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Marcel Boyer: Real Options, Network Development, and Network Access

Discussion by:
Prof. Dr. Felix Höffler
Lehrstuhl für Regulierungsökonomik
WHU – Otto Beisheim School of Management
felix.hoeffler@whu.edu
URL: www.whu.edu

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Overview of the Paper

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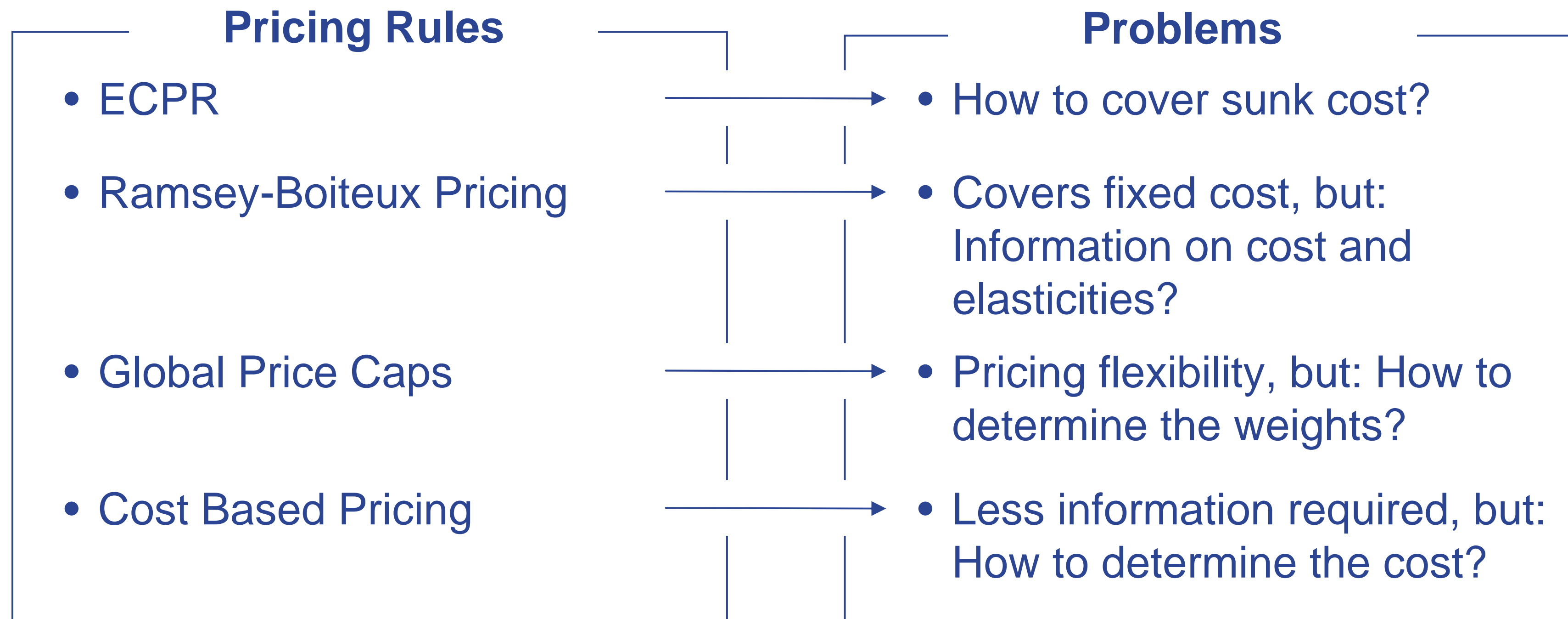
Traditional Access Pricing

- ECPR
- Ramsey-Boiteux Pricing
- Global Price Caps
- Cost Based Pricing (e.g., LRIC)

