

The Effect of Internet Book Piracy: Case of Comics
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The effects of piracy have been discussed overtime whether piracy harms legal sales or not is still an empirical question in the society. Anyway, it's serious concern for publishers in the near future. The market structure of the comic publishing industry is oligopoly. The intent of this paper is to examine the displacement and/or advertisement effect of piracy in the case of comics in the Japanese book industry by using comic book as a research target. Japanese comic publishers belong to an anti-piracy association named CODA (Content Overseas Distribution Association) which carried out a massive deletion project. This paper's research question is whether the number of reach sites reduced comic sales and whether the massive deletion project increased sales by using direct measurement of product level piracy ratio and a massive deletion project as a natural experiment.

This study chose 16 major active reach sites to be researched by checking manually every month with regards to 3,360 volumes. Book sales data is actual sales base which was offered by the four major publishers for the purpose of academic analysis. Tanaka used two models to examine the effect of piracy on legal sales. The first was ordinary panel regression, which correlated comic sales to the number of reach sites controlling the comics' popularity as fixed effect.

$$\log(Y_{it}) = a_i + b \cdot \log(\text{Site}_{it} + 1) + c \cdot Z_{it} + e_{it} \quad (1)$$

But in first model popularity can change during a research period to some extent causing an endogeneity problem. To cope with this problem, as a second approach, Tanaka applied standard difference-in-difference regression (DID) using the massive deletion project as a natural experiment.

$$\text{Log}(Y_{it}) = a_i + b_0 \cdot \text{DafterJulyt} + b \cdot \text{Deletion}_i \cdot \text{DafterJulyt} + c \cdot Z_{it} + e_{it} \quad (2)$$

Both approaches consistently showed that the effects of piracy on legitimate sales are heterogeneous depending on whether the comics are ongoing or completed. Piracy decreases sales of ongoing comics, but it increases sales of completed comics. To put this another way, displacement effect is dominant for ongoing comics, and advertisement effect is dominant for completed comics. Since completed comics series have already ended, and publishers no longer do any promotion for them, consumers almost forget completed comics. The result showed that negative effect is larger than positive effect, indicating that piracy reduces the total revenue of publishers.