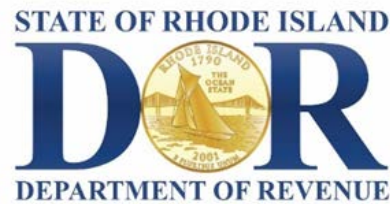


Estimated 2020 Economic Impact of the COVID-19 Pandemic on Rhode Island



**Office of Revenue Analysis
Rhode Island Department of Revenue**

**FTA Revenue Estimation and Tax Research Conference
October 19, 2021**

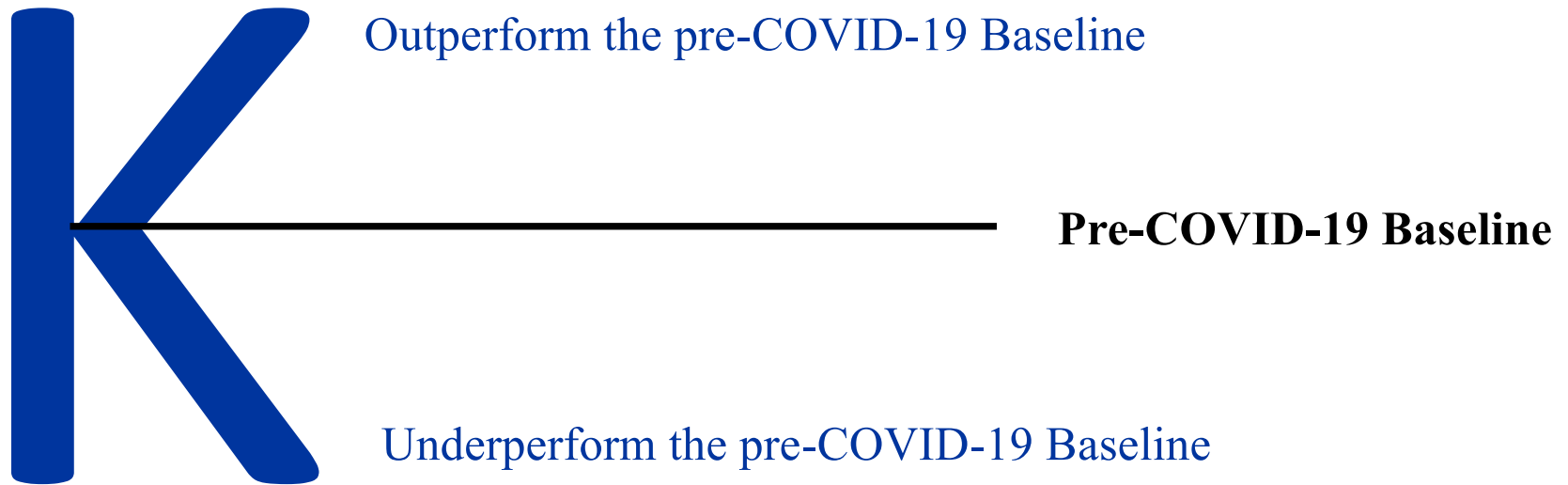
Purpose of the Study

- Assess the economic impact of the COVID-19 pandemic on Rhode Island's economy in 2020 at the industry level
- Economic impact measured by change in taxable sales for the sales and use tax compared to the pre-COVID-19 baseline
- Detailed industry categories included all retail trade categories and certain personal services categories

Introduction

- Chainbridge utilized Rhode Island monthly sales tax remittance data provided by DOR to perform the analysis
- The change in taxable sales was tracked monthly from CY 2019 to CY 2020 at the industry level (NAICS)
- The results were consistent with a “K-shaped” recovery for the Rhode Island economy
- The downward leg of the “K” was comprised of the certain personal services industries while the upward leg of the “K” generally consisted of the retail trade categories

The “K” Shaped Recovery



COVID-19 Pandemic in Rhode Island

Phase I – The Onset of the COVID-19 Pandemic:

March 2020 – April 2020: Rapid growth in the number of new cases; high death rate among the elderly, especially those in conjugate care

Phase II – The Summer Reprieve:

May 2020 – September 2020: Sharp decline in the number of new cases; deaths still generally confined to those aged 65 and over

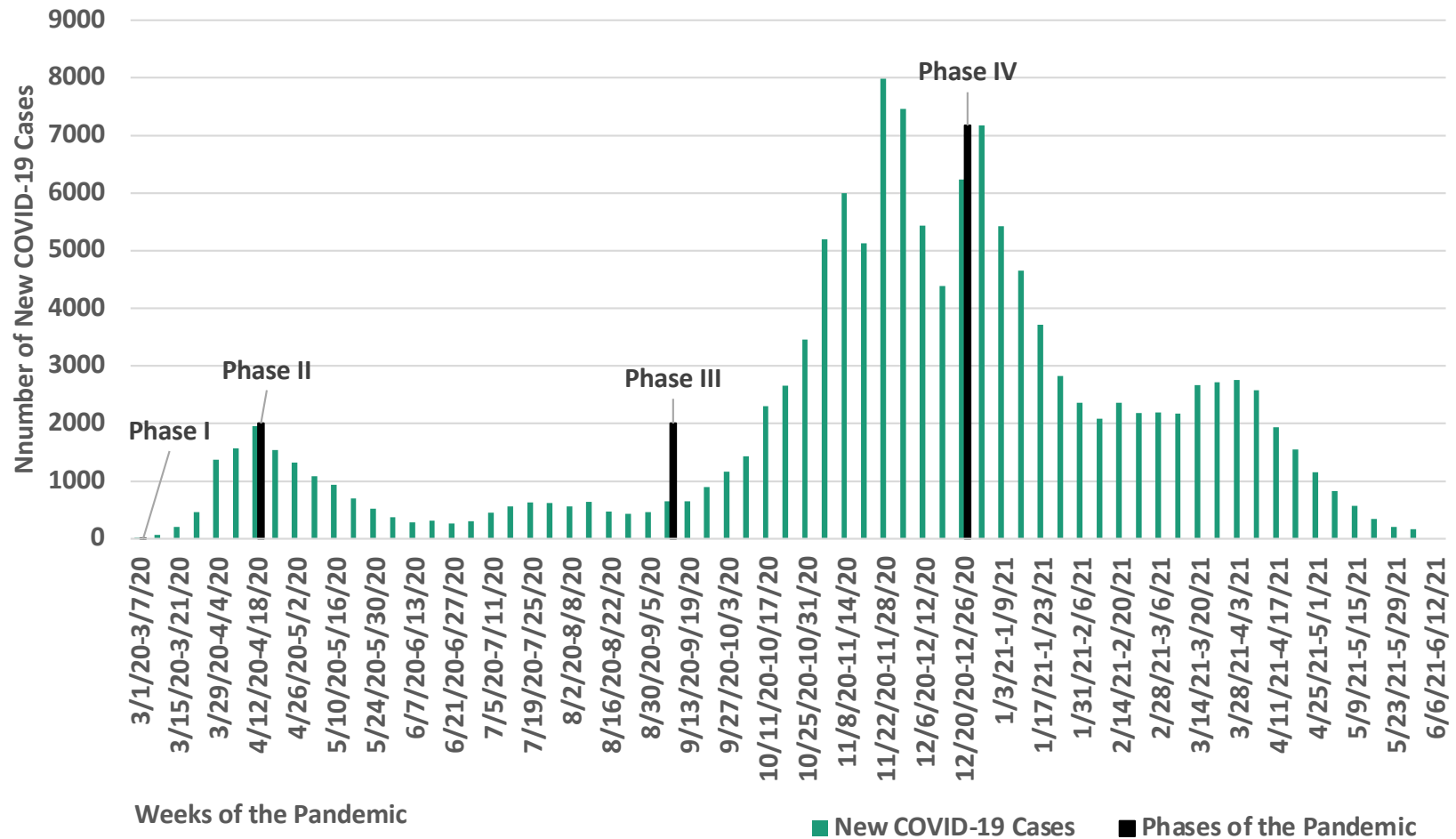
Phase III – The Fall/Winter Resurgence:

October 2020 – December 2020: Steep increase in the number of new cases; hospitalization and death rates rise sharply with more deaths in lower age groups, especially among those with co-morbidities

Phase IV – COVID-19 Vaccinations Arrive:

December 2020 – Present: State's quick vaccination response dramatically reduced the number of new cases in 2021 prior to the arrival of the Delta variant

