

TRENDS IN SEASONAL SHOPPING AND HOUSEHOLD DELIVERIES

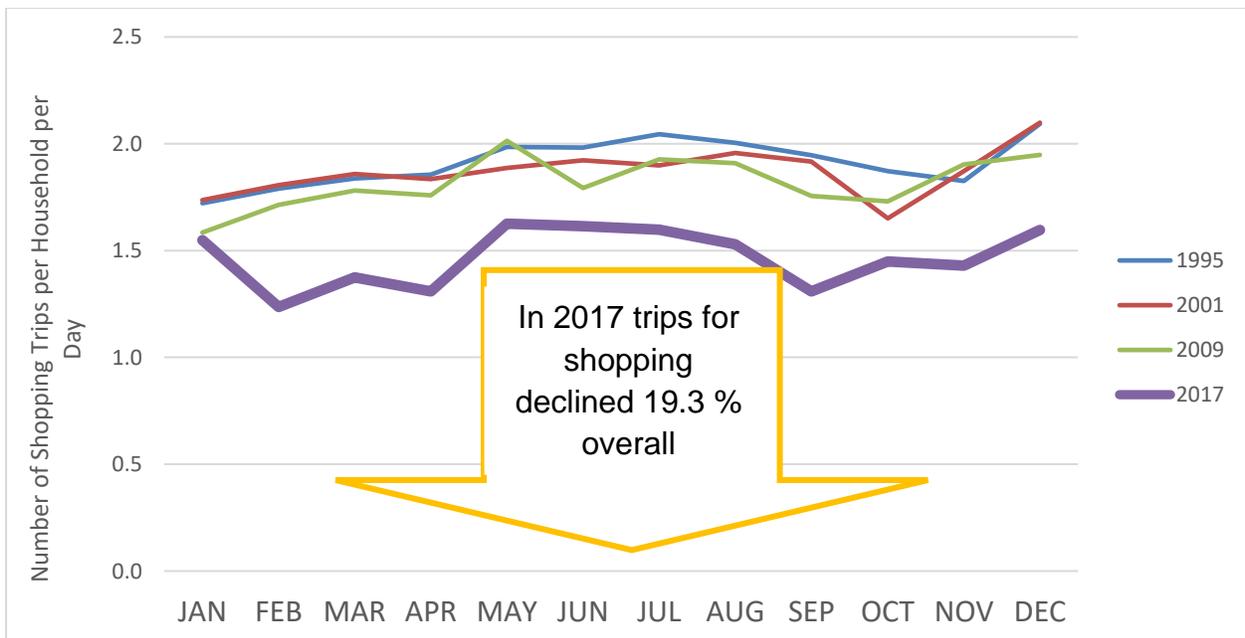


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Americans allocate about one out of five trips to shopping, and for the 2019 holiday season about half of shoppers plan to purchase gifts or holiday items online¹. Recent travel behavior data shows a large decline in household shopping trips—almost 20%²--and transportation planners wonder if that is related to online substitution. The National Household Travel Survey (NHTS) obtains information on both shopping travel and people’s online purchases and deliveries to the household. This brief looks at the trends in seasonal shopping trips and household deliveries and shows that perhaps 5 percent or more of household shopping travel may have shifted to household delivery between 2009 and 2017.

According to the NHTS, US households generate 17.5 shopping trips a week on average—about 1 ½ per day. The seasonality of shopping trips shows general increases over summer and again at the end of the calendar year (see Figure 1). The 2017 data show decidedly lower rates of travel for shopping (almost 20 percent lower overall) with notable declines in the early Spring and Fall. Figure 1 shows the number of shopping trips per household by month for 1995, 2001, 2009, and 2017.