Risk and the Role of Options

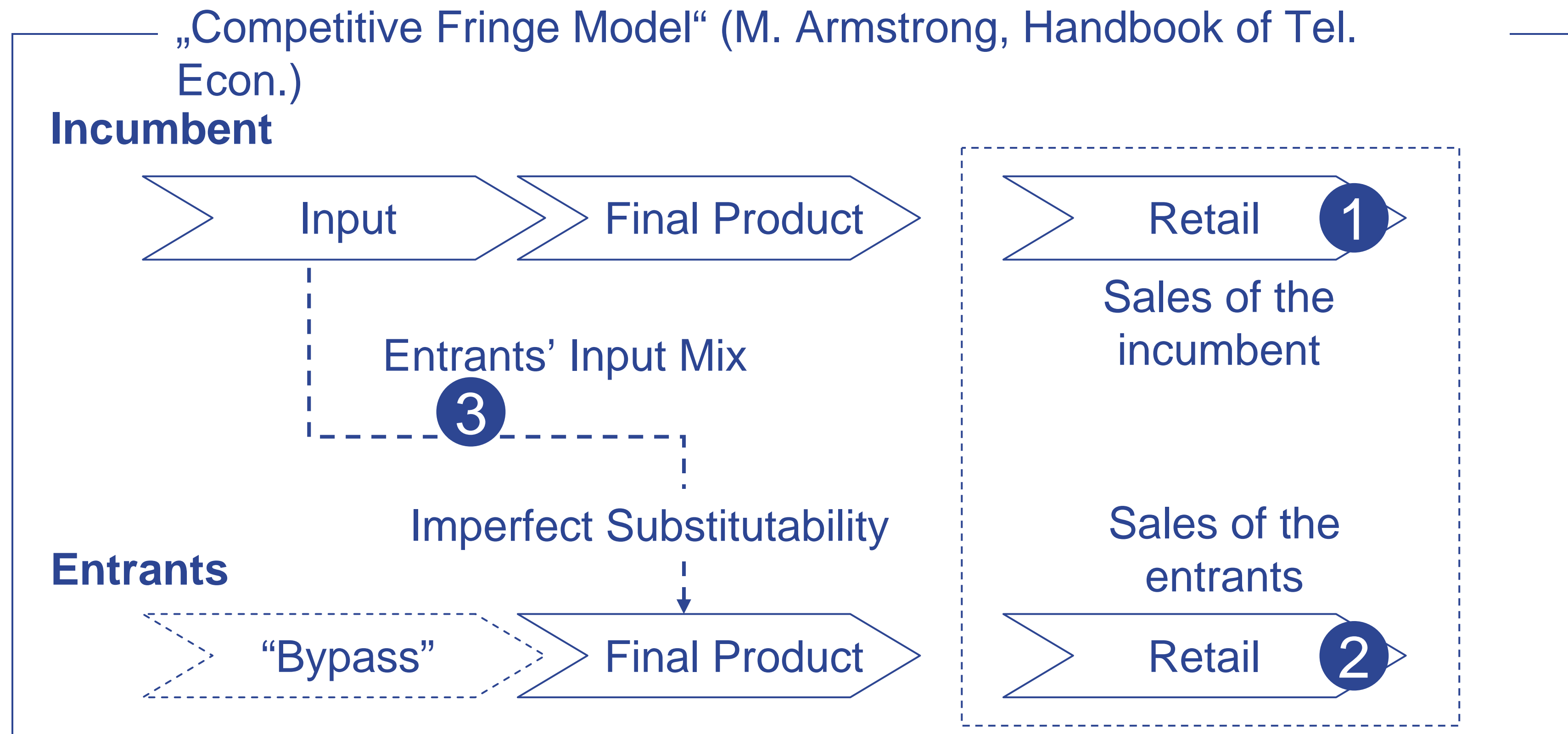
- Network expansion and access pricing
- Incumbent: Option to wait
- Entrant: Option to enter

