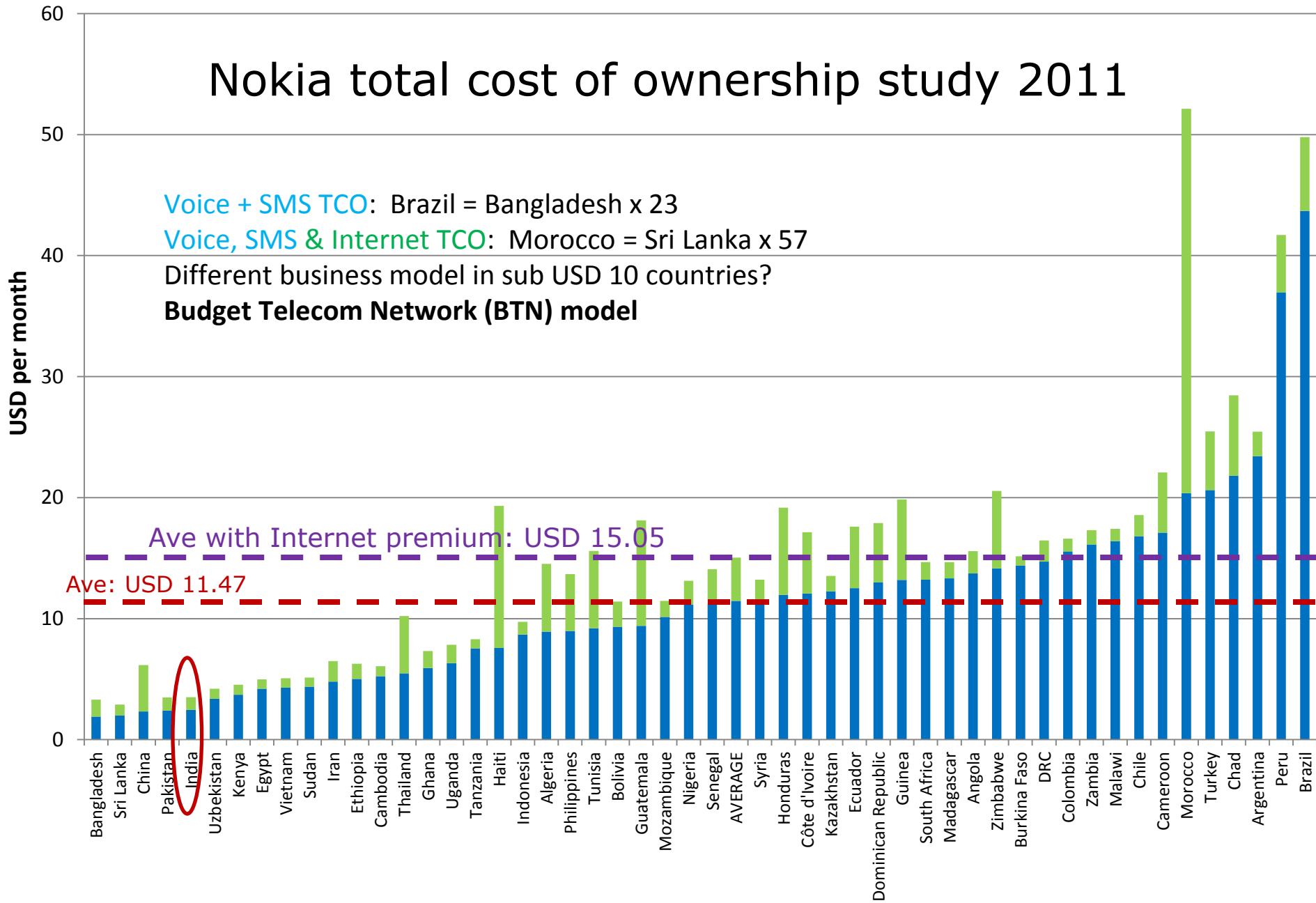
Nokia total cost of ownership study 2011

