Access Pricing and Competition

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Purposes

• To set out some general principles which can provide guidance on setting access prices
• To provide examples of different approaches to access pricing from different industries in OECD countries
Preliminary Remarks

• The “classic” access regulation problem has the following ingredients:
  – Two complementary activities
  – One of which is non-competitive (due to regulation, demand or cost-side economies of scale or scope)
  – The other of which is competitive
Preliminary Remarks

Access services
“Downstream” competitive sectors
Final services

Monopolist

\[ M \rightarrow p_1 \]
\[ M \rightarrow p_2 \]
\[ M \rightarrow p_3 \]

\[ C \rightarrow p_4 \]
\[ C \rightarrow p_5 \]
\[ C \rightarrow p_6 \]
Preliminary Remarks

- “One-way” versus “two-way” access
- Incentives to deny access depends on the relative “weight” of regulation of final prices relative to access prices
Preliminary Remarks

- Problem can be viewed as problem of setting final prices
- There is a close analogy to the standard monopoly problem
- I will focus on pricing issues
  - Quality of access is also important
  - Incentives for efficiency can be separated from the problem of pricing
  - Must be able to force the
Objectives and Instruments

Principle 1:
“The form of access pricing that is most appropriate in any given context depends critically on the objectives that are pursued and the instruments for achieving those objectives”
## Possible Objectives & Instruments

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Objectives and Instruments

• If the problem is to find efficient prices and:
  – there are no fixed costs or access deficit to be recovered through access prices;
  – no prices are distorted for other public policy reasons; and
  – there are no concerns regarding entry

• The solution is **marginal cost pricing**
  – all prices, including access and final prices should equal the corresponding marginal cost
Objectives and Instruments

• Marginal cost is not the same thing as incremental cost

• Where the upstream service is capacity constrained, marginal cost may be very sensitive to quantity
  – in this case it makes more sense to regulate quantity than price
  – allow prices to adjust to clear the market
  – adjust capacity to induce the efficient price
Getting Relative Prices Right

• If the problem is to find efficient prices and
  – there are no fixed costs or access deficit
  – at least one price is distorted away from marginal cost
  – there are no concerns of inefficient entry

• The solution is that final prices for all substitute products should be also distorted away from marginal cost
Getting Relative Prices Right

• If the entrants’ produce a product that is a substitute for the incumbent’s final product
  – any distortions in the final product relative to marginal cost should be reflected in the access price

• Mathematically:
  – access price = marginal cost of access plus mark-up on distorted price times the “displacement ratio”
Getting Relative Prices Right

- When entrants’ and incumbent’s final goods are perfect substitutes
  - access = final price - marginal cost of incumbent on downstream activity (ECPR)
- Examples from telecommunications
Getting Relative Prices Right

Principle 2:
“When any one final price is distorted away from cost, prices for all substitute products should be distorted in the same way”
– Where the entrants’ and incumbent’s products are a substitute a distortion in the incumbent’s final prices should be reflected in the access prices
Efficient Bypass Upstream

- What if we also care about preventing inefficient entry in the non-competitive activity?
- Access prices which are above or below cost will induce inefficient entry decisions
- But final prices of the entrants and incumbent must maintain their correct relative positions
Efficient Bypass Upstream

- So we need another instrument
  - Either: Prohibit new entry (as in the postal sector)
  - Or: If a tax/subsidy is possible, use a tax/subsidy on final prices to separate the problem of setting access prices and final prices
- Set access prices equal to cost and use tax/subsidy to distort final prices
Efficient Bypass Upstream

Principle 3:

“If entry upstream cannot be controlled in other ways it is essential to use another instrument to break the link between the access prices and the entrant’s final prices”

– Access prices should be set equal to cost and use tax/subsidy or a universal service mechanism to distort final prices to maintain their correct relative positions
Efficient Recovery of Fixed Costs

- If the problem is to find efficient prices and
  - There are fixed costs or an access deficit which must be recovered
  - But no other distorted prices and no concerns of inefficient entry

- Solution:
  - recover the fixed costs in as efficient a manner as possible by raising prices above cost, more on less elastic services
Efficient Recovery of Fixed Costs

• Known as Ramsey prices
  – access price = marginal cost of access plus Ramsey mark-up which depends on the superelasticity of demand

• Key implication:
  – Where prices must be raised above marginal cost to recover fixed costs, it is essential to take demand factors into account - prices cannot be purely cost-based.
Efficient Recovery of Fixed Costs

