Tracking the Impact of COVID-19 on the Online Economy in Real-Time

Adobe Digital Insights (ADI) Team

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Overview

- The COVID-19 pandemic brought a cataclysmic shift to the online retail landscape, beginning in mid-March 2020. The ADI team was uniquely positioned to begin dynamically tracking US spend and price changes that were beginning to emerge due to the pandemic through the Digital Economic Index (DEI) initiative. Throughout the course of the year we have been able to identify early signals and shifts in demand and inflation through rapid data refreshes. This has allowed us to determine which trends appear temporary and which ones are here to stay, in terms of consumers overall purchase power and propensity.

- Presentation Outline:
  - Data Sources
  - Online Spend Migration & Unprecedented Growth
  - Charting online inflation across Categories
  - Travel Data Trends for Flights & Hotels
 - The Season Ahead

Data Sources for Online Spend

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

- 100 million+ product SKUs

- 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 eGuide

# Online Spend Migration & Unprecedented Growth
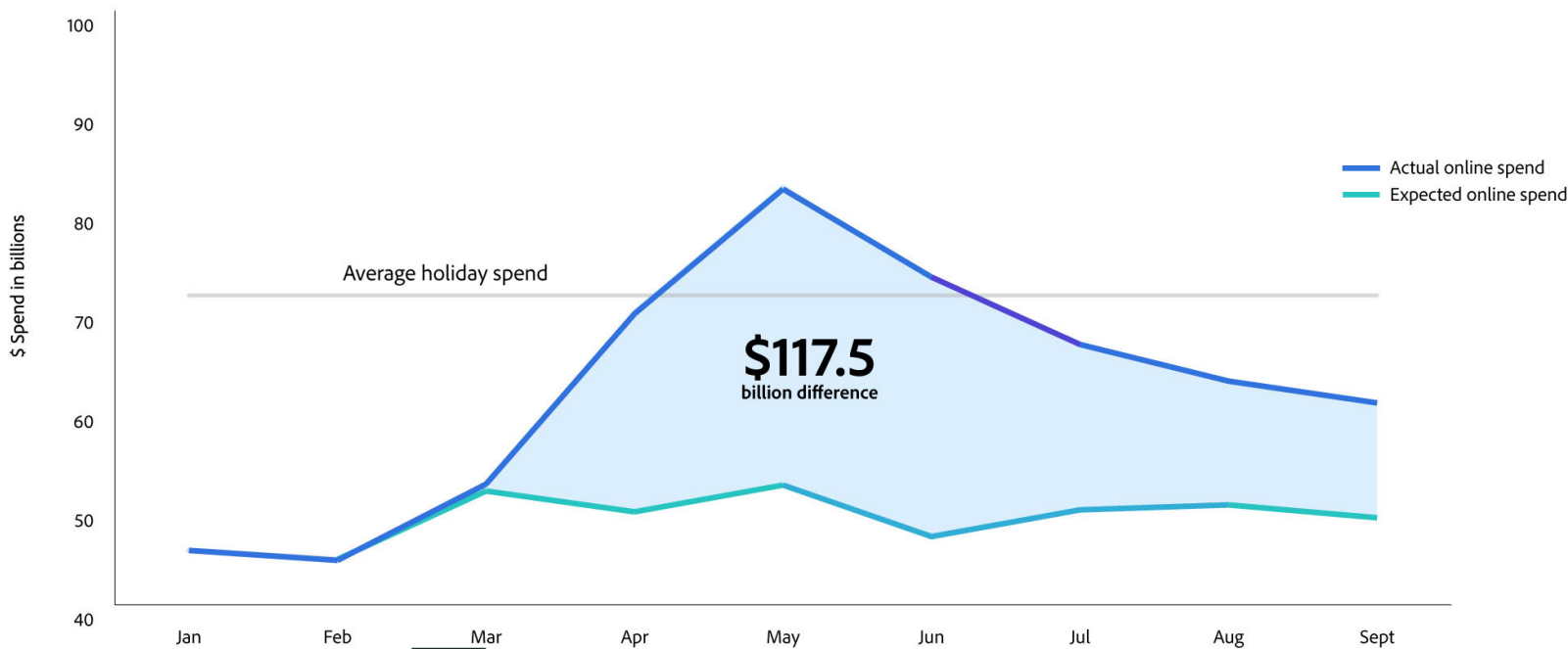
Online Retail Spend, Actual vs. Expected | U.S. 2020
Source: Adobe Analytics

- First demand spikes were observed in late February, when PPE items like hand sanitizers saw 817% YoY growth
- May ecommerce spend growth peaked at 78% YoY, reaching $82.5B
- Online captures offline demand during the early months of the pandemic and then spend draws down as stores re-open and consumer budget tightens

The Line Between Online and Offline is Blurring

- Even before shutdown measures began, consumers showed a propensity toward the quick buy online pickup in store (BOPIS) "delivery" method.
- During lockdown, BOPIS orders tripled YoY, and have continued a strong trajectory. We anticipate holiday shopping to bring BOPIS levels even higher.
- 46% of consumers reported using their smartphone for comparing prices while shopping in store (survey, 2018).

