

Presumption-Based Merger Control

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E.CA Competition Law and Economics Expert Forum
April 17, 2023

- Concentration measures play a central role in merger analysis
 - U.S. *Horizontal Merger Guidelines* adopt both safe harbors and anticompetitive presumptions based on the **post-merger level** and **change** in the **Herfindahl index** (naively computed).
 - These presumptions play an important role in both the agencies' merger investigations, and in court proceedings.
 - Similar concentration-based presumptions exist in many other jurisdictions.

- Yet, the basis for these presumptions in both **form** and **level** remains rather unclear.

- In our paper *Concentration Thresholds for Horizontal Mergers* (American Economic Review, 2022), Michael Whinston (MIT) and I examine these presumptions, focusing on a merger's **unilateral price effects**.
- We make **two points**:
 - ① There is both a theoretical and an empirical basis for **focusing only on the change** in the Herfindahl index and not its level (and, more generally, on just the merging firms' shares) in screening merger for whether they will harm consumers.
 - ② The levels at which current presumptions are set are **likely too lax**, at least unless one is crediting large efficiency gains (5% or larger) to the typical merger or a significant presumption that entry, repositioning, or other factors will prevent anti-competitive effects.

- *Starting point:* Absent efficiencies, mergers harm consumers.
- We therefore focus on the **synergy required to prevent consumer harm**, and its relation to measures of concentration.
- Our analysis proceeds in two parts:
 - ① We first study theoretically the determinants of required synergies in three models in which one might hope to have a clear relationship to market shares/concentration (homogeneous-goods **Cournot** model; **CES/ MNL** models of differentiated-goods price competition).
 - ② We then examine the required synergies in the context of the **U.S. beer industry**, using demand and marginal costs estimated by Miller and Weinberg (Econometrica, 2017).

The U.S. *Horizontal Merger Guidelines*

- First introduced by the U.S. DOJ in 1968, at time of great hostility toward mergers.
- Focused on preventing concentrated industries, with stringent presumptions of anticompetitive harm based largely on merging firms' shares:

Anticompetitive presumptions in markets with CR4 >75%:

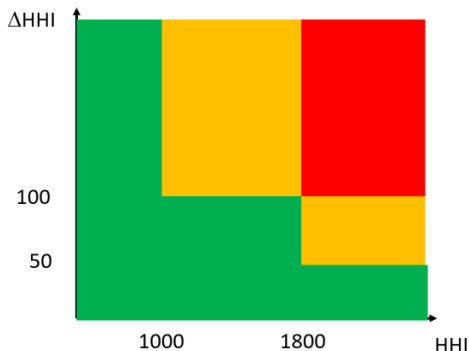
<u>Acquiring Firm</u>	<u>Acquired Firm</u>
4%	4% or more
10%	2% or more
15% or more	1% or more

Anticompetitive presumptions in markets with CR4 < 75%:

<u>Acquiring Firm</u>	<u>Acquired Firm</u>
5%	5% or more
10%	4% or more
15%	3% or more
20%	2% or more
25% or more	1% or more

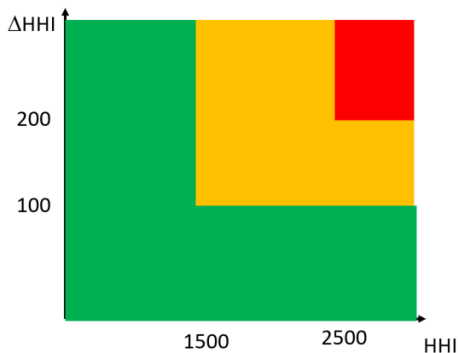
The U.S. *Horizontal Merger Guidelines*

- The 1982/1992 DOJ *Guidelines*:
 - Replaced CR4 with Herfindahl index
 - Put much more importance on **level** of concentration in market (not just merging firms' shares)
 - Had much more lenient presumptions:



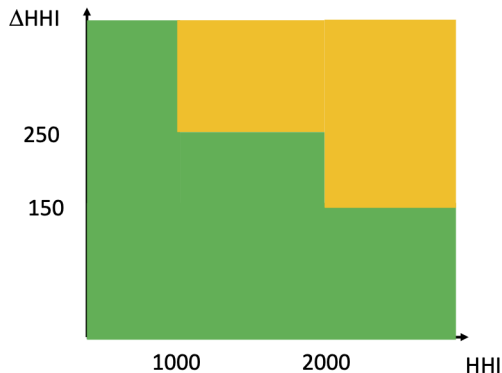
The U.S. *Horizontal Merger Guidelines*

- The 2010 DOJ/FTC *Guidelines*:
 - Relaxed presumptions further to achieve “transparency”:



The 2004 EC *Guidelines*

- The 2004 European Commission *Guidelines*
 - First EU-level *Guidelines* strongly influenced by US *Guidelines*.
 - HHI thresholds relate to whether Commission is “unlikely to identify horizontal competition concerns”.
 - Thresholds more lenient than those of the 1992 US-*Guidelines*:



- Focus on creation or strengthening of dominant position.
- Important role of market shares for establishing a dominant position:
 - 40% market share for a single firm (*Monopolvermutung*)
 - merger of two symmetric firms with 20% market share each would result in Δ HHI of 800
 - means that post-merger HHI is at least 1600
 - 50% market share for three firms
 - 67% market share for five or more firms

Theoretical Analysis

- We analyze a class of models in which there is some price or quantity index A (summarizing the quality-adjusted prices or quantities of the various products) such that
 - ① Consumer surplus depends only on A .
 - ② Each firm cares about its rivals only through their effect on A .
- This class of models includes:
 - the homogeneous-goods Cournot model
 - the differentiated-goods price competition models with CES or MNL demands

Result

The level of efficiencies required for a merger not to harm consumers (i.e., for A to remain unchanged),

- ① *is independent of industry concentration, holding fixed the market shares of the merger partners;*
- ② *is increasing in the market shares of the merger partners and is higher, the more similar are those shares.*

- **Example:** 5 firms. Firms 1 and 2 want to merge; their combined market share is 40%.
 - *Observation 1:* For required efficiencies, it does not matter whether firms 3 to 5 have a 20% market share each or firm 3 has a market share of 40% and firms 4 and 5 one of 10% each.
 - *Observation 2:* Required efficiencies are larger if firms 1 and 2 have a 20% market share each than if firm 1's market share is 30% and firm 2's is 10%.
- ▶▶ Cournot example
- **Implication:** Focus should be on change in Herfindahl index (Δ HHI), not on its level (HHI).
 - Focus should not be on the joint market share of the merger partners either: more asymmetric mergers seem less problematic.

Empirical Analysis of Mergers in Brewing

- The theoretical models are quite special.
- What do we see in “actual markets”?
- Here, we study the effects of 390 potential (local) mergers in the U.S. brewing industry, using estimated demand and costs from Miller and Weinberg (*Econometrica*, 2017)
 - Dataset: 39 local markets, 5 firms
 - Very flexible (random-coefficient MNL) demand systems
 - For each possible merger between pairs of firms in each local market, we simulate the merger for varying cost synergies, and find the synergy at which consumer surplus is unchanged. We then look at how the required synergy is related to HHI and Δ HHI.

Empirical Analysis of Mergers in Brewing

- Required efficiency gains in $(HHI, \Delta HHI)$ -space:

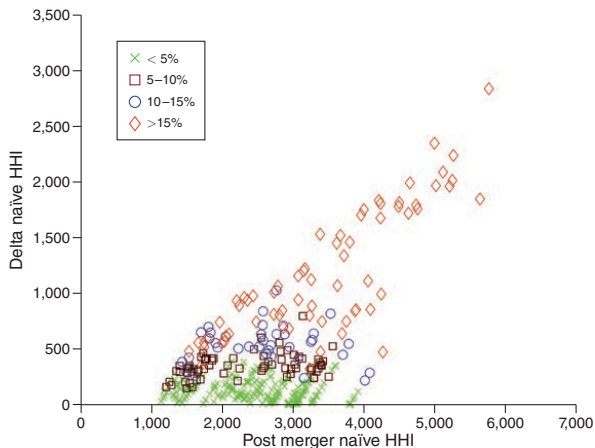
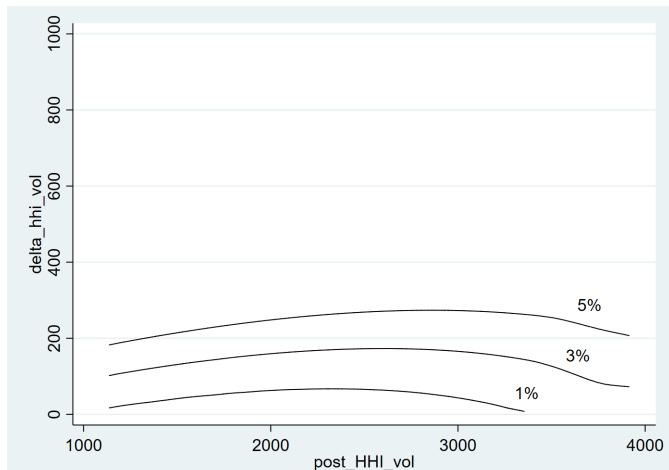


FIGURE 5

Note: Relationship between the synergy required for a merger to be CS-neutral and the postmerger HHI and its change, based on the RCNL-1 model and volume shares.

