

# Data Sources for Online Spend/Prices

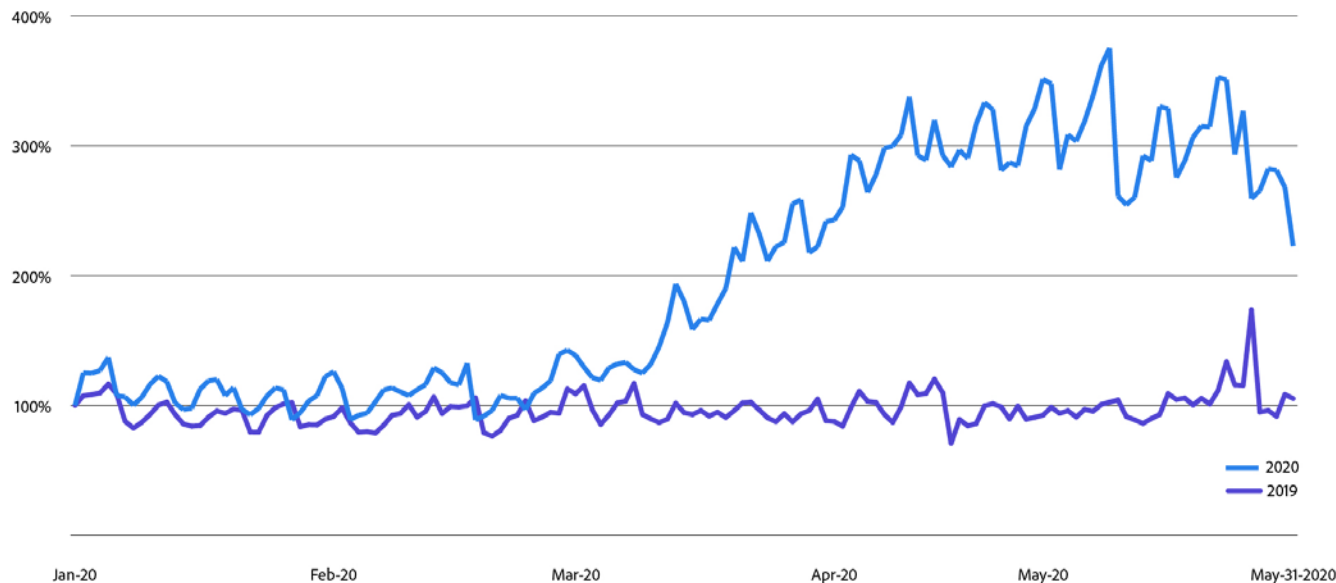
The online spend data is powered by Adobe Analytics, which tracks activity across thousands of retail sites and analyzes:

- 80 of the top 100 U.S. online retailers\*
- 1 trillion visits to retail sites
- External sources that help calibrate the size of overall ecommerce and account for any growth happening outside of the Adobe sample

*\*Per Internet Retailer 2018 eGui*

# The Line Between Online and Offline Is Blurring

- Even before shutdown measures began, consumers showed a propensity toward the quick Buy-Online-Pick-Up-In-Store “delivery” method.
- During lockdown, BOPIS orders tripled YoY, but have started to come down since the reopening began.
- 46% of consumers reported using their smartphone for comparing prices while shopping in store (Survey, 2018).



Online B.O.P.I.S. Orders | 2019 vs 2020 (U.S.)  
Source: Adobe Analytics

# The Rise Of Ecommerce With the Lockdown Measures



- May ecommerce spend grew 78% YoY, reaching \$82.5B
- Electronics sales saw a 58% lift in online sales in April compared to January
- Grocery sales saw a 110% lift in online sales in April

# Digital Economy Index Methodology

- The Fisher Ideal Price Index uses quantities of matched products purchased in the current period (month) and a previous period (previous month) to calculate the price changes by category.
- The index is **weighted by the real quantities** of the products purchased in the two adjacent months.
- Little to no lag.
- Adobe uses a combination of Machine Learning and manual effort to categorize the products into the categories defined by the CPI manual.
- Methodology developed alongside Austan Goolsbee and Pete

Fisher Price Index formula:

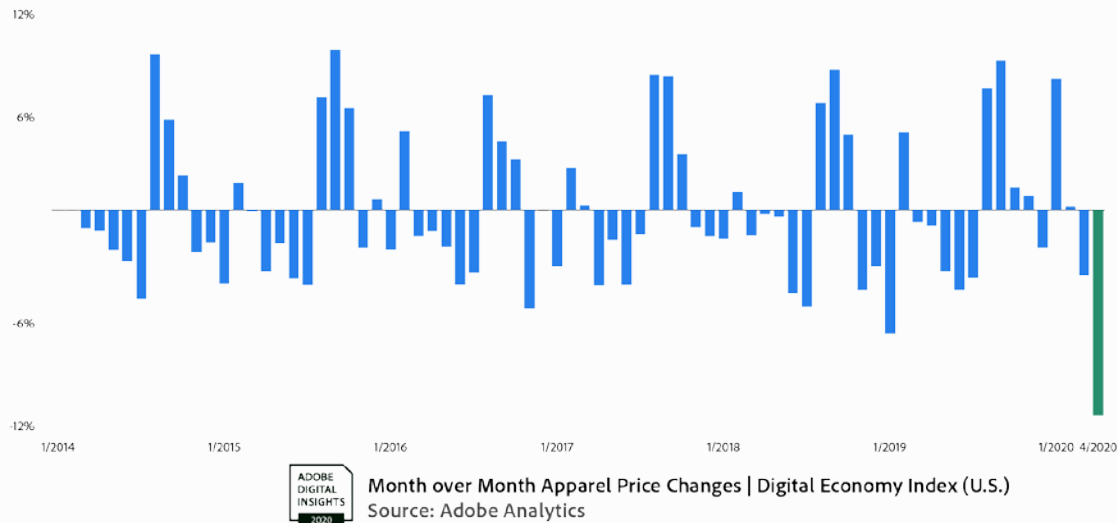
$$I_{01} = \sqrt{\frac{\sum p_1 q_0}{\sum p_0 q_0} * \frac{\sum p_1 q_1}{\sum p_0 q_1}}$$

