New technologies have provided copyright holders with new sales and distribution channels for their content, while also providing consumers with new opportunities to obtain high quality free copies of this content. These opportunities and challenges are apparent in the policy debate over whether to include “broadcast flag” copy protection in over-the-air Digital Television (DTV) standards.

Movie studios have argued that without copy protection, digital over-the-air movie broadcasts will lead to increased piracy and reduced sales of DVDs and other media. Conversely, consumer groups have argued that the broadcast flag would curtail consumers’ fair use rights while doing little to slow digital piracy. After being enacted by the FCC, and subsequently overturned in the courts, regulatory authority for the broadcast flag is currently being debated in Congress.

What is striking in this debate is that neither side has advanced any empirical evidence of the impact of movie broadcasts on DVD sales or piracy to support their arguments. The goal of our research is to empirically analyze these two questions.

To do this we have collected a new dataset tracking DVD sales and Internet piracy for all movies shown on over-the-air broadcast channels and on the four most popular ad-supported cable channels from July 12, 2005 through the present. Following the recent literature (see Brynjolfsson, Hu, and Smith 2003; Ghose, Smith, and Telang 2006), we use Amazon’s sales rank to infer DVD sales levels at Amazon.com. We use two public BitTorrent tracker sites to track the supply and demand of pirated copies of these movies. We also collect control information on broadcast characteristics, movie characteristics, and DVD characteristics. Our data are collected starting 14 days before each movie is broadcast to assess baseline sales and piracy levels. At present, our dataset contains over 700 movies and over 900 DVDs.

Our preliminary results suggest that DVD sales increase by an average of 410% immediately after a movie is shown on over-the-air broadcast TV (Figure 1). Moreover these appear to represent net gains, rather than just demand shifting. We also find no evidence that DVD sales are affected by the strength of copy protection provided in cable and satellite broadcasts (versus over-the-air). Furthermore, we find that TV broadcasts are not associated with a statistically significant increase in either the supply of or demand for pirated movies on over BitTorrent networks.

The finding that movie broadcasts serve as a complement to subsequent media sales should be encouraging to movie studios exploring new ways to market and distribute their content. These findings should also provide much needed empirical evidence in the Congressional debate over the broadcast flag and other copy protection systems for digital media broadcasts.
We believe our research, in addition to addressing the managerial and policy issues discussed above, will raise a variety of issues of importance to the symposium attendees. First, our research makes use of several new datasets — notably BitTorrent trackers for the purpose of observing changes in movie piracy — that may be useful to ecommerce researchers. Second, we believe our analysis raises interesting statistical challenges. For example, analyzing the long-term responses in DVD sales requires estimation of sales life cycle curves across a large number of DVDs and comparison of these curves to those of DVDs for movies that weren’t shown on TV. We would plan to raise and discuss these issues at the conference. Finally, our setting is conceptually similar to event studies commonly seen in economics and finance research, raising what we believe are useful linkages to these literatures.

We also note that our research is ongoing. By late May we hope to be able to obtain additional data which will allow us to control for viewership in analyzing the sales responses to movie broadcasts and also to refine our piracy results by isolating domestic piracy response.

Bibliography


![Figure 1: DVD Sales Increase After Over-The-Air Movie Broadcast](image)