

THE WELFARE CONSEQUENCES OF MERGERS WITH ENDOGENOUS PRODUCT SELECTION

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Motivation:

Advancing Merger Simulations



- Merger simulation techniques in differentiated-product industries focus on price changes following a merger, and calculate the resulting welfare impacts.
- These “price-only” simulations abstract away from the possibility that industry participants will change their product offering decisions following a merger.
- This constraint underestimates the profit impact of mergers; consumer welfare effects may be enhanced or mitigated depending on post-merger product offerings.

Research Question



- How are post-merger market structure and welfare simulations changed by allowing for changes in product offerings post-merger?
- To answer this question, we develop a merger simulation approach in which prices *and* (discrete) product offerings are endogenized.
- We perform a variety of simulations, in an effort to isolate impact of particular mechanisms through which post-merger product offering changes may operate.

Literature / Background

- Nevo's (2000) approach "is not consistent with firms changing their strategies in other (than price) dimensions."
- Peters (2006) – finds a substantial difference between the price-only merger simulation results and the price effects of actual mergers.
- Theoretical (Gandhi et al, 2008) and empirical (Fan, 2012) simulations with continuous product characteristics.
- Examples of merger cases that cite potential issues related to product offerings (culling products, entry by rivals, synergies) with *ad hoc* analysis of impacts.

Model and Simulations (1)

- Differentiated product competition with endogenous price and product offerings
 - Adaptation of Draganska, Mazzeo & Seim (2009)
 - Firms endowed with a set of potential products
 - Stage 1 - Choose whether or not to offer each potential product
 - Stage 2 - Choose prices

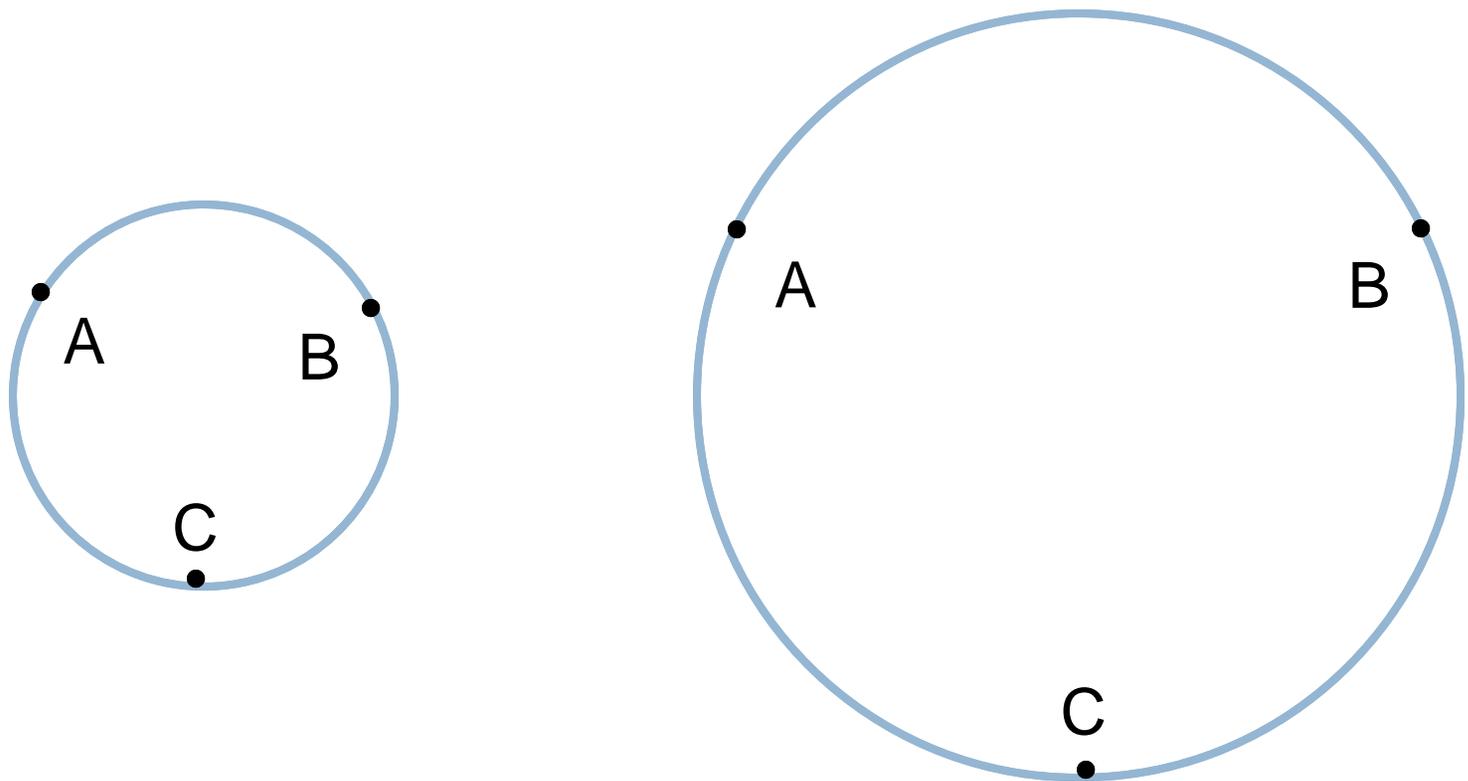
- Solve through backward induction:
 - Given offering decisions, find equilibrium prices
 - Calculate consumer surplus and producer profits
 - Using these profits as an input, model the product offering decision and characterize its equilibrium (*a la* Seim, 2006).
 - We adapt the information assumption (on fixed costs of entry) to allow for a range from complete to incomplete information (Grieco, 2013).

