

Show and Tell: Online Shopping

Continued Exploration

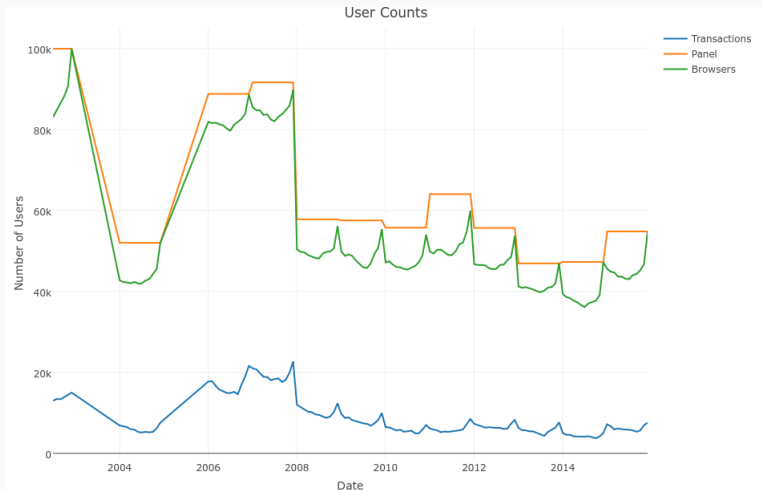
Mallick Hossain

- Organized comScore online shopping and browsing data
 - Answered previous question about how online shopping and browsing activity has changed since 2002!
- Read papers linking online shopping with tax avoidance and increased elasticity
- Focused research question on online shopping and sales taxes and/or excise taxes for tobacco

Question from Last Time

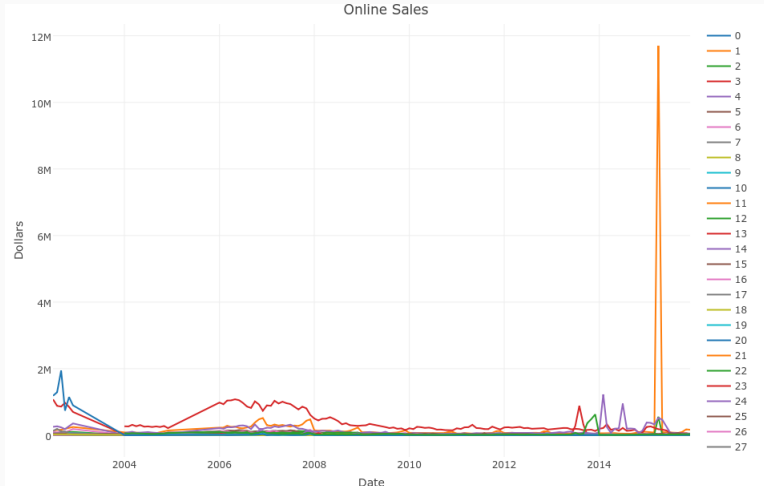
- How are panelists selected?
 - Primary source is through the Third-party Application Providers which offers free software, applications, and utilities in exchange for considering participating in the comScore panel
 - In many cases, people still receive the application even if they decline to join the panel
 - comScore also offers a Trees for Knowledge program which they pledge to plant a tree for each new panelist that joins
 - Second method is through their Affiliate program which relies on text or banner ads
 - People are encouraged through either “make your voice heard” appeals or incentives (see above)

Number of Users in Sample



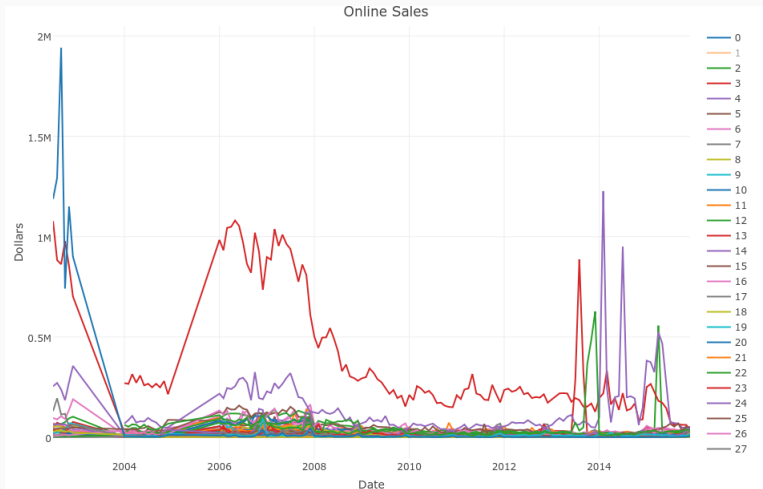
Sales Summary

- Category 1 is Apparel. I'm sure this is some categorization fluke.



