



Adobe Digital Economy Index

Adobe Analytics | August 2020



Methodology

Most comprehensive report of its kind

- The DEI is powered by Adobe Analytics, which analyzes 1 trillion visits to retail sites and over 100 million SKUs.
- Adobe Analytics measures transactions at 80 of the top 100** retailers on the web in the U.S.
- Adobe Analytics measures transactions from 7 out of the top 10 US airlines.
- Companion research based on a survey of 1,018 U.S. consumers (18 years or older) fielded between August 31st and September 2nd, 2020.

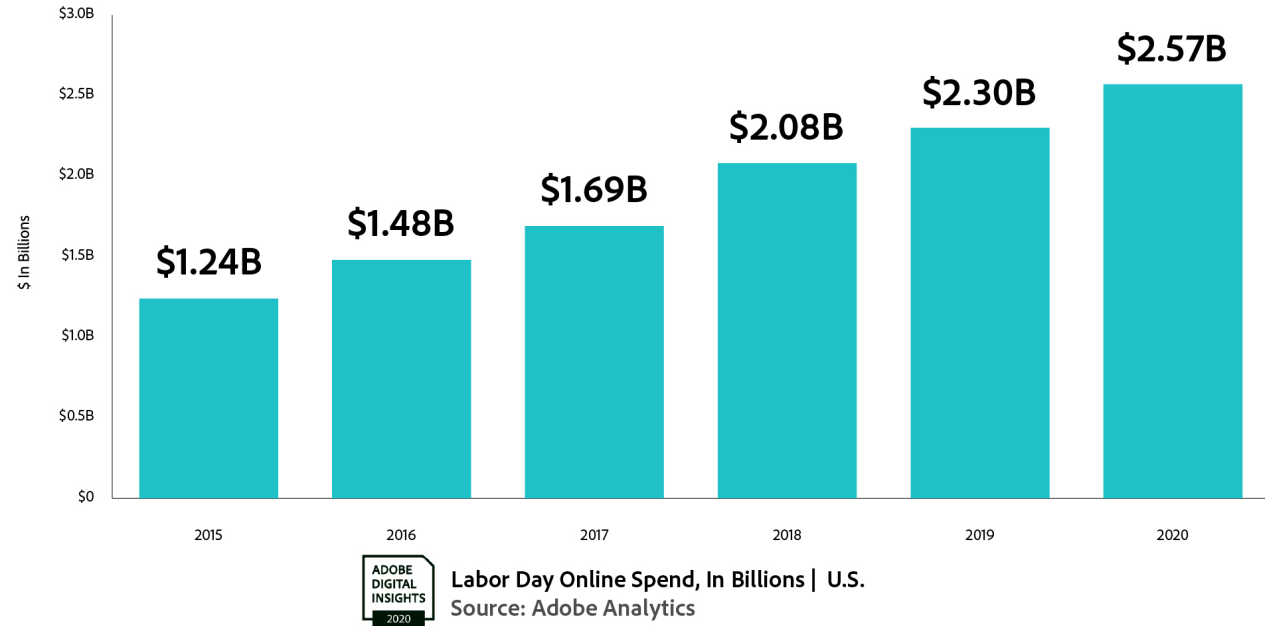
*** Source: Adobe Analysis of Internet Retailer 2018*

Summary

- Adobe's Digital Economy Index (DEI) is a global economic measure for the 21st century that more quickly, comprehensively, and internationally measures the increasing buying power of digital consumers—with greater detail than any other data source available.
- Sales growth for Labor Day was up, but far weaker than the days leading up to the U.S. federal holiday. Elevated online shopping levels appear to be decreasing the potency of specific shopping holidays and events.
- August online sales growth trends down further as staggered re-openings continue and consumer demand for purchasing certain goods falls, while holding steady across other online categories.
- Consumers basket values return to normal levels, after dropping significantly in April.
- Digital Purchase Power (DPP) remains flat as electronics deflation offsets grocery inflation.
- Labor Day weekend travel bookings spiked up, in the preceding days, as travelers made last-minute decisions to travel. However, overall travel bookings were down significantly, as expected, for the holiday weekend.

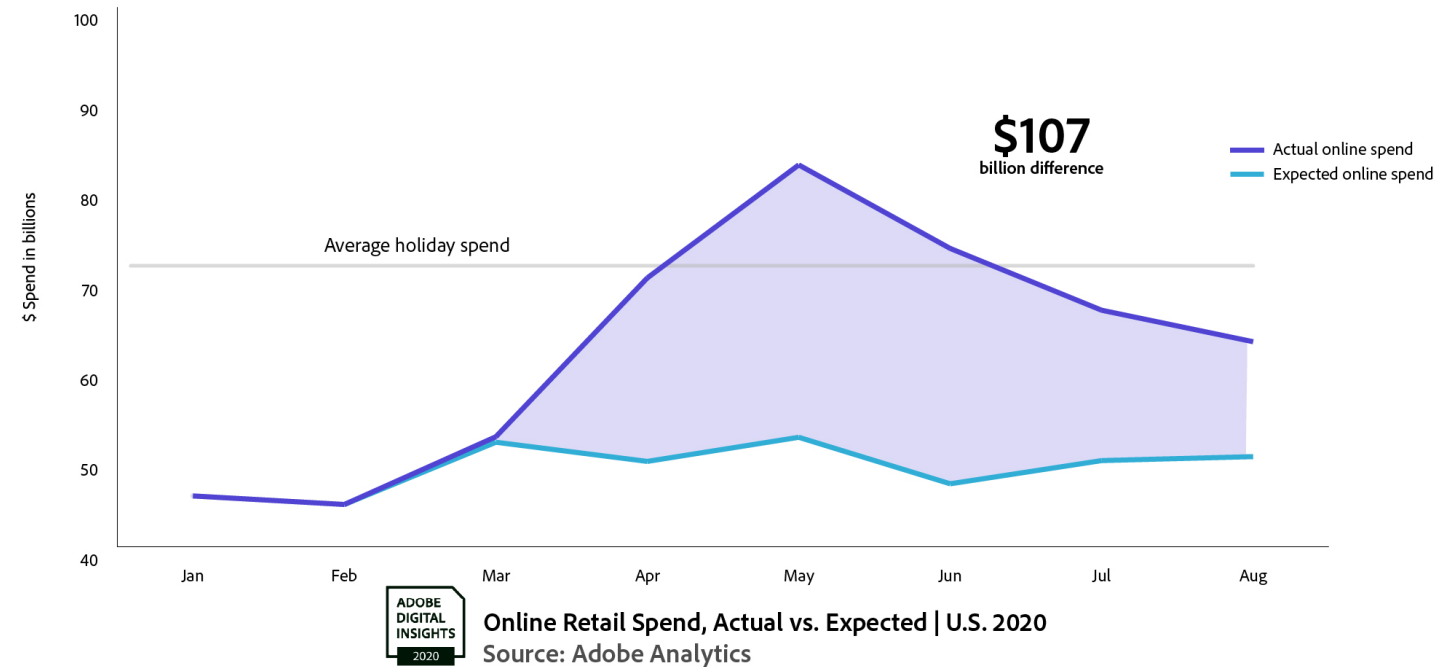
Labor Day weekend drives muted sales impact

- Labor Day online sales came in softer than expected this year, at just \$2.6B and +12% YoY.
- The day even came in at below the expected forecast for a world without COVID and lockdowns.
- The week leading up to Labor Day showed muted growth as well at 33% YoY.
- The relatively low online turnout for Labor Day is a major reversal of the pattern we've been seeing for the past few years. In the past, holidays have almost always grown faster than the average trend.