Model and Simulations (2)

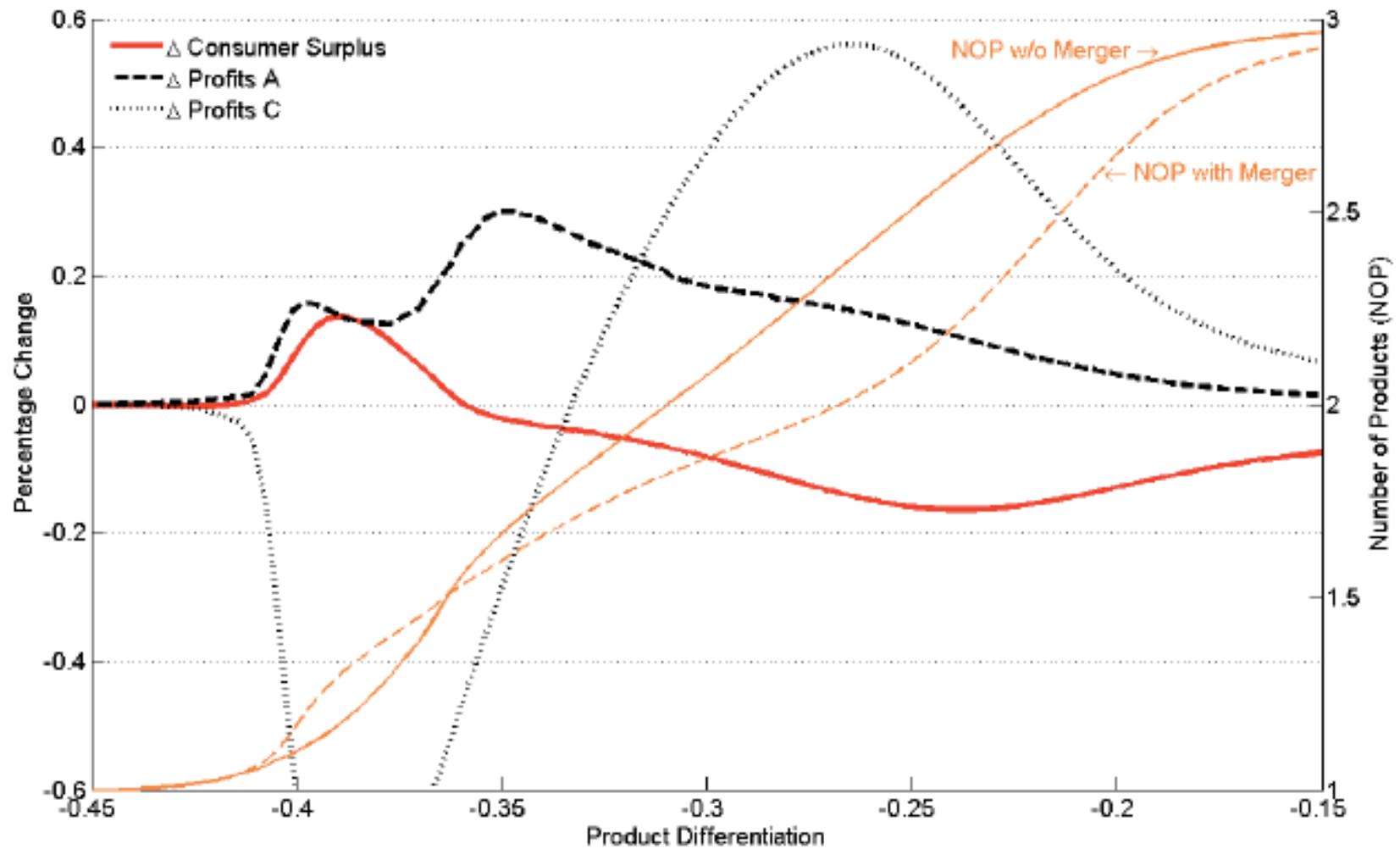
- Straightforward simulation approach using three symmetric market participants (A, B & C) offering at most one product
- We first do a pre-merger simulation – calculating “expected” products offered, profits and consumer surplus (primitives set to produce “reasonable” results).
- We allow A & B merge, we recalculate the equilibrium allowing for price and offering changes and compare the number of products offered, profits and consumer surplus.
- Across the simulations, we vary the extent of differentiation among the competing firms, pre-merger.