Voice + SMS TCO: Brazil = Bangladesh x 23
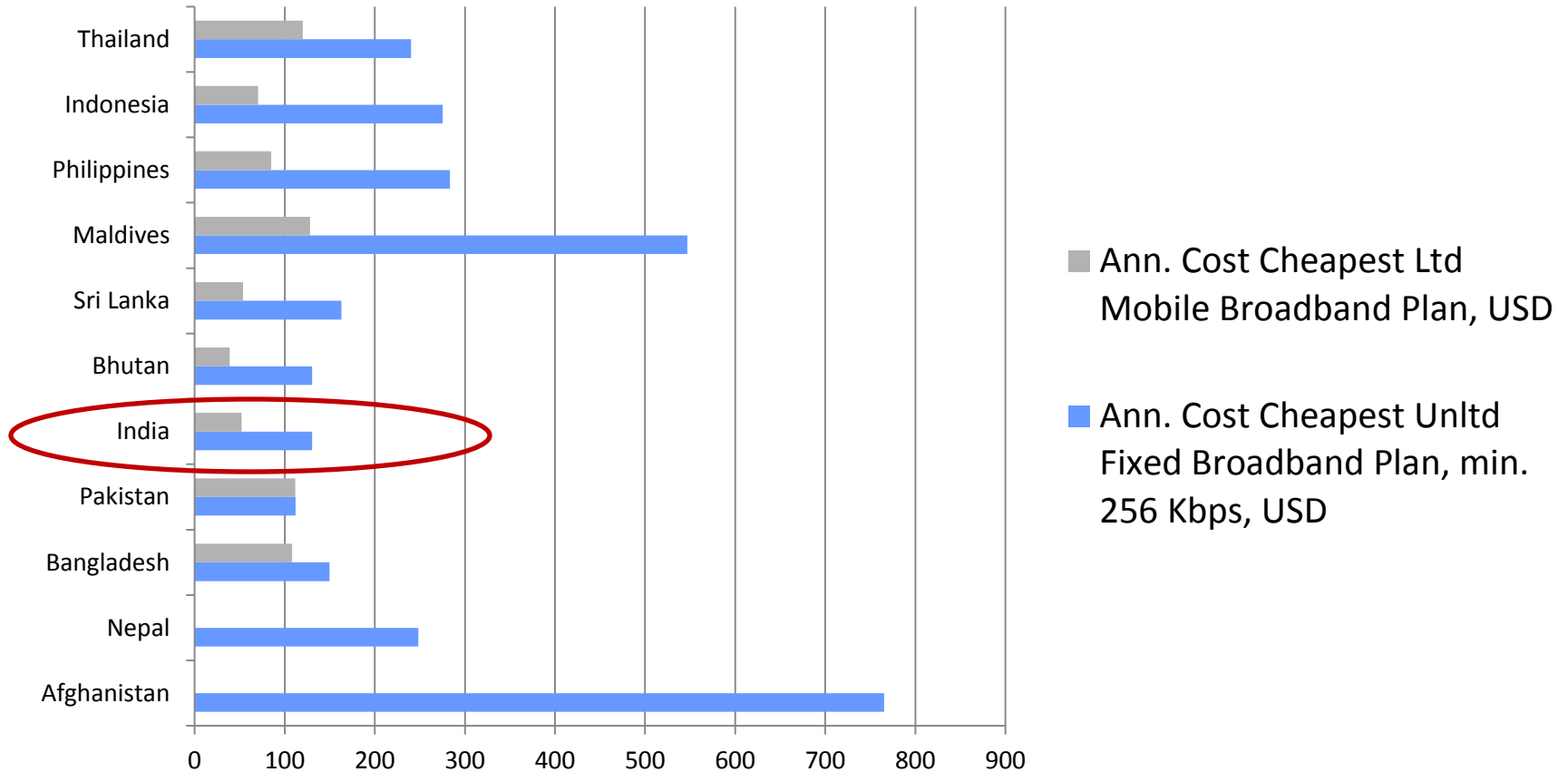Voice, SMS & Internet TCO: Morocco = Sri Lanka x 57
