Cross-National Effects of Pharmaceutical Pricing Policies

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Implications of Globalization for Pricing of Pharmaceuticals

- Pharmaceuticals are potentially global products
  - Chronic diseases now predominate in most countries

- But access to medicines in less affluent countries is limited
  - Delays and non-launch of new drugs
  - High prices, relative to per capita income

- Regulatory policies in affluent countries contribute to this

- Limiting cross-national effects of pharmaceutical pricing policies could improve differential pricing, increase access for middle/low income countries and increase pharmaceutical R&D
Social Welfare Perspective: Differential Pricing is Efficient and Equitable Way to Allocate Joint R&D Costs

♦ Medicines are R&D-intensive, compared to other goods

♦ R&D benefits consumers globally: Who should pay?

♦ Economic theory: "Ramsey pricing" maximizes social welfare, subject to covering joint costs (including normal profit)
  – Lower prices in more price-elastic markets
  – Higher prices in less price-elastic markets

⇒ Prices should differ across countries based on average per capita income
  – assuming price-sensitivity depends on per capita income
Industry Perspective: Incentives for Differential Pricing If Markets are Separate

♦ Differential pricing => higher sales and profit than uniform price

♦ Economic theory: Profit maximizing price differentials reflect price sensitivity
  – Lower prices in more price-elastic markets
  – Higher prices in less price-elastic markets

=> Manufacturers’ private incentives to charge differential prices across countries are aligned with social interest

♦ This is intuitive: Charging lower prices in lower-income markets increases utilization
  – which benefits consumers and industry sales
But Markets are Increasingly Connected and Actual Prices Differentials are Limited

1. **Parallel trade**
   - Permitted within EU; Under debate in the US

2. **Price Regulation Based on External Referencing**
   - Formal: Canada, Italy, Japan, Netherlands, Spain, etc.
   - Informal comparisons in many countries: UK, US

3. **Most-favored Nation Clauses**
   - Country A requires lowest price given to other countries
When Markets Are Connected, Manufacturers Seek to Charge Uniform/Similar Prices

- If a low price in one market will reduce prices in other markets, a manufacturer will rationally charge a single target price (or narrow band) in all connected markets
  - If Country A rejects or cannot pay the target price => delay or no launch

- Launch delays and non-launch reduce access for consumers and revenue for companies

Evidence
- 1990-2000s Delays and non-launch in lower-price EU countries
Mean 2003 Price by Number of Molecule Launches

Source: Danzon and Epstein, 2008
Median Launch Delay by Number of Launches:

![Graph showing the relationship between the number of molecules launched and the median launch delay for various countries.](image-url)
Comprehensive Biopharmaceutical Price Indexes
US weights, US = 100, 2005 IMS Data
Source: Danzon and Furukawa, 2007
Availability of New (post-1996) Biopharmaceuticals and Mean Launch Lags: 2005 Data

Percent of 69 new global biopharm available

<table>
<thead>
<tr>
<th>Country</th>
<th>% Available</th>
<th>Launch Lag (months)</th>
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<tr>
<td>US</td>
<td>80</td>
<td>5.6</td>
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<tr>
<td>Japan</td>
<td>28</td>
<td>35.1</td>
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Price Differences Roughly Reflect Income per Capita, Except for Middle Income Countries: 2005 Price Indexes, US = 100; US weights

Source: Danzon and Furukawa, Health Affairs, 2008
Conclusions from the evidence

♦ Launch delay and non-launch are more likely in countries with lower prices

♦ Referencing from high-price to lower-price EU countries contributes to launch lags in the lower-price countries

♦ Referencing from high-price EU countries also contributes to higher prices, relative to their income, in lower-price EU countries

♦ => Referencing and parallel importation by high-income countries create a dilemma for lower-income countries
  - Pay high prices, relative to their income, or forego availability
Conclusions (2)

♦ If US adopts external referencing or parallel trade, negative spillover effects to other countries could be much larger than within-EU effects observed so far

♦ High prices in middle/low income non-EU countries also reflect within-country income differentials
  – New drugs are targeted to affluent, self-pay subgroup
  – Public systems use local branded generics
Policies to Implement Differential Pricing

1. Regulation based on internal, value-based pricing to reflect each country’s values
   – Limit use of external referencing and parallel trade

2. Confidential rebates from manufacturers to payers, based on utilization
   ♦ Confidentiality prevents referencing, promotes competition
   ♦ Prevents parallel trade: wholesalers buy at global list price
   ♦ Third party audit could address transparency concerns

♦ Within-country differential rebates could reduce prices to public systems in middle/low income countries