Towards a more competitive Europe: A merger policy approach

Revisiting Igami and Uetake (2020): Mergers, Innovation and Entry-Exit Dynamics

Luis Moyano García

Cornell University

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The key idea

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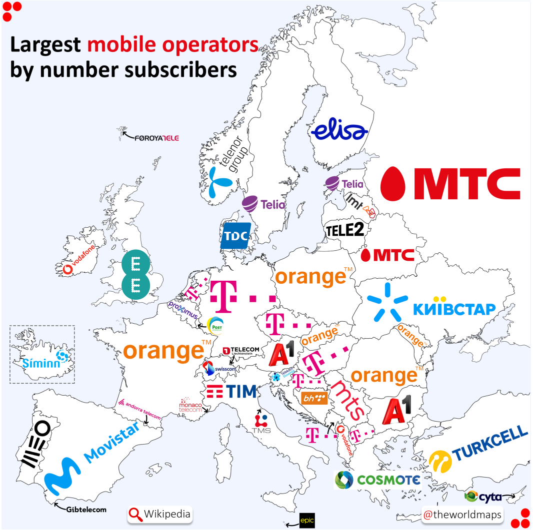

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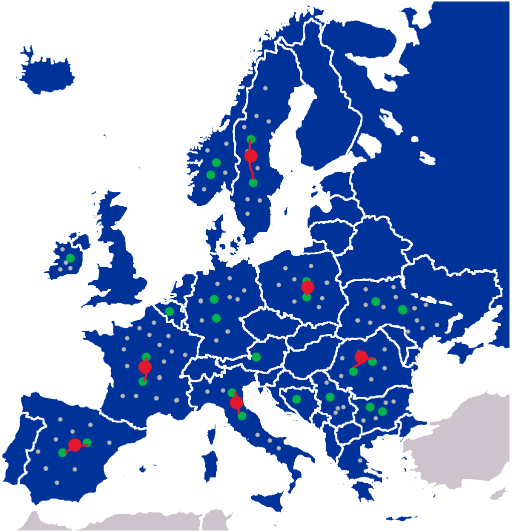

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Motivation

Literature

The model

Data

Estimation

Counterfactuals

Outline

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Foreword of the Draghi Report (2024)

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→ Technology adoption rises with firm size for all technologies. Big investments.

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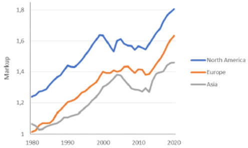
Figure 27: Aggregate markup by global region



Source : De Loecker and Eeckhout (2021)

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— RQ2: Assess the following trade-offs

- Optimal investments
- Barriers to entry

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- **Market structure and innovation. Dynamic welfare trade-off.** Igami and Uetake (2020), Mermelstein, Nocke, Satterthwaite and Whinston (2018), Marshall and Parra (2018), Scotchmer (2004), Farrell and Shapiro (1990).

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- **Dynamic games and mergers.** Igami and Uetake (2020), Jeziorski (2014), Stahl (2011), Gowrisankaran (1995, 1999); Innovation: Benkard (2004), Goettler and Gordon (2011), Kim (2015), and Igami (2017, 2018); Entry and exit: Ryan (2012), Collard-Wexler (2013), Takashi (2015), Arcidiacono et al. (2016), and Igami and Yang (2016)

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$$\omega_{i,t+1} = \omega^1, \text{ and } \kappa^{a^0=1} + \varepsilon(a^0_{it})$$
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- The incumbent chooses $a_{it} \in \{exit,\ innovation,\ merger,\ innovation -and-merger,\ idle\}$. Each action has a sunk cost $(\kappa^x, \kappa^i, \kappa^m, \kappa^{i\&m}, \kappa^c)$.

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— They model the antitrust authority by making mergers infeasible when the number of firms n_t reaches a policy threshold, $\underline{N}$

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  5. Mover i implements a dynamic action, and its state evolves accordingly, drawing $\Delta_{i,t+1}$ if it merges.

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The Bellman equation:

$$V_{it}(\omega_t, \varepsilon_{it}) = \pi_{it}(\omega_t) - \phi_t(\omega_{it}) + \max\{V_{it}^x, V_{it}^c, V_i^i, \{V_{ijt}^m\}_j, \{V_{ijt}^{i\&m}\}_j\}$$

where V_{it}^a represents conditional (or "alternative-specific") values of exiting, idling, innovating, proposing merger to rival j, and both of the latter two, respectively.

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$$EV_{it}(\omega_t) = E_\varepsilon[V_{it}(\omega_t, \varepsilon_{it})] = \pi_i(\omega_t) - \phi_t(\omega_{it}) + \sigma\left\{\gamma + \ln \sum_{a \in A} \exp\left(\frac{V_{it}^a}{\sigma}\right)\right\}$$

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- γ is the Euler constant
- σ is the logit scaling parameter
- $V_{it}^a = V_{it}^a(\omega_t, \epsilon_{it}^a) - \varepsilon_{it}^a$ (the deterministic part)

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Ex-ante optimal choice probabilities:

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— Alternative modelling possibilities considered: (1) infinite horizon, (2) continuous time, (3) heterogeneous recognition probabilities, (4) alternative bargaining protocols, and (5) private information on synergies.

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- Information frictions between markets (for counterfactuals) (European fragmentation)...

Model innovations

— There are two types of players $\{European,\ National\}$, and only national players can merge.

— There are $M = 27$ *geographical* markets, where companies of $European$ type play in all of them, and $National$ type play only in one market m.

- Perhaps consider as well the possibility of making firms active in different *product* markets.

— Only one merger per market each period is possible (see if we could allow for multiple mergers across markets).

— Information frictions between markets (for counterfactuals) (European fragmentation)...

— Barriers to entry as the number of players goes down: decreasing probability of entry as N decreases.

Outline

Motivation

Literature

The model

Data

Estimation

Counterfactuals

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1. Company financials [Historical Orbis]:
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3. Merger deals:
    - S&P Capital IQ
    - Annual reports (Publicly listed entities)
    - Zephyr (Bureau Van Dijk)

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4. Other: Terminal period (T), bargaining power, (TIOLI: χ) and recognition probability $(\rho = 1/n_{\max})$.

Counterfactuals

- Quantify welfare gains of reducing internal market frictions.
- Assess optimal investment levels.
- Assess the trade-off between consolidation and barriers to entry.