Figure 1 - Shopping Trips by People 16+ per Household per Day, 1995-2017



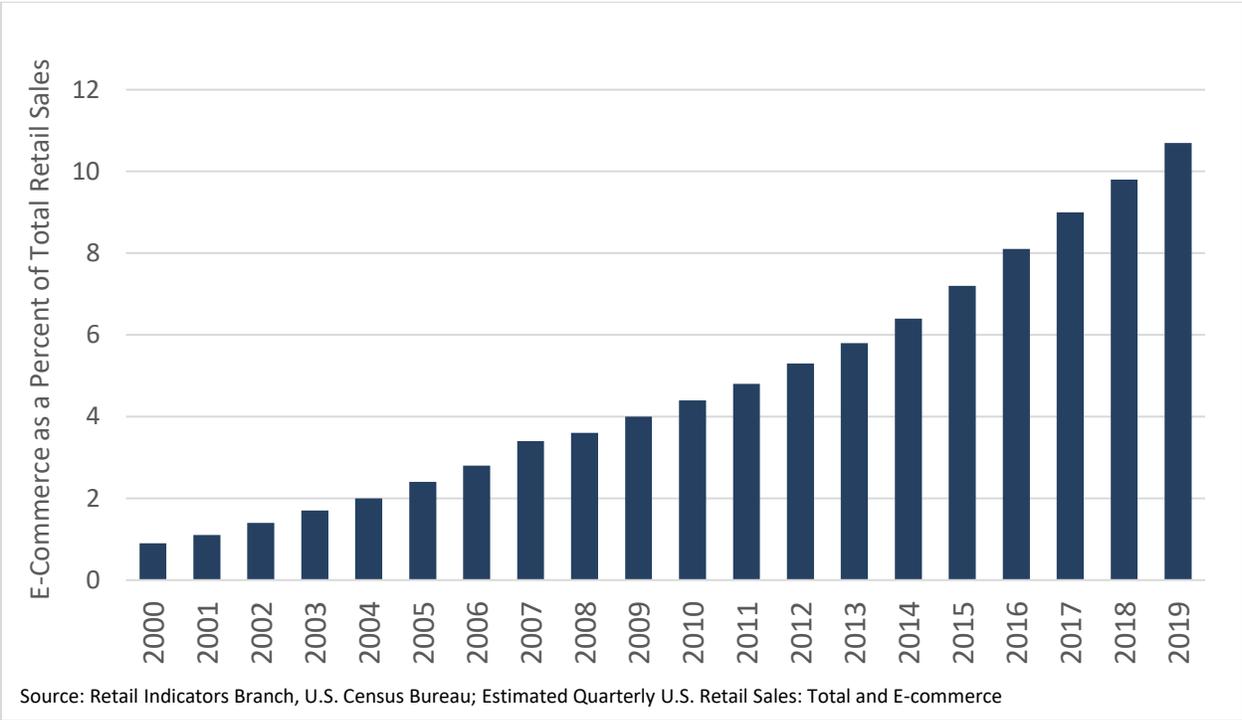
¹ The National Retail Federation at: <https://nrf.com/insights/holiday-and-seasonal-trends/winter-holidays>

² “Summary of Travel Trends: 2017 National Household Travel Survey” at: https://nhts.orl.gov/assets/2017_nhts_summary_travel_trends.pdf

Non-workers make more shopping trips per person than workers, and women (whether they are workers or not) make more shopping trips per person than men. These patterns shift when looking at the stops made by workers on their way to or from work. Generally, working men and women chain the same proportion of their shop trips into their commutes (11.4 and 10.5 percent respectively). However, during the holiday shopping season (November and December), working men are *much* more likely to include a shopping trip in their commutes compared to working women. In November and December, 21 percent of men’s shopping trips are made during the commute compared to 9.7 percent of women’s shopping trips.

But rather than driving from store to store, many people are ordering goods on-line to be delivered to the household. The US Census recently released the e-commerce estimates and the trends in the proportion of retail sales that are on-line is impressive (see Figure 2).

Figure 2- Trends in On-Line Sales as a Percent of all Retail Sales (2nd quarter adjusted)