COVID-19 Pandemic in Rhode Island



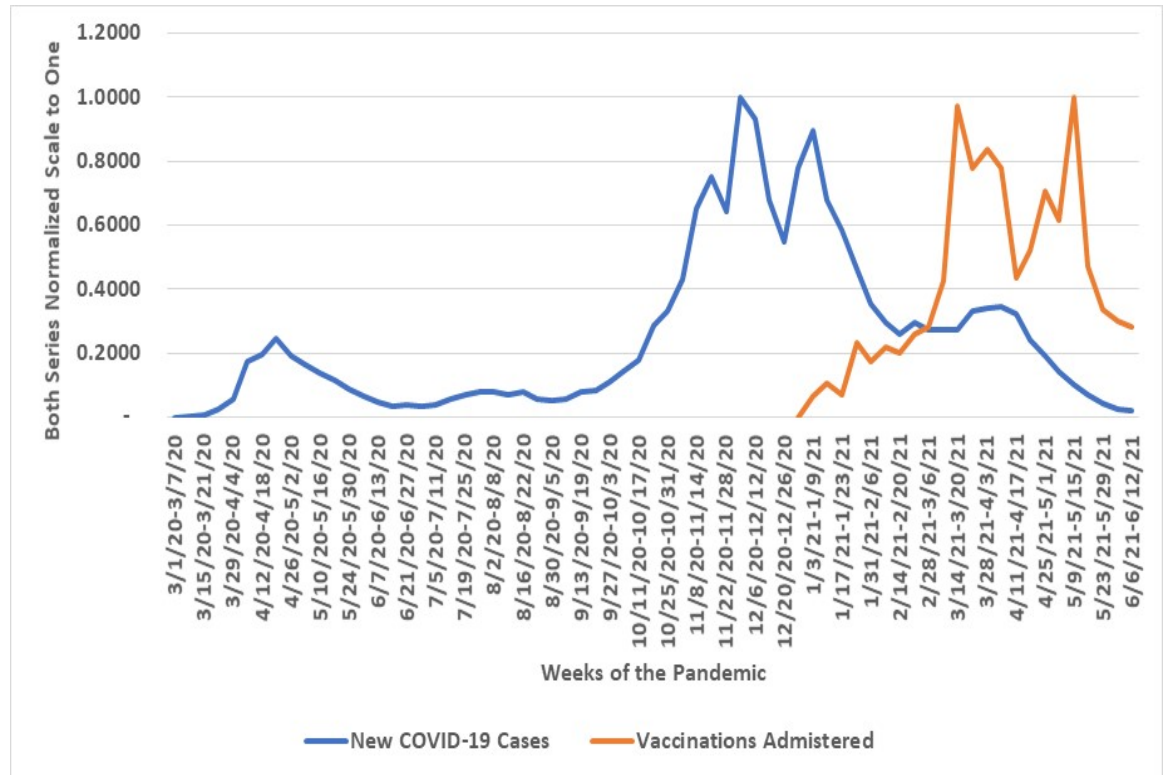
State's COVID-19 Pandemic Response

- **Phase I:** March 2020 – April 2020
Dine-in service at restaurants and bars halted; State's casinos closed; Stay-at-home order issued by the Governor closing all non-essential retail and service businesses.
- **Phase II:** May 2020 – September 2020
Stay-at-home order lifted; State's casinos and other businesses reopen with limited capacity and mandatory masking and distancing requirements; Continuous relaxation of restrictions on operations.
- **Phase III:** October 2020 – December 2020
Increasing restrictions on business operations; Pause in reopening the economy from November 30 to December 20
- **Phase IV:** January 2021 – Present
Rapid relaxation of restrictions on business operations; Restrictions on business operations eliminated as of May 21, 2021

Vaccinations and COVID-19 cases

- This graph shows the impact of vaccinations on the decline in the number of new cases
- As vaccinations increased, particularly for the elderly, the very rapid increase in new cases started to decrease quickly

Number of New COVID-19 Cases and
Vaccinations Administered
March 1, 2020 to June 12, 2021
Scale Normalized to One



Data and Chainbridge Methodology

- Sales tax remittance data by month for the calendar years 2019 and 2020
- Identify the North America Industry Classification System (NAICS) codes for as many taxpayers as possible
- NAICS code assignments for records with Federal Employer Identification Numbers (FEINs) or Company Name fields were made for as many tax remitters as possible

Data and Chainbridge Methodology

- Several data sources of NAICS information to make assignments
 - Standard and Poor's *Compustat* database
 - An external database from a private company that was purchased
 - Manual inspection and NAICS code assignments based upon company names
- The resulting micro-database represented about 82.7% of total taxable sales reported to the State
- At no time did anyone outside of the State tax agency have access to the sales tax micro-data (i.e., taxable sales or sales tax data)

Determining the Industry Sectors Impacted by the COVID-19 Pandemic

- US Bureau of Economic Analysis (BEA) represents spending by individuals by personal consumption expenditures (PCE) -- BEA PCE categories map closely to NAICS retail trade categories and certain personal service categories
- Spending by businesses is represented by business spending on investment goods and intermediate goods and services -- no similar translation of the business intermediate and investment purchase categories to the NAICS categories
- Focus of the analysis is on what Chainbridge termed Retail Trade and Certain Services

Retail Trade Sectors Impacted by the COVID-19 Pandemic

Retail Trade Categories

- NAICS code 441 - Motor Vehicle and Parts Dealers
- NAICS code 442 - Furniture and Home Furnishings Stores
- NAICS code 443 - Electronics and Appliance Stores
- NAICS code 444 - Building Material, Garden Equipment, Supplies Dealers
- NAICS code 445 - Food and Beverage Stores
- NAICS code 446 - Health and Personal Care Stores
- NAICS code 447 - Gasoline Stations
- NAICS code 448 - Clothing and Clothing Accessories Stores
- NAICS code 451 - Sporting Goods, Hobby, and Musical Instrument Stores
- NAICS code 452 - General Merchandise Stores
- NAICS code 453 - Miscellaneous Store Retailers
- NAICS code 454 - Non-Store Retail

Certain Services Sectors Impacted by the COVID-19 Pandemic

Certain Services Categories

NAICS code 721 – Accommodation

NAICS code 722 - Food Services and Drinking Places

NAICS code 811 – Repair and Maintenance

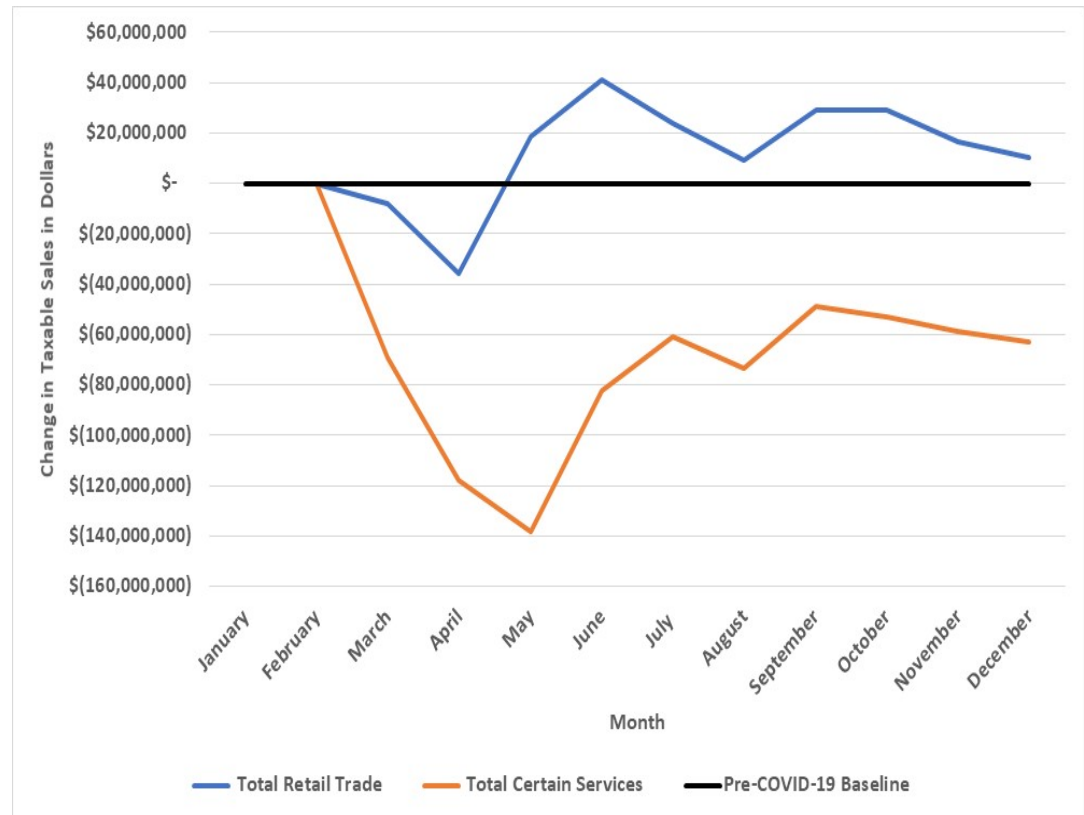
NAICS code 812 – Personal Laundry Services

Estimating the Pre-COVID-19 Baseline

- Start with 2019 monthly proportions of taxable sales to annual taxable sales by industry sector
- Grow the 2019 annual taxable sales to 2020 by industry sector consistent with the pre-COVID-19 forecast from January 2020
- Distribute the 2020 annual taxable sales to the months of 2020 based upon the 2019 monthly proportions by industry sector
- The first month of economic impact was March 2020 as the first COVID-19 case in Rhode Island was diagnosed on March 1, 2020

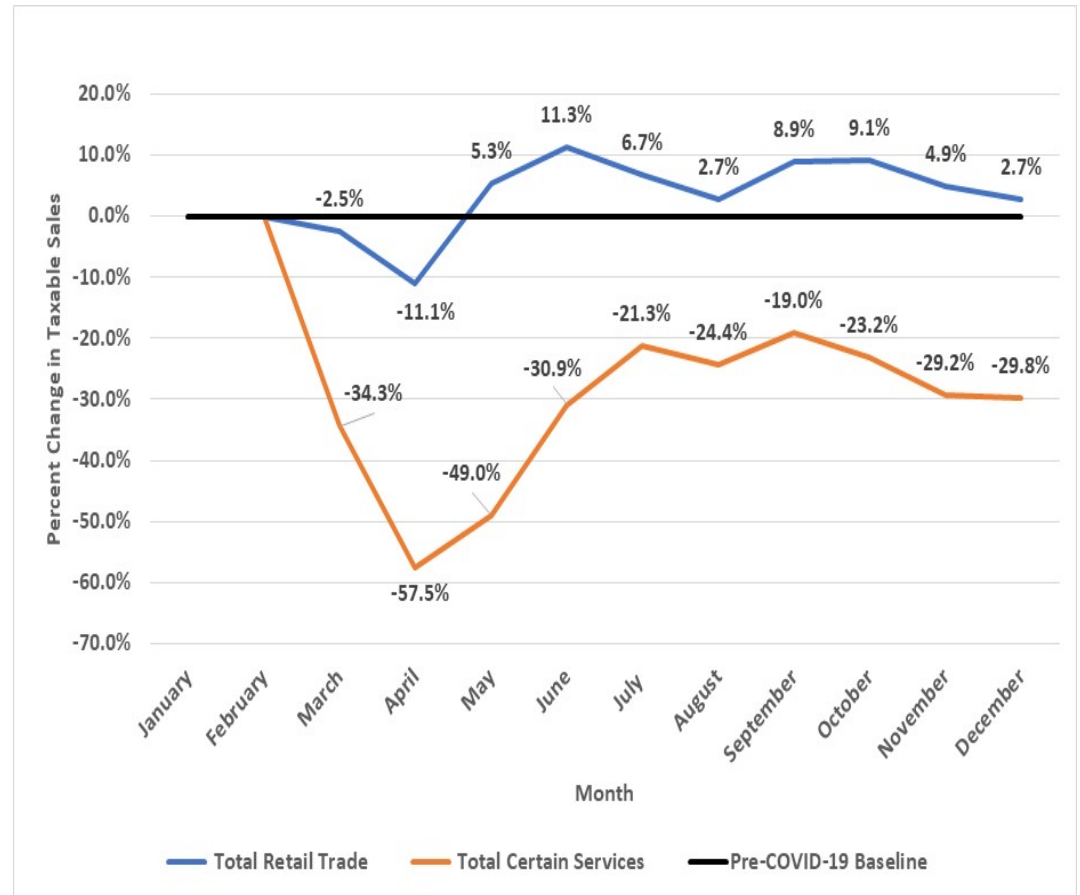
Impact of COVID-19 Pandemic on Retail Trade and Certain Services -- 2020