Model and Simulations (3)

- Across the simulations, we vary the extent of differentiation among the competing firms' products
- The extent of product differentiation is help fixed when comparing pre-merger to post-merger outcomes



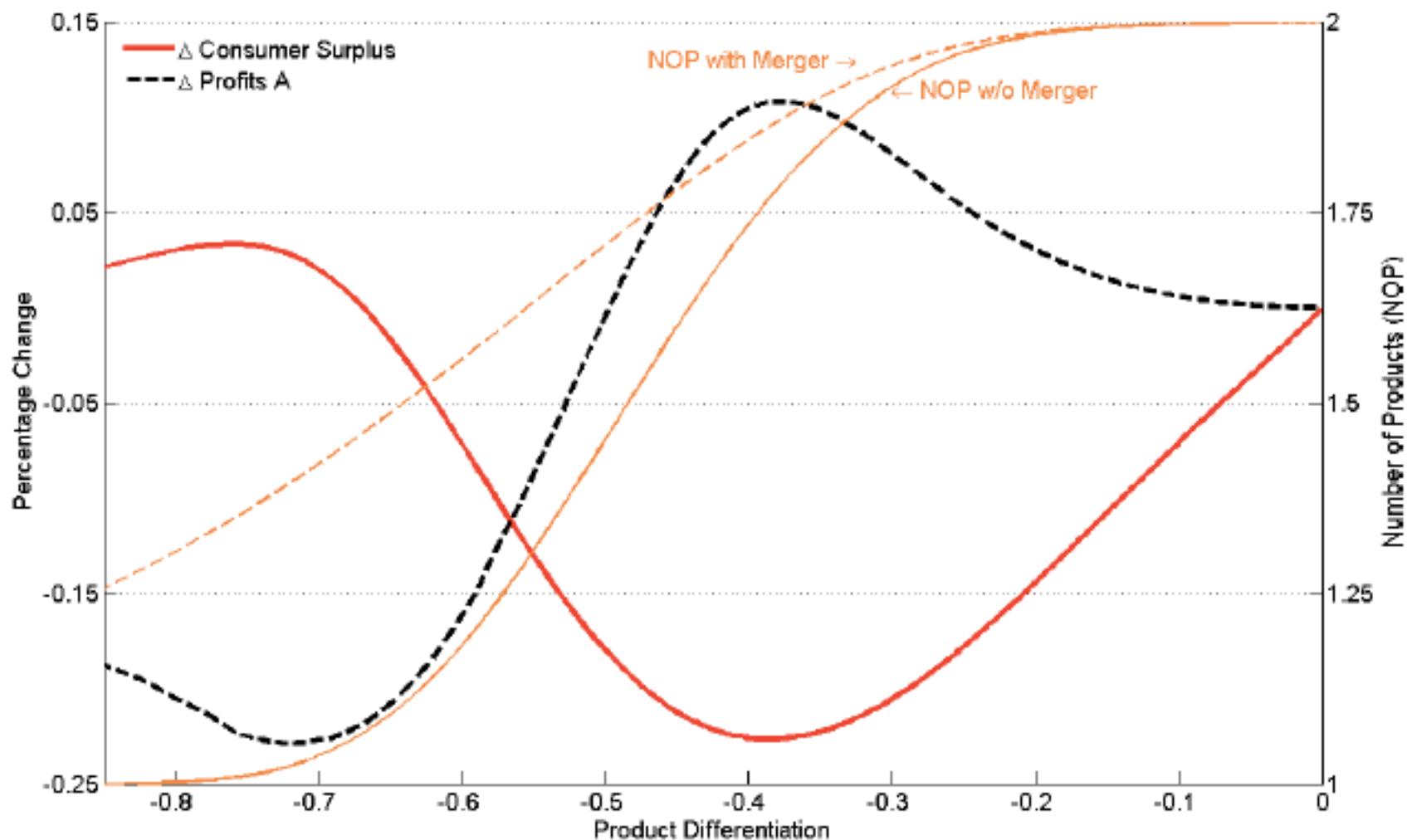
“Results”



