MARKET FAILURES AND PUBLIC POLICY

Jean Tirole, December 8, 2014

Nobel Lecture in Economic Sciences

Dedicated to the memory of Jean-Jacques Laffont
I. INTRODUCTION

II. RESTRAINING MARKET POWER

III. TWO-SIDED MARKETS

IV. INTELLECTUAL PROPERTY

V. CONCLUDING REMARKS
Industrial organization’s long tradition

- French engineer-economists Cournot (1838) and Dupuit (1844)

Antoine Augustin Cournot  
Jules Dupuit
• Antitrust revolution post Sherman Act (1890)...

S. 1.
[Assembly Bill No. 1129]

IN THE HOUSE OF REPRESENTATIVES
MAY 17, 1890

Mr. Ewing of Florida, from the Committee on Committee on Commerce, submitted a bill for an act to protect trade and commerce against unlawful restraints and monopolies.

AN ACT

To protect trade and commerce against unlawful restraints and monopolies.

1. Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

2. SEC. 1. Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is hereby declared to be illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a misdemeanor, and, on conviction thereof, shall be punished by fines not exceeding five thousand dollars, or by imprisonment not exceeding one year, or by both said punishments, in the discretion of the court.

3. SEC. 2. Every contract or agreement entered into for the purpose of preventing competition in the sale or purchase...
...comforted by Harvard Structure-Conduct-Performance paradigm (1930-1970)

Ed Chamberlin
Joan Robinson
Joe Bain
Michael Scherer
• Chicago school critique ("empiricism without theory") and counterrevolution (1960-1980)

George Stigler  Harold Demsetz  Richard Posner
A collective effort

- Closest collaborators on the Prize’s awarded field

Drew Fudenberg
Eric Maskin
Jean-Jacques Laffont
Patrick Rey
Jean-Charles Rochet
Paul Joskow
Josh Lerner
• And a global research environment
A stroke of good fortune

- My awakening to industrial organization at MIT
- Breakthroughs in game theory and information economics
- Growing awareness of inefficiency of old style public utility regulation
- Independent agencies and an increased attention to economic reasoning
The economist’s social responsibility

(Case-by-case) “rule of reason” right approach, but daunting informational requirements for the regulator. Economists must

(1) develop a rigorous analysis of how markets work, accounting for
   ▪ specificities of industries
   ▪ what regulators do and do not know

(2) participate in policy debate.
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Curbing market power to the benefit of consumers

It often boils down to regulation of rate of return

- Sectoral (utility) regulation
- Antitrust
- Patent and Trademark Offices and specialized intellectual property courts
Illustration: the foreclosure doctrine (1)

Fair access creates downstream competition and low prices for end users.

railroad infrastructure, power grid, key patent...

train operators, power producers, technology implementers...

passengers/freight, electricity consumers, technology users...
Illustration: the foreclosure doctrine (2)

railroad infrastructure, power grid, key patent...

train operators, power producers, technology implementers...

passengers/freight, electricity consumers, technology users...

vertical integration or sweet deal

Hart-Tirole (1990), Rey-Tirole (2007)...

End users
Market power is

**deserved** | **undeserved**
Common sense prescription about handling market power

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<td>utility regulation</td>
<td>investment/effort</td>
<td>lucky cost and demand conditions</td>
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Handling the firm’s informational superiority (1)

about

- its environment: technology/demand (“adverse selection”)
- its actions: effort to reduce cost, increase demand, give access to rivals (“moral hazard”)

Principle #1: reduce informational asymmetries: data collection, benchmarking, auction.
Principle #2: one size does not fit all; offer menu of options, e.g.

• cost plus: high cost and low profit

• fixed price: low cost and high profit.
Can’t have cake and eat it too. Incentives generate rents.

Implications (knowing them could have avoided some wishful thinking):

1. Carefully monitor quality
2. Promote regulatory commitment
3. Beware capture by industry

Latter two call for agencies that are independent w.r.t. politics and industry.

Laffont-Tirole (1986 → 1993)
• Curbing market power constrains price *level*. What about the price *structure*?

• Firm has more information than regulator, administered pricing dangerous. Besides, it is much less obvious that firm has conflicting objective with regards to price structure.

Message:  ○ regulate price level
    ○ don’t tinker with price structure without in-depth analysis.
• Ramsey-Boiteux: business oriented (what the market can bear)

$$\frac{p_i - c_i}{p_i} = \frac{\theta}{\eta_i}$$

price charged to $i$-segment \hspace{1cm} marginal cost of $i$-segment

where $0 < \theta < 1$

$(\theta = 1$: unregulated firm $\theta = 0$: first best (no budget constraint))

• Well-designed global price cap (constraint on firm’s weighted average price) as way of implementing Ramsey-Boiteux pricing

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Two-sided markets

Buyers
- gamers
- users
- “eyeballs”
- cardholders

Sellers
- videogame platform
- operating system
- portals, newspapers, TV
- debit & credit cards

Platform
- game developers
- application developers
- advertisers
- merchants
Pricing

\[ p_i - (c - v_j) = \frac{1}{\eta_i} \]

- Platform’s cost per transaction
- Price charged to side \( i \)
- Side \( j \)’s willingness to pay to interact with a side - \( i \) user
- Elasticity of demand

\( c - v_j \): “opportunity cost”

Two-sided platforms’ business model

Two-sided platforms account for what each side can bear and for externalities → very skewed pricing patterns

<table>
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<tr>
<th>low-price side</th>
<th>high-price side</th>
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<tbody>
<tr>
<td>consumers (search engine, portal, newspaper)</td>
<td>advertisers</td>
</tr>
<tr>
<td>cardholders</td>
<td>merchants</td>
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Optimal regulation of must-take cards, must-join platforms

card payment system, online booking system...

Amex card user, Booking customer...

Cash user, direct customer...


Wither antitrust for two-sided markets?
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Search for “information-light” rules when available

Example: patent pools (co-marketing of patent licenses by multiple patent owners)

Royalty staking hinders the diffusion of technologies. Analogy:

Co-marketing is desirable
Harmful co-marketing

Akin to merger to monopoly
Brief history of patent pools

1945
- Railroads
- Planes
- TV
- Radio

1997
- Revival (mainly in IT)
How do we tell good and bad co-marketing arrangements apart?

Individual licensing

How do we tell good and bad co-marketing arrangements apart?

Individual licensing

1

2

Pool

dividends

p_1

sells bundle at P*

p_2

Cum unbundling

1

\[ p_1 \]

1

\text{dividends}

Pool

\text{sells individual licenses at agreed prices } p_1^* \text{ and } p_2^* \text{ (bundle price } P^* = p_1^* + p_2^* \text{)}

2

\[ p_2 \]

Multiple routes to solving a technological problem prior to standard.

Standard selects a particular route.

Creating a real commitment (not vague promise of fair, reasonable and non-discriminatory – FRAND – licensing).

Lerner-Tirole (forthcoming)
Thank you!