- Steep decline in nominal taxable sales for Certain Services (hotels and restaurants)
- Retail Trade -- modest decline in March and April followed by a robust recovery during the rest of the year
- This graph highlights the “K-shaped” recovery -- Retail Trade above the pre-COVID-19 baseline; Certain Services below the pre-COVID-19 baseline



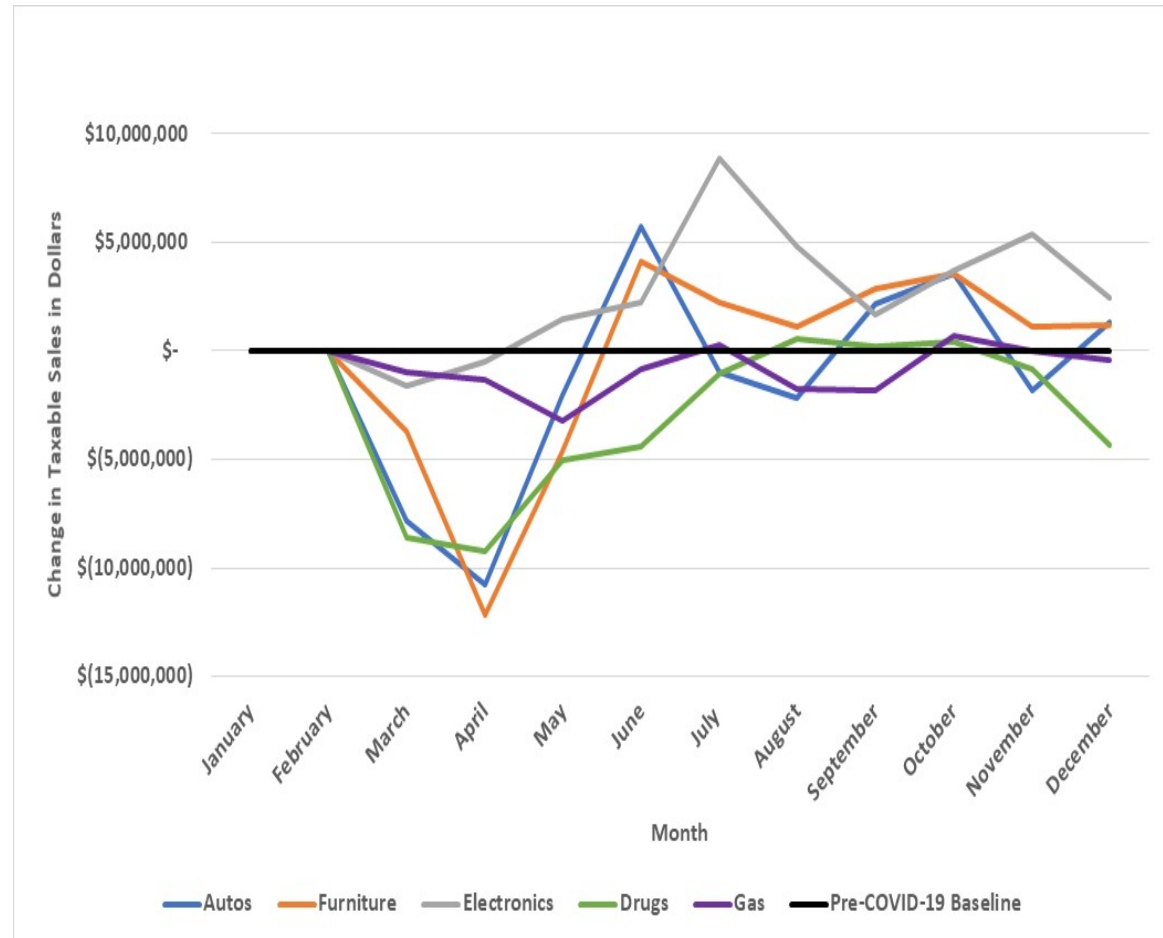
Percent Change in Taxable Sales from Pre-COVID-19 Baseline -- 2020

- The percent change in taxable sales mirrors the results of the nominal dollar change in taxable sales
- Retail Trade exceeded the pre-COVID-19 baseline after April 2020 while Certain Services recovered after April 2020 but remained below the pre-COVID-19 baseline throughout the remainder of 2020



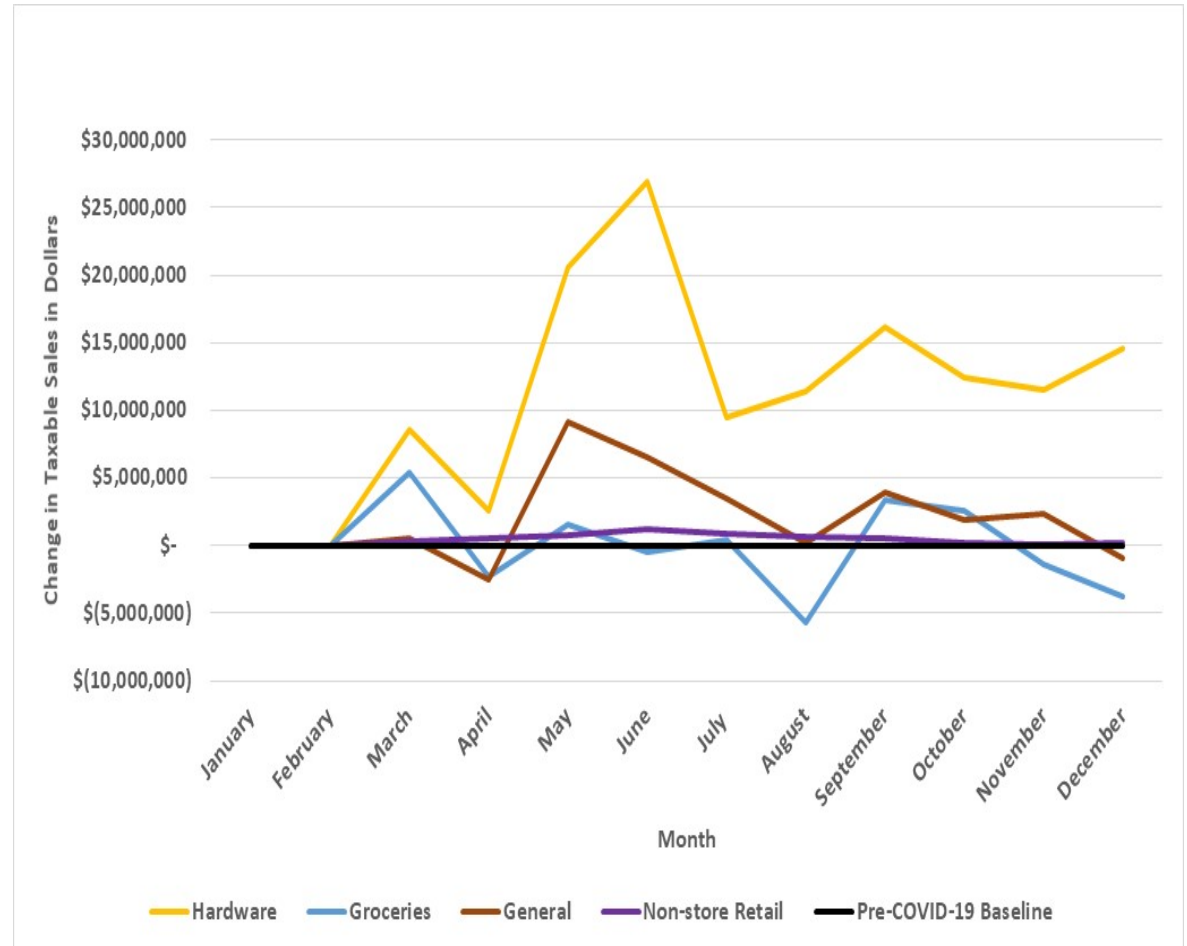
Impact of COVID-19 on Taxable Sales of Adversely Affected Retail Trade Categories

- In March and April taxable sales of autos, furniture, electronics, drugs, and gas declined
- Followed by significant recoveries for taxable sales of autos, furniture, and electronics
- These recoveries largely reflect the changes attributable to people staying at home (work and childcare) and the influx of federal relief payments