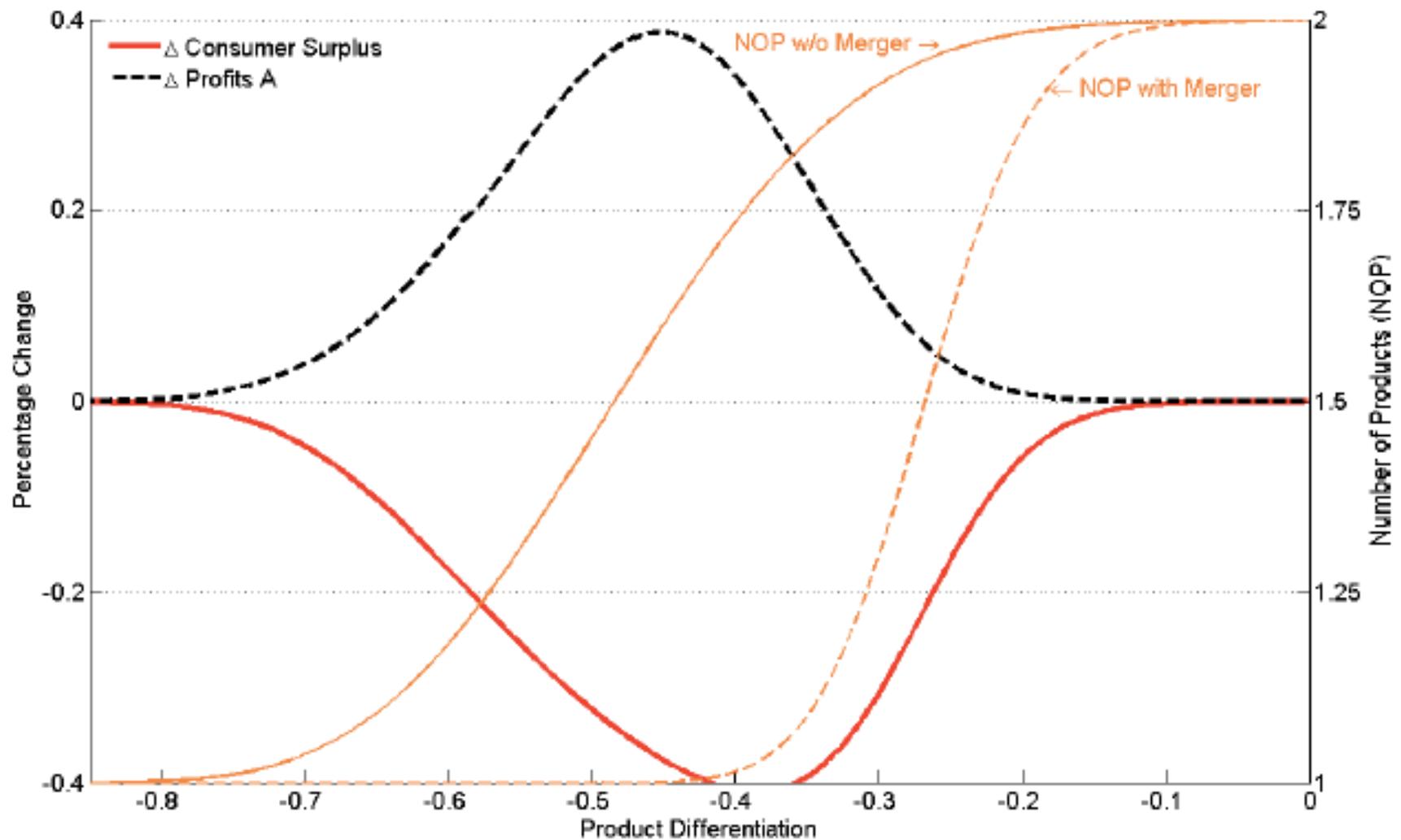
Summary of “Results”

