Uniqueness and Replacement in Fashion Piracy and Knockoffs
Gil Appel, Barak Libai and Eitan Muller

Abstract

We explore the monetary consequences caused by design piracy to original items being copied. We consider the case of an original new fashion product introduced to the market, and what happens to the value of the cash stream from the growth process when a knockoff product is introduced at the same time. We look at three main factors that drive the effect of the knockoff. One is acceleration, where the additional pirated designs help awareness and thus can have a possible positive effect on the original in the same manner it had been shown for other markets such as software. The second is that of substitution, which represents the loss of sales due to people that would have purchased the original design, yet buy the knockoff. The third is the uniqueness effect that stems from the ubiquity of the design that increases due to the knockoff.

To explore the effect of these factors, we build a fashion diffusion model where customers avoid adopting or leave an adopted fashion if the number of items in the market crossed their threshold. We take advantage of the emergence of Google Trends tool that allows researchers to gather search pattern data for an immense set of search terms that people typed into the Google search engine, and is increasingly used by researchers to understand the growth of market phenomena. This is complemented by industry data on the extent of the knockoff phenomenon, which together enables us to conduct simulations to understand the financial impact of knockoffs. Following this analysis, three main findings are especially notable:

a) Based on the growth patterns we examined, the overall financial effect of a knockoff on the original is negative. In over 97% of the cases the combined harm due to substitution and uniqueness is greater than the positive effect of acceleration. Given industry data on the ubiquity of design piracy, we find that the average harm to the NPV of the original firm at more than 13% of the NPV, which is considerably larger than a previous assessment in the business press.

b) The harm of substitution had been often stressed in the context of the direct harm to profitability of the original product, and the role of acceleration had been highlighted when considering the positive effects of pirated goods. Yet we find that the less emphasized uniqueness effect may dominate both when considering the monetary effect of a knockoff. In the ranges we analyzed we find that on average acceleration has a positive effect of about 10% to the profits of the original, the substitution has a negative effect of 6% and uniqueness has a negative effect of 18%.

c) Given the calls to protect original US fashion articles via a legal protection period, similar to the case in the European Union, we analyze the dynamic effect of a protection period on the NPV of the original product. We find that initially there is little effect of the grace period due to the opposing forces of uniqueness and acceleration. However, after some time (one year on average in the ranges of our data) the positive effect of the grace period begins to dominate, and grows in an almost linear pattern as the protection period becomes longer.