Different business model in sub USD 10 countries?
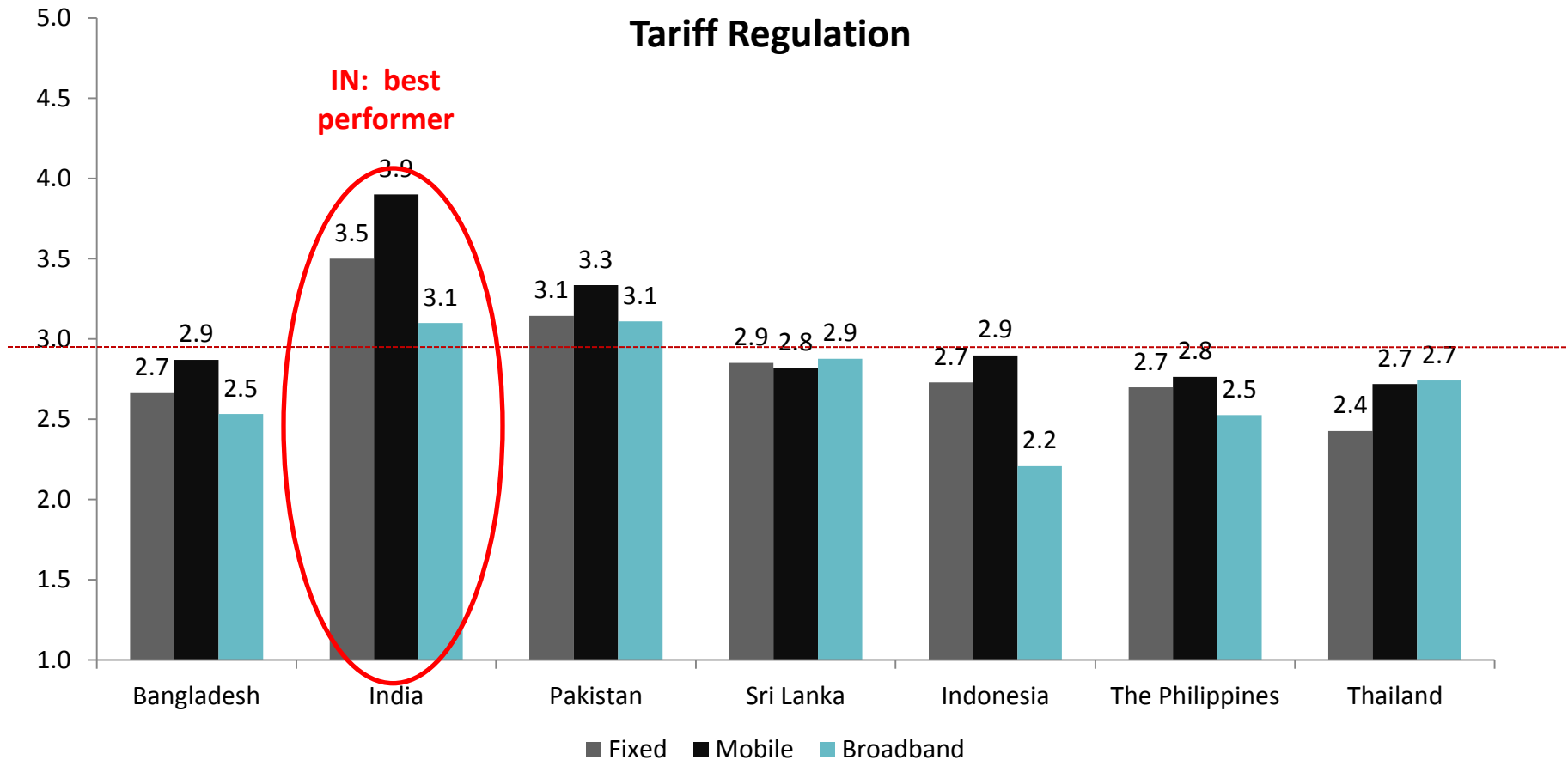**Budget Telecom Network (BTN) model**