Traditional Access Pricing Regimes



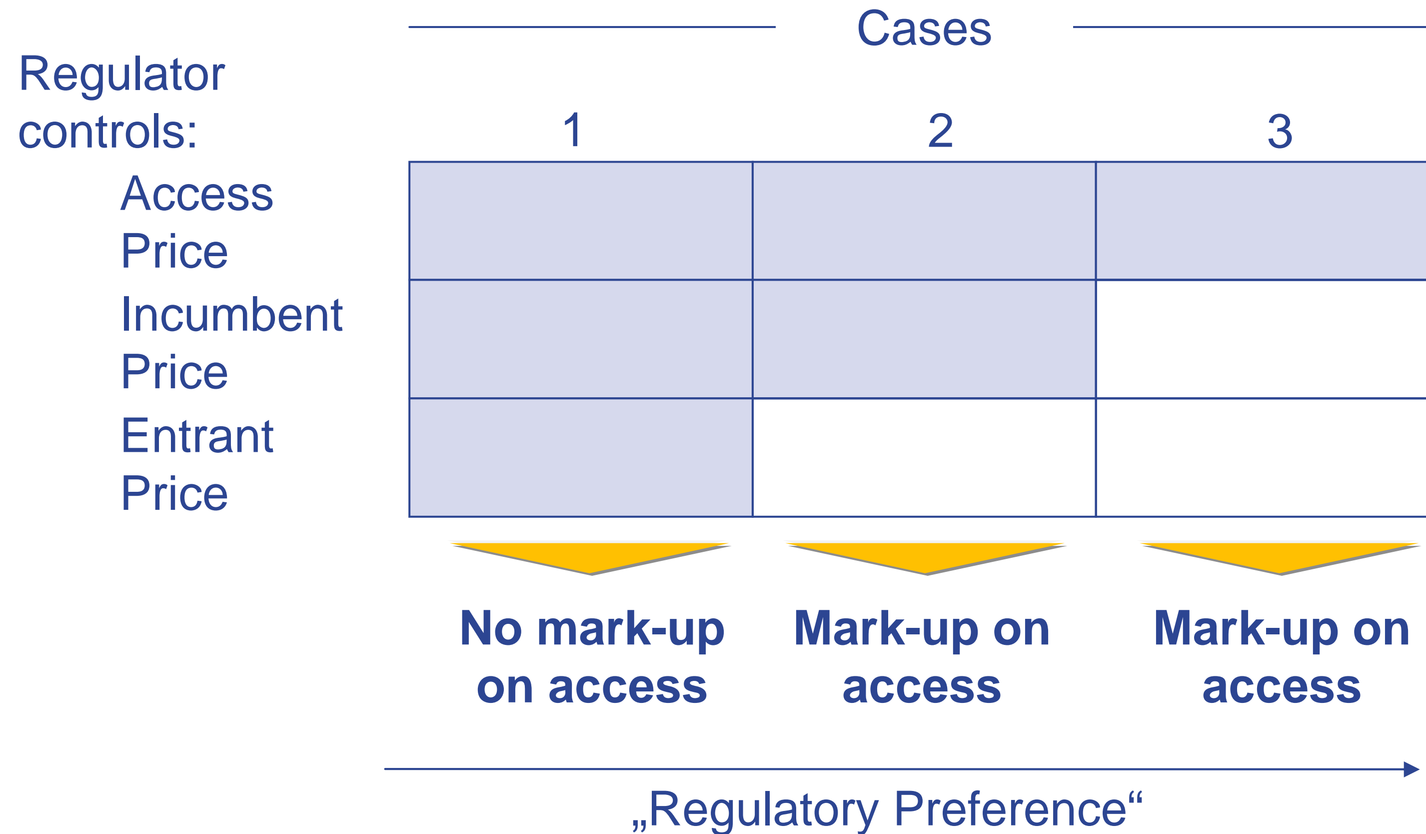
Pragmatic Solution:
Average Cost Based Pricing

A Complementary View on Access Pricing



Three problems and three potential prices as instruments

Instruments and Problems



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The Role of Risk

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Currently, risk is accounted for in the calculation of the cost of capital, e.g., as a WACC based on the CAP-M

Practical Problems	Conceptual Problems
• Project specific cost of capital vs. highly integrated listed companies • New and innovative investments, e.g., Next Generation Access Network / Fiber to the home	• Accounting for option values

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Option Value

Investment under uncertainty

time	1	2	3	4	5	6	7	8	9	10	NPV (zero discounting
payoff (0.5)	-10	1	2	3	-3	3	3	3	2	2	+6
payoff (0.5)	-10	1	2	2	-3	0	0	0	-1	1	-8

- If the project cannot be stopped in-between: it should not be undertaken
- If the project can be stopped after t = 4, it should be undertaken

Value of stopping = +1
(with prob ½ you earn +6, with prob ½ you earn -5 and stop after t = 4)

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Implications

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Cost of Capital

- A project is less risky if it can be abandoned
  -> cost of capital have to be adjusted for this

Option to wait

- Wait and see is valuable
  -> if the regulator does not compensate the incumbent, the incumbent will exercise the option and investments are delayed

Options to enter

- Regulated access is an option to enter the market
  -> if the entrants don't have to pay for it (e.g., in form of a lump sum payment), they are subsidized

Questions

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1. Entrants should always contribute to network expansion – here they should do so ex ante, but: how to identify potential beneficiaries from the option to enter?
2. Contribution of entrants should be in form of a lump sum payment – but how do the entrants' customers then contribute to the investment?
3. What is wrong (per se) with subsidizing entrants? (except for knife-edge cases)
4. How can investment needs of entrants be accounted for?
5. What is the relation to "open season" procedures?
6. In the model, the price is exogenous - what about the level of competition and its impact on price and value of the option?

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Thank you very much for your attention!

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