- “Overall” effects range from relatively large to null
 - ▣ Depending on the extent of product differentiation; which determine pre-merger equilibrium offerings
- We investigate possible mechanisms – reasons why firms might have an incentive to change post-merger offerings:
 - ▣ Higher prices induce additional offerings.
 - ▣ Fixed cost-savings from culling “similar” products.
 - ▣ Coordination (offer most-profitable product, excluding rivals, information – reducing *ex post* regret).
 - ▣ Fixed cost synergies allow more products to overcome the threshold to be offered.
- Simulations are designed to isolate each of these

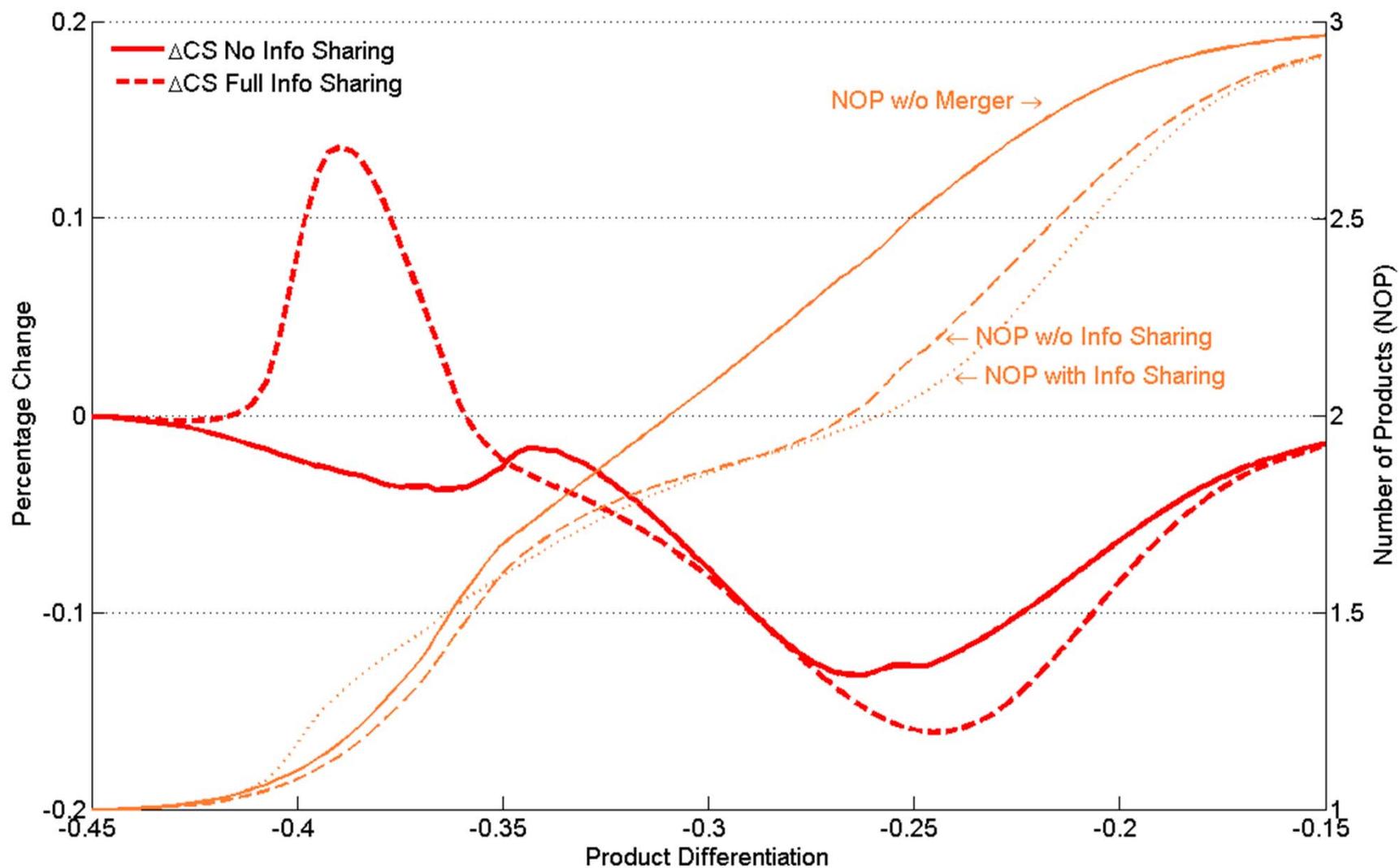
Additional Entry From Higher Post-Merger Prices