Ave with Internet premium: USD 15.05

Ave: USD 11.47

USD per month

Bangladesh, Sri Lanka, China, Pakistan, India, Uzbekistan, Kenya, Egypt, Vietnam, Sudan, Iran, Ethiopia, Cambodia, Thailand, Ghana, Uganda, Tanzania, Haiti, Indonesia, Algeria, Philippines, Tunisia, Bolivia, Guatemala, Mozambique, Nigeria, Senegal, AVERAGE, Syria, Honduras, Côte d'Ivoire, Kazakhstan, Ecuador, Dominican Republic, Guinea, South Africa, Madagascar, Angola, Zimbabwe, Burkina Faso, DRC, Colombia, Zambia, Malawi, Chile, Cameroon, Morocco, Turkey, Chad, Argentina, Peru, Brazil

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■ Monthly TCO (USD)   ■ Internet premium (USD)

Fixed & mobile broadband prices in SE & S Asia, 2011 August: Mobile almost always significantly cheaper

Ann. Cost Cheapest Ltd Mobile Broadband Plan, USD

Ann. Cost Cheapest Unltd Fixed Broadband Plan, min. 256 Kbps, USD

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All SEA countries & some SA countries offer speeds higher than 256 kbps

Tariff Regulation scores from 2011 Telecom Policy and Regulatory Environment Survey

Tariff Regulation

IN: best performer

Bangladesh
- Fixed: 2.7
- Mobile: 2.9
- Broadband: 2.5

India
- Fixed: 3.5
- Mobile: 3.9
- Broadband: 3.1

Pakistan
- Fixed: 3.1
- Mobile: 3.3
- Broadband: 3.1

Sri Lanka
- Fixed: 2.9
- Mobile: 2.8
- Broadband: 2.9

Indonesia
- Fixed: 2.7
- Mobile: 2.9
- Broadband: 2.2

The Philippines
- Fixed: 2.7
- Mobile: 2.8
- Broadband: 2.5

Thailand
- Fixed: 2.4
- Mobile: 2.7
- Broadband: 2.7

Legend: ■ Fixed ■ Mobile ■ Broadband

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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?

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What is HHI (Herfindahl-Hirschman Index)?
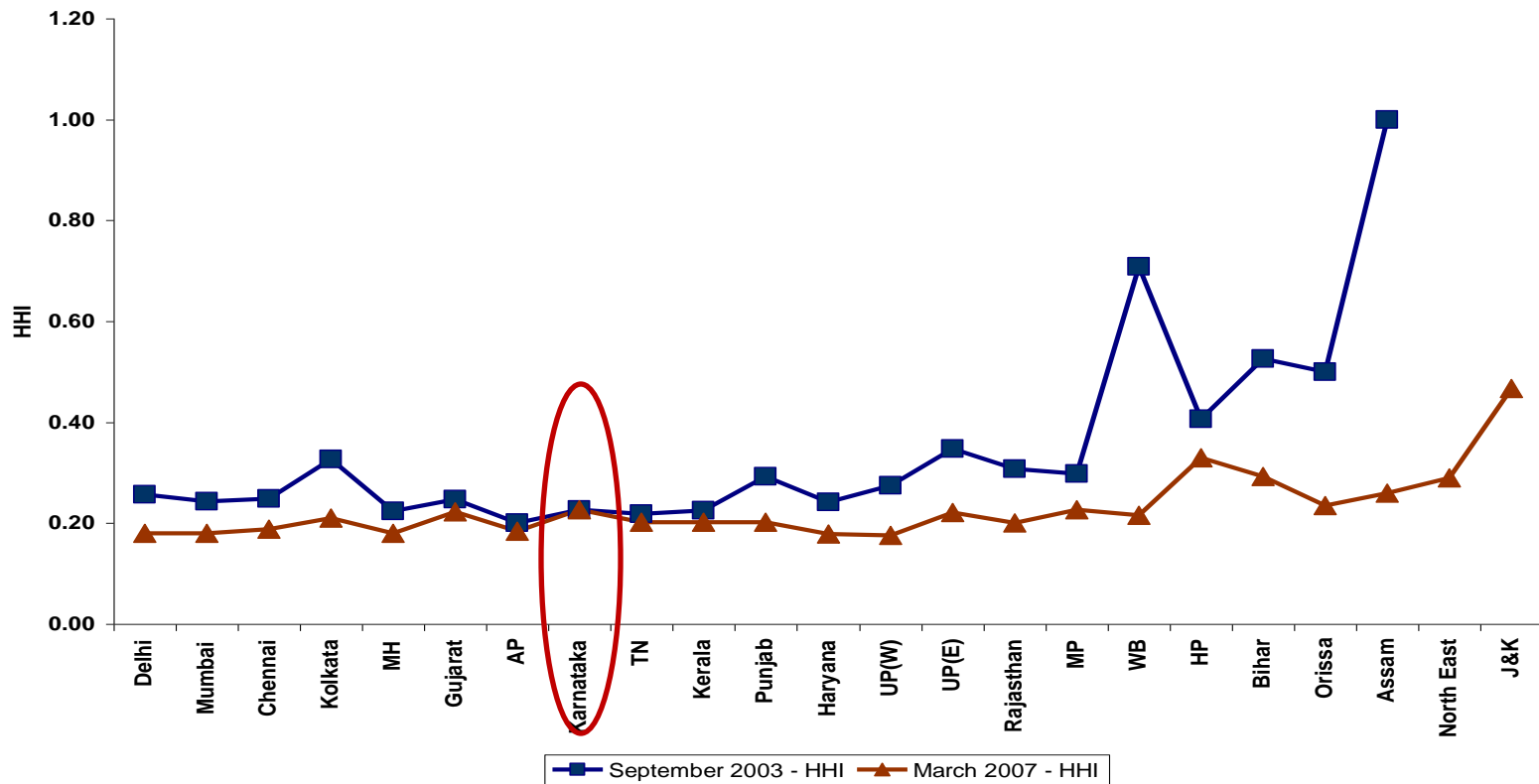
- HHI = $\sum$ (Market share)^2
- When market has 100 suppliers with equal market share of 1%
  - HHI = 100
- When market has 1 supplier with 100% market share
  - HHI = 10,000
- When market has 4 suppliers with equal market share
  - HHI = ?