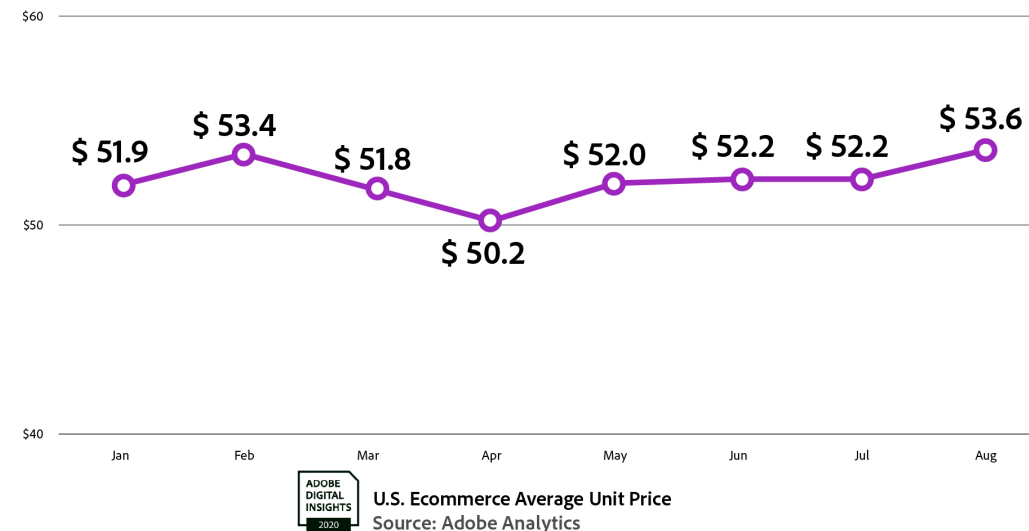
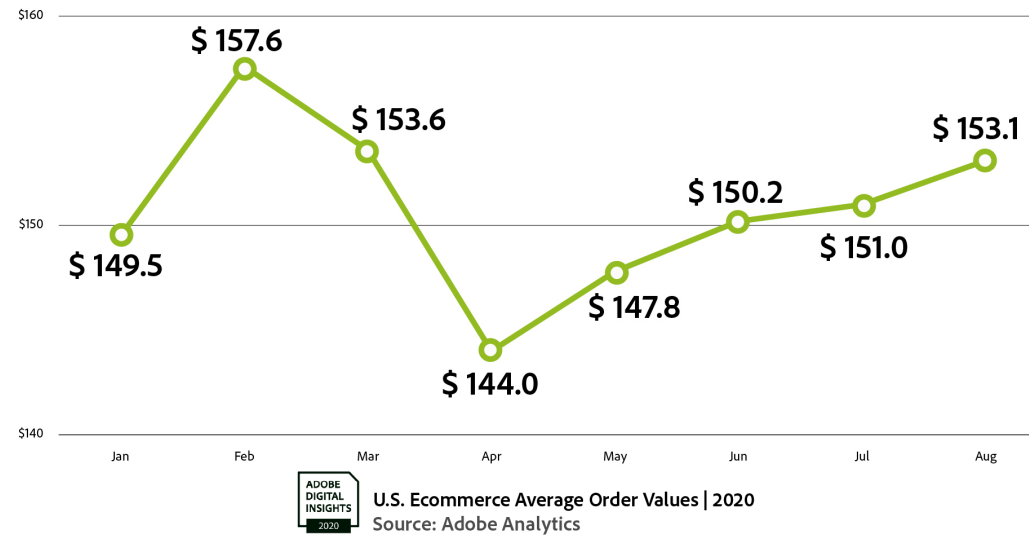
Online spend growth slips further in August...

- As physical stores become more available, and "Back to School" saw expected challenges, August showed further decline in ecommerce growth, down to "just" +42% YoY.
- US consumers spent a total of \$63B in August.
- US consumers have spent 14 billion hours, or 1.6 million years, shopping online so far this year
- 2019 had only two \$2B days outside of the holiday season. As of August we've already had 130 days that pass that milestone.
- Every single day from May to the end of June was over \$2B.
- None of the days outside of the holiday season surpassed the \$3B mark last year. This year we've already had three of them: May 4th, May 18th, and May 25th.



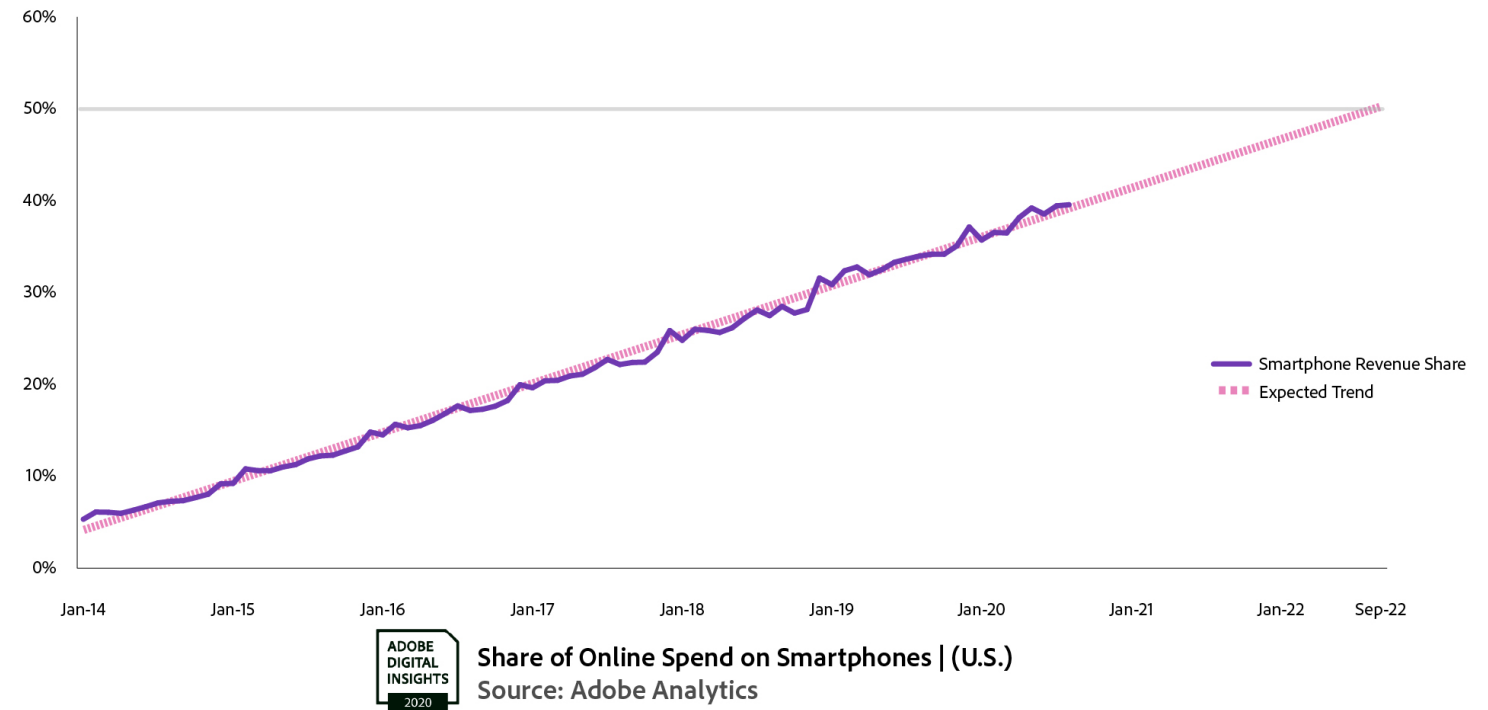
Consumers became nimbler in their ecommerce shopping early in the pandemic

- Consumers made smaller purchases in April as stores closed, and they turned online for essentials that they'd normally go to the store for.
- That behavior change resulted in a \$10 drop in basket value from \$154 in February to \$144 in April.
- Consumers have since slowly shifted back to the normal levels. August consumer baskets were at \$153, while the individual average product price shot back up to \$54.



