

# COVID-19's Effect on the Consumer Expenditure Surveys' Estimates

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Federal Committee on Survey Methodology

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# Introduction

- Adjustments to procedures
- Response rates before and during the pandemic
- Data quality impact
  - ▶ CE vs PCE Comparison
  - ▶ Expenditure Means
  - ▶ Relative Standard Error Impacts



# Data Collection

- All in person interviews were done by telephone starting March 19<sup>th</sup>
- Web diary option was added
- Interview Survey collection instrument was updated to collect stimulus payment amounts issued as part of the 2020 CARES act



# Stimulus Payments

- Question was added in June of 2020
  - ▶ Captured if they received a payment
  - ▶ What the payment was used for
    - Increase spending
    - Increase savings
    - Pay off debt



# Response Rates

- In March of 2020, response rates began to drop
- Diary had the more significant drop of 14% compared to Interview of 1%
- Sample increase in January 2020 helped offset the total surveys collected
  - ▶ Diary increased from ~5000 to ~7500



# Response Rates

- The U.S. Census Bureau partnered with the Economic Reimbursable Surveys Division (ERD) to use their research contact frame to supplement the CE surveys. Beginning with April 2020, phone numbers from the ERD contact frame were included.
- The Diary sample increase as well as the ERD supplement helped support moderate gains in terms of sample size for both the Interview and Diary Surveys in quarters 3 and 4 of 2020.

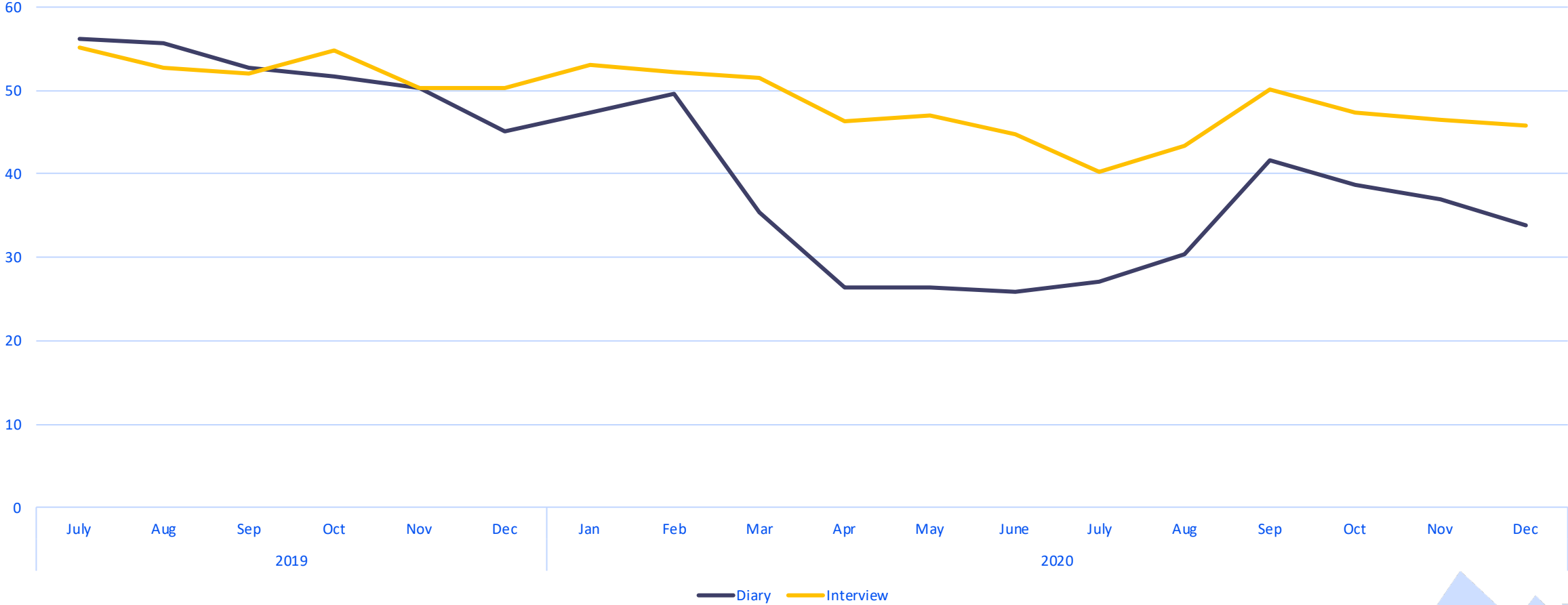


# Response Rates

- Interview Survey response rate showed an increase of almost 10 percentage points from July to September 2020.
  - ▶ Response rates from September to December 2020 declined slightly, falling to 45.8 percent.
- Diary Survey response rates showed a similar uptick in response from April to September 2020, with response rates then falling slightly to 33.9 percent.