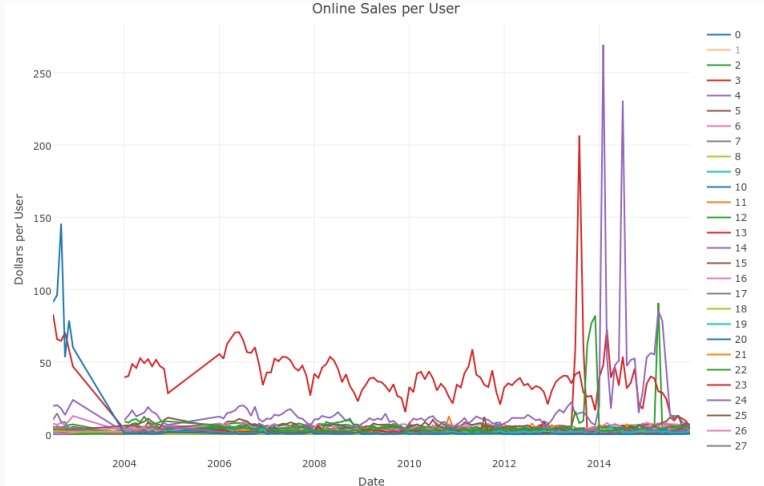
Sales Summary

- Removing apparel, we see that Air Travel is the largest source of online sales

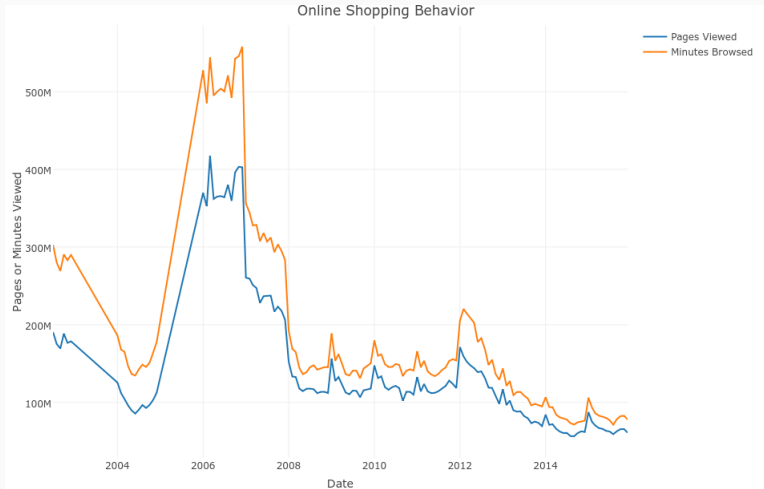


Per Capita Sales

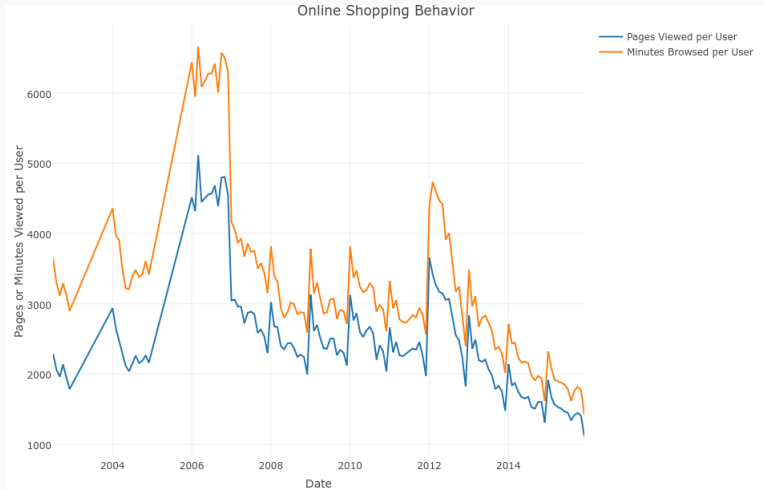
- We can also normalize this by the number of users that made online purchases, to make the numbers comparable across years



Browsing Behavior



Per Capita Browsing



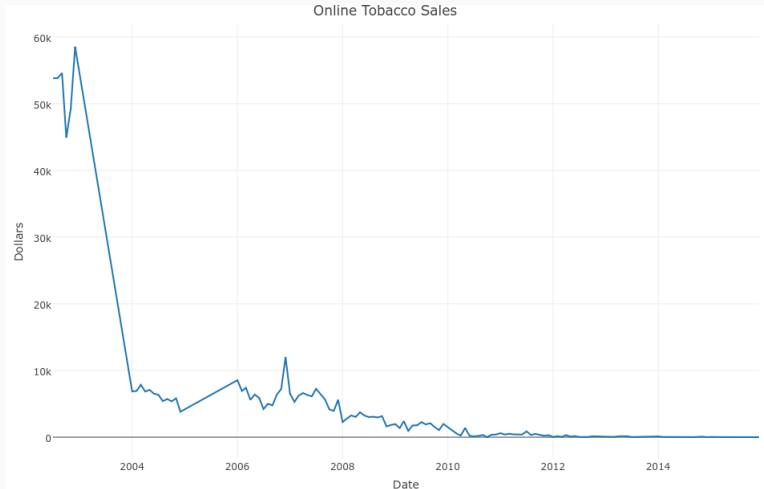
Open Questions

- 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)?
 - Seems like people are spending less time browsing and searching
- 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?
 - Strong evidence from Goolsbee, et. al (2010) and Einav, et. al (2014)
- How should the observations be weighted? comScore only provides raw data, not weights.

- 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

Online Tobacco Sales

- What's going on here?
 - Not exactly sure just yet. Could be a categorization issue. Further investigation is under way.



Recall Last Meeting's Goals

- 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

Mission Accomplished



Goals for Next Meeting

- Clean comScore panelist data (i.e. remove panelists with missing or implausible data)
- Get data matching ZIP codes with states
- Get data of state-level sales and tobacco taxes since 2002
- Explore relationships between online sales and state sales tax (a la Einav, et. al 2014)
- Summarize more related papers

Any questions or suggestions?