Online BOPIS Orders | 2019 vs. 2020 (U.S.)
Source: Adobe Analytics
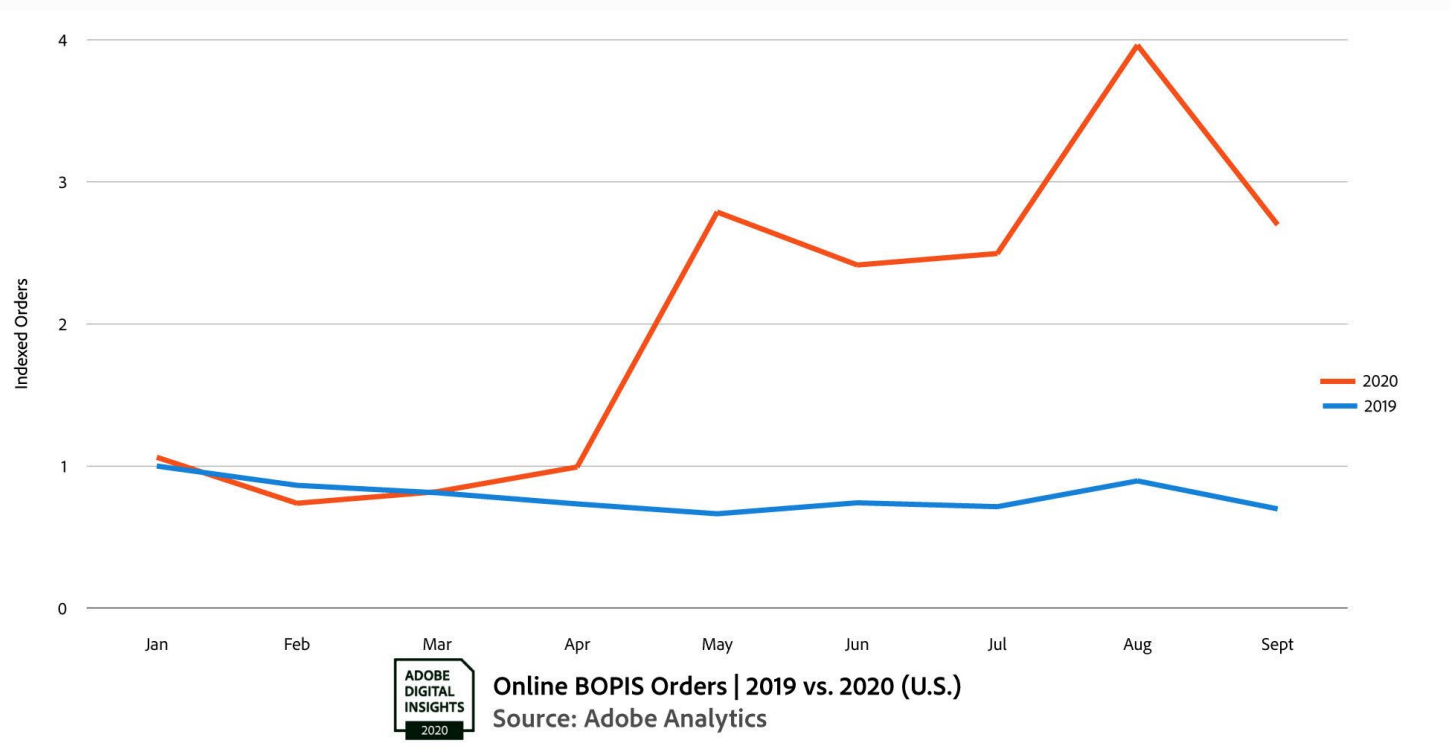
Ecommerce holiday season likely to see two years' worth of growth, reaching $189B, +33% YoY

- The online holiday season is forecast to break all its past growth records and grow 33% YoY to $189B.