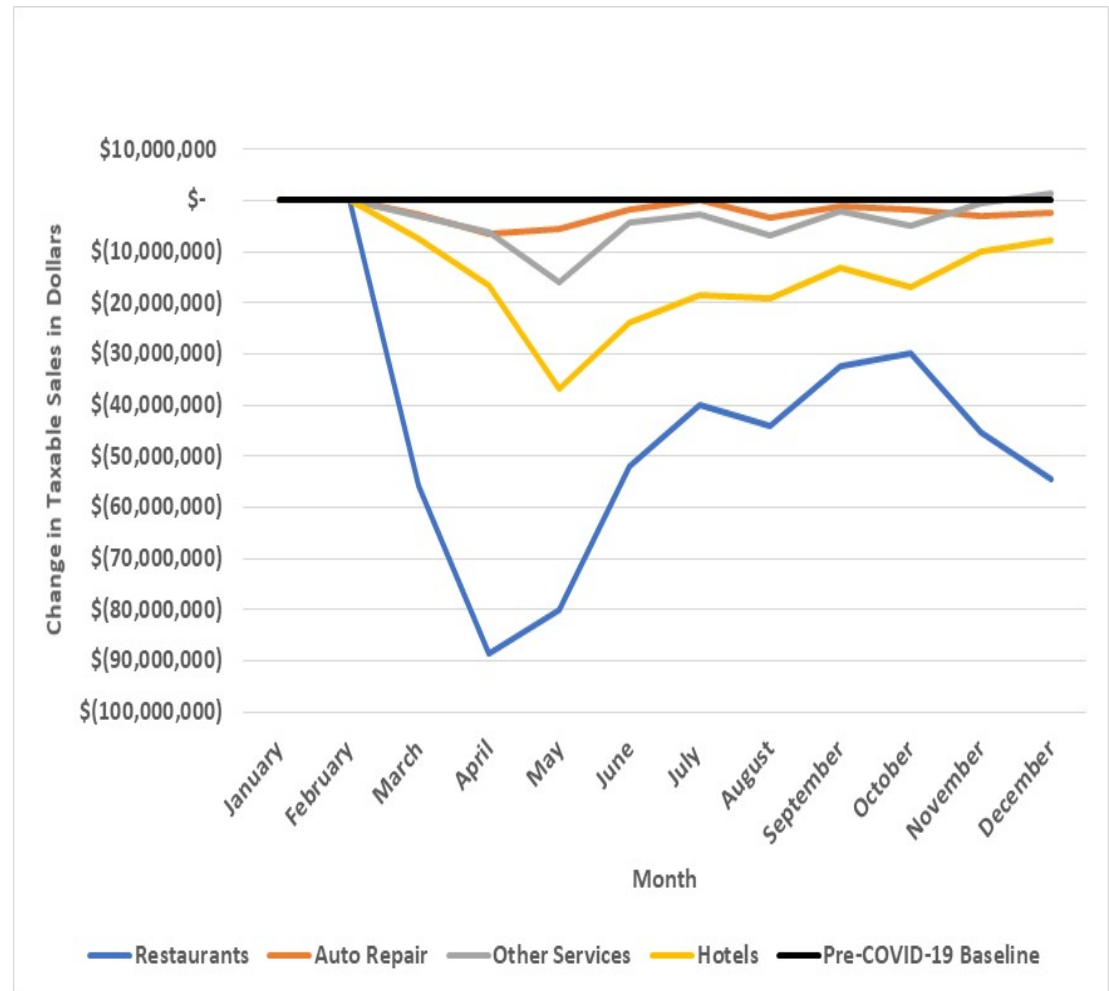
Impact of COVID-19 on Taxable Sales of Positively Affected Retail Trade Categories

- Hardware stores - significant increase in taxable sales spiked higher in May and June
- General retail stores – a decrease in March and April but came back over the rest of the year
- Grocery stores -- sharply up in March and April but relatively flat the rest of the year



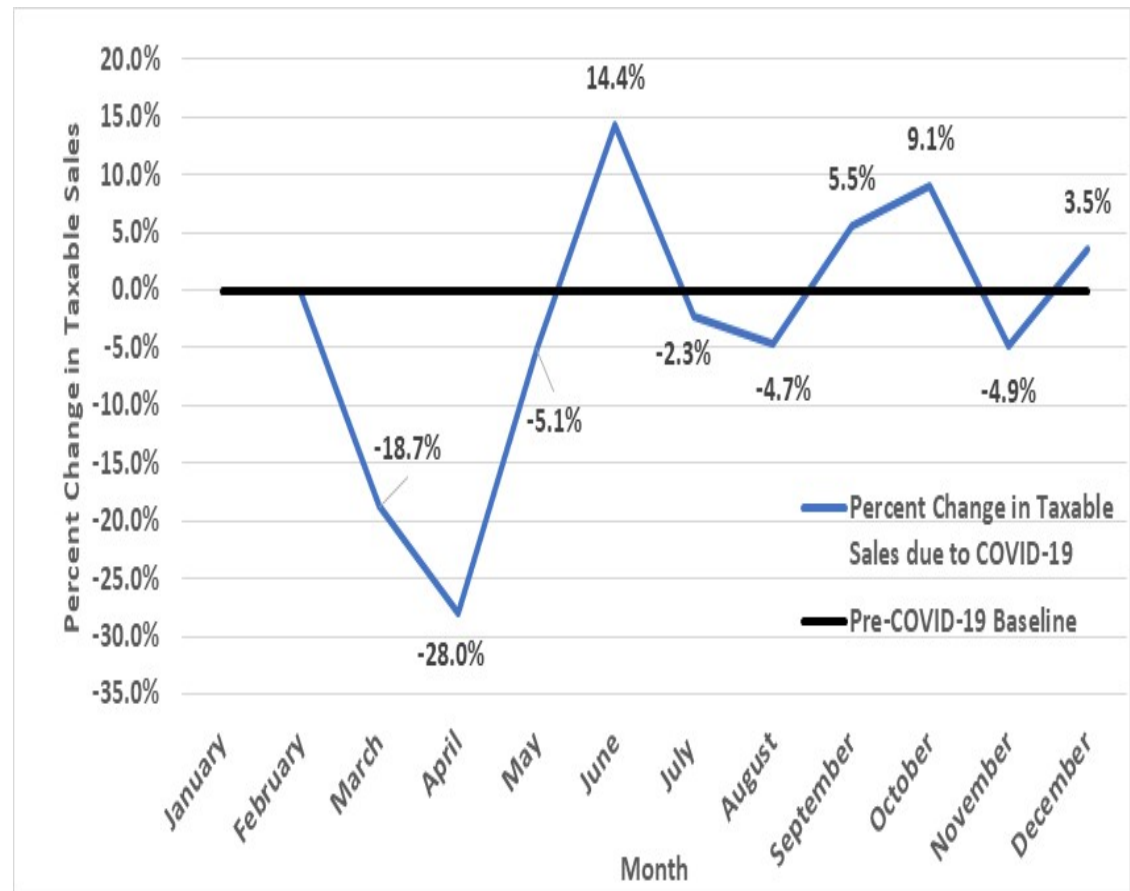
Impact of COVID-19 on Taxable Sales of Certain Services Categories

- Restaurants - significant decline in taxable sales in March and April, recovered, but below pre-pandemic levels, fell again in October – December
- Hotels - large decreases in taxable sales in March, April and May and remained below pre-COVID-19 baseline throughout year
- Personal services – taxable sales decline modestly at the onset of the pandemic but remain just below baseline over the rest of the year



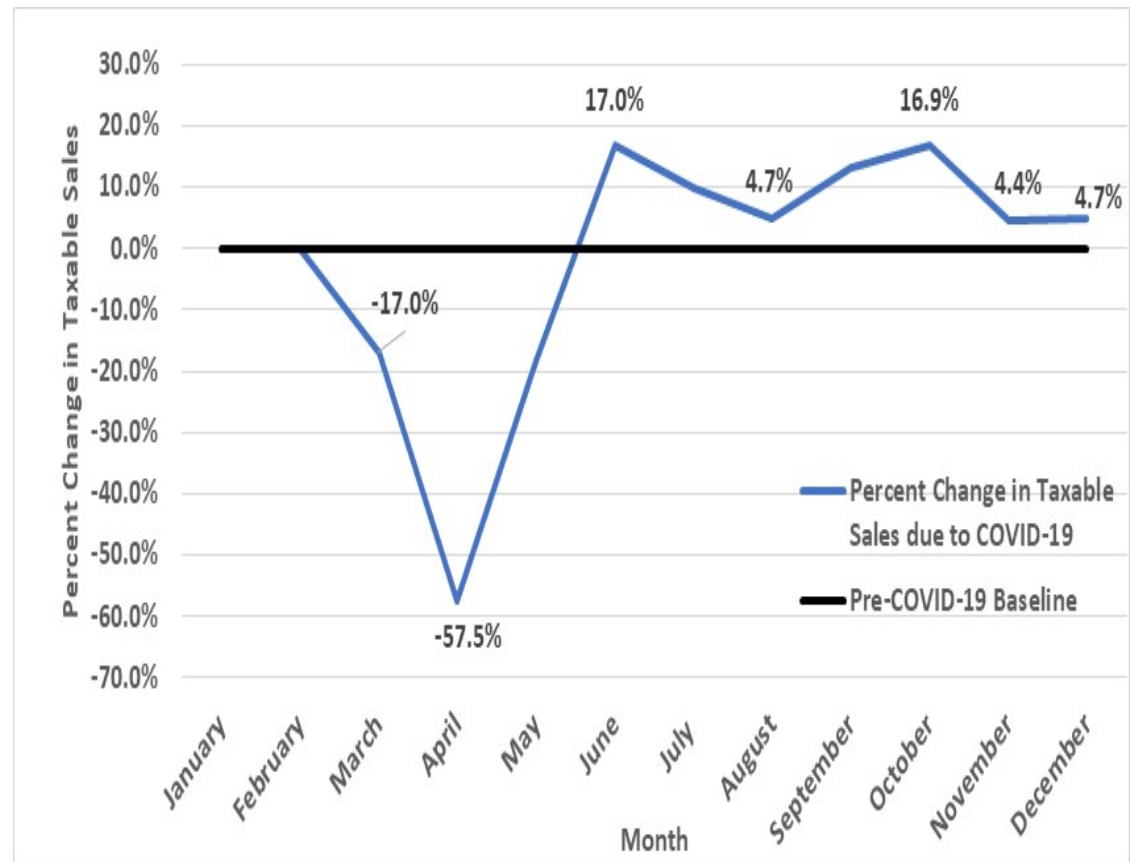
Autos: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Initial impact of COVID-19 on the taxable sales of the auto retail sector was a sharp decline of -18.7% in March.
- The initial March decline was followed by an even steeper decline of -28% in April.
- Recovery began to take hold in June 2020 and by the end of the year, the percent change in taxable sales were slightly higher than the pre-COVID-19 baseline.



