# *Consumption Inequality Before, During, and After the COVID-19 Pandemic*


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*Session E-5: Creating an Integrated System of Data and Statistics on Household Income, Consumption, and Wealth: Progress on Building*


*Disclaimer:* This presentation provides a summary of research results. The information is being released for statistical purposes, to inform interested parties, and to encourage discussion of work in progress.

updated November 4, 2024

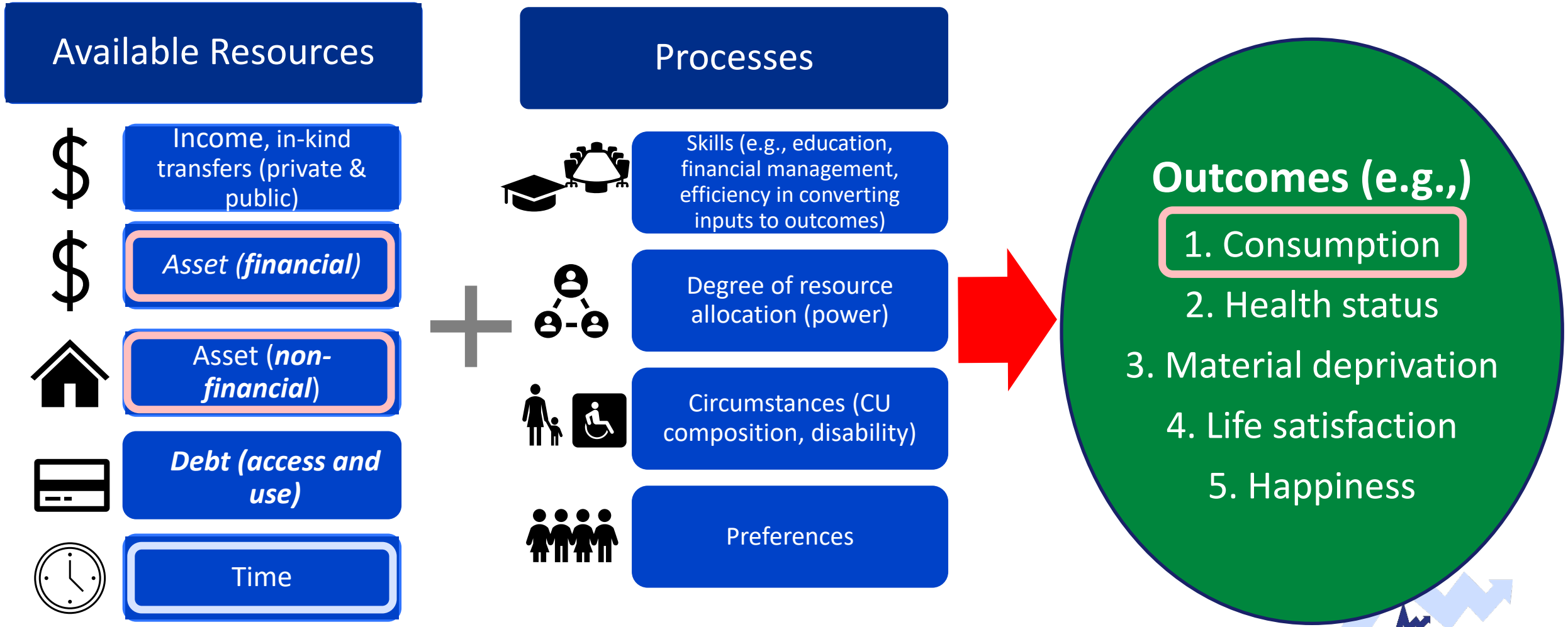
# COVID and Consumption Inequality

- COVID greatly impacted the economy
  - Sudden shutdown in March 2020
  - Shift in types of expenditures, as some types of spending was more affected than others
  - Unprecedented fiscal response
- Consumption inequality fell in 2020 before recovering in 2021 and 2022
  - Decline driven by declining consumption in pandemic sensitive components of consumption among those at the top of the distribution

# Overview

- Consumption measure
- This study
  - Data and methods
  - Results
- Future, data challenges, and questions for discussion

# Consumption as a Well-being Outcome: A Function of Resources and Processes



# Why Produce Consumption Measures?

- Alternative measure of well-being based on outcomes
  - Supports work and recommendations on OECD joint distributions of income, consumption, and wealth
  - Allows us to go beyond expenditures – importance of home production during COVID-19 pandemic period
- Inequality and poverty measurement
  - Supports the work of the Interagency Technical Working Group (ITWG) on Evaluating Alternative Measures of Poverty (2020)
  - Follows along with the CNSTAT panel (2023) focus on consumption needs as does the proposed Principal Poverty Measure
  - In-development Luxembourg Consumption Study (LCS) - international