- The uncertainty 2020 has brought to the economy, and the challenges around social distancing at physical stores make this holiday a unique.

- Since last holiday season ecommerce has seen growths of over 120% on some days, while hitting lows of 25% on others.*

Online Holiday Spend by Year (with Median 2020 Forecast)
Source: Adobe Analytics

Unchanged Physical Stores | Unchanged Disposable Income

**This forecast depends on the continuation of the current trend into the season.

* The highest growth day was May 9th at +128% YoY

Data Source & Methodology for Online Price Index

Adobe's online price index leverages the Fisher Price Index to track prices in the world of ecommerce

The Fisher Ideal Price Index uses quantities and prices of matched products purchased in the current period and a previous period to calculate the price changes by category.

The index is **weighted by the real quantities** of the products purchased in the two adjacent periods.

The products are categorized using a combination of machine learning and manual classification into the categories defined by the CPI manual.
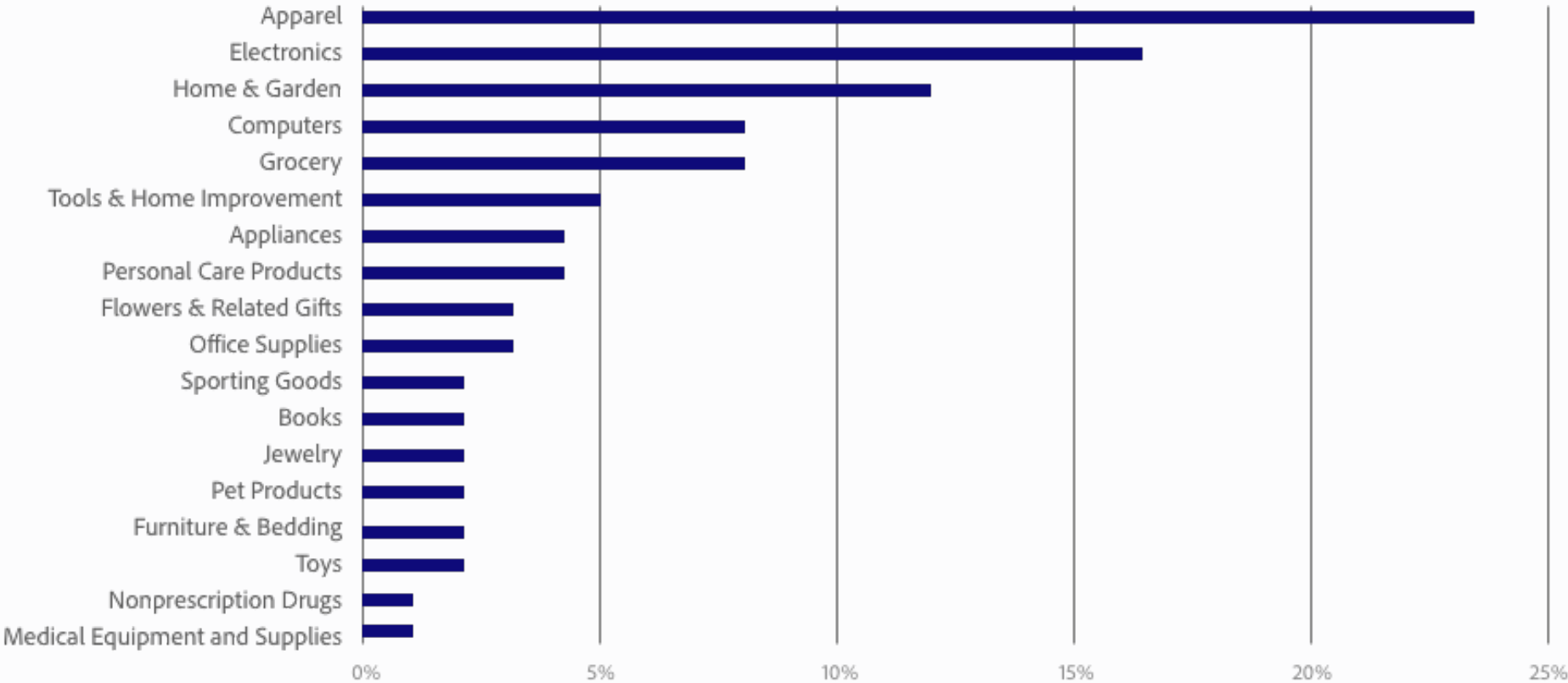
Methodology developed alongside Austan Goolsbee and Pete Klenow