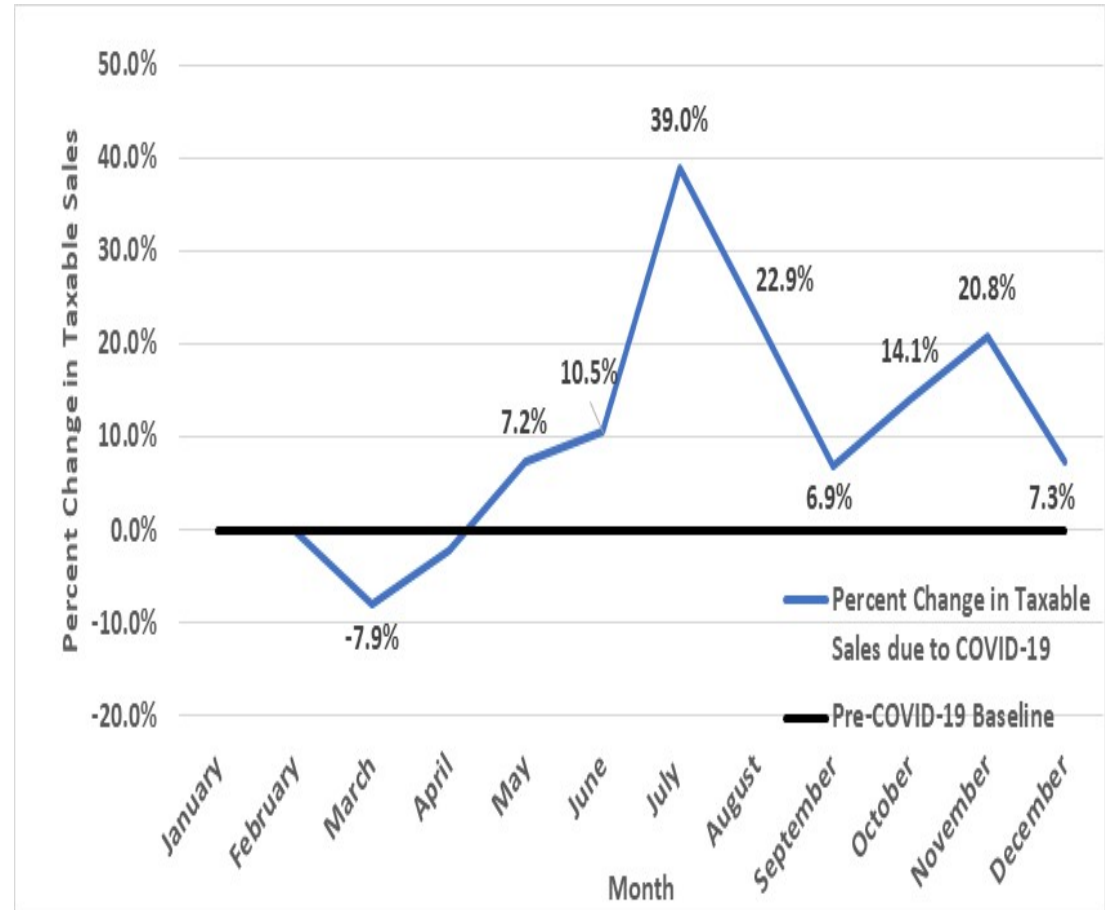
Furniture: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Initially a significant negative impact from COVID-19 on furniture industry sales early 2020 (-57.5% in April).
- May 9, 2020: Phase 1 of Reopening RI stated with the lifting of the stay-at-home order.
- June taxable sales 17% above the pre-COVID-19 baseline and recovery continues over the rest of 2020.



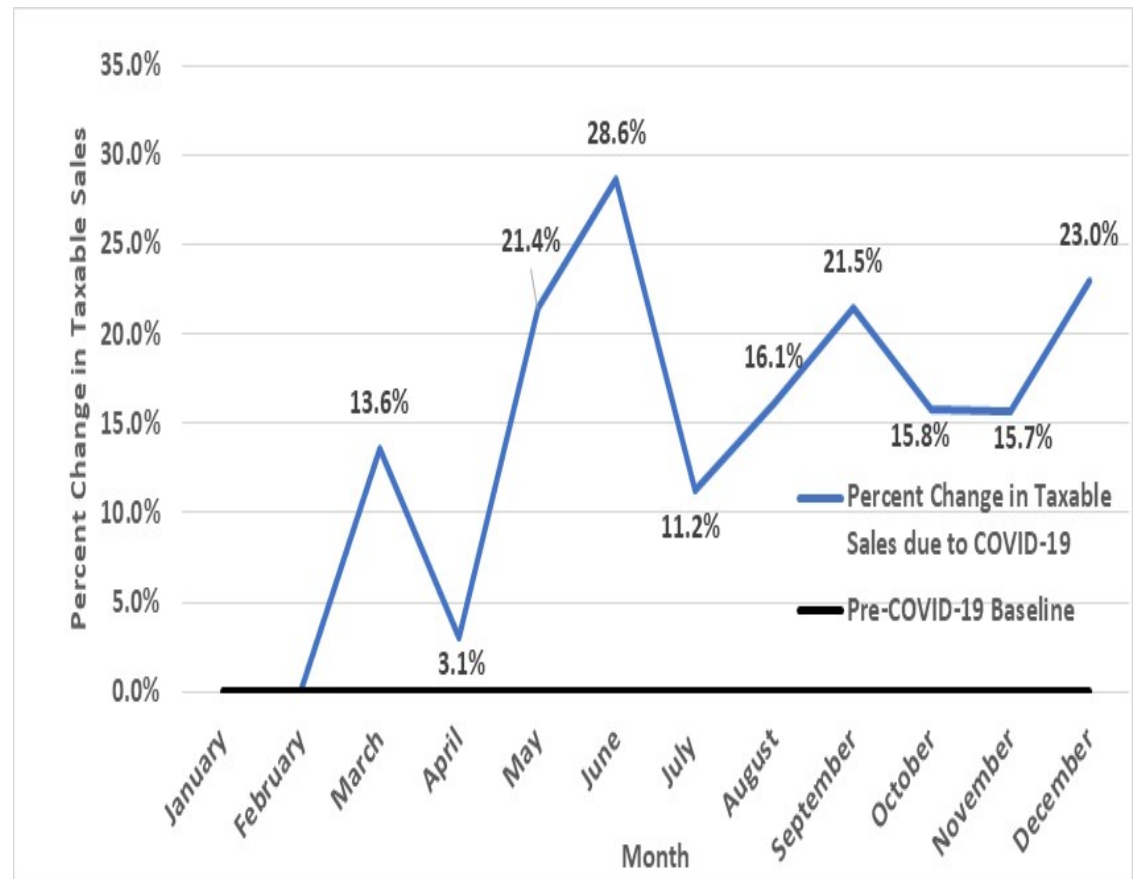
Electronics: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Modest decrease in taxable sales in March and April of 2020.
- Taxable sales of electronics and appliances first exceed the pre-COVID-19 baseline in June and remain elevated for the rest of 2020.
- On an annual basis, taxable sales are 10.1% above the pre-COVID-19 baseline for 2020



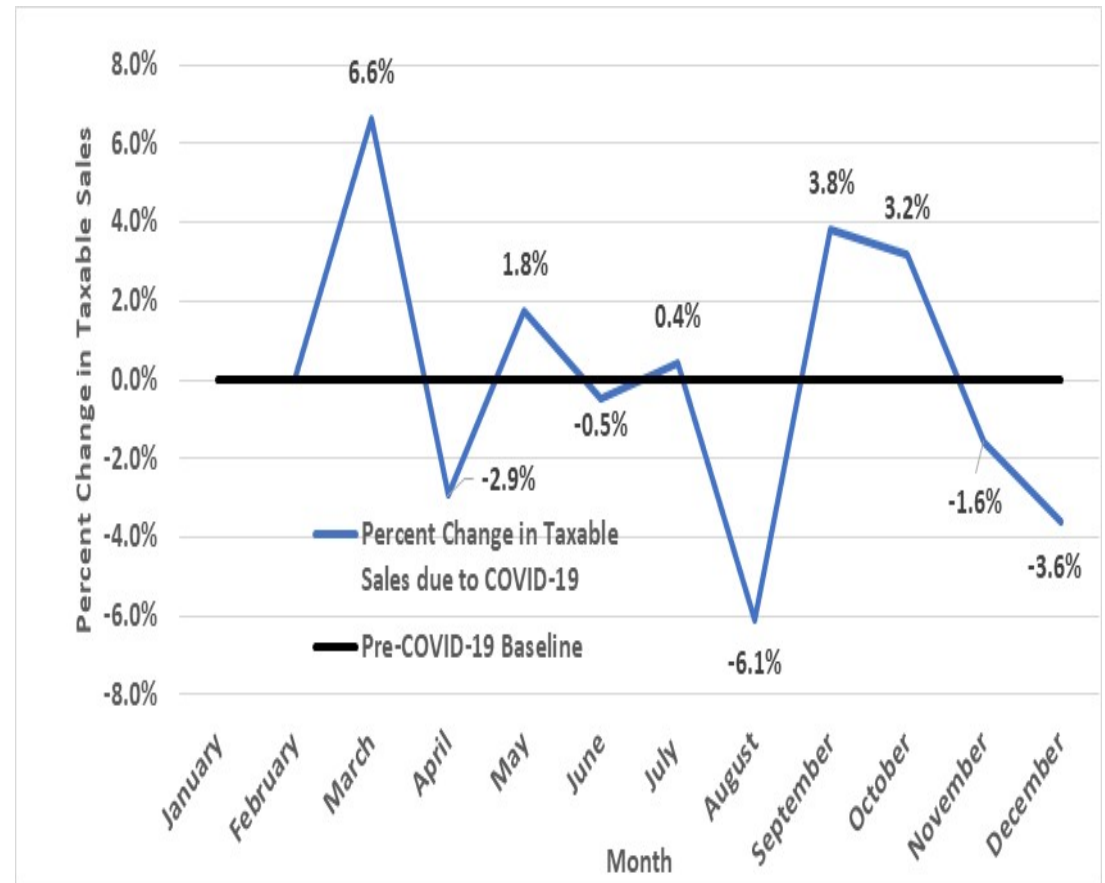
Hardware: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Significant increase in taxable sales in March through June of 2020.
- Hardware stores taxable sales significantly higher than the pre-COVID-19 baseline throughout the rest of 2020.
- This phenomena is the “staycation effect” - if I can’t go on vacation, then I better make my home a place where I want to be this summer.



