Product Variety and Investment in Mobile Telecommunications

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Abstract

Firms choose which products to offer and how much to invest in the infrastructure those products require. A firm adds a product or builds infrastructure when the profit it captures covers the cost. A planner, however, also counts the surplus left to consumers and the profit taken from rivals. Because products and infrastructure are complements, a distortion in one can affect the decision on the other. Existing work in product variety takes infrastructure as given.

We estimate a model of dynamic investment, product choice, and uniform pricing on Peru's 4G rollout. Business stealing offsets 80 percent of a marginal plan's consumer surplus gain, so variety is only mildly insufficient. A planner would offer different plans, not more, raising welfare by 5 percent of income. Completing the 4G network is worth 60 percent more under the planner's menus. The same menus raise what a firm earns from its first base station in a market by seven to eleven times its cost. Better products make more investment worthwhile.