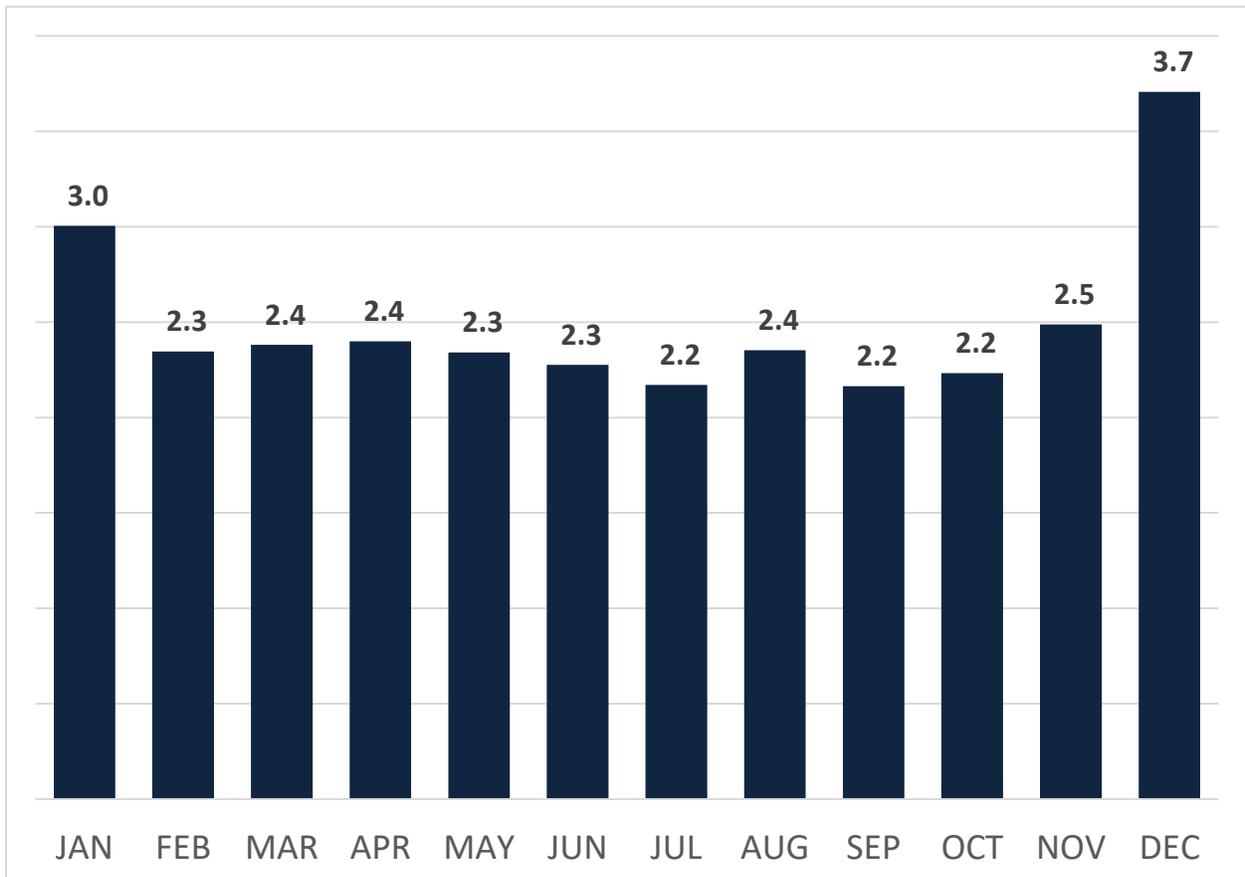


Online shopping behavior is seasonal as well, according to the NHTS. While the overall number of deliveries from online orders is 2.5 per person per month (which varies significantly based on lifecycle and age), the number of deliveries jumps during the holiday season. Note that the NHTS asks about deliveries in the last 30 days, and therefore people reporting in January would include some days in December in their response. Figure 3 shows the number of deliveries from online purchases by month (of the interview). The number of deliveries reported each month tracks very well with the amount of physical shopping trips by month.

Going further, if each delivery reported in the NHTS can be thought of as a ‘substitute’ for a physical shopping trip, the data from Figure 1 and Figure 3 can be combined in an interesting way. Under this

assumption, online shopping 'replaced' over 5 percent of shopping trips overall between 2009 and 2017, and more than that during the holiday shopping season. For example, in December online shopping may have replaced over 7 percent of the physical shopping trips between 2009 and 2017.

Figure 3 - Number of Online Deliveries per Person 16+ (last 30 days), 2017 NHTS



Overall, the delivery of goods and services to households is creating huge new demands on our transportation system—for example the shift from private vehicle to commercial vehicle travel. Commercial vehicle miles of travel (VMT), freight, and especially light-duty commercial vehicle travel, is increasing at a faster rate than household VMT. This shift impacts the mix of vehicle type, air quality, safety, time of day, and other basic measures. And the only forecast is for more demand of this consumer convenience.

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