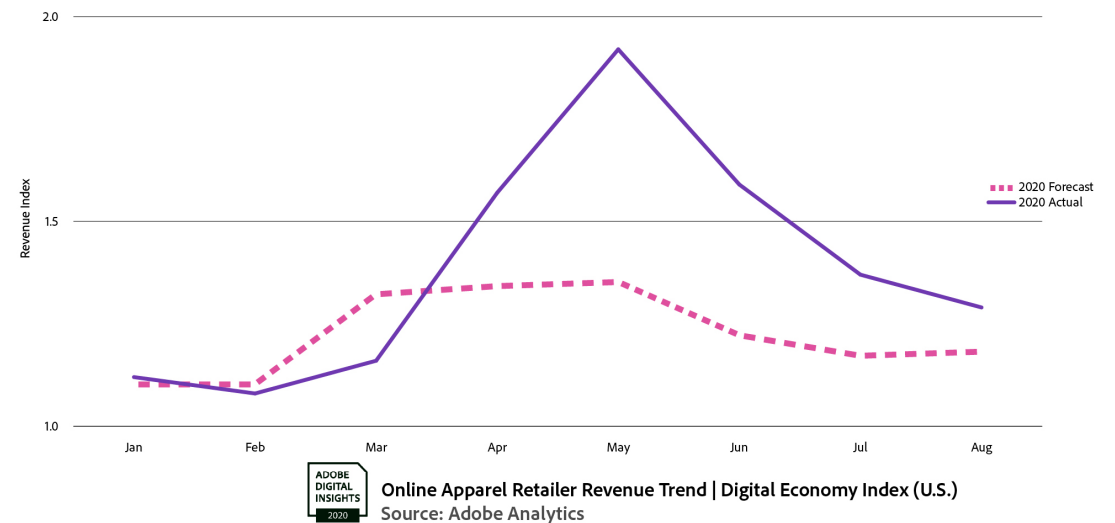
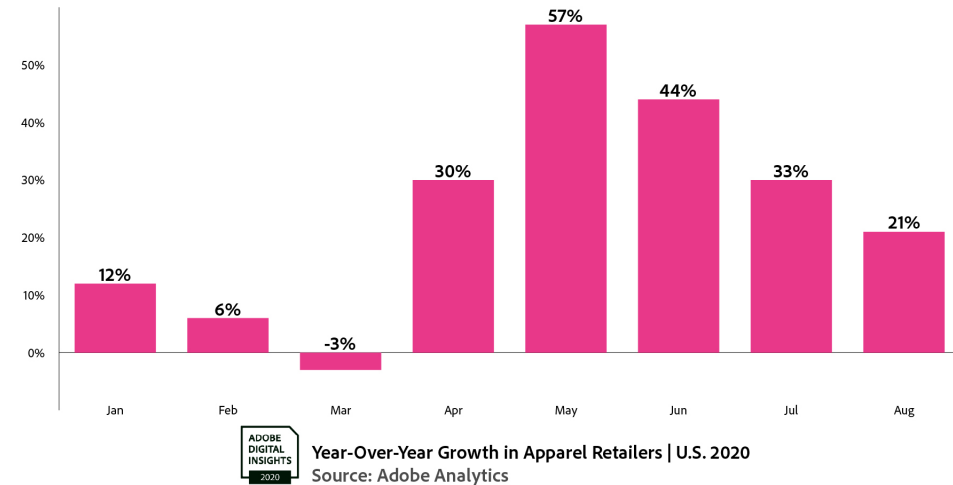
Mobile reigns supreme for ecommerce, 60% of August visits through smartphones

- Smartphones are significantly past the half-point of visits to retailer websites.
- However, they still account for only 40% of all sales.
- \$190B has been spent through smartphone devices so far this year.
- Smartphones are on track to contribute more than 50% of online spend by September 2022.



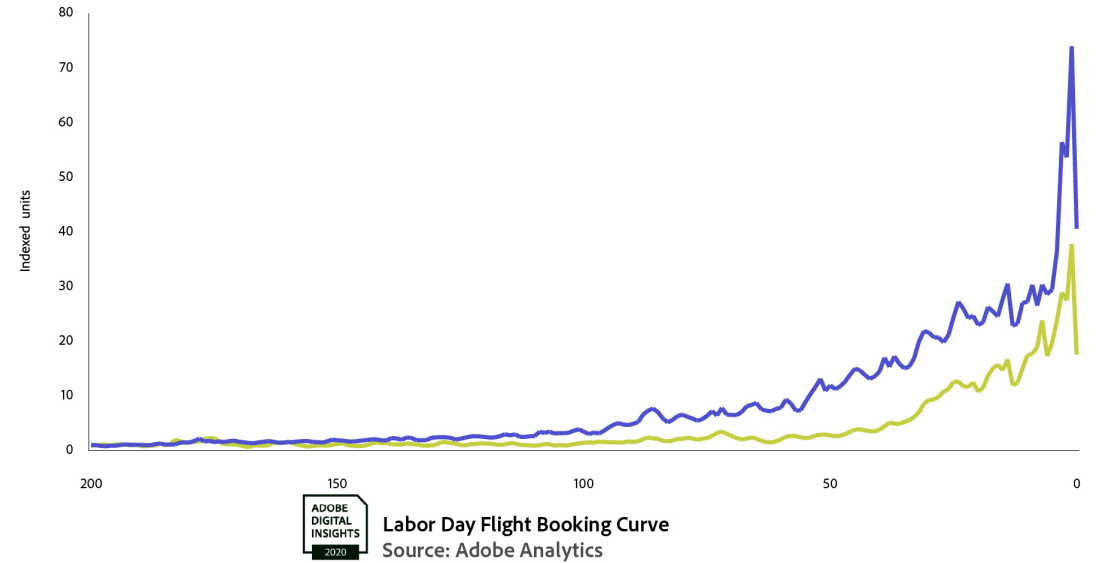
Apparel YoY growth falls at a faster rate than overall ecommerce

- August YoY growth for the apparel drew down to 21% and contributed significantly to the topline decrease, observed for overall ecommerce.
- 52% of consumers agreed that, in August, they spent less on apparel, online, than they had before.*



Last minute Labor Day plans cause flight booking spike

- In the two weeks leading up to Labor Day weekend there were 60% more flight bookings than the previous 14 days. In 2019, the comparable time only saw 45% growth, indicating travelers deliberated until the last minute this year about purchasing a flight. This has potentially positive implications for holiday travel in November and December.
- Labor Day domestic flight bookings were down 58% YoY, while hotel bookings were only down 20% YoY, indicating travelers feel more comfortable staying in hotels than traveling by airplane. Our survey indicates that of those that plan to travel over the next 6 months, 45% plan on staying in a hotel, and 34% plan on traveling by airplane.*
- Travelers within the Midwest were most willing to travel for Labor Day, with flight bookings originating there only down -36% YoY. The Northeast is the most reluctant to travel, at -61% YoY.

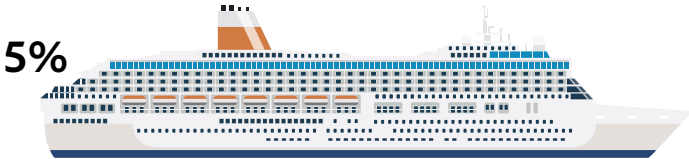
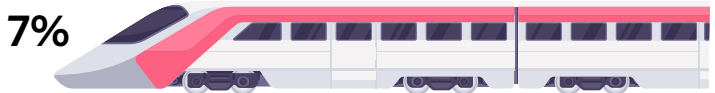


Travel looks different for nearly half of consumers making travel plans

49% of consumers say they plan on doing some level of traveling in the next 6 months:

- 21% within their state
- 32% within the US
- 6% internationally

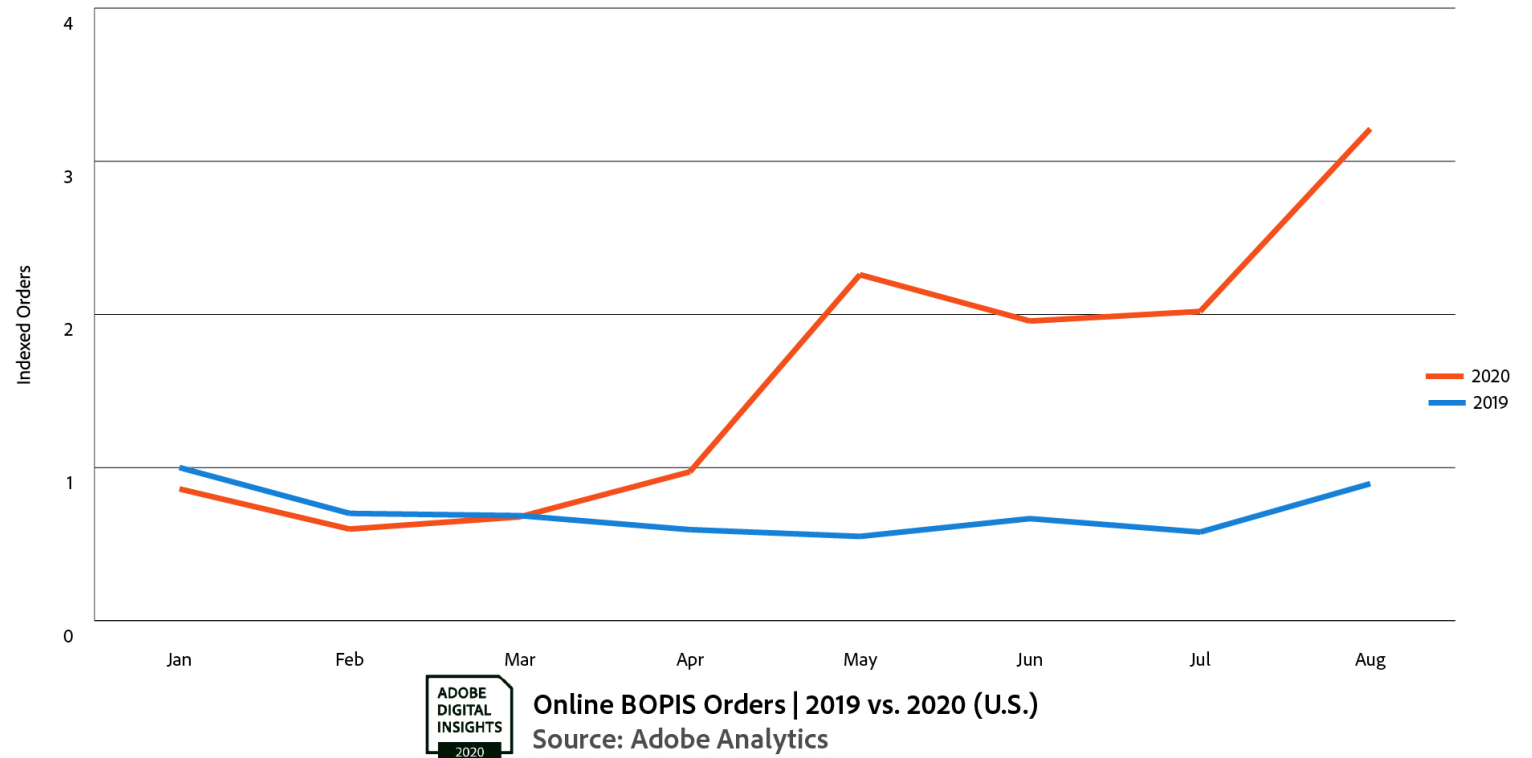
What is your reason for traveling in the next 6 months?*	
52%	Visit friends/family
45%	Recreation
20%	Work
11%	Moving
7%	Remote Work



We asked consumers
“How do you plan on traveling over the next 6 months?”*

BOPIS surges given consumer uncertainty and retailer optimization

- Buy online pickup in store (BOPIS) usage surged in August, with 59% growth over July (259% YoY), as consumers continue to be more comfortable venturing out to stores, and retailers continue improving the BOPIS experience.
- According to our survey, 30% of online consumers prefer using BOPIS or curbside over delivery.*



August daily sales stay consistent in grocery, apparel, and electronics

Much of consumer sentiment reflected ongoing (but not increasing) uncertainty, with August trends mirroring closely the trends seen in July.



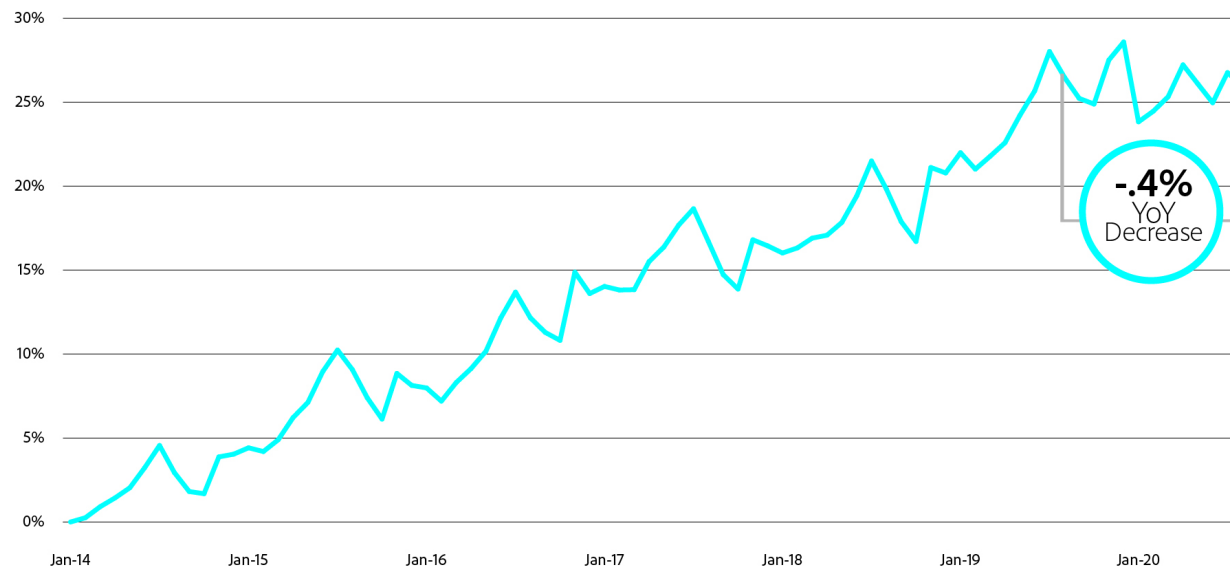
- U.S. online grocery saw a 3 percent increase in average daily sales in August.
- Consumer electronics daily sales increased by 3 percent as consumers bought electronics to suit their mobile learning needs.
- Daily online apparel sales shifted down by 3 percent in August.

*Growth compared to baseline period of July 15 to July 31 to measurement period of August 15 to August 31

Digital purchase power stays flat in August

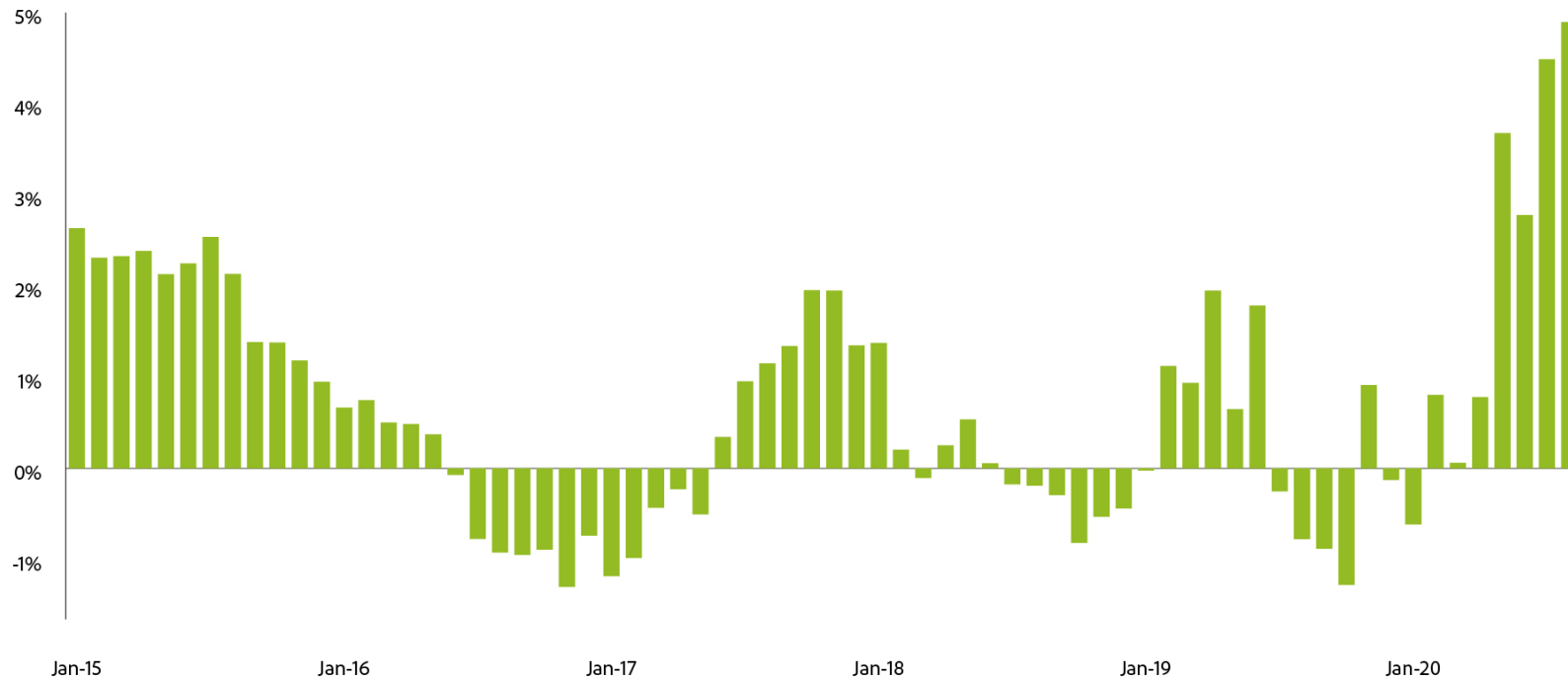
U.S. Digital Purchase Power (DPP) was down slightly at -0.4% in July 2020 YoY:

- On average, August DPP typically grows at +4.2% YoY, however, this year DPP was down at -0.4%. This further highlights the inflationary environment COVID has wrought upon the online economy.
- Deflation in certain major categories like electronics (-4.8% YoY) was offset by continued inflation in others, like grocery (+4.8 YoY).
- Amid demand decreases, apparel prices were down -1% YoY, but were up 2.3% MoM.
- Consumers are now purchasing an online basket of goods for \$1.00 that was worth \$1.00 in August 2019, and in a unique break from the trend their digital money has not gained any purchasing power.



YoY grocery inflation hits new high

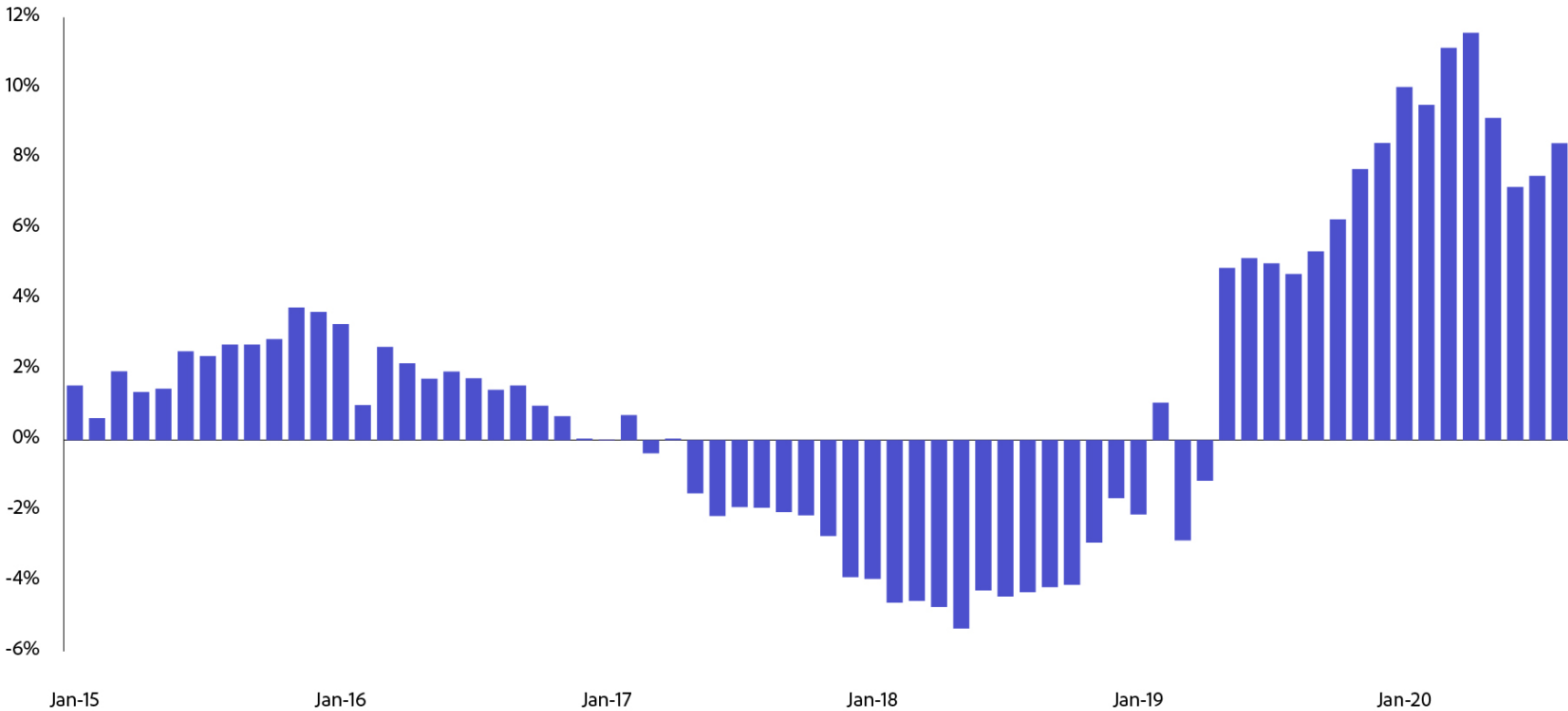
- While online grocery prices remained relatively flat MoM, they surged to a new high of +4.8% YoY, in August.
- In the wake of more stable demand and in-store purchasing, online grocery price growth MoM has plateaued. However, the prices are significantly elevated considering the time of the year, and can be expected to see seasonal increases, as we edge closer to Q4.



Year-Over-Year Price Growth, Grocery | U.S.
Source: Adobe Analytics

Flowers and related gifts see unseasonal price surges

- Flowers and related gifts traditionally see price surges during Valentine's Day and Mother's Day. However, with COVID keeping people apart, and ecommerce being leveraged for gift delivery, flowers and related gifts prices have been hitting new YoY growth highs over the past 6 months. These types of products saw a +8.4% YoY increase in prices in August.



Year-Over-Year Price Growth, Flowers And Gifts | U.S.
Source: Adobe Analytics

Scope and outlook

March announcement

April monthly refreshes begin

Holiday Season trends



Stay tuned for updates and data refreshes here:

<https://www.adobe.com/experience-cloud/digital-insights/digital-economy-index.html>

Appendix

The appendix contains a closer look at U.S. DEI categories, formula, and methodology, along with the benefits to consumers, companies, and policy makers.



Why we're introducing DEI in an evolving landscape

Before the COVID-19 pandemic:

- The digital economy has been growing faster than the economy as a whole.
- Inflation has been historically low—influenced by falling prices online.
- Online shopping has been converging with offline as click-and-collect, one-day shipping, and other services let people transact online for a wider variety of goods and services.
- Mobile shopping has allowed people to shop and buy from anywhere at any time.
- Online shoppers have become accustomed to being able to compare and buy products around the world and have them shipped to their door.
- Similarly, ecommerce companies have come to expect competition from around the world.
- In this growing global digital economy we need a metric that can track online prices across nations and enables consumers, companies, and policy makers to understand the trends, similarities, and differences across industries and countries.

In today's reality:

- Economic policy makers need fast turnaround insights to manage a global health and economic crisis.
- Online shopping has become the primary means of commerce populations around the world as purchases previously made in person are shifted online.
- Shoppers' baskets have shifted toward items related to health, working from home, and social distancing.
- Companies are adjusting to daily changes in demand, supply, and labor availability.
- With the global economy rapidly evolving, we need a metric and supporting insights that can help consumers, citizens, companies, and policy makers assess their economic world and make intelligent, informed choices about how to help themselves and others.

Measuring the 21st-century economy

A snapshot of the DEI

- It's a measure of increasing consumer buying in the digital world, starting with the U.S. and growing to cover the world's major economies.
- It uses this metric to explore our global digital lives, from when to buy a new TV to which countries pay most for organic produce.
- Through it we're able to establish the digital purchasing power (DPP) that informs consumers' buying power online for various goods.

Why the DEI is important

- The world economy is interconnected, especially the digital economy, and it needs metrics that reflect that relationship.
- Consumers, companies, and policy makers need a high-speed, detailed, reliable, global source of insight to inform their choices.

What sets the DEI apart

- Its insights are fast and accurate.
- Its insights are based on what consumers actually purchase, rather than surveying respondents about products they've purchased without controlling for quantity (how BLS calculates CPI).
- Its data spans the globe.