Empirical Analysis of Mergers in Brewing

Figure: Contour plot of combinations of HHI and ΔHHI , that make a merger not harm consumers—for a given level of efficiencies. (Based on regressing required synergies on polynomial of HHI and ΔHHI .)



Empirical Analysis of Mergers in Brewing

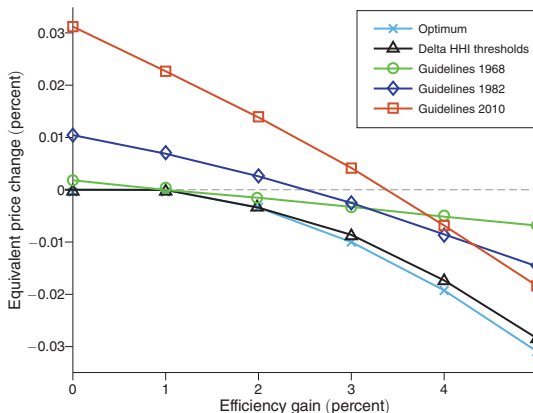


FIGURE 9

Notes: Graph showing the performance (measured by the induced percentage change in all prices) of alternative approval policies as a function of the merger-induced efficiency gains. The depicted policies are the 1968, 1982, and 2010 *Guidelines'* thresholds (green circles, blue diamonds and orange squares, respectively), a simple threshold policy based only on Δ HHI (gray triangles) and the optimal policy (light blue crosses). Based on the RCNL-1 model and volume shares.

When might screening based on the level of industry concentration (HHI) make sense?

- Coordinated effects?
- Non-price responses by rivals?
- Efficiency gains related to industry concentration?
- Enforcement budget constraints?
- Prevent *significant* harm?

- Concentration measures depend on market definition
 - Starting in 1982, the U.S. *Guidelines* describe the *Hypothetical Monopolist Test* to define markets, which can lead to very narrow markets.
 - But: in the U.S., when the agencies go to court, they typically allege broader, more “natural” markets, seemingly because judges would look dimly on what appear to be overly narrow markets.
 - If so, then it is concentration in these more natural markets that is relevant for merger policy and the effect of the *Guidelines*’ thresholds.
- **Important caveat:** Both our theoretical and empirical analyses relate to mature markets in which market shares reflect competitive advantages in costs or qualities. Does not easily translate to new, innovative industries.

Should Merger Control Rely (More) on Presumptions?

While economists tend to be in favor of a case-by-case analysis, there is a role for presumptions in merger control:

- At the screening stage (phase 1), agencies may need to rely on presumptions to save on resources.
- During the in-depth analysis (phase 2), presumptions shift the burden of proof.
- (Presumptions may make it easier for the merger partners to anticipate the outcome, thereby potentially saving on proposal costs.)

How to Define Good and Bad Presumption-Based Approaches?

- My work suggests that concentration-based presumptions should
 - focus on the change in concentration (Δ HHI) rather than the level of concentration (HHI);
 - be tougher than they currently are.
- Good presumption-based approaches should be
 - well-grounded in economic theory;
 - supported by (robust) empirical evidence;
 - used in moderation for the right purposes.
- We need more merger retrospectives, for presumptions to be well-founded.
 - Require merger partners to grant agencies access to post-merger data?

Example: Required Efficiencies in Cournot Markets

Table: Required reduction in marginal costs for consumers not to be harmed as a function of merging firms' market shares. Each merger's Δ HHI in parenthesis. Cournot model with demand elasticity $\epsilon = 1.5$.

market share	5%	10%	20%	30%
5%	3.4% (50)	4.7% (100)	6.0% (200)	6.9% (300)
10%	4.7% (100)	7.6% (200)	10.0% (400)	12.0% (600)
20%	6.0% (200)	10.0% (400)	15.4% (800)	19.4% (1200)
30%	6.9% (300)	12.0% (600)	19.4% (1200)	25.0% (1800)