A Theory of Conglomerate Mergers

Zhijun Chen and Patrick Rey
Monash University and Toulouse School of Economics

6 March 2018
Conglomerate Mergers

- Antitrust: neither horizontal nor vertical
  - Separate product markets
  - Same customers (independent / complementary products)

- Recent wave in digital economy
  - Google / Motorola - $12.5 billion, 2014
  - Facebook / WhatsApp - $22 billion, 2014
  - AT&T / DIRECTV - $48.5 billion, approved by the FCC in July 2015
  - Dell / EMC (data storage) - $67 billion, 2015
  - Microsoft / LinkedIn - $26.2 billion, December 2016
  - AT&T / Time Warner - pending
 Parties
- AT&T: largest Internet and telephone service provider in the US
- DIRECTV: second largest pay-TV supplier

 Complaints
- American Cable Association: harm to competition (video distribution)
- Netflix: abuse of market power (interconnection)
- Biglaiser (2014): higher prices for TV programs (content)

 Defence
- AT&T: save costs for consumers
- Katz (2014): consumers’ benefit from one-stop shopping
- Berry and Haile (2014): simulations confirming this

 Five months after the merger, AT&T raised prices for TV packages
Policy divide

- **US**
  - Robert Bork (1978): no threat to competition
  - US Merger Guidelines: concerns disappear in 1982
  - Antitrust authorities: no prohibition in 40 years
  - Deputy Assistant Attorney General William Kolasky on \textit{GE/Honeywell}:
    - “After fifteen years of painful experience with these now long-abandoned theories, the U.S. antitrust agencies concluded that antitrust should rarely interfere with any conglomerate merger”
    - “US agencies simply could not identify any conditions under which a conglomerate merger would likely to give the merged firm the ability and incentive to raise price and restrict output”

- **EU**
  - Concerns about portfolio & bundling effects (exclusionary effects)
  - EC blocked \textit{GE/Honeywell} (2001, after US approval) and \textit{Tetra Laval-Sidel} (overturned by CFI/ECJ)
  - \textit{Eurotunnel/SeaFrance}: unbundling remedy (British and French NCAs)
This paper

- A simple theory of conglomerate mergers
  - Gain: consumption synergies
    - AT&T/DIRECTV: single installation / bill / helpdesk
    - Aérospatiale/de Haviland: pilot cert. & training, spare parts & maint.
    - Eurotunnel/SeaFrance: urgent versus non-urgent freight
  - Harm: portfolio differentiation softens competition

- Baseline setting
  - Independent demands for two products
  - Homogenous single-product firms

- Variants and extensions
  - Better integration / interoperability versus “one-stop shop” benefit
  - Product differentiation
  - Merger dynamics
Insights

- Impact on prices
  - Consumption synergies confer a competitive advantage
    - Merged entity appropriates part of them
  - Portfolio differentiation: bundle versus mix-and-match
    - Heterogeneous benefits across consumers: softens competition
    - Exacerbated in case of pure bundling
    - [Double marginalization across stand-alone firms]

- Impact on consumers
  - Positive impact is markets are not too concentrated or no bundling
  - Consumers (particularly multi-stop shoppers) can be hurt otherwise
Baseline Setting

- Two markets $A$ and $B$; independent demands
  - Demand: Unit demands, homogeneous valuations $u_A$ and $u_B$
  - Supply: Bertrand competition in both markets
    - firms $A_1, A_2, \ldots$ (same constant unit cost $c_A$)
    - firms $B_1, B_2, \ldots$ (same constant unit cost $c_B$)
  - Social gain from trade: $w = u_A - c_A + u_B - c_B$

- Pre-merger
  - Bertrand competition drives prices down to cost
  - Consumers obtain $w$

- Suppose firms $A_1$ and $B_1$ merge \(\rightarrow\) can offer bundle $A_1 - B_1$
  - Generates heterogeneous consumption synergies: $s \sim F(s), f(s)$
  - Assumptions: $h(s) \equiv \frac{F(s)}{f(s)}$ is increasing, $k(s) \equiv \frac{1-F(s)}{f(s)}$ is decreasing
Mixed Bundling

Proposition

- Stand-alone prices are at cost
- There exists $\tau^*$ such that:
  - Consumers with $s < \tau^*$ mix-and match and get $w$ (as before)
  - Those with $s > \tau^*$ buy the bundle and get more than $w$ (better-off)
- The bundle is sold at a premium; the merged firm obtains $\Pi^* > 0$

Intuition:

- Bertrand competition for multi-stop shoppers (stand-alone prices)
  - Obvious is $n_i \geq 3$; but applies as well if $n_i = 2$
  - Multi-stop shoppers are thus unaffected
- The bundle creates consumption synergies
  - The merged firm appropriates part of it
  - Revealed preference: one-stop shoppers are better-off
Pure Bundling

**Proposition**

- Same as mixed bundling when \( n_A, n_B \geq 3 \)
- When instead \( n_i = 2 \) for some \( i \in \{A, B\} \)
  - consumers who mix-and match face higher prices (worse-off)
  - fewer consumers mix-and match (those with \( s \leq \tau^{**} < \tau^* \))
  - the bundle is sold at even higher price; the merged firm obtains \( \Pi^{**} > \Pi^* \)
- The effect is more pronounced when \( n_A = n_B = 2 \)

**Intuition: Portfolio differentiation**

- Heterogeneous preferences for bundle: softens competition
- Whenever \( n_i = 2 \) for \( i \in \{A, B\} \), stand-alone firm increases its price → the merged firm responds by increasing its price and market share
- Double marginalization across stand-alone firms if \( n_A = n_B = 2 \)
Merger generates efficiency gains for consumers
- These are partly appropriated by the merged firm
- Sole effect if $n_A, n_B \geq 3$ OR in the absence of pure bundling
  - Consumers who mix and match are unaffected
  - Consumers who opt the bundle benefit from this

Portfolio differentiation may soften competition
- Effect arises if $n_i = 2$ for some $i \in \{A, B\}$ AND pure bundling
  - Consumers who mix and match are harmed
  - Total consumer surplus may be reduced

Note: merger always increases total welfare here
... but would need to account for allocative distortion

Zhijun Chen and Patrick Rey
Monash University
Toulouse School of Economics
6 March 2018

10 / 15
One-stop shop benefit

- Benefits for one-stop shoppers – with or without bundling
  - Mixed bundling equivalent to “no bundling”
  - Cannot charge “more” to one-stop shoppers (arbitrage)
- When $n_A, n_B \geq 3$, same as before (with or without bundling)
- When $n_i = 2 < n_j$
  - No bundling or mixed bundling: similar outcome
    - merged firm offers good $i$ at cost (more concentrated market)
    - exploits its competitive advantage on good $j$
  - Pure bundling: same outcome
    - portfolio differentiation
    - higher price for good $i$
- When $n_A = n_B = 2$
  - Market power even without pure bundling
  - Mixed strategy equilibrium
Baseline setting: homogeneous products / “extreme” competition
- Absent bundling, perfect competition even with $n_i = 2$ firms
- Bundling is the only source of product differentiation

Assume now that products are differentiated
- $n_A = n_B = 2$: Hotelling duopoly in each market
  - Firms $A_1$ and $B_1$ are located at one end of the Hotelling line
  - Firms $A_2$ and $B_2$ are located at the other end

Consumers
- Perfect correlation of preferences across markets
- Uniform distribution

Mixed bundling
Proposition

The merger:

- Increases stand-alone prices for all products
  \[\rightarrow\] harms consumers who mix and match

- Benefits consumers buying the bundle
  increases total consumer surplus if \( s \) is uniformly distributed

- Increases profit of merging firms
  but reduces the profits of stand-alone firms

Intuition:

- Consumption synergies: competitive advantage for merged firm

- Portfolio differentiation: competition softening
  - Double marginalization for stand-alone firms
  - But merged firm less aggressive on stand-alone prices
  \[\rightarrow\] lower market share for multi-stop shoppers
Intuition:

- So far, static analysis; dynamics?

- $N = 2$ markets
  - First conglomerate merger is profitable
  - Second conglomerate merger would not be profitable

- $N > 2$ markets, many stand-alone firms in each market
  - “Merger game”
    - One firm is randomly selected and proposes a conglomerate merger, which is implemented if all targeted firms accept it
    - Another firm is randomly selected among stand-alone ones, and so on...

- Merger wave
  - One conglomerate for every “portfolio size” $N, N - 1, ...$
  - Larger conglomerates are more profitable
Conclusions

- Antitrust treatment of conglomerate mergers
  - US
    - rather lenient until recently
    - AT&T-Time Warner?
  - EU
    - Initial focus on creation / reinforcement of dominance
    - Portfolio effects: exclusionary abuse, bundling
    - European courts have imposed rather strict standard

- This paper: portfolio differentiation effect
  - Pure bundling, versus mixed or no bundling
  - Policy implication: no pure bundling