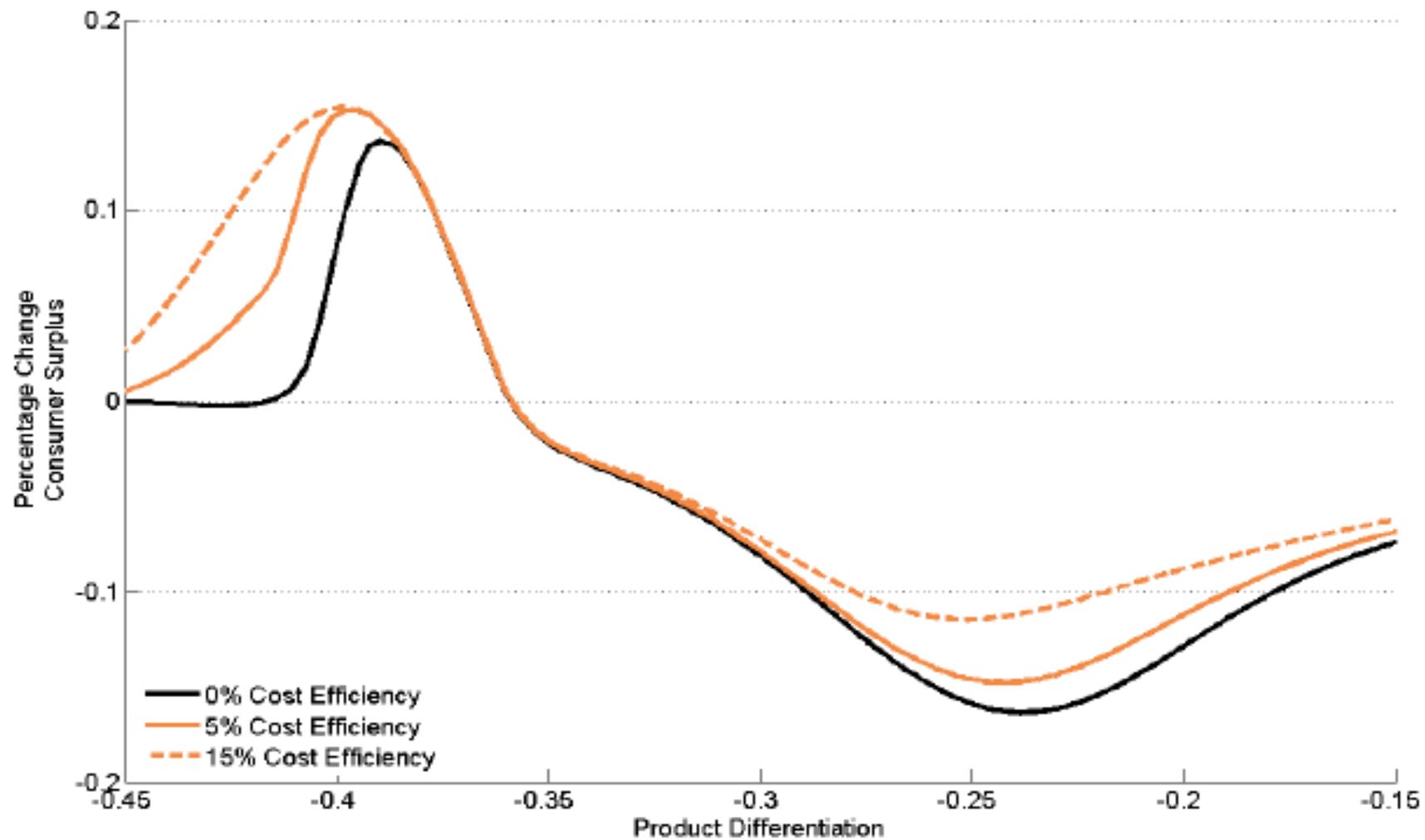
Cost Savings from Reducing Offerings



Coordination Allows for More Aggressive Play



Fixed-Cost Synergies Induce Entry



Summary of Findings

- “Anything can happen” of course, but the simulations give an idea of the scope of the effect and what it depends on
 - ▣ Particularly, the extent of pre-merger differentiation.

- The two main mechanisms (price increases and cost savings) offset in terms of endogenous offerings and their impact on consumer welfare
