Title
Price Dynamics in the Markets for Bourbon and Scotch: 2005-2020

I want to submit an abstract for:
Conference Presentation

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Keywords
bourbon, scotch, price dynamics, dispersion, cross-price elasticity

Research Question
How has the distribution of bourbon and scotch prices changes over time? How do product attributes affect price and how has this changed? What is the cross-price elasticity?

Methods
Use data from the 2005-2020 Nielsen Scanner data to study how the distribution of prices over time. Exploit regional variation in customer attributed and prices to estimate cross-price elasticity.

Results
Bourbon and scotch prices changed in different ways over time. The median price of bourbon changes very little over this period while the median price of scotch rose 45%.

Abstract
This study uses A. C. Nielsen scanner data from 2005-2020 to study changes in the distribution of bourbon and scotch prices over time. To start with, we focus on comparing changes in the median price, with changes in prices of lower end whiskies and changes in the price of premium bourbon and scotch (the 75th and 90th percentiles in the price distribution). We also examine the premium associated with product attributes such as age, proof, and designations such as barrel select or single barrel. We will estimate cross-price elasticities related to different types of whiskies. Finally, we examine how prices vary across regions, examining the impact of how taxes and
demographic characteristics such as income affect prices in a region. Comparing price dynamics in these two markets will show how changes in demand in a mature market such as scotch differ from the changes that have occurred in a market such as bourbon that went through a long period of very low demand. Variation in price by age will help quantify the returns from storing the product longer, allowing a better understanding of the factors behind the decision of when to sell a product whose price rises with age. This will also allow us to measure whether price variation by age is changing over time and affecting the risk associated with aging these products. Cross regional variation in taxes and sales will allow us to estimate the elasticity of demand for scotch and bourbon. Cross regional variation in prices that are associated with demographic characteristics that are associated with demand, such as income, will allow us to quantify the potential impact of the three-tiered distribution system of the market. Cross-price elasticities will help us understand how price shocks in these other markets affect pricing and aging decisions for bourbon and scotch. Preliminary results show that the price of bourbon and scotch changed in different ways over time. For example, after adjusting for inflation the median price of bourbon changes very little over this period—rising from $25 per liter to $26 per liter, while the price of a bottle of bourbon at the 90th percentile increased by almost 25%, rising from $38 per liter to $46 per liter. In contrast, in the scotch market the median price of a bottle went up by 45%, rising from $25 per liter to $36 per liter, while the price of a bottle at the 90th percentile 50%, rising from $52 per liter to $80 liter. At the 10th percentile of the price distribution the price of a liter of bourbon rose by 10% while the price of a liter of scotch remained constant. In both markets the difference in price between the 90th and 10th percentiles rose, but the increase was substantially greater in the scotch market. The change in the 90-10 differential was 25% in the bourbon market but was 65% in the scotch market. Relative demand has clearly shifted to premium products in both markets, but the increase in scotch was substantially larger. We will explore possible reasons for the differences in price dynamics in these markets.

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