

- **COVID-19 Pandemic Shift in Spending/Categories (Personal or Government)**
 - How has the COVID-19 pandemic affected what product types and the quantity in which they are purchased. Beyond what is expected, (homegoods, etc.), where major changes have been realized. Possibly also explore the actual change of online shopping traffic.
- Vehicle Market Trends (Sedans, Coupes, Crossover, SUV)
 - Based on the vehicles I see on roads, I personally have noticed trends arising in the car market even within the last 5 years. An exploration in how this has changed, and an investigation into when and how quickly changes happen.
- **Airline Industry (Visualize Worldwide Travel, Reduction of Airlines, Trips)**
 - Specifically focus on airline travel change post COVID. Beyond the dip of travel, explore the dilution of airlines, change in the industry, and visualize the difference in trips worldwide.
- Beauty Industry (Change in popularity of products, newcomers to segment)
 - Question of whether the beauty industry is trend based. How do the popularity of type of products change by season, and year, i.e. lip pencils, lip liners, lipsticks, as well as visualizing the longevity and perseverance of product types.
- New York City Apartments (Rent vs. Buy percentage, cost change, average costs)
 - What is the percentage of apartments in New York City that are owned vs rented, how has the market shifted over the last 20 years, where (borough) prices have jumped the most, are there areas where prices have stayed relatively the same.
- Fast Food Consumption in the US since 2000 (Correlation with obesity data)
 - Exploration of popularity of fast food in the United States. Does it have a correlation with obesity? Possibly location based.
- Change in enrollment in Higher Education in 50 years
 - Looking at the sheer numbers regarding college students. Look at graduation rates, hiring rates, unemployment rates, etc.
- Change in average time spent on devices vs. change in average visual acuity
 - How has the increased screen time usage over the last 15 years impacted vision for people. Explore changes by age demographics.
- iPhone App Store Data (Increase in Total Number of Apps, Most Popular Yearly)

- Exponential growth in applications used and available. What kind of apps are popular by year, and are their trends regarding what is popular?
- Changes in RobinHood Users From 2020 Onwards
 - Exploring how the pandemic increased the number of users of RobinHood, to gauge the increase in amateur traders. Also wondering about change post \$GME and \$AMC buying hold scandal.

Describe each idea in a sentence or three (ideally ending with a concrete, testable question) in 4.final-project/process/ideas.md(you'll need to run make update to pull down the template for this file first)

Data Sources

- From your ten ideas, find five data sources on the web and document them in the file 4.final-project/process/datasources.md using the format demonstrated with the USGS example at the top of the file (and be sure to delete this once you've completed your list).
- <https://worlddata.io/usa>
 - Have contacted, am trying to get access to dataset.
- <https://www.brookings.edu/blog/future-development/2020/12/14/the-decline-and-recovery-of-consumer-spending-in-the-us/>
- <https://www.bea.gov/news/2021/personal-income-and-outlays-february-2021>
- <https://www.statista.com/chart/23574/consumer-spending-on-goods-and-services/>
- <https://www.statista.com/topics/831/per-capita-expenditure/>
- https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=3&isuri=1&nipa_table_list=2014&categories=underlying

The \$149.0 billion decrease in current dollar PCE in February reflected a decrease of \$155.9 billion in spending for goods and a \$7.0 billion increase in spending for services (table 3). Within goods, the decreases were widespread across most categories, led by “other” nondurable goods (mainly pharmaceutical products and recreational items). Partly offsetting these decreases was an increase in gasoline and other energy goods. The increase in services primarily reflected increases in housing and utilities and in health care (mainly hospitals) that were partly offset by a decrease in spending for food services. Detailed information on monthly PCE spending can be found in [Table 2.3.5U](#).

Personal outlays decreased \$141.5 billion in February (table 3). Personal saving was \$2.41 trillion in February and the personal saving rate—personal saving as a percentage of disposable personal income—was 13.6 percent (table 1).