 - ▣ Regulators/courts: beware arguments emphasizing one and ignoring the other.

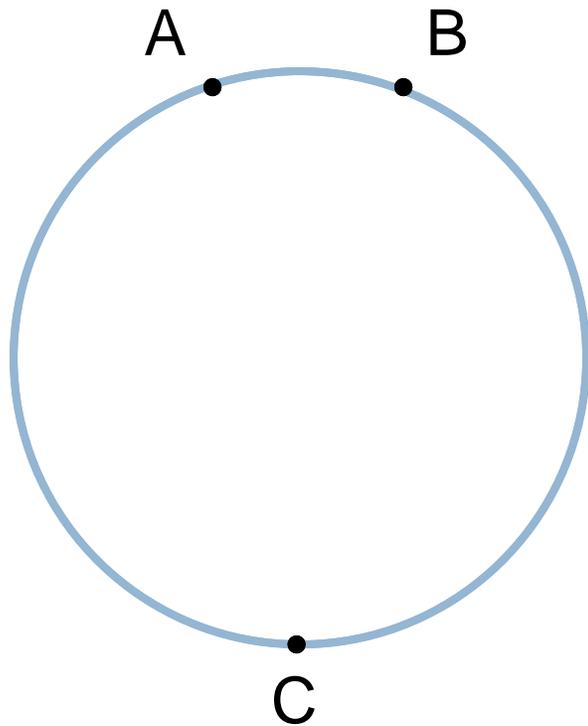
- Future research: we are trying to find a suitable setting to estimate rather than simulate the model and see what the repositioning effects are with real data (challenges).

APPENDIX

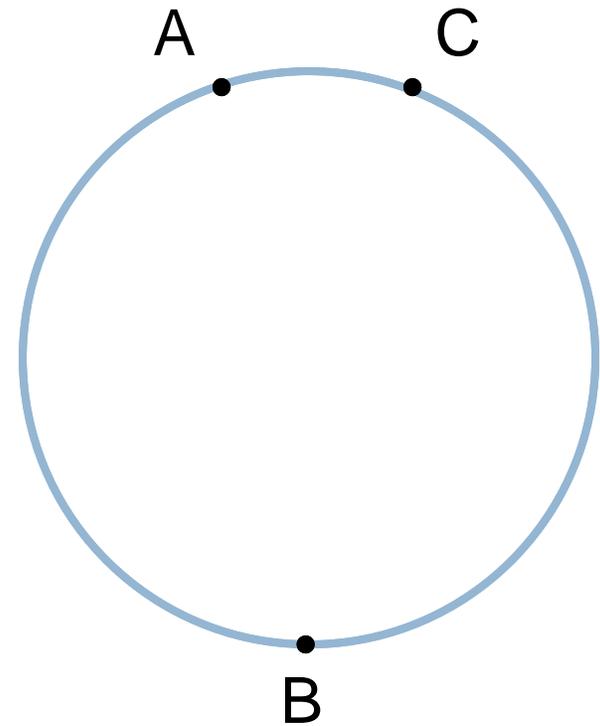


Alternative Product Space Configurations

- We relax the assumption that A, B & C are equi-distant and consider a couple of alternatives.

