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)...
...comforted by Harvard Structure-Conduct-Performance paradigm (1930-1970)
• 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
(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.
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.

- End users
- $D_1$, $D_k$, $D_n$
- $U$

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...

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

vertical integration or sweet deal
Common sense prescription about handling market power

Market power is
deserved undeserved
Common sense prescription about handling market power

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# 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)

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

\[
\frac{p_i - c_i}{p_i} = \frac{\theta}{\eta_i}
\]

where \( 0 < \theta < 1 \)

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

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Two-sided markets

- **Buyers**
  - gamers
  - users
  - “eyeballs”
  - cardholders

- **Platform**

- **Sellers**
  - videogame platform
  - operating system
  - portals, newspapers, TV
  - debit & credit cards
  - 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 account for what each side can bear and for externalities → very skewed pricing patterns

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<th>high-price side</th>
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<td>consumers (search engine, portal, newspaper)</td>
<td>advertisers</td>
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<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...

Merchant

Platform

Platform user

Platform non-user


merchant fee

price coherence
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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

- Railroads
- Planes
- TV
- Radio
- Cars

1945

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

Individual licensing

1

dividends

Pool

2

sells bundle at $P^*$

$p_1$

$p_2$

Cum unbundling

sells individual licenses at agreed prices $p_1^*$ and $p_2^*$ (bundle price $P^* = p_1^* + p_2^*$)

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)
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Thank you!

Bernard Caillaud
Bengt Holmström
Drew Fudenberg
Patrick Bolton
Philippe Aghion
Patrick Rey

... and many, many others.

Olivier Blanchard
Mathias Dewatripont
Roland Bénabou
Emmanuel Farhi

Josh Lerner
Patrick Rey
Paul Joskow
Jean-Jacques Laffont
Eric Maskin

Jean-Charles Rochet

Oliver Hart