

# Platform Search Design and Market Power

## Lear Competition Festival — Proposal Summary

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In this project I study the market power that arises from a retail platform owner’s ability to choose the arrangement of products that consumers see. Additionally, I quantify the impacts of proposed antitrust remedies designed to address policymakers’ concerns about this form of platform market power. As the recent US Congressional Subcommittee on Online Platforms and Market Power put it: “...a handful of gatekeepers have come to capture control over key arteries of online commerce”.

Online retail platforms like Amazon are the marketplace for a large and growing number of products, and almost as many independent small businesses that compete with the owner of the platform. However, consumers shopping on these platforms do not take into account all the available products when they make their purchasing decision. The platform owner instead chooses the subset of products that consumers see when they search, and so in turn decides the number and type of consumers that small businesses have access to. The setting can be characterized by consumers who value low prices and product variety, a large platform owner that sells a set of ‘core’ products (e.g. common brands and own brand) and many small businesses that compete by selling both common brands and fringe products.

By choosing the arrangement of products, the platform owner influences the consumer search process, placing some products out of reach of all but those consumers with the lowest search costs. Pricing competition is also affected, as there are fewer competitors amongst the easiest to reach products. The platform owner’s power to decide the arrangement of their own products and of small businesses on their platform is a source of market power that has lacked rigorous examination to date.

A question arises from the platform’s role as a ‘gatekeeper’ — how are consumer welfare and small business outcomes affected by these decisions? Should we be concerned that the platform

owner places its own products in a more advantageous position than those products sold by small businesses? Given recent policy discussions, what should we expect if proposed antitrust remedies like vertical divestiture (i.e. where the platform owner is prevented from also operating as a seller) are enacted?

To answer these questions, I propose a tractable model to understand how alternate rules of arranging products will affect search behavior and pricing.

I estimate my model using data on two key ways in which Amazon's product arrangements affect consumer search and market power: the position of products on Amazon's search results; and the BuyBox grouping that orders sellers selling the same product by the lowest price. Descriptive statistics show that products sold by Amazon are more advantageously positioned (i.e. higher in the search results) than the products sold by small businesses. However, Amazon may simply be giving prominence to, and simultaneously choosing to sell, the most popular or desirable products. Panel log-log regressions at the product-week level confirm that as a product's position in the search results changes across the weeks, there is a correlated change in demand for the product, highlighting the importance of the arrangement of products for that product's sales. However, to establish whether the status-quo arrangement might be harmful for consumer welfare, we need a structural model to pose alternative arrangements of products.

My model has two stages. First, firms (the platform owner and small businesses) set prices for their differentiated products by Nash Bertrand. Second, consumers search sequentially on a tree-form representation of the observed arrangement of products to expand their consideration set (having rational expectations of the products), before making a purchasing decision. In the following I discuss preliminary results for one market on Amazon and consider two classes of counterfactuals.

For the first class of counterfactuals I posit an impartial gatekeeper that equalizes the probability of being in any position in the search results. In this counterfactual, profits shift from Amazon to small businesses highlighting the market power Amazon enjoys under the status quo arrangement of products. However, prices rise once firms re-optimize and on net, consumer welfare is slightly harmed under an impartial gatekeeper.

For the second class of counterfactuals, I consider the proposed antitrust regulation that would prevent Amazon from being both the platform owner and a platform participant. Small business profits increase when Amazon exits as a seller, but consumer welfare falls. In light of this I propose an intermediate solution — splitting the platform into an Amazon-side and a small business-side and letting consumers choose a side. Under this proposal small business profits increase, Amazon continues selling, and consumer welfare is not harmed.