Why we're uniquely qualified to build the DEI

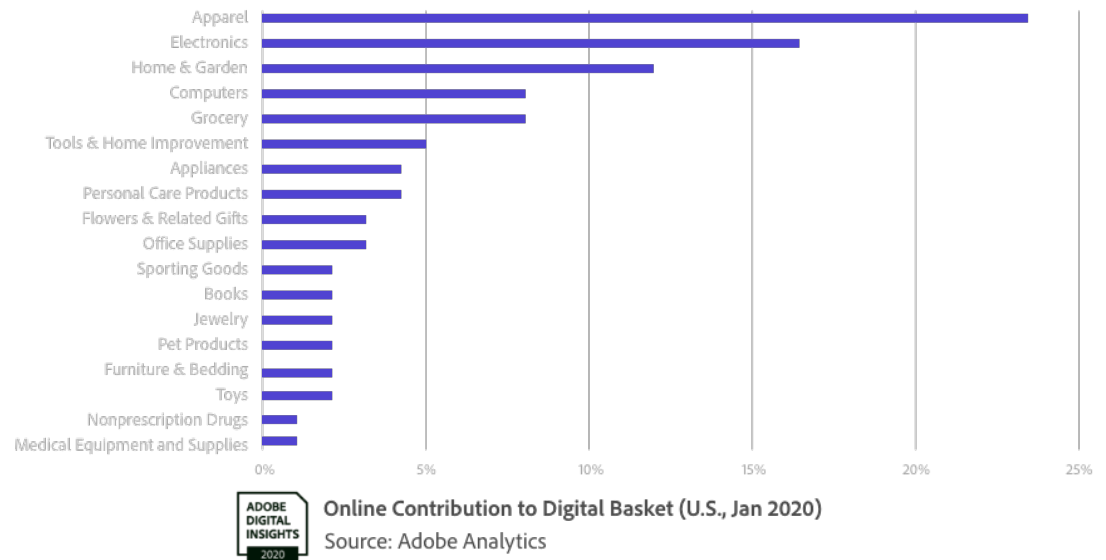
- Only we have the data from trillions of visits, tens of millions of products, and thousands of retailers needed to assess the global digital economy.
- Our Adobe Sensei AI capability can take all this data and process it in near-real time to give high-speed insights.
- We're trusted by multiple companies to create this index.
- Only Adobe is trusted by the economists and academics that can use this data to make a real difference in the world.

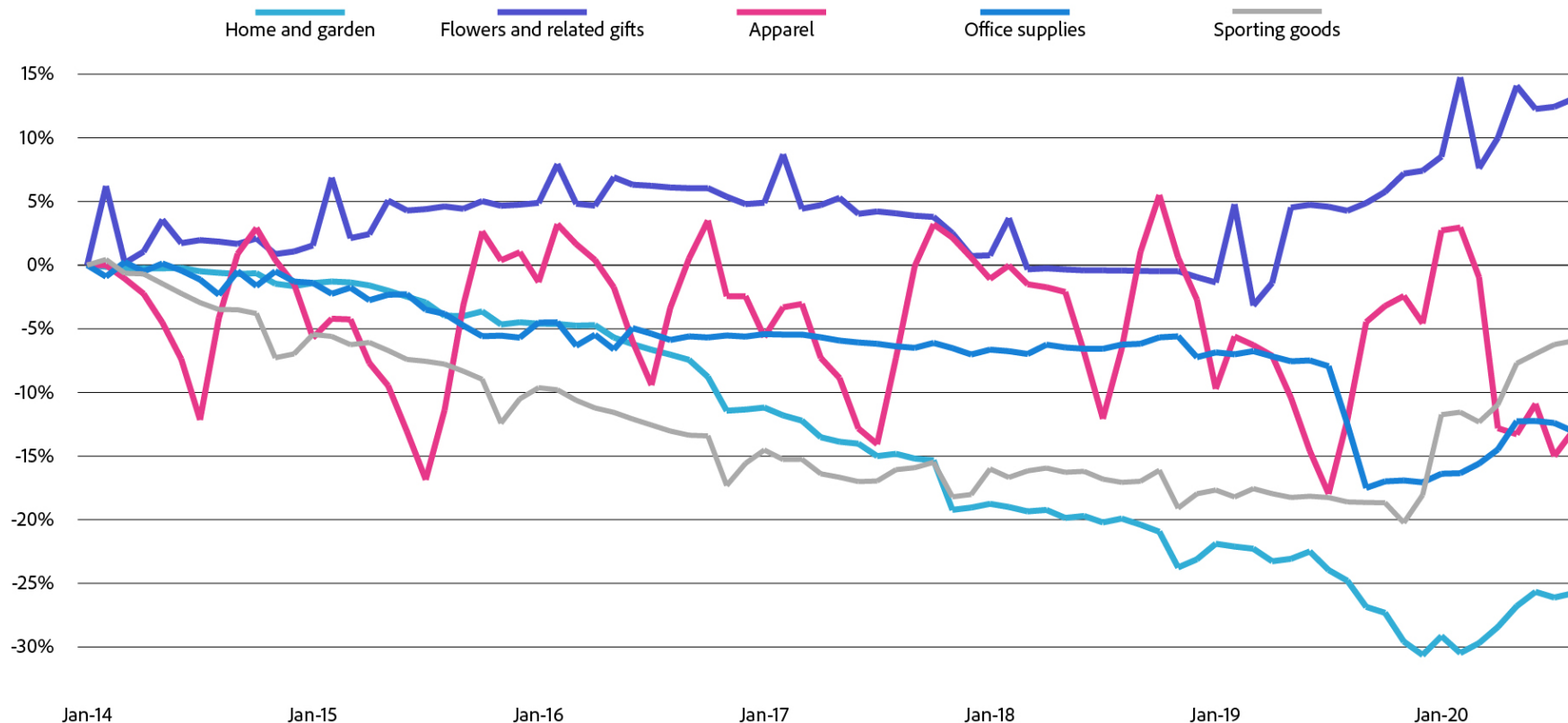
How DEI can help

- Consumers get a better understanding of their digital world—when to buy, what to buy, and how digital commerce is changing their lives.
- Companies get a better understanding of local and global trends, allowing them to anticipate and manage across international businesses.
- policy makers get a much-needed rapid read on the digital economy and key data that can be used to anticipate broader economic trends.