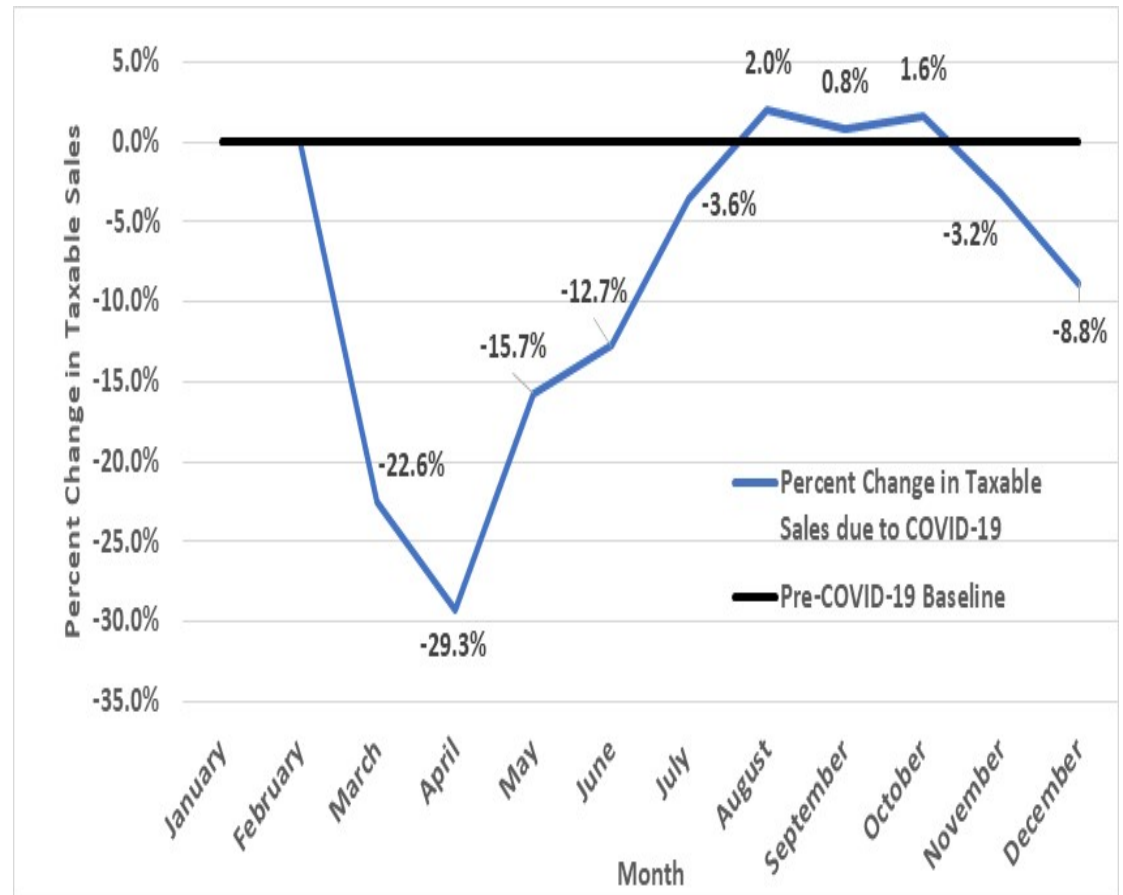
Groceries: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Groceries, food and beverage stores, experience a 6.6% increase in taxable sales in March of 2020.
- Category does not include retailers that sell both groceries and other general merchandise
- After March taxable sales are stable-ish before dropping in August and then rising again in early Fall.



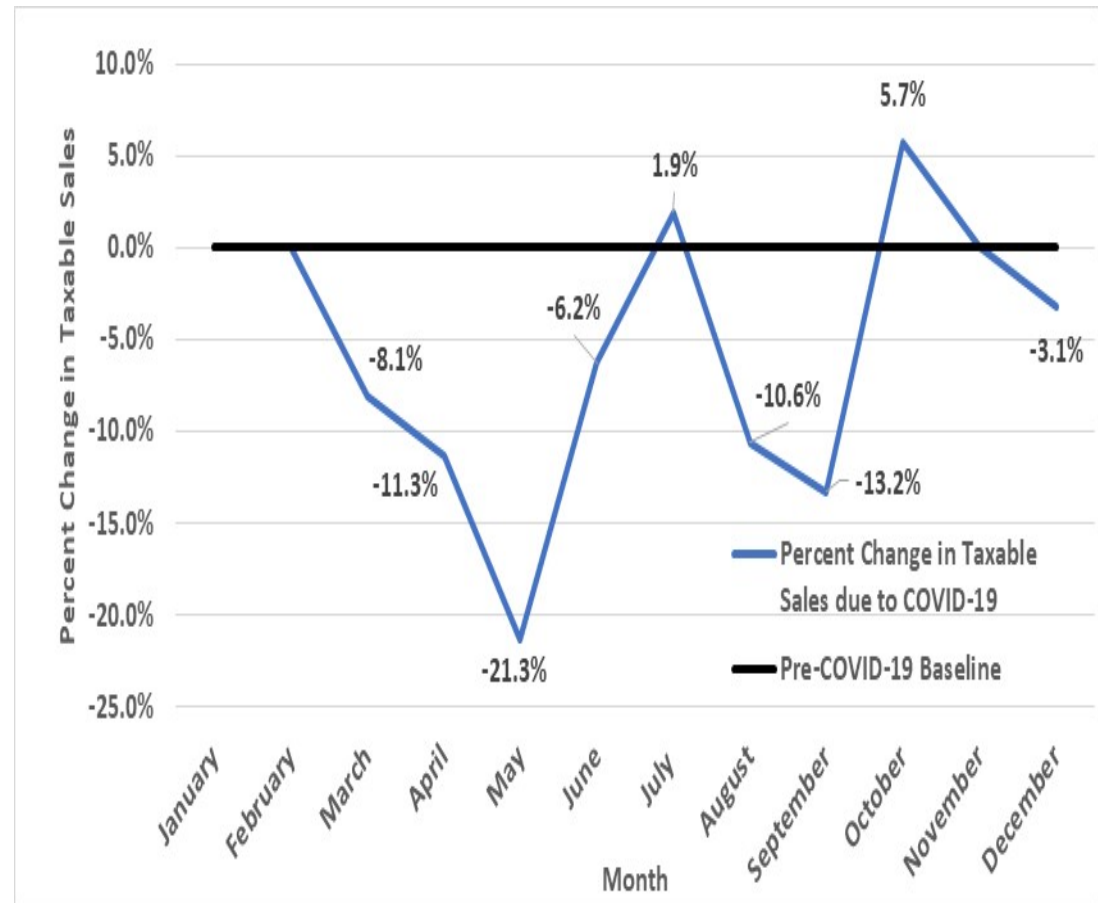
Drugs: % change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Steep drop in taxable sales below the pre-COVID baseline in March of 22.6% with a further decrease in April of 29.3%.
- Taxable sales remain suppressed until July after which they track the pre-COVID-19 baseline until the resurgence in late Fall.
- For all of 2020, taxable sales at drug store are down 8.6% vis-à-vis the pre-COVID-19 baseline.



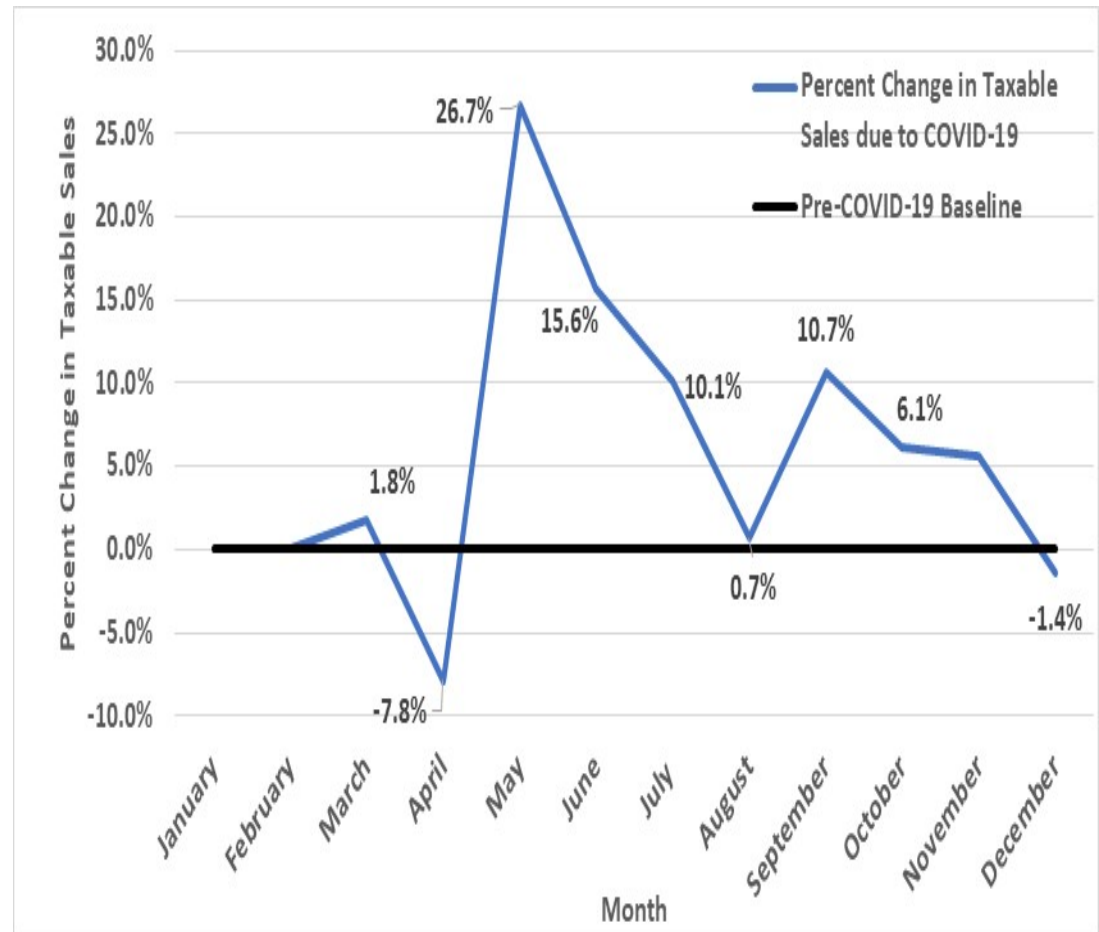
Gas: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Taxable sales of gasoline fall consistently over the March 2020 through June 2020 period bottoming out May at -21.3%.
- Taxable sales rise to pre-COVID-19 baseline levels in July before falling again in August and September.
- Taxable sales stabilize over the last three months of 2020.
- Reduced commuting due to WFH and less vacation driving.