# Consumer Expenditure Surveys Monthly Estimation Response Rates (2019Q3 through 2020Q4 collection year)

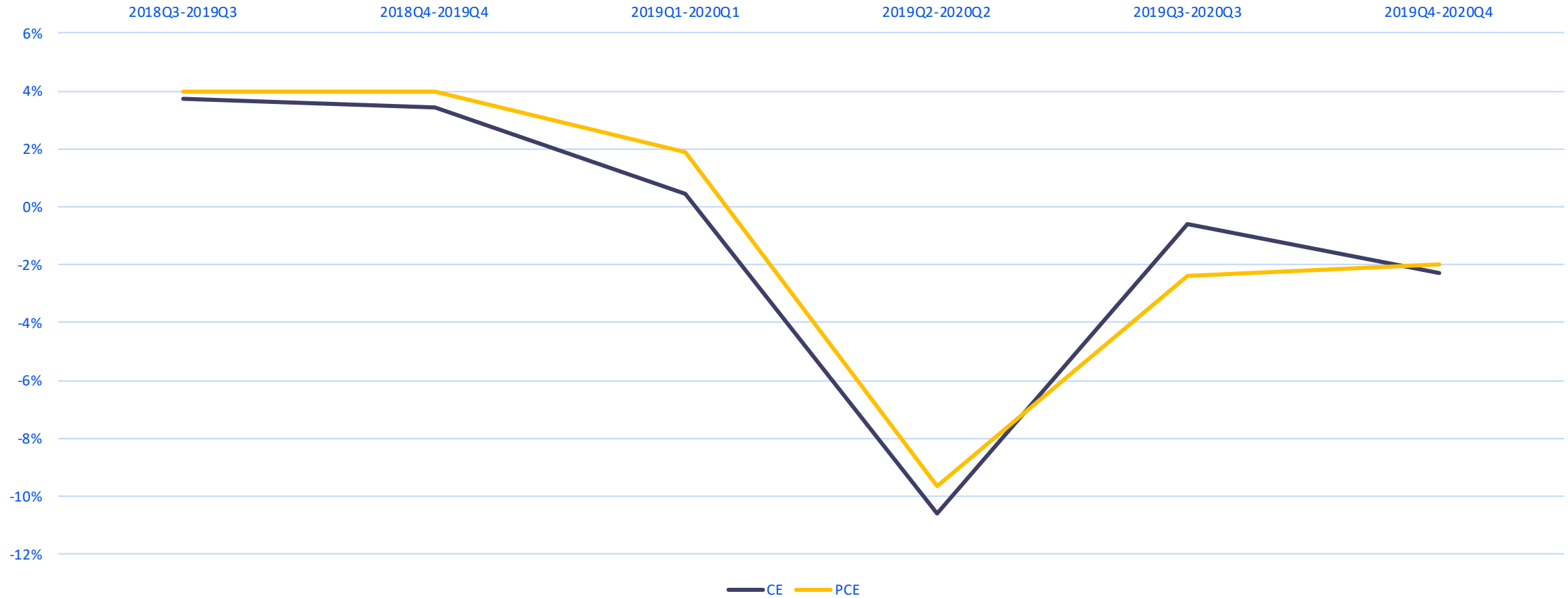




# Data Comparison – CE vs PCE

- Interview and Diary Survey estimates from the 3<sup>rd</sup> quarter of 2019 through the 4<sup>th</sup> quarter of 2020 were compared with the Personal Consumption Expenditures estimate for the same period
  - ▶ Year over year percent changes showed similar trends
  - ▶ From 1<sup>st</sup> quarter of 2020 through the 2<sup>nd</sup> quarter, CE showed a larger over year percent change decrease than PCE
  - ▶ However, the percent changes for the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2020 showed similar trends