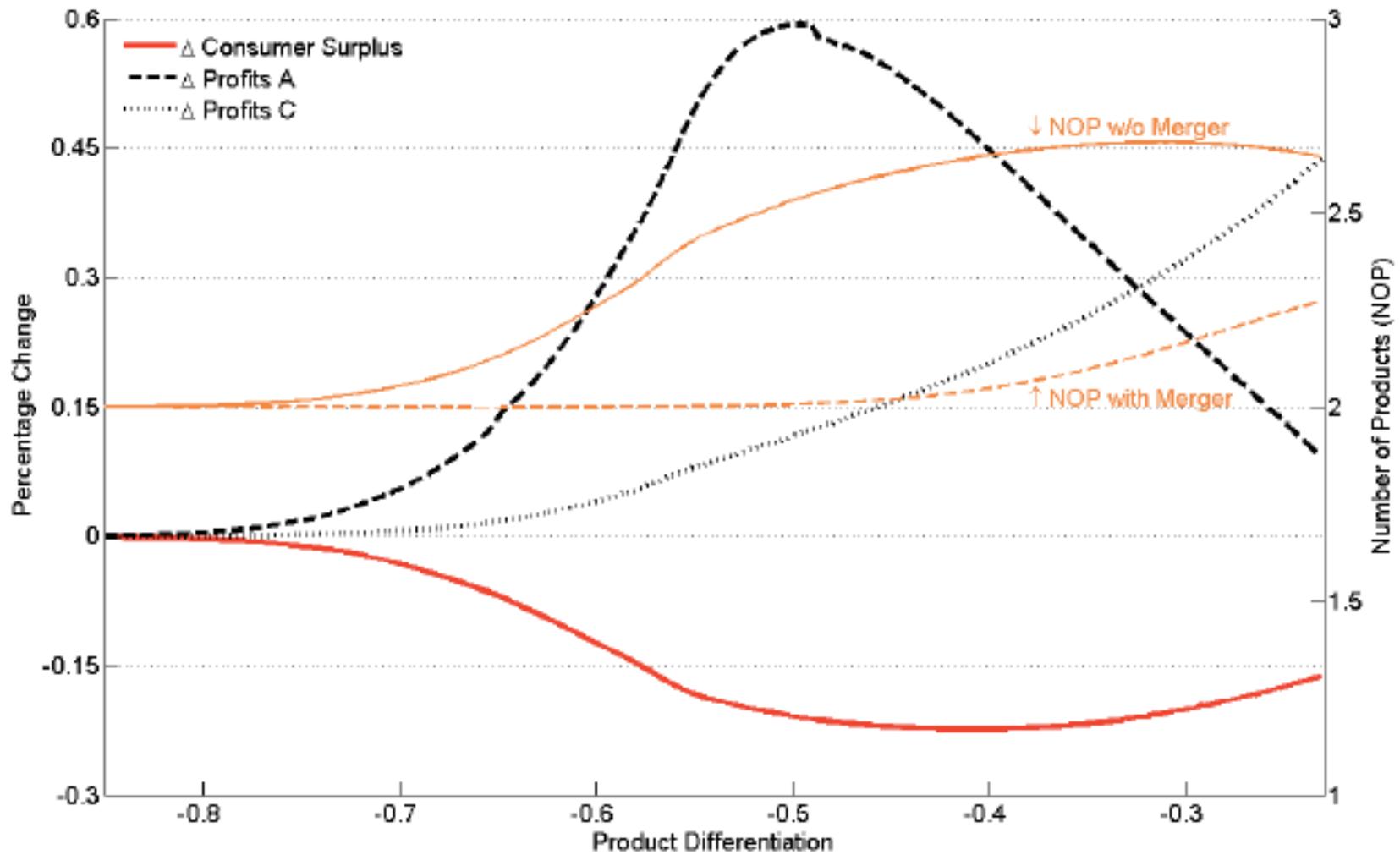


versus



Biggest effect from culling products, not joi

Merging Parties are Closer Substitutes



Don't talk about this slide

Merging Parties are Differentiated (but one is closer to rival)