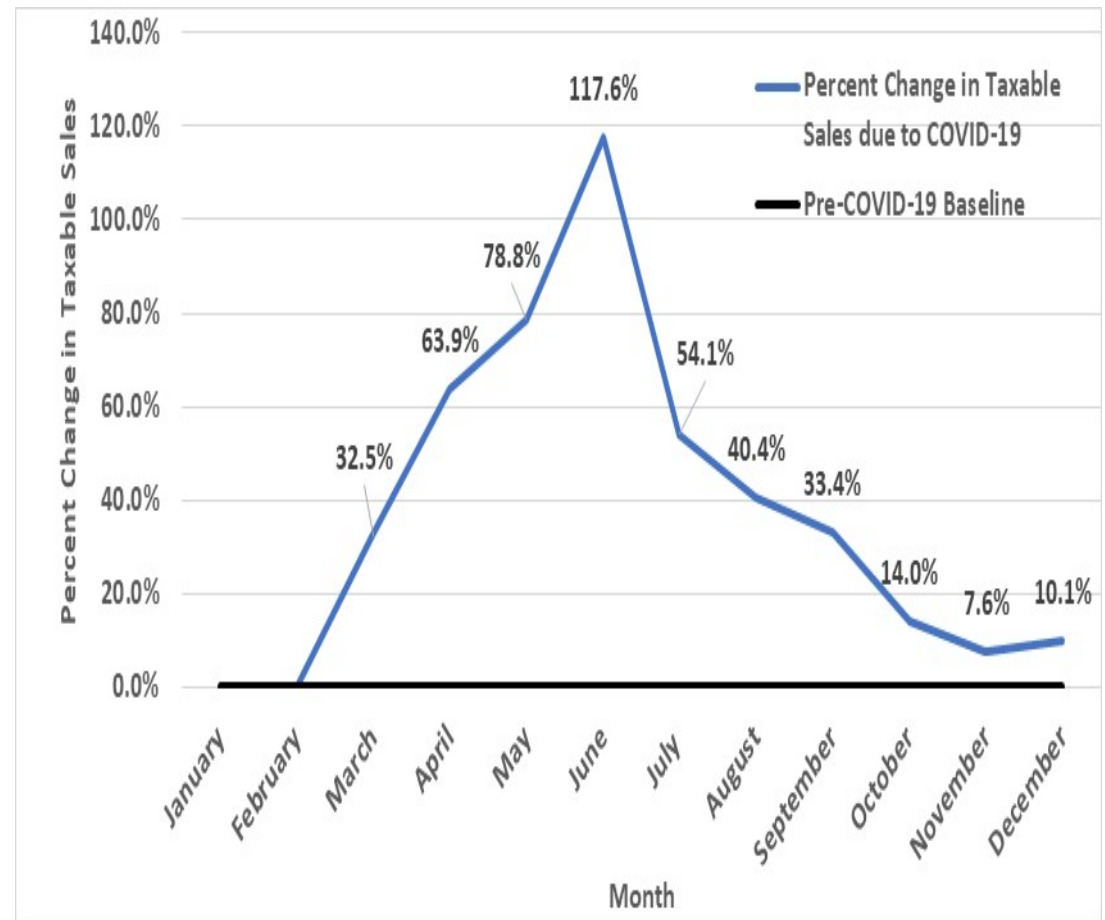
General Retail: % change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Decline in April due to stores that didn't also sell groceries being closed.
- Stores that sold both groceries and general merchandise were open and sold all goods (not just groceries).
- April decline was followed by taxable sales significantly higher than the pre-COVID-19 baseline from May through November 2020.



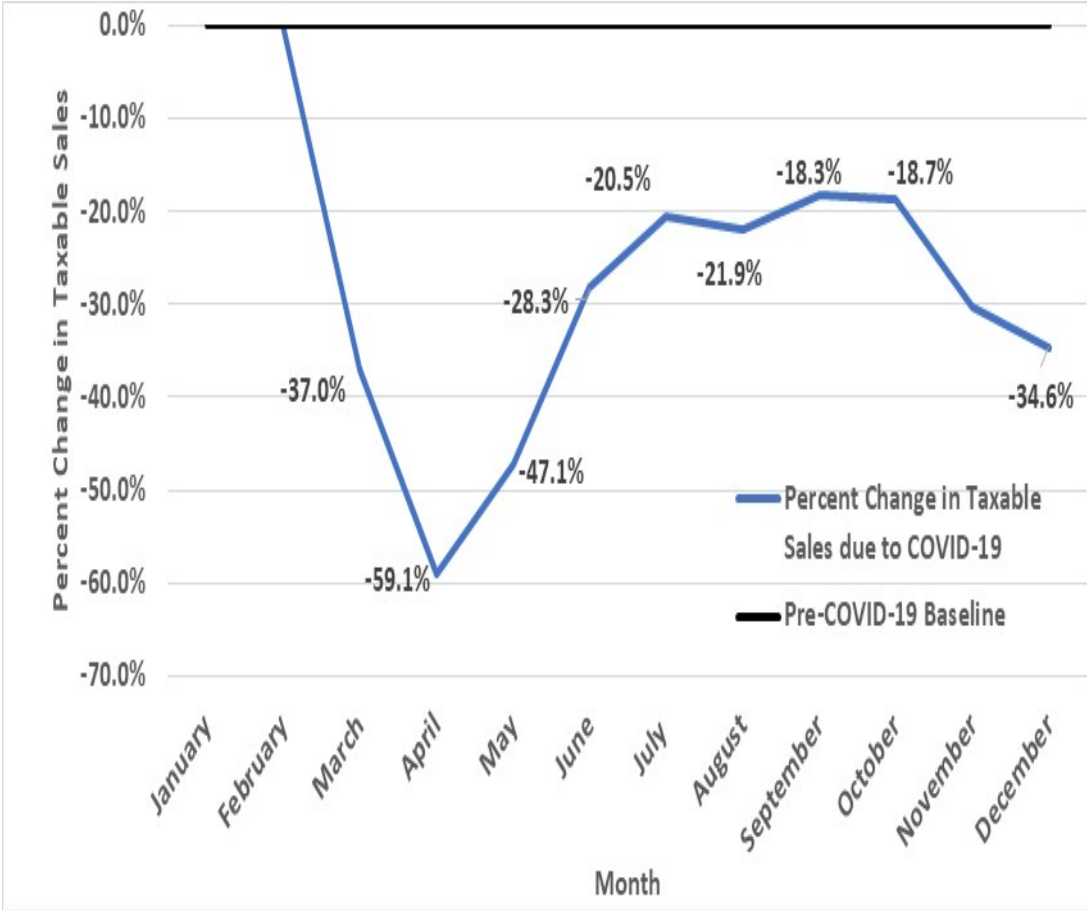
Remote Retail: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Increase in taxable sales in March 2020 of 32.5%, in April of 63.9%, in May of 78.8%, and in June of 117.6% above the pre-COVID-19 baseline.
- Rates of increase declined after June but taxable sales of remote retailers remained above the pre-COVID-19 baseline for the rest of the year.
- Thank you, Wayfair!



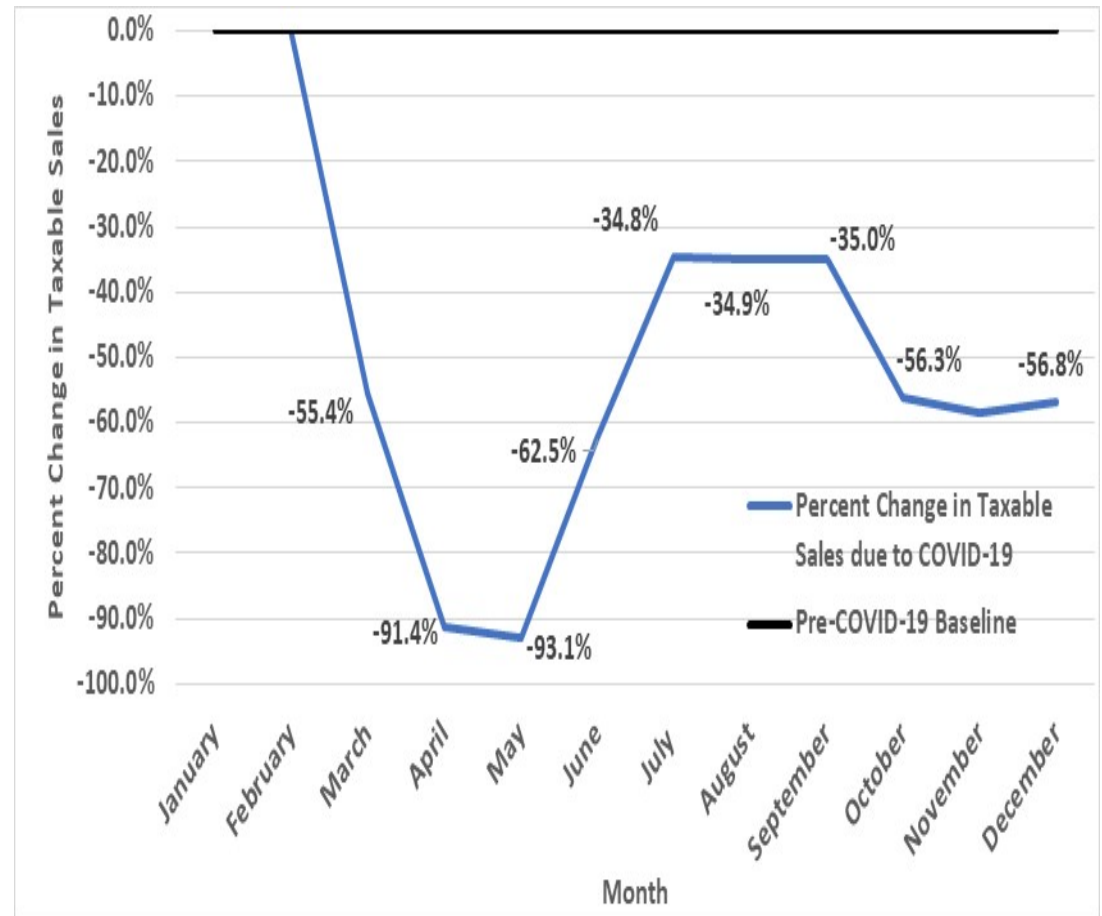
Restaurants: % change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Significant declines in taxable sales in March of 37.0%, in April of 59.1%, and in May of 47.1% compared to the pre-COVID-19 baseline.
- Rates of decrease in taxable sales diminish over time but never rise above -15%.
- Impact worse for sit down restaurants than for fast serve restaurants.