Fisher Price Index formula:

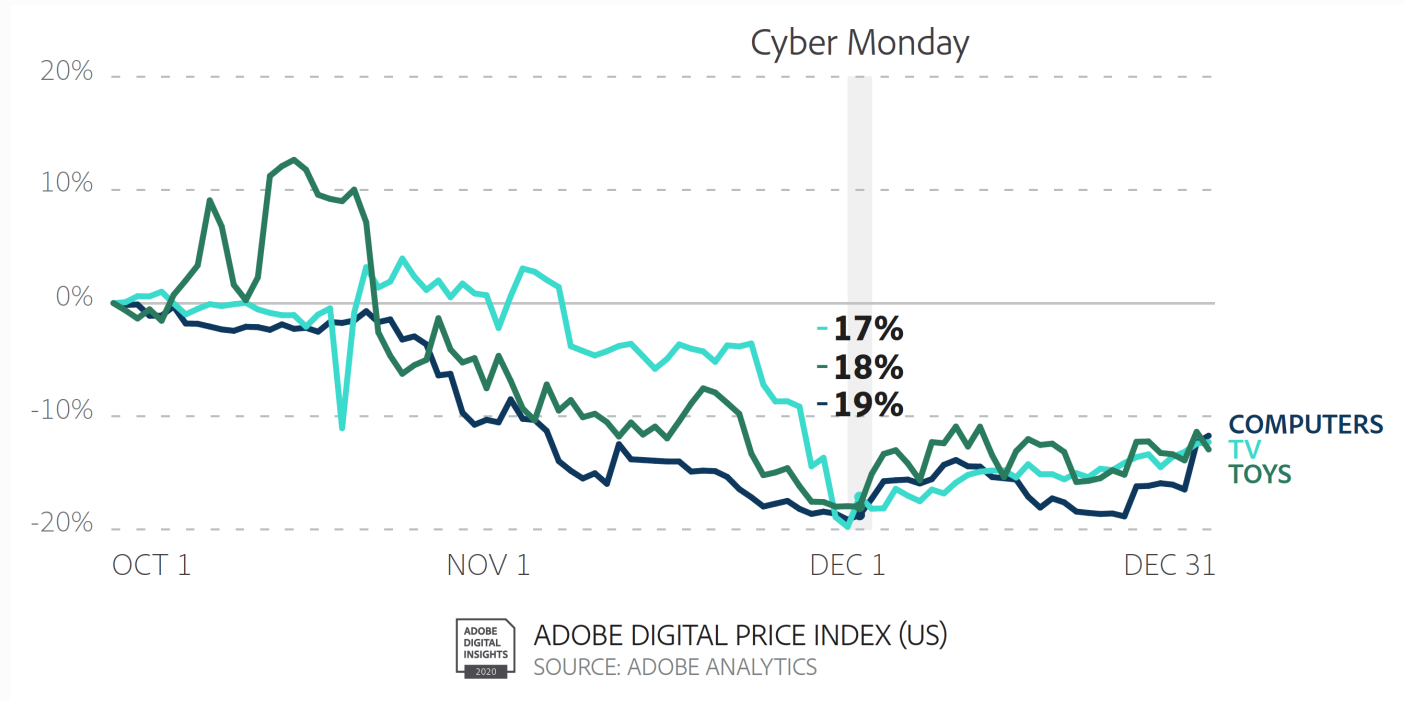$$I_{01} = \sqrt{\frac{\sum p_1 q_0}{\sum p_0 q_0} * \frac{\sum p_1 q_1}{\sum p_0 q_1}}$$

Digital Economy Categories

Online Contribution to Digital Basket (U.S., Jan 2020)
Source: Adobe Analytics

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DEI Data Availability

**The DEI is available in real-time**

Adobe is currently calculating the price indices 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