India has one of the highest levels of competition

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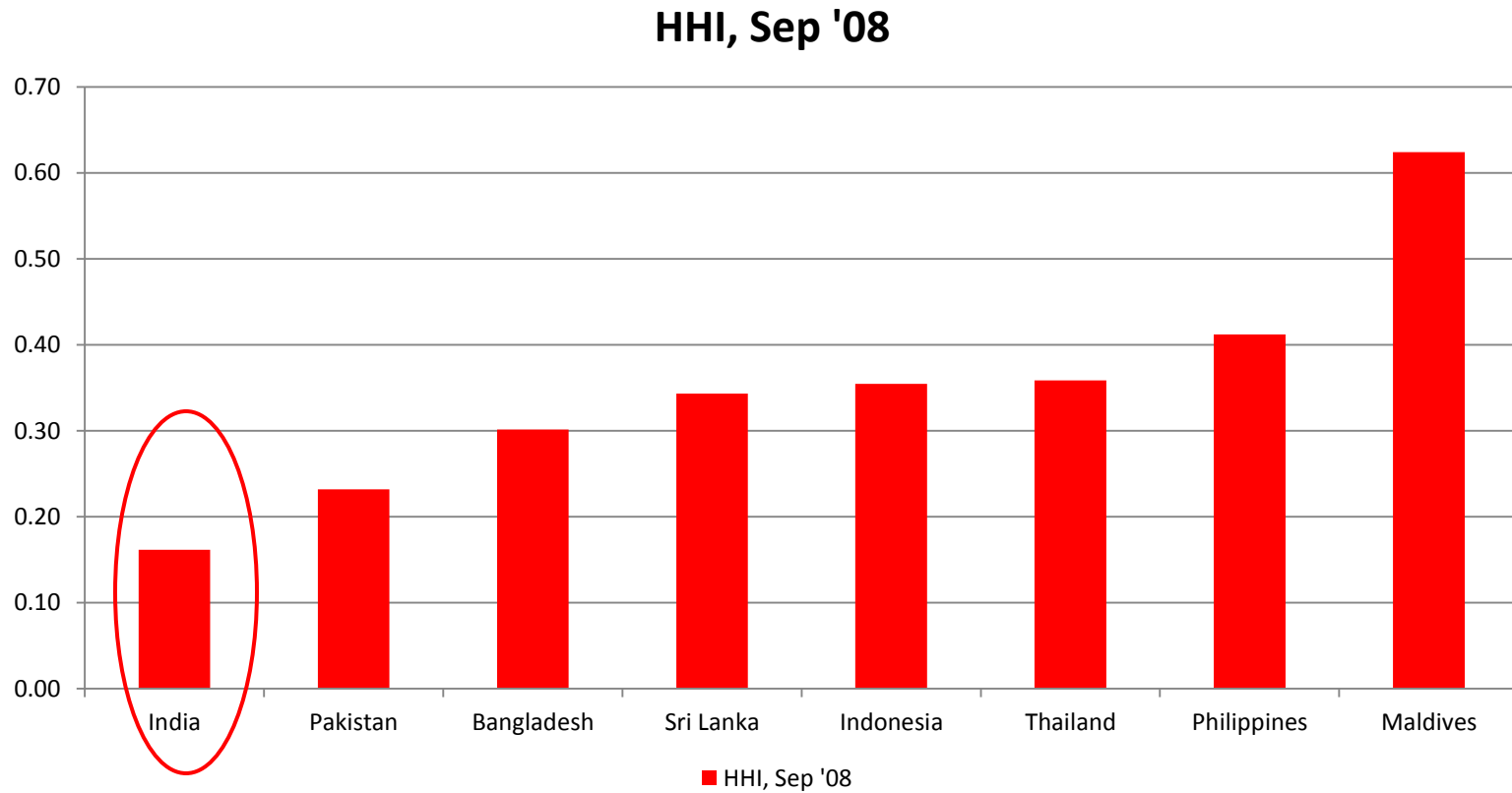
Very competitive (and increasing) even at Circle level