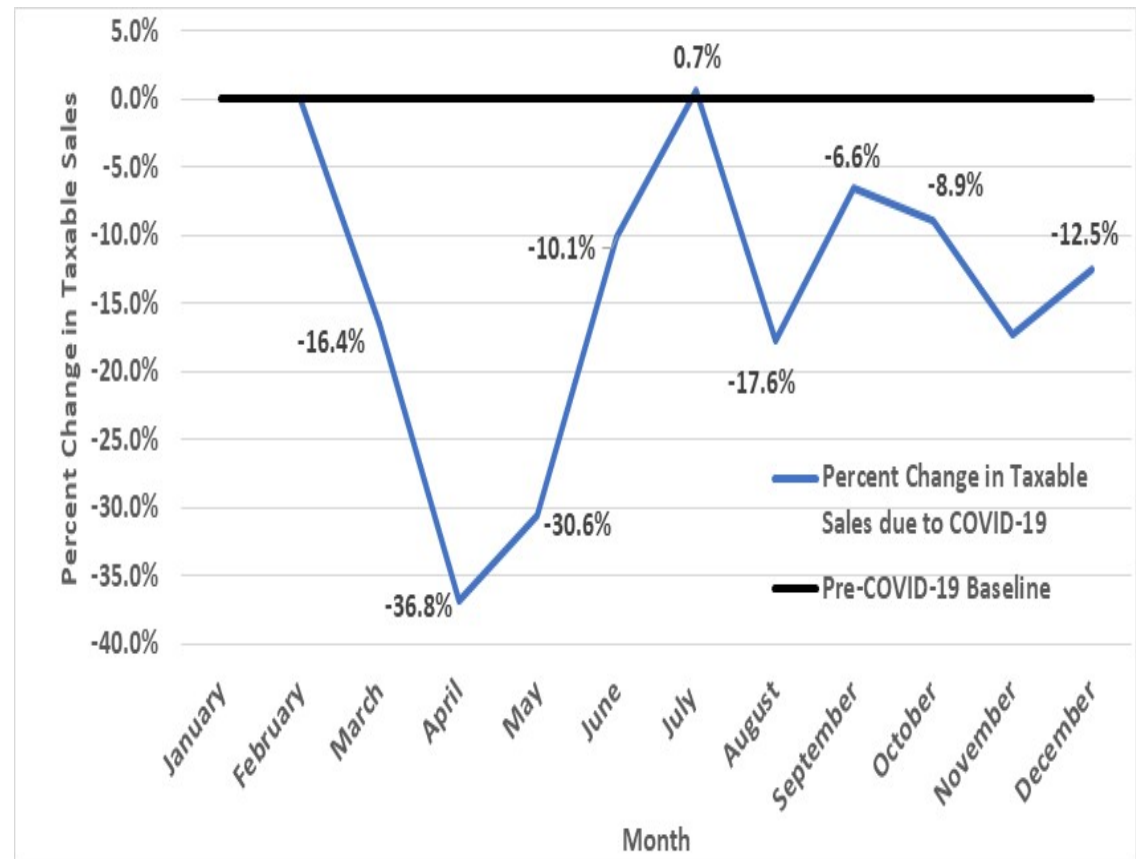
Hotels: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Significant decreases in taxable sales in March of 55.4%, in April of 91.4%, and in May of 93.1% compared to the pre-COVID-19 baseline.
- Rates of decrease in taxable sales diminish over time but top out at approximately -35%.
- Impact worse for business vs. leisure accommodation and hotels vs. private rentals.



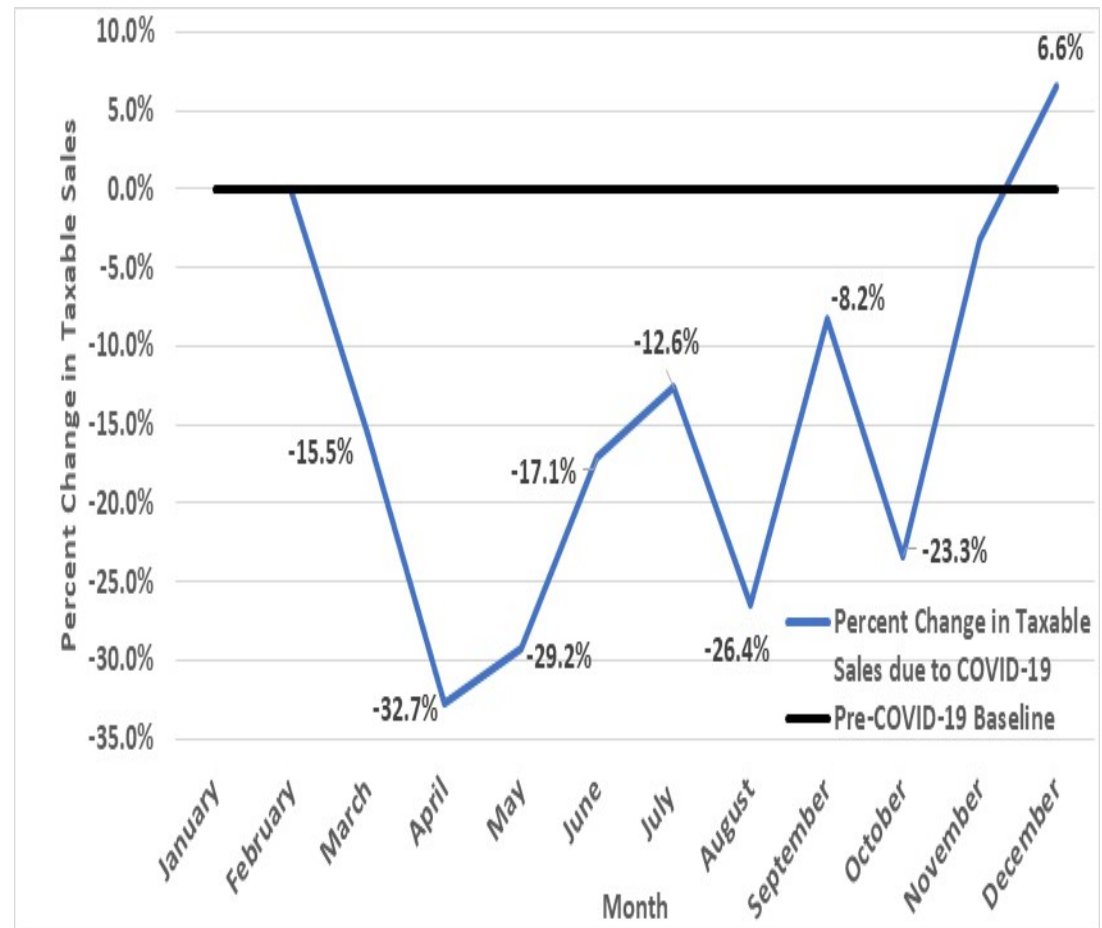
Auto Repair: % change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Taxable sales (parts) decline in taxable in April of 36.8% and in May of 30.6% relative to the pre-COVID-19 baseline.
- Slight recovery in July followed by a downturn in August through December.
- Performance below the baseline due to less driving but also the State's suspension of vehicle inspections for most of 2020.



Other Personal Services: % Change in 2020 Taxable Sales from Pre-COVID-19 Baseline

- Significant drop in taxable sales relative to the pre-COVID-19 baseline in the first few months of the pandemic.
- A zig-zag recovery June to November before an eclipsing of the baseline in December.
- The subsector impact of the change in taxable sales is not clear, but I'm guessing dry cleaners bore a fair amount of the decrease!



Conclusion: Impact of the COVID-19 Pandemic on 2020 Taxable Sales

- Overall, the impact of the COVID-19 pandemic on Rhode Island's economy as measured by taxable sales was mixed:
 - All sectors experienced initial declines in taxable sales consistent with the “shutdown” of the state's economy.
 - Once the economy began to reopen, a number of Retail Trade sectors recovered quickly and were outperforming their pre-COVID-19 benchmark by no later than the end of the year (often sooner).
 - Even with the economy reopening, the Certain Services sectors continued to struggle to regain their footing and significantly underperformed the pre-COVID-19 baseline for the rest of 2020.
- This pattern of recovery, with some sectors above and other sectors below the pre-COVID-19 baseline is consistent with a “K” shaped recovery for Rhode Island's economy in 2020.

Conclusion – CY 2020 impact of COVID-19 pandemic (continued)

- These results track what some economic analysts have labeled a “K-shaped” recovery -- certain industries are recovering well while others continue to struggle
- In this case, the leg of the “K” slanting down are the Certain Services categories and the leg of the “K” slanting up are the Retail Trade categories
- By the end of 2020, the recovery of Retail Trade was more robust than expected at the early stages of the pandemic -- Certain Services did not fare so well

Contact Information

Paul L. Dion, Ph.D., Chief
Office of Revenue Analysis
Rhode Island Department of Revenue
paul.dion@revenue.ri.gov
(401) 574-8999

Eric W. Cook, Ph.D.
CEO
Chainbridge Software, LLC
ecook@chainbridge.com
(703) 359-8211

Thank You!