# Data Structure

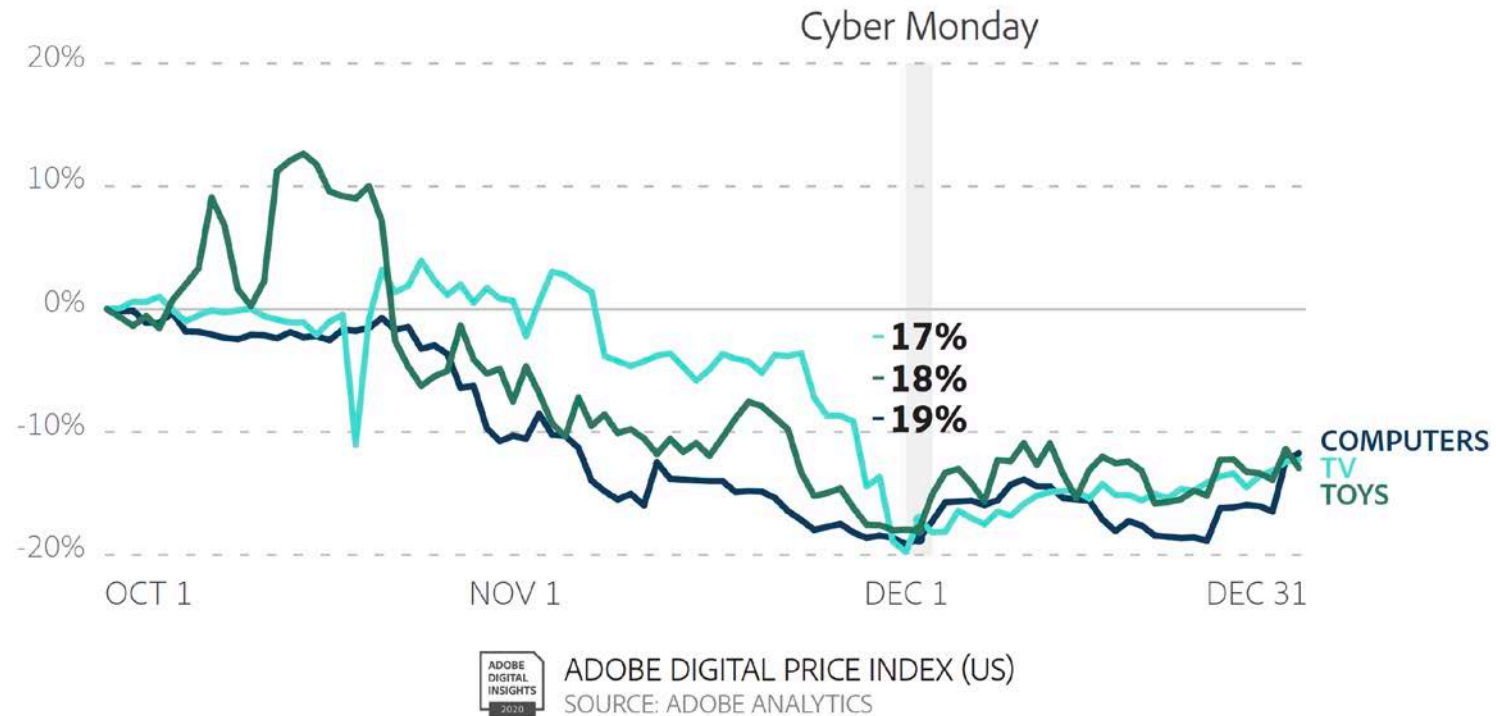
- The Fisher Ideal Price Index uses quantities of matched products purchased in the current period (month) and a previous period (previous month) to calculate the price changes by category.
- The quantities and revenue are available on a daily level
- The data is aggregated to a monthly level
- The price is calculated as  $\frac{\text{total monthly revenue}}{\text{total monthly units sold}}$
- Taxes and shipping are not included in the price

# Apparel saw its Largest Monthly Price Decrease in April

- The average apparel price growth for April over the past 5 years has been -2.9%
- This year that growth is -12%
- April saw the largest monthly drop for Apparel in over 5 years.



# DEI Data Availability



## The DEI is available in real-time:

- Adobe is currently calculating the Price indexes on a bi-monthly basis
- The data allows for more granular looks, even at a daily level
- During the holiday season, Adobe tracks prices at a daily level for select categories