

Show and Tell: Online Shopping

Initial Exploration and Idea

Mallick Hossain

Progress Report

- Secured third-year paper readers (thanks Frank!)
- Obtained research data sets
 - comScore Web Behavior database
 - American Time-Use Survey
- Constructed exploratory analysis tool for time-use survey
- Beginning exploration of comScore data
 - Primary data for third-year paper
- Constructed short-list of feasible third-year paper questions

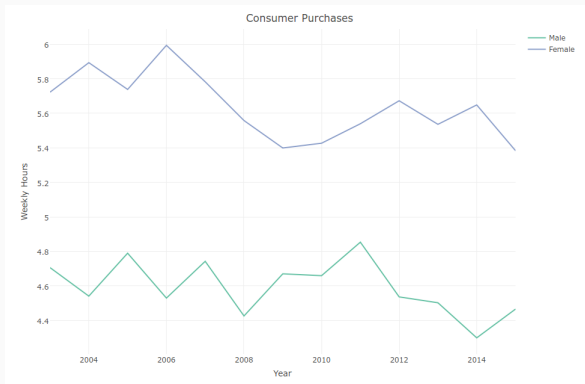
- comScore Web Behavior Database
 - Records online browsing and transaction activity of about 50,000 US users
 - Years included: 2002, 2004, 2006-2015
 - Includes data on
 - Domains
 - Number of pages viewed within domain
 - Total time spent browsing domain
 - Product purchased
 - Product category
 - Price and quantity
 - Total price of basket



- E-commerce is a hot topic of exploration in the IO literature and time-use data is shedding light on how people use the internet for shopping and leisure
- Many interesting questions in these areas:
 - How has online shopping and browsing activity (time and/or money spent) changed since 2002?
 - Are individuals shifting their offline shopping online or is this generating new shopping?
 - Has online shopping become more concentrated over time (measured by number of sites visited or with recorded purchases)?
 - Does search in online shopping result in lower prices (i.e. what are the benefits of reduced search costs)?
 - Is online shopping sensitive to sales or excise taxes?

Time Spent Shopping

- According to the American Time Use Survey, time spent on consumer purchases has declined over time



Related Literature

- Use Nielsen Homescan data to estimate the elasticity of substitution between time and market goods in home production
 - They obtain an estimate of 1.7 ($SE = 0.5$), which implies that households will allocate more time to home production (i.e. cooking, coupon clipping, etc.) if the relative price of market goods increases
 - They also document a decreasing opportunity cost of time over the Great Recession because households increased their shopping intensity even though the returns to shopping decreased over that period

- Use time-use data to estimate how foregone work hours were allocated during the Great Recession
 - They find that 50% of foregone work hours were allocated to leisure (primarily sleeping and watching TV) and 30% were allocated to home production (primarily cooking, cleaning, laundry, and shopping)

- Use cigarette sales, excise taxes, and internet penetration to estimate sensitive to taxes
 - Online tobacco merchants generally do not collect sales or excise taxes
- Find that internet sales have increased sensitivity of taxable cigarette sales to state tax rates by 69%
- Estimate that tax increases between 2001 and 2005 might have caused states to collect about 9% less revenue that would have been expected without tax-free internet sales

Goals for Next Meeting

- Review papers related to e-commerce to help narrow down feasible and interesting questions
- Clean and organize comScore data
- Answer at least one of the questions posed earlier in this presentation

Any questions or suggestions?

