

# A Note on Jain's Digital Piracy Model: Horizontal vs Vertical Product Differentiation

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## Abstract

We study how private intellectual property rights protection affects equilibrium prices and profits in a duopoly competition between firms that offer a product variety of distinct qualities (vertical product differentiation) in a setup that is closely related to that put forward by Jain (2008), where firms offer the same qualities in equilibrium (horizontal product differentiation). Consumers may make a choice to buy a legal version, use an illegal copy (if they want to and can), or not use a product at all. Using an illegal version violates intellectual property rights protection and is thus punishable when disclosed. Thus, both private and public (copyright) intellectual property rights protection are available on scene.

**Keywords:** Vertical and horizontal product differentiation; Software Piracy; Bertrand competition; Private and public intellectual property rights protection

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