

**ESSAYS ON INDUSTRY COMPETITION WITH DURABLE
GOODS AND NETWORK EFFECTS
(DISSERTATION ABSTRACT)**

**AN EMPIRICAL ANALYSIS OF INDIRECT NETWORK EFFECTS IN THE HOME VIDEO
GAME MARKET (JOB MARKET PAPER)**

We explore the indirect network effect in the market for home video games. We examine the video game console makers' strategic choice between increasing demand by lowering console price and by encouraging the growth of software variety.

We also explore the existence of an applications barrier to entry in the console market, and find that there is little evidence for such a barrier. Finally, we assess the applicability of the model to out-of-sample situations, to look at whether our model and previous similar models can generalize to other markets for purposes of marketing or antitrust inquiry. We find that the model generalizes reasonably well to the Japanese market for the same generation of gaming systems, but poorly to previous generations in the US market.

CONSUMER DYNAMICS IN THE PRESENCE OF CHANGING SOFTWARE

This paper estimates a dynamic model of consumer preference for differentiated durable hardware with perishable complementary software using the US home video game market. This market is characterized by both falling prices and volatile future software streams; consumers make their purchasing decisions by forming expectations of both prices and software. Following Gowrisankaran and Rysman (2006), we formalize this as an optimal stopping problem. We specify consumers as having persistent heterogeneous tastes and the ability to rationally forecast the distribution of future prices and software levels. To investigate the role future software plays in determining hardware choice, the estimation decomposes software into three categories: current, older (than current) and future software. We find forward-looking behavior is important in determining consumers' choices. Our estimates also show future software plays a more important role than current and old software in determining the choice of consoles (hardware).

NEW ESTIMATES OF BROADBAND ENTRY AND DEMAND

This study examines the supply of DSL broadband by the incumbent local exchange company (LEC) in five Midwestern states, and also demand for DSL from subscribers. The data are a unique, finely aggregated list of where DSL is deployed and subscribed as of March 2000. We examine the determinants of entry and find that income, other demographics, and cost factor affect availability. The racial characteristics of the neighborhood affect the demand for DSL from the incumbent LEC given that it is available, even after controlling for other demographics. The presence of competition from competitive LECs does not appear to affect the entry of DSL by the incumbent LEC but is negatively associated with demand for DSL from the incumbent, suggesting active competition for customers is occurring. The latter results are still tentative since competition from cable modem providers has not yet been explored.