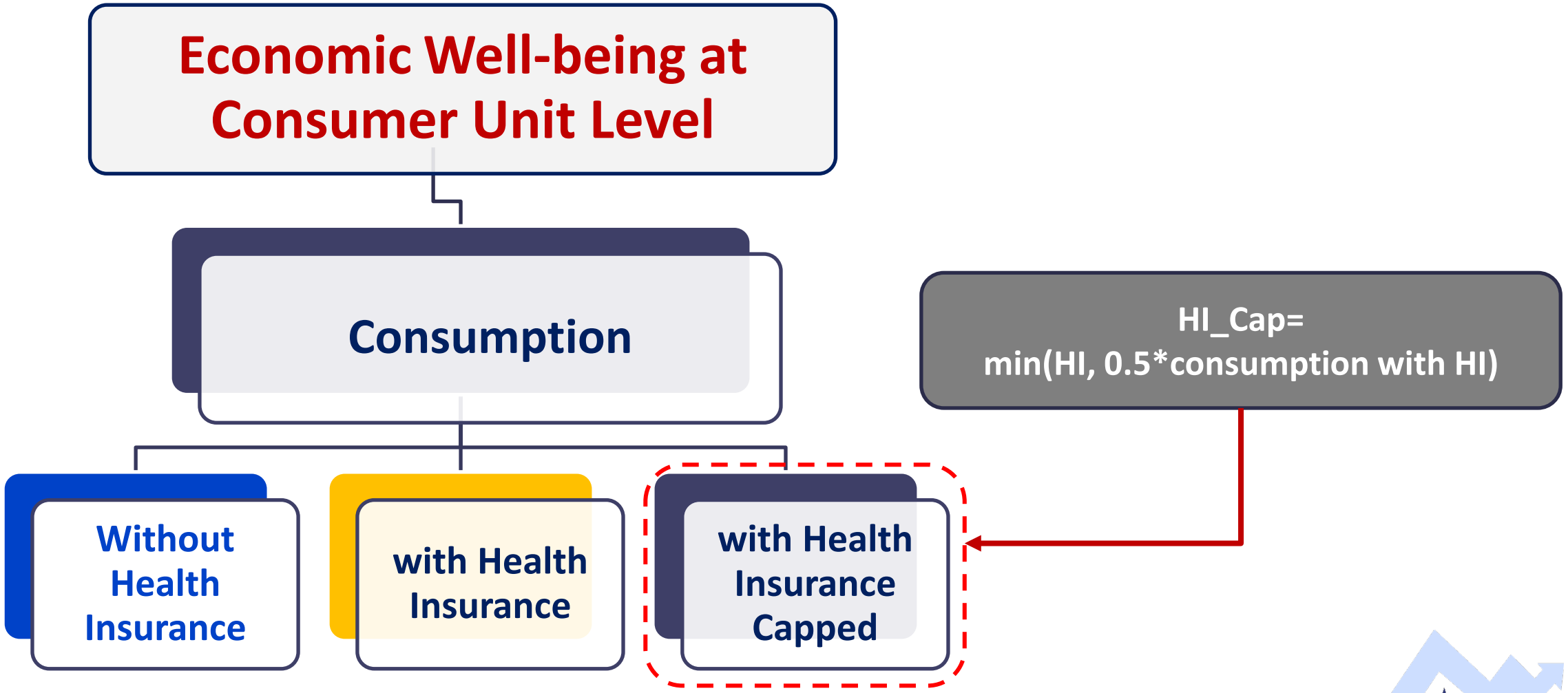
# Previous Work on BLS Consumption Measure

- Presented at professional meetings starting in 2022
  - *ASSA, CNSTAT, FESAC, JSM, OECD, JSM, SEA, & SGE*
- Publications
  - Garner, Thesia I., Brett Matsumoto, Jake Schild, Scott Curtin, and Adam Safir, "Developing a consumption measure, with examples of use for poverty and inequality analysis: a new research product from BLS," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, April 2023, Developing a consumption measure, with examples of use for poverty and inequality analysis- Monthly Labor Review
  - Cho, Caleb, Brett Matsumoto, and Dominic Smith, "A consumption measure for automobiles," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, January 2024, A consumption measure for automobiles - Monthly Labor Review
  - Garner, Thesia I., Brett Matsumoto, Jake Schild Consumption Inequality During and After the COVID-19 Pandemic, BLS Working Paper 573 March 2024, Consumption Inequality During and After the COVID-19 Pandemic - BLS Working Paper -- *source of consumption results presented today*

# Consumption Expenditures vs Consumption: Key differences

- Owned shelter – expenditures vs rental equivalence
- Durables – expenditure vs flow of services
- In-kind transfers – included in consumption
- Household Production
- Gifts and barter – for own consumption
- Problem categories (investment vs consumption)
  - Education
  - Health

# Concepts of Consumption




NOTE: None of these measures include "Education"