- Note that Ramsey prices maintain the correct relative positions of final prices
  - If a price is distorted above marginal cost to fund the fixed costs then allocative efficiency demands that all prices for substitute products also be distorted in the same way
  - In the case of perfect substitutes Ramsey prices satisfy the ECPR rule
Efficient Recovery of Fixed Costs

- **Problem:**
  - Setting a large number of prices according to Ramsey principles requires substantial information about demand and cost of a large number of services

- **Solution:**
  - Allowing the incumbent discretion to set its own prices subject to a cap on the price of a basket of services that includes access and final prices
Efficient Recovery of Fixed Costs

Principle 4:

“If fixed or common costs or an access deficit must be recovered through prices, final prices and access prices should be marked up above marginal cost, with the mark-up larger for services with less elastic demand”

– relative position of final prices (principle 2) are automatically maintained
Price Discrimination and Competition

• With fixed costs to be recovered, allocative efficiency can be improved with price discrimination, such as:
  – Peak Load Pricing (different prices for goods sold at different times)
  – Third-degree price discrimination (different prices for different customer classes)
  – Second-degree price discrimination (different prices for different units of the good sold to the same person)
Price Discrimination and Competition

• Third-degree price-discrimination
  – Access prices should vary according to the demand elasticity of the final customer
  – Examples
  – But what if this form of PD is possible in final prices but not in access prices?
    • Downstream competition is limited
    • Level of access charges determines scope for competition
Price Discrimination and Competition

- Second-degree price-discrimination (i.e., two-part or non-linear prices)
  - Access prices should have a two-part or non-linear structure
  - Examples
  - But what if two-part pricing is possible in final prices but not in access prices?
    - Downstream competition is limited
Price Discrimination and Competition

Principle 5:

“Where downstream competition is an objective any price discrimination which is present in the incumbent’s final prices should be present in the access prices”

– Where it is not possible to price discriminate in access prices the incumbent should be prevented from doing so in final prices even where it is efficient to do so.
More on Second-Degree Price Discrimination

• The use of two-part access prices can convert the downstream activity into a natural monopoly
  – Unless the fixed part of the two-part tariff is made proportional to the capacity available to the entrant (examples in natural gas and airports)
More on Controlling Entry

- Where there are fixed costs which must be recovered:
  - To prevent inefficient entry access prices should be no lower than incremental cost and no higher than stand-alone cost;
  - If Ramsey prices are outside this range - we need another instrument - use taxes and subsidies to bring final prices to their efficient levels
Conclusions

• Access pricing is a form of natural monopoly regulation
  – Many of these results are variants of standard results on the regulation of natural monopolies

• There is a huge range of efficient prices, from below marginal cost to higher than stand-alone cost
  – And a huge variety of structure of prices including peak-load, two part prices, price-discrimination and so on
Principle 1: Objectives and Instruments

• The form of access pricing that is most appropriate in any given context depends critically on the objectives that are pursued and the instruments for achieving those objectives.
Principle 2: 
Getting Relative Prices Right

- When any one final price is distorted away from cost, prices for all substitute products should be distorted in the same way
  - Where the entrants’ products are a substitute for the incumbent’s products a distortion in the incumbent’s final prices should be reflected in the access prices, so as to maintain the correct relative positions of the final prices
Principle 3: Efficient Bypass Upstream

• If entry upstream cannot be controlled in other ways it is essential to use another instrument to break the link between the access prices and the entrant’s final prices
  – Access prices should be set to lie between incremental cost and stand-alone cost and use tax/subsidy or a universal service mechanism to distort final prices to maintain their correct relative positions
Principle 4: Efficient Recovery of Fixed Costs

• If fixed or common costs or an access deficit must be recovered through prices, final prices and access prices should be marked up above marginal cost, with the mark-up larger or services with less elastic demand
  – relative position of entrants’ and incumbent’s final prices is maintained
  – price discrimination of all kinds usually enhances the efficiency of the result
Principle 5: Price Discrimination and Competition

• Any price discrimination which is present in the incumbent’s final prices should be present in the access prices
  – Otherwise the scope for competition will be limited and final prices will be inefficient
  – Where it is not possible to price discriminate in access prices the incumbent should be prevented from doing so in final prices even where it is efficient
Practical Tips

• When faced with an access pricing problem, start by asking questions:
  – What are the objectives that I want to achieve with prices?
  – What are the instruments I have to achieve those objectives?
  – How substitutable are the products produced by the incumbent and the entrants?
  – What is the expected level of competition downstream?