# Year-over-year percent change in quarterly expenditure aggregates, Consumer Expenditure Surveys and Personal Consumption Expenditures, 3rd quarter 2019 through 4th quarter 2020



# Data Comparison – CE vs PCE

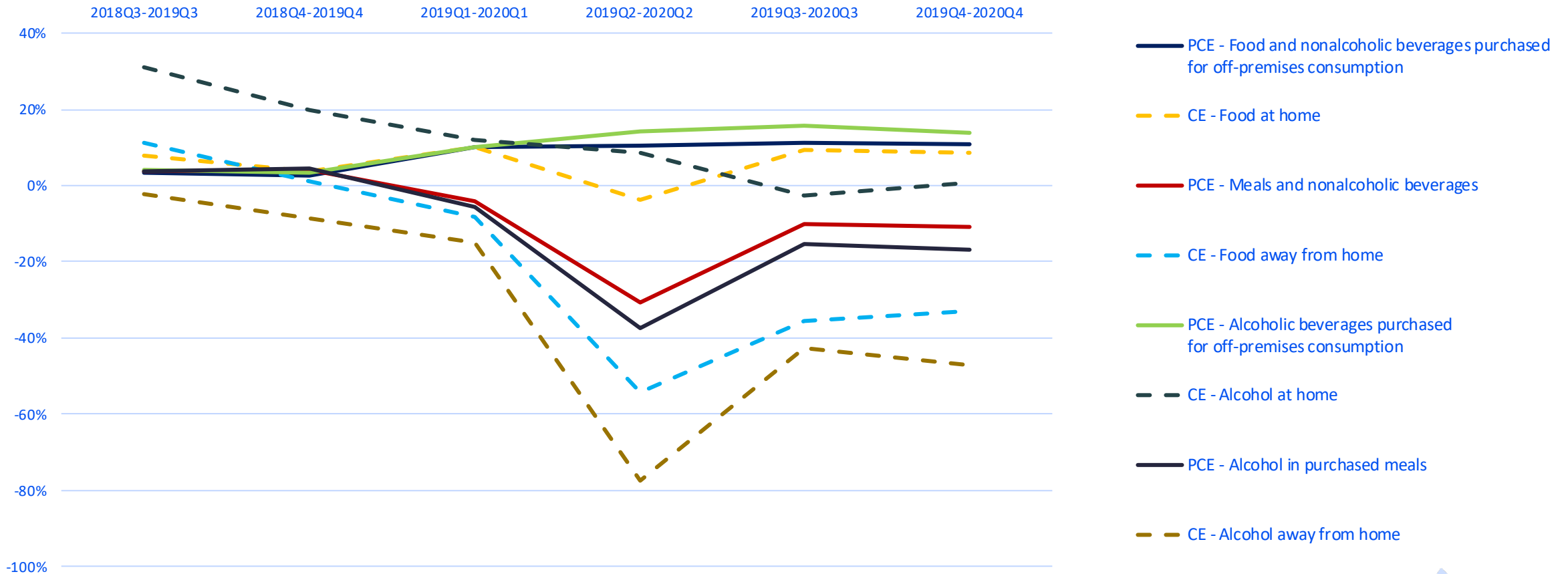
- CE compared aggregates that corresponded well with PCE
  - ▶ Food and alcohol at home and away from home
- Percent change in aggregates for away from home food and alcohol expenditures in both the PCE and CE continued to show similar patterns, with CE continuing to show a more dramatic drop in spending

# Data Comparisons – CE vs PCE

- In quarters 3 and 4 of 2020, year-over-year percent change figures for at home spending in the CE were more closely aligned with PCE than it was in quarter 2 of 2020
- CE expenditures dropped more than PCE for food away from home and alcohol away from home



# Year-over-year percent change in quarterly expenditure aggregates, Consumer Expenditure Surveys and Personal Consumption Expenditures, 3rd quarter 2019 through 4th quarter 2020



# Data Quality – Expenditure Mean Estimates

- 2020 Annual News Release showed several notable changes in major expenditure categories
- Out of 14 major spending categories, only five showed an increase over the previous year's estimate



# Year-over-year percent change in quarterly means, Consumer Expenditure Surveys, 3rd quarter 2019 through 4th quarter 2020