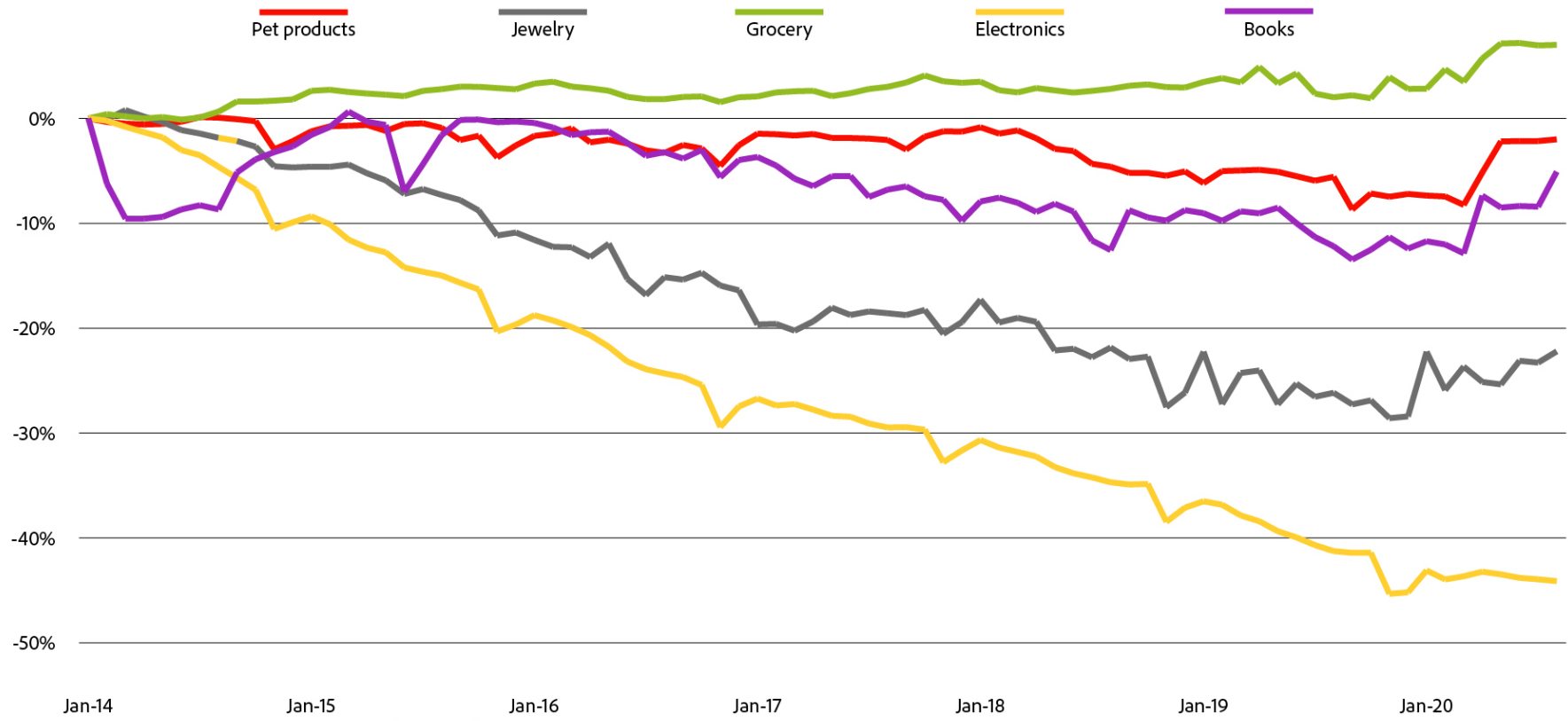
What the Digital Economy Index Measures

- The DEI calculates digital purchasing power (DPP) by country.
- DPP measures how much more people can buy with a dollar, euro, real, pound, yen, etc. online now versus a year ago.
- For example, if DEI for the U.S. is up by 2 percent, then \$1.00 spent online now will buy you what \$1.02 would have bought you a year ago.
- The DEI is always weighted by what people **actually spend** online:
 - As computers become less expensive, total online purchasing power will go up quickly because a good portion of what people buy online is computers.
 - But a rise in the price of pet products wouldn't affect purchasing power much, because people spend relatively little on pet products online.
- Economies with fast-growing DEIs are making more and better goods available to their online consumers more cheaply.
- Because Adobe's DEI looks at what people actually buy, it allows reasonable comparisons between global economies.

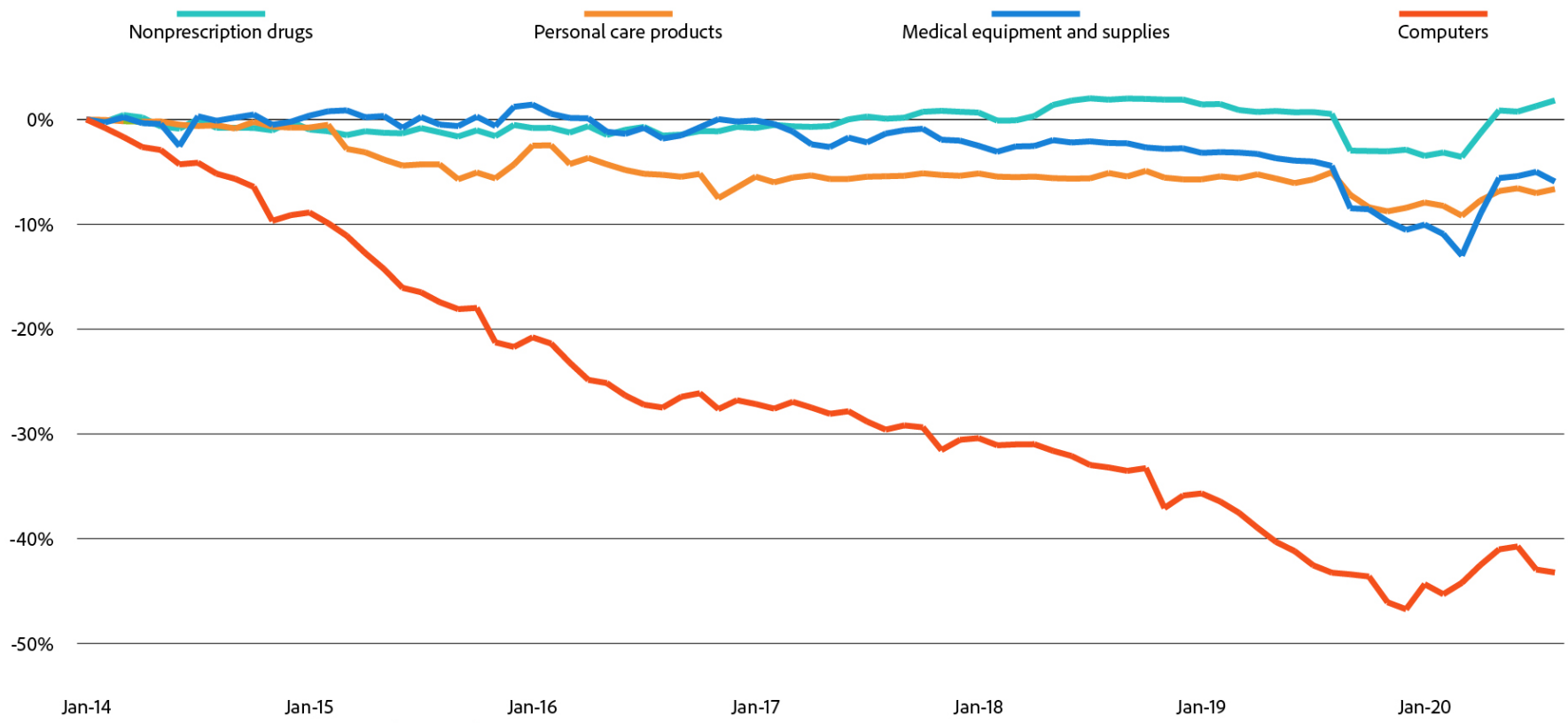




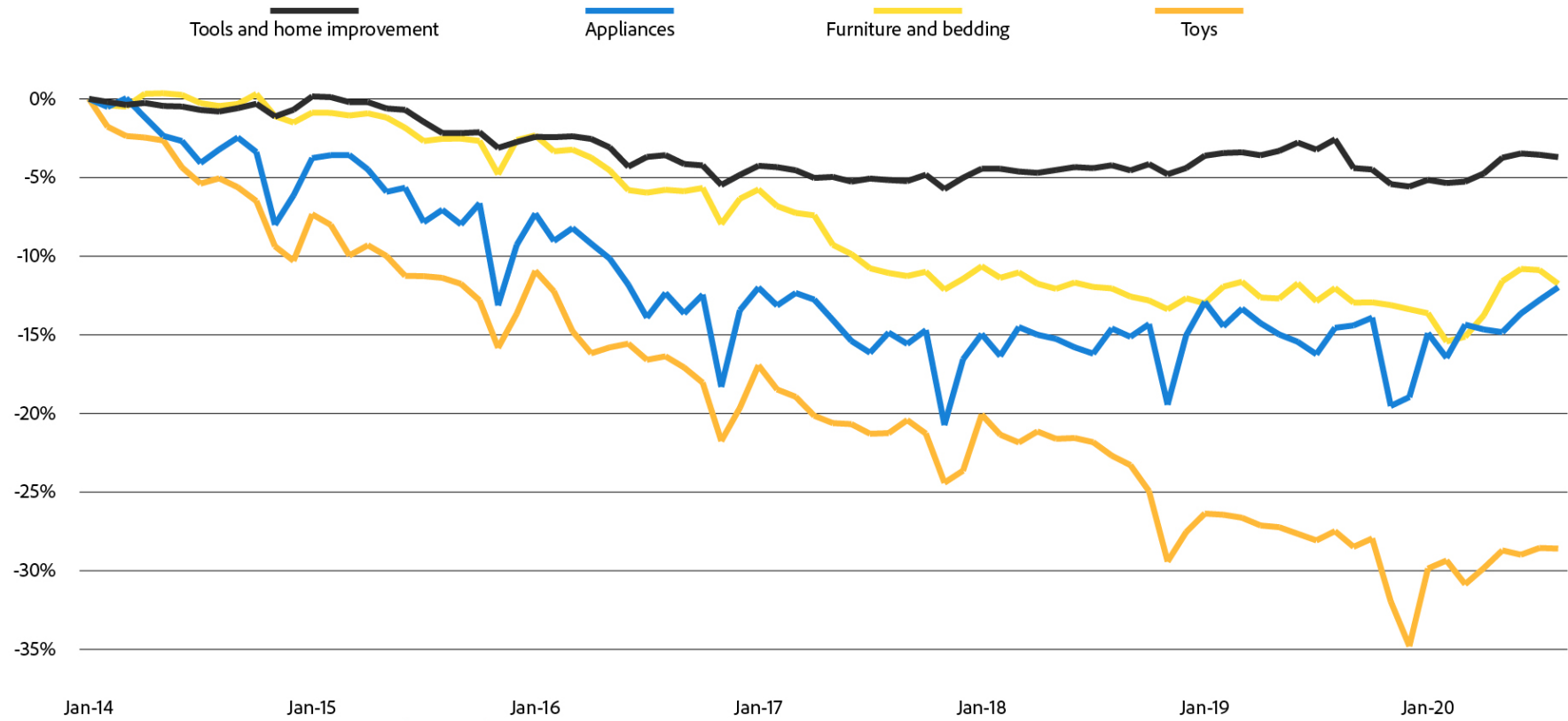
Online Price Trend by Category | Digital Economy Index (U.S.)
 Source: Adobe Analytics