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.
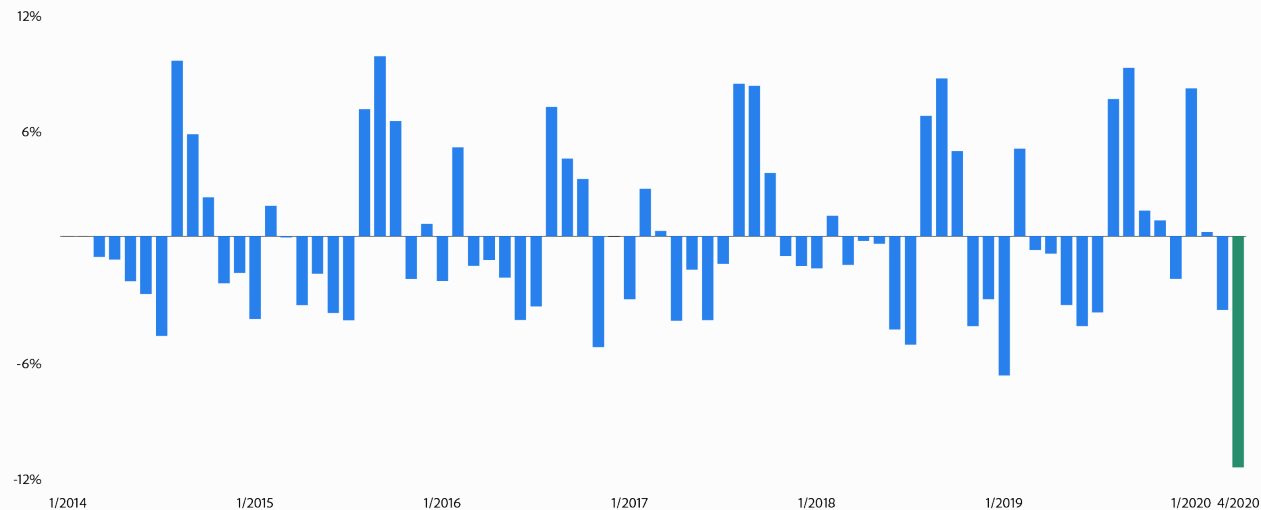
Month over Month Apparel Price Changes | Digital Economy Index (U.S.)
Source: Adobe Analytics

# Online Grocery Prices Tick Up in May, Consumers Feel the Pinch

Online Grocery Price Changes | Digital Economy Index (U.S.)
Source: Adobe Analytics Trend
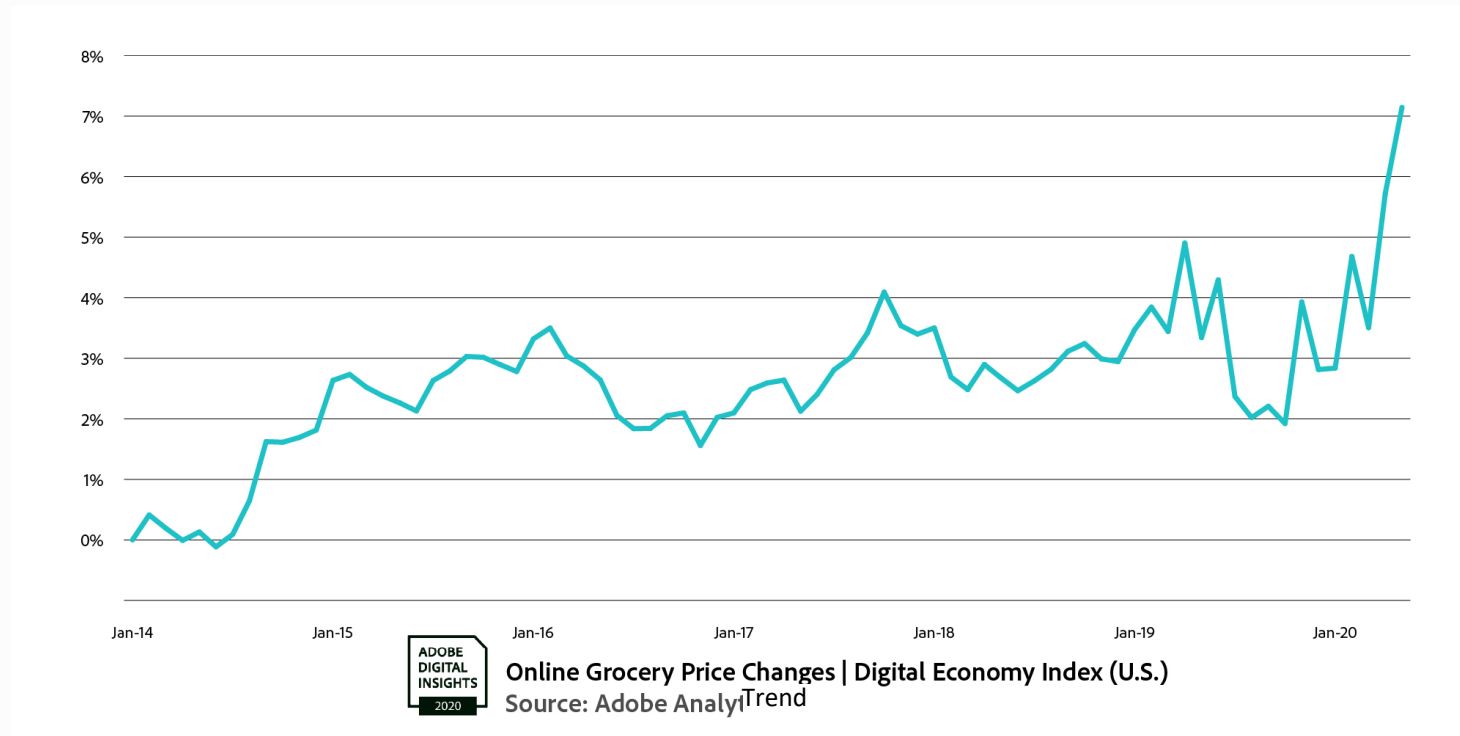
Grocery prices were up in May by **4%** YoY and increased **1.3%** MoM. In our survey, approximately 60% of consumers say that they believe prices have gone up for grocery.

