

## Cross-Product Compatibility, Lock-In, and Market Power: The Case of Smartphones and Laptops.

### **Abstract:**

This paper examines the role of compatibility across *standalone* technology products in anchoring consumers to brands. Through a novel experimental design, I identify the causal impact of compatibility, showing that participants' willingness to pay for smartphones increases by 9% of their retail price when compatible with a laptop. I combine the experimental results with a smartphone demand model that incorporates compatibility with laptops to assess the welfare effects of (i) regulations mandating cross-brand compatibility (“open ecosystems”) and (ii) cross-market mergers. I find that in 2018-2019, closed ecosystems benefit Samsung by locking non-Apple laptop owners into lower-quality Samsung smartphones, while the switch to open ecosystems boosts Apple’s smartphone market share. However, in 2020-2023, closed ecosystems benefit Apple, as Samsung’s top smartphones are superior, prompting Apple laptop owners to switch to Samsung smartphones in open ecosystems. In both periods, consumer surplus rises due to lower prices and greater product variety in open ecosystems. A counterfactual merger between Samsung and HP, Apple’s main smartphone and laptop competitors, respectively, results in lower smartphone market concentration but raises Samsung smartphone prices, disadvantaging consumers who value compatibility less.