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 Source: Adobe Analytics



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 Source: Adobe Analytics



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 Source: Adobe Analytics

Methodology and partnerships

We've partnered with economists Austan Goolsbee and Pete Klenow to contextualize and analyze the output from the DEI.



Austan Goolsbee, University of Chicago

- Robert P. Gwinn Professor of Economics at the University of Chicago's Booth School of Business
- Formerly served as President Obama's chairman of the Council of Economic Advisers



Pete Klenow, Stanford University

- Professor at Stanford University's Department of Economics
- Currently visiting scholar, Federal Reserve Bank of San Francisco
- Member of editorial boards for *Econometrica*, *American Economic Review*, *Quarterly Journal of Economics*, and more

Formula for the DEI

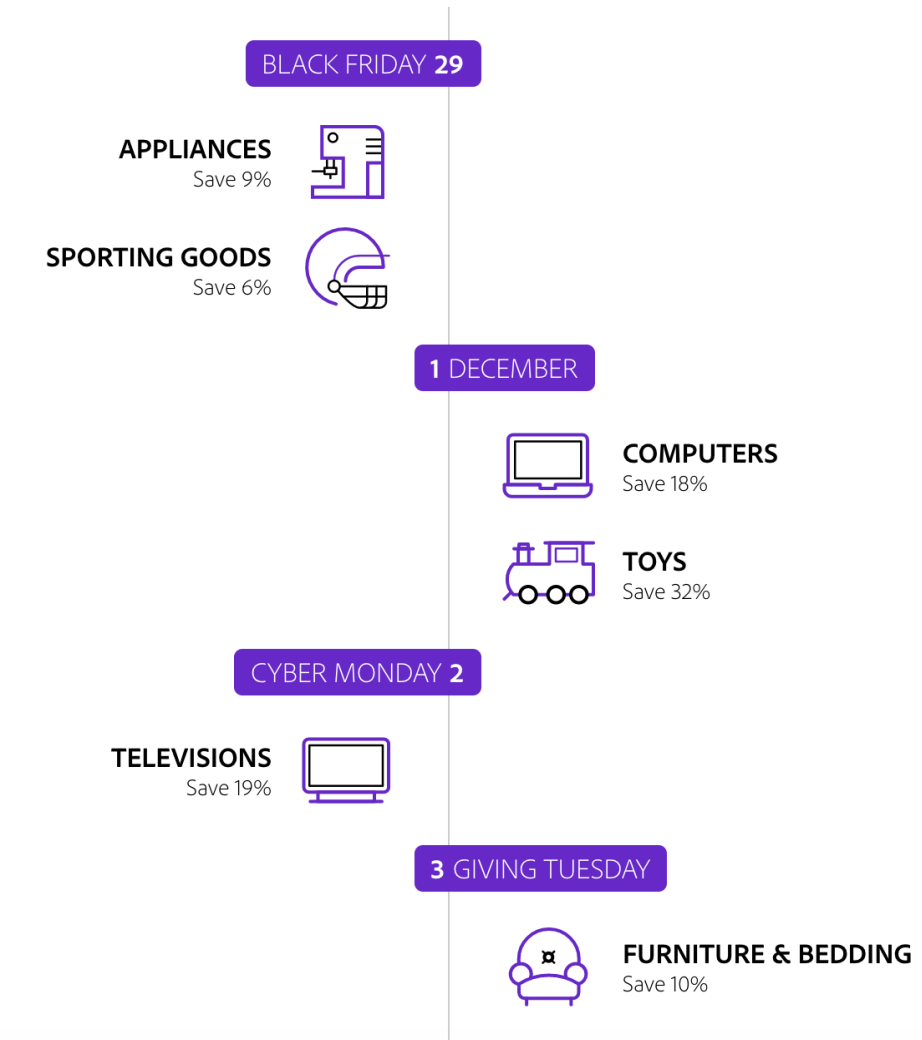
The base formulation for the DEI is informed by the Fisher Price Index:

- The Fisher Ideal Price Index uses quantities purchased on the current period (month) and a previous period (previous month) to determine actual consumers preferences. Instead of assuming that consumers' preferences for what goods to buy are constant over a certain number of years, it's able to account for the fact that they are constantly changing what they buy.

$$\text{Fisher } \pi_t = \sqrt{\frac{\sum_{i=1}^n P_{it} U_{it-1}}{\sum_{i=1}^n P_{it-1} U_{it-1}}} * \sqrt{\frac{\sum_{i=1}^n P_{it} U_{it}}{\sum_{i=1}^n P_{it-1} U_{it}}}$$

How the DEI benefits consumers

- Consumers can get valuable guidance from the DEI, like the best times to buy appliances, TVs' or cameras. Our holiday report already featured DEI insights during the Q4 shopping season, and it provides guidance on the best days to buy hot-selling items.
- The DEI initiative will expand the product categories and geographic scope of our pricing data, which will allow consumers to tap into the best days to buy a wider assortment of goods, wherever they are in the world.
- Lastly, the DEI will help contextualize the pricing that consumers are observing on certain goods, as well as how these price changes may fluctuate and impact them in the future.



How the DEI benefits companies

- Companies can gain valuable insights from the DEI, like how digital economies are different in the U.S. versus the UK, especially when it comes to apparel, grocery items, and a host of other product categories.
- The DEI shows movement in global prices that require context and comprehensive tracking, so that companies can gain visibility into the market forces that are impacting their consumers and clients.
- Companies will be able to see how their pricing strategies will impact and be reflected in global pricing trends, both inside and outside their own product and goods categories.
- Quantity data that the DEI initiative uncovers will illuminate how product demand is being impacted by price and how consumers are substituting one type of good for another.
- The speed at which DEI data is populated will allow them to be more reactive to emerging pricing trends. In some cases the data will be predictive, which will be even more valuable to organizations everywhere.

DEI Data for leading thinkers and institutions

- We will make our DEI data feeds available to governmental institutions and organizations that develop policy and provide economic guidance.
- Organizations that are looking for ways to more accurately understand the digital economy will be able to use real-time data to analyze the rapid-impact events like COVID-19 that are happening both domestically and globally.
- This data will be a combination of pricing and product-level category data to help economic institutions better determine which parts of the digital economy can best predict inflation, as well as how consumer baskets are shifting.
- These data feeds will be provided on a biweekly cadence to most organizations so that they can be more responsive to shifts happening within different sectors.

How the DEI benefits policy makers

- policy makers can get guidance from the DEI, especially in categories where digital data predict changes in the broader economy.
- The DEI can look at prices mapped across a national census framework. This allows for pricing and product sales insights across urban and rural regions, high- and low-income segments, and diverse and non-diverse populations. Ultimately, this allows policy makers to understand the pricing effects being experienced by different constituencies.
- policy makers can develop plans based on the DPP metric we're tracking to determine the buying power consumers are experiencing over time.
- The DEI will be trended against the CPI to help paint a clear picture of whether consumers are experiencing better pricing offline or online. As a result, policy makers will be able to make the case to expand broadband and bring connectivity to regions in need of favorable pricing on goods that were not accessible online before.

