Three essays on consumer product returns

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Essay 1: Optimal Retail Return Policies with Consumer Opportunism

Most retailers offer refunds to consumers who, after a trial period, return a product that they find does not fit their needs. There is evidence from practice that some consumers are willing to use this return option opportunistically, essentially "renting" a product by using it during the trial period and then returning it. Restocking fees (partial refunds) can be used to combat this behavior. However, such fees might be viewed negatively by consumers in cases where the return is due to a true lack of fit. We derive optimal pricing and return policies that explicitly consider both the extent of opportunism (how many consumers consider such behavior) and the benefit of opportunism (the attractiveness of the renting option). Our analysis reveals several new insights for retailers regarding pricing and return policies when opportunism is present in the marketplace. We also examine the profit impact of changes in the extent or benefit of opportunism, finding that this impact is not always intuitive, and that increases in either of these two opportunism constructs can actually increase profits in some cases. In an extension, we provide additional insights for when the salvage value of returned items is linked to how much utility has been extracted by the opportunistic consumer.

Essay 2: Using Transactions Data to Improve Consumer Returns Forecasting and Retailer Practices

The cost of consumer electronics returns in the U.S. has been estimated at $16.7 billion per year, representing 6% of revenue for an average consumer electronics manufacturer. Almost all prescriptive practices for lowering the cost of processing returns require a forecast of how many consumer returns will arrive in each period. Despite the fact that retail transactions data is readily available and has been shown to provide significantly better demand forecasts for new product sales, this data has not been explored for forecasting consumer returns. Using a data set provided by a major U.S. retail chain and consisting of 20,801 transactions of 2,483 electronic products, we develop an econometric model that simultaneously explains the consumer's experience duration and return probability, which are in turn used for predicting return quantity in a given time period. This approach yields 20% to 40% lower forecast errors than benchmark time-series models, and the performance gain is sustained even with a very parsimonious set of explanatory variables. Our econometric model also identifies promising managerial actions for lowering the cost of consumer returns such as better targeting of buyer assistance programs and choosing different return time windows for specific product families.
While Money-Back-Guarantee (MBG) product return policies are common in the experience goods retail industry, the research provides little guidance on what additional value consumers assign to a product with a MBG. This is especially true in the online retail environment where, despite the fact that forward and return shipping charges influence consumers' valuations of MBGs, most retailers operating both traditional and online channels use a standard return policy for both channels. For online retailers, both shipping charges and seller reputation may influence the perceived value of MBGs. While a non-refundable forward shipping is likely to be perceived by consumers as an implicit restocking fee and hence, decrease the value of a MBG policy, consumers may infer a positive increase in the value of MBGs to retailers with good customer feedback. We empirically measure the value of MBGs in the online context by collecting the final selling prices of identical products offered by different vendors (with different return policies) who sell on eBay. Our data set includes 2946 bidding transactions of 86 products sold on eBay. One key econometric challenge with this study was how to correct for a seller's endogenous decision of whether to offer a MBG policy. Intuitively, the sellers who are more likely to offer MBG would also be the ones who expect to yield a better payoff from doing so. We discuss why the common instrumental variable approach fails in our context and propose a maximum likelihood estimator based on the error correlation structure. We find that a MBG policy for online consumer electronics to be smaller than 7% of the product's value. A seller who offers free forward shipping and has an average reputation may expect a 5.16% increase in a consumer's valuation of a product if the retailer switches from not offering a MBG to offering a MBG, but increases in the charges for forward shipping will quickly erode any value associated with offering a MBG policy.