# Data Quality – Expenditure Means Estimates

- Largest drops in the following categories:
  - ▶ Apparel and services
  - ▶ Personal care products and services
  - ▶ Alcoholic beverages
  - ▶ Food
- Food and alcoholic beverages declines were primarily associated with away from home purchases
  - ▶ Food away from home: approximately 33 percent decrease
  - ▶ Alcohol away from home: approximately 44 percent decrease

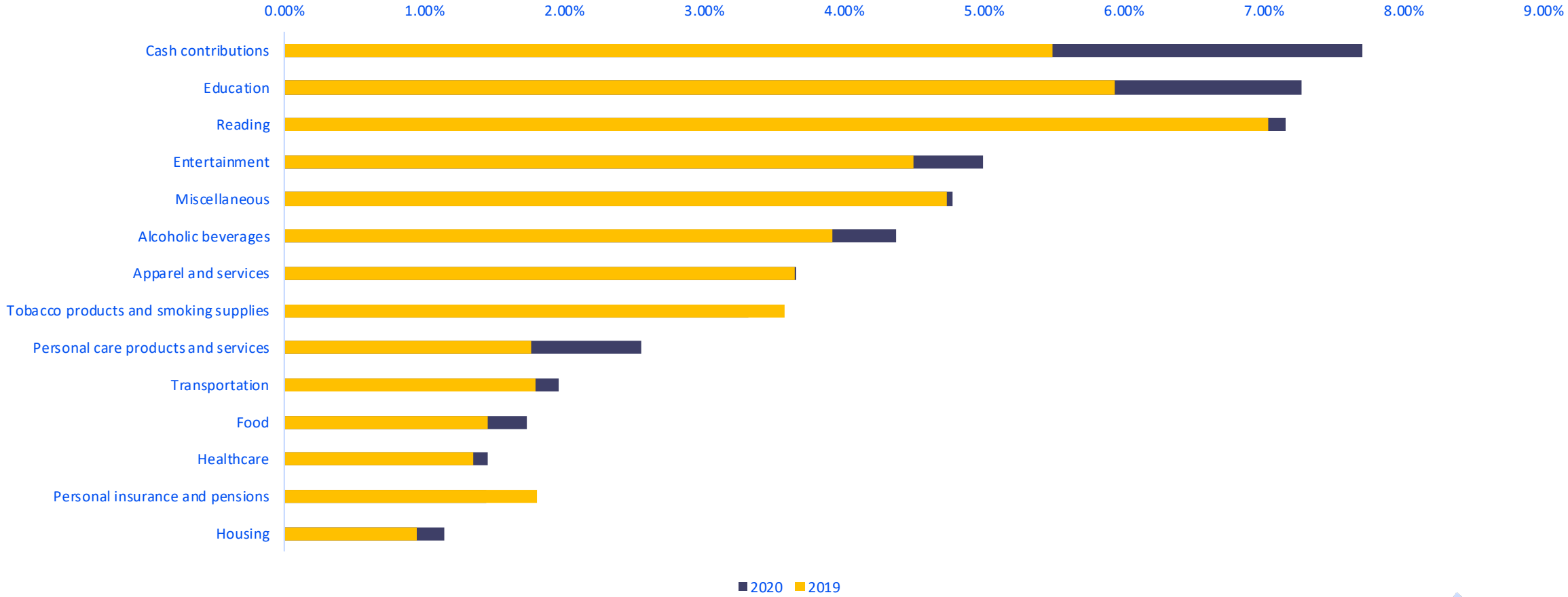




# Data Quality – Standard Errors

- CE looked at year-over-year change in variance for 2020 compared to 2019
- Only two of the 14 major spending categories in 2020 had an increase in RSE (relative standard error) of greater than one percent
  - ▶ Education
  - ▶ Cash Contributions

# Year-over-year change in quarterly relative standard error, Consumer Expenditure Surveys, 3rd quarter 2019 through 4th quarter 2020



# Summary

- Food and alcohol spending away from home dropped more in CE than in the PCE in 2020
- Nine major spending categories declined in 2020
  - ▶ Drop in Apparel and services and Personal care products and services
  - ▶ Drop in Food and Alcoholic beverages were associated with away from home purchases
- RSE increased over one percent in two out of 14 major spending categories in 2020

# Future Work

- The CE program will continue to analyze the impact of COVID-19 on the CE data and its products including the public use microdata files and tables



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