Comparison of Circle-wise HHI 2003-2007

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
- $PRICE_{new} = PRICE_{previous} * (1+(CPI-x))$
- 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
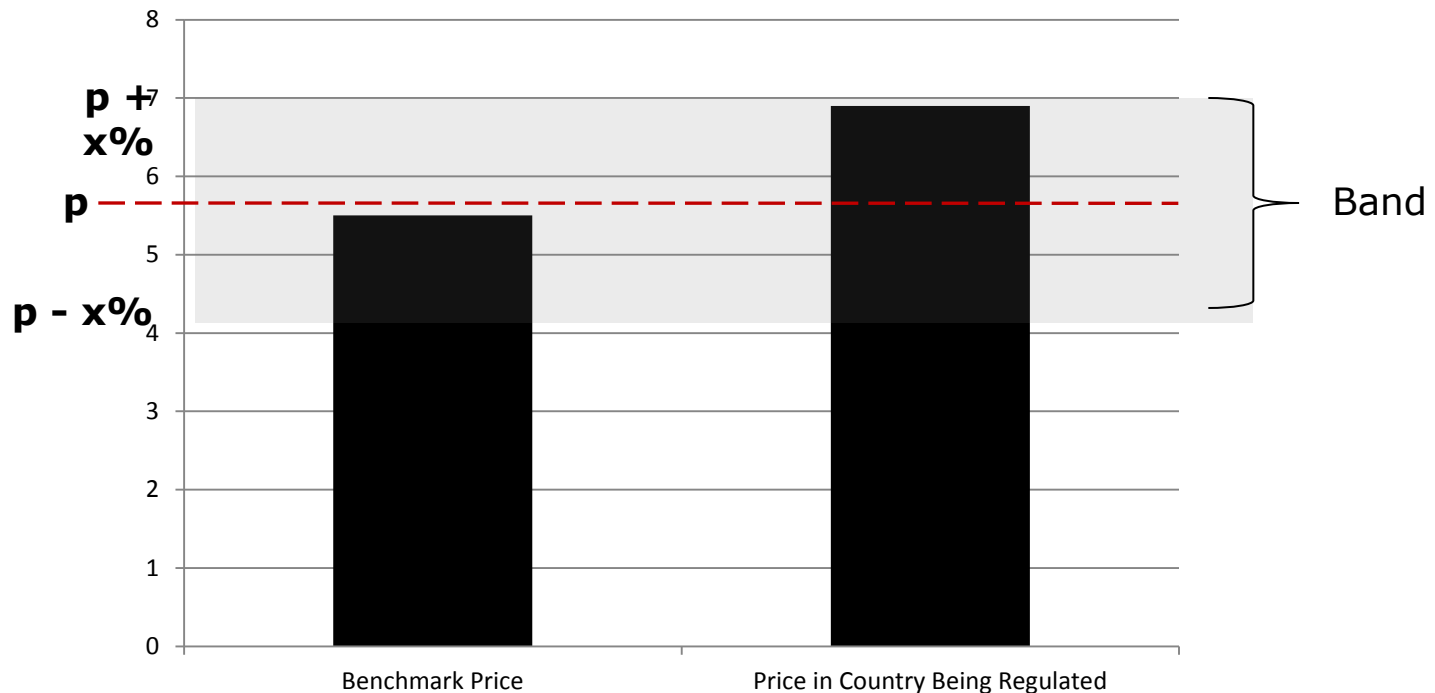 - Island nations, land-locked countries, mountainous countries

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 re-calculated
  - 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:

- Samarajiva , R. & Iqbal, T. (2009). Banded forbearance: A new approach to price regulation in partially liberalized telecom markets, *International Journal of Regulation and Governance*, 9(1): 19-40.