Inflation Throttles U.S. Digital Purchasing Power in May

U.S. digital purchasing power (DPP) decreased by 1% in May compared to April

All DEI categories experienced inflation this month, except for apparel, appliances, and jewelry. As a result DPP decreased.

Digital Purchasing Power | Digital Economy Index (U.S.)
Source: Adobe Analytics

Online Price Changes by Category | Digital Economy Index (U.S.)
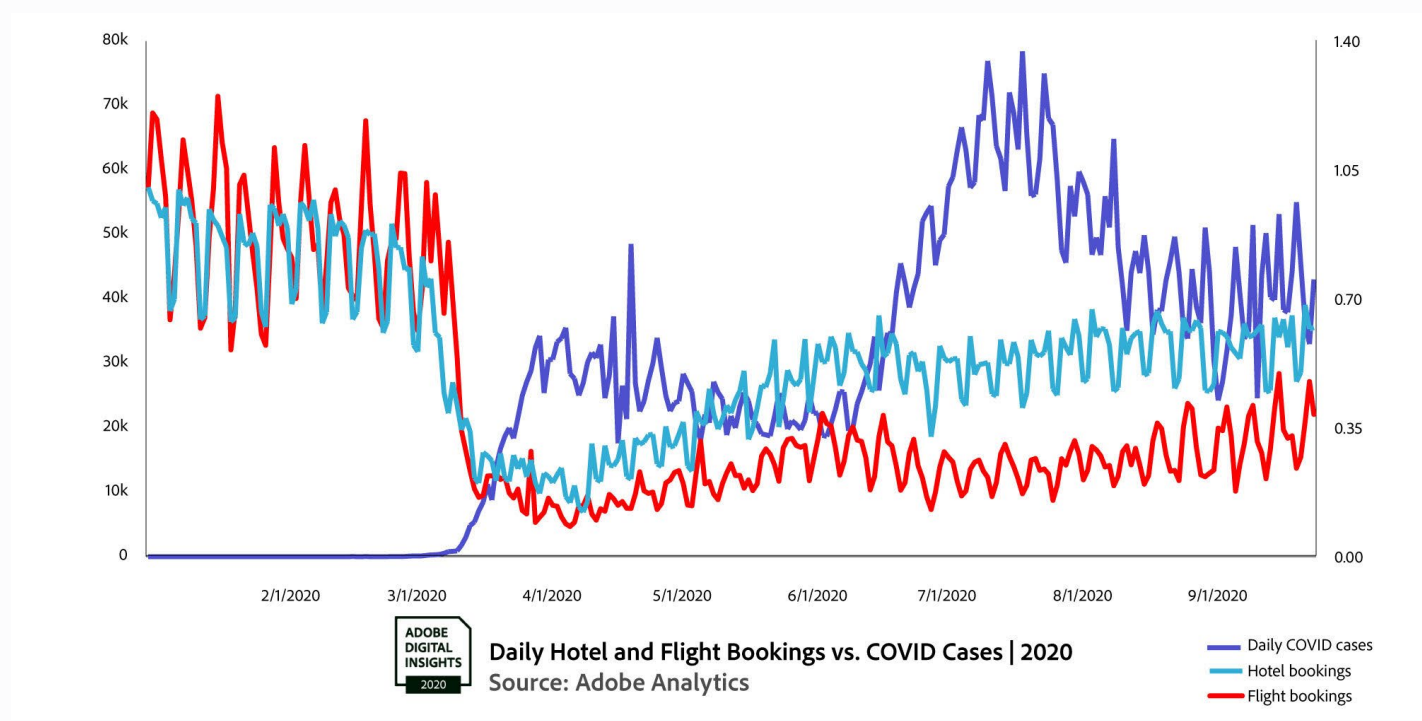Source: Adobe Analytics
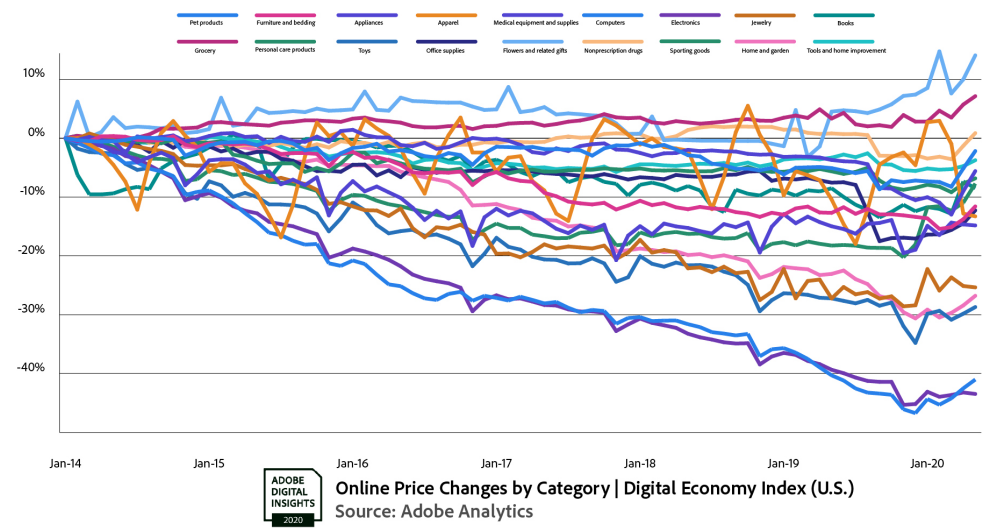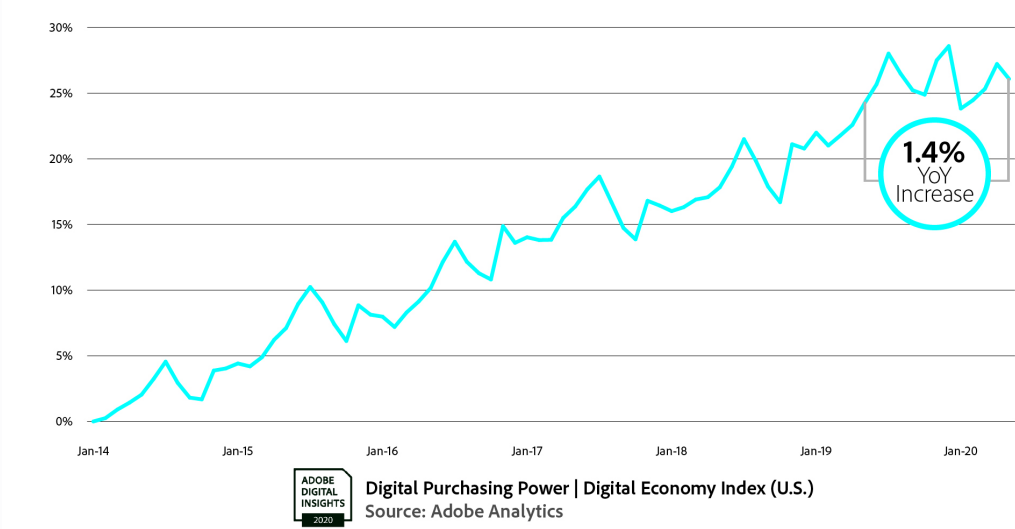
Adobe Travel Data Availability

Adobe Analytics measures transactions from 7 out of the top 10 US airlines

The available data captures:

- Flight origin / destination pairs

- Flight ticket price

- Flight class

- Quantity
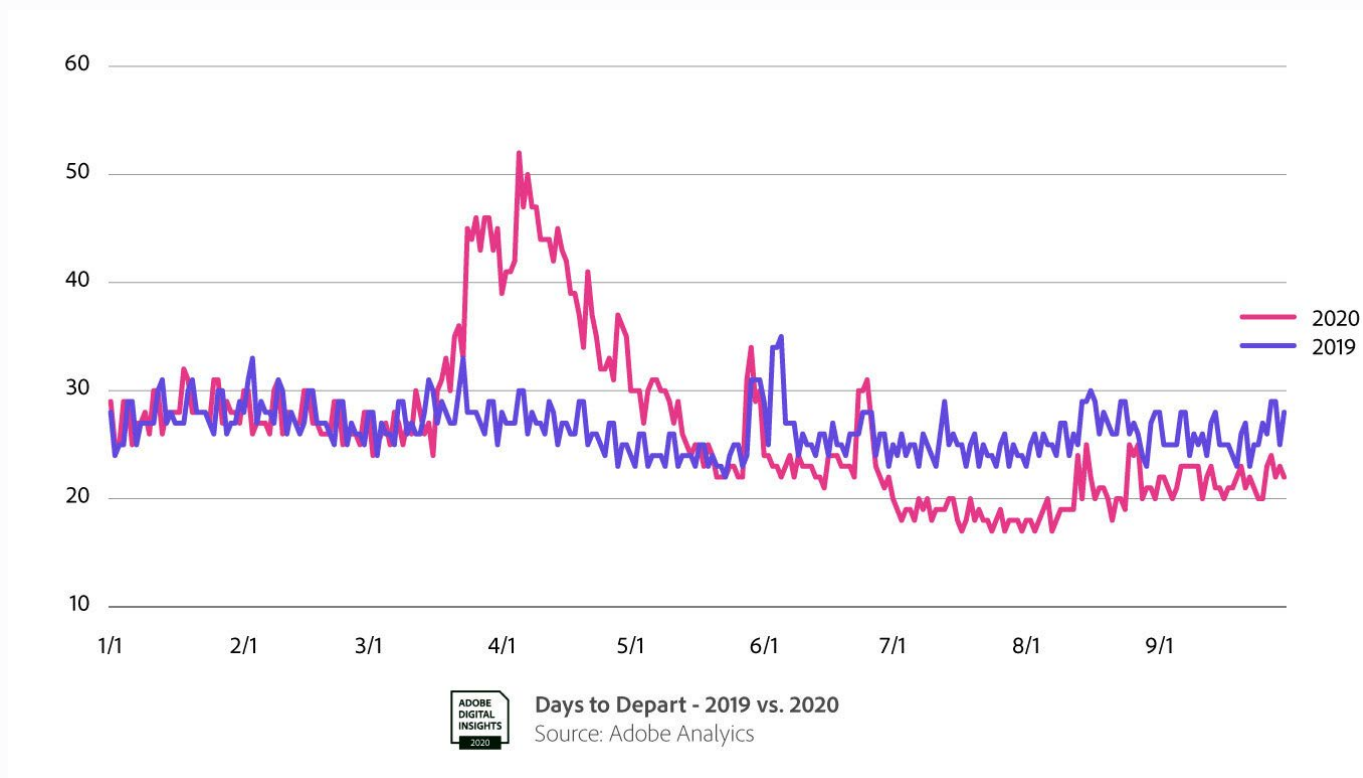
- Departure date

- Booking date

Travelers Have Settled Into Their Comfort Levels

Daily Hotel and Flight Bookings vs. COVID Cases | 2020
Source: Adobe Analytics

— Daily COVID cases
— Hotel bookings
— Flight bookings

- Flight and hotel bookings dropped to 20% of their pre-COVID levels in mid-March

- As travelers, airlines, and hotels have adapted to the current situation, flight and hotel bookings have settled into their new trends

- Hotel bookings are at 55% of pre-COVID levels, flight bookings remain at 30%

Flight Booking Behaviors Returning to Normal

Days between booking and departure date

Days to Depart - 2019 vs. 2020
Source: Adobe Analytics

- In mid-March the days to departure started to lengthen among those that still bought tickets, with the booking curve peaking at nearly 90 days the first week of April.

- Since then the time to departure has come down, and has now dropped below the 2019 average as people are buying flights more last minute

Future Work

- Regional breakouts of the DEI (state / zip / city)

- Analysis of purchasing behavior by income using ACS data

- Expansion into other countries

- Dynamic category weighting

- Category based breakout of ecommerce growth

Scope and plan

March announcement	April monthly refreshes begin	Additional countries and "H1 Outlook Report"	Holiday pricing trends

Stay tuned for updates and data refreshes here:
https://www.adobe.com/experience-cloud/digital-insights/digital-economy-index.html

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