

Thesis Abstract

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Quantifying the Heterogeneous Effects of Piracy on the Demand for Movies (Job Market Paper)

The debate on digital piracy has attracted significant public attention. An accurate estimate of the loss due to piracy crucially relies on correctly identifying the substitution between pirated and paid consumption. Using a novel dataset of downloads collected from the BitTorrent network, I estimate a random-coefficient demand model of movie piracy to quantify the effect of movie piracy on two channels of movie revenue: box-office and DVD sales. I allow piracy to have positive effects on sales through word of mouth (WOM). The rich data on BitTorrent allows me to examine the heterogeneous effects of piracy. Counterfactual results reveal that digital piracy has heterogeneous effects between different video qualities and on different channels of sales. On the one hand, it reduced the US box-office revenue of the motion picture industry by only 2.71% over 40 weeks in 2015. On the other hand, DVD sales in US dropped by 36% because of piracy. In addition, substitutability differs substantially by quality of pirated video. Low-quality pirated videos are poor substitutes for both channels of sales. Lastly, the positive WOM effect from pirated consumption contributed 0.23% and 2% of sales from the box-office and DVD sales, for a total of \$ 68.7 million.

Will the Leak Sink the Ship? Screener Leaks and the Impact of Movie Piracy

Screeners are movie copies sent to critics and industry professionals for evaluation purposes. Sometimes screeners are leaked accidentally and made available to download on the Internet. This paper exploits the plausibly exogenous variation of file sharing/piracy activities caused by screener leaks of Oscar nominated movies to estimate the impact of movie piracy on box office revenue. Using information on leak dates collected from *thepiratebay.org*, I employ a difference-in-difference strategy to identify the causal effect of piracy on movie box office. The paper finds two interesting results. First, screener piracy caused by leaks reduces the box office revenue of the leaked movie in subsequent weeks by 29.8% on average. However, the negative impact on total box office is to a large extent moderated by the late occurrence of leaks. Second, there are significant negative indirect effects on other movies: An additional contemporaneous leak lead to a 3% decrease of box office revenue of other unleased movies.