# Data

- Base is U.S. Consumer Expenditure Survey Interview, 2019Q2 through 2023Q1 to represent 2019 through 2022
- Reference periods define what we refer to as a "year," e.g., year 2019
  - Data collected in 2019Q2-2020Q1
  - Reference period January 2019-February 2020 defines "2019"
- Assume quarterly data are independent (not restriction based on number of interviews)
- Supplement Interview data with data from other sources (e.g.,)
  - CPS-ASEC
  - USDA Administrative Data
  - MEPS Insurance Component & CMS National Health Expenditure Database
  - National Center for Education Statistics

# Imputations

- Value of health insurance (but also include CU reported premiums)
- In-kind benefits – LIHEAP, NSLP, WIC (if EBT, $0 monthly, but add infant formula), and rental subsidies
- Flow of services from owned vehicles (user cost approach)
  - Impute depreciation and opportunity costs for vehicle (cars and trucks only)
  - Drop expenditures for purchase of other vehicles
  - NOTE: other components of flow of services based on user cost (operating expenses) are already included as part of spending for all vehicles

# Inequality Analysis

- Data preparation
  - Equivalized using 3-parameter equivalence scale
  - Person weighted distributions: FINLWT21*fam_size
- Gini index
  - Overall consumption inequality relative to other measures
  - Decompositions of consumption inequality by component

# Decomposition of Inequality by Consumption Category

- Gini decomposition by type of consumption (Lerman and Yitzhaki 1985):

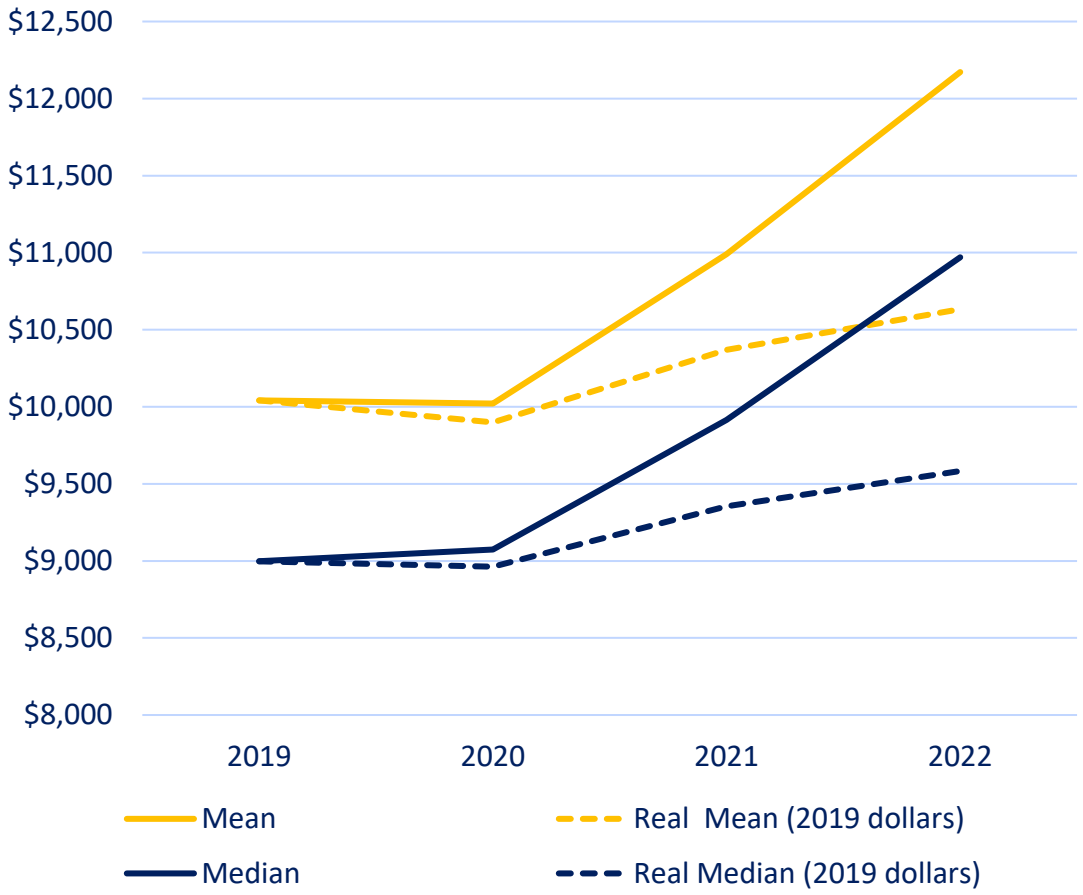
$$G = \sum_{g} G_g R_g S_g$$

  - $G_g$: Within category Gini
  - $R_g$: Correlation with rank of overall consumption
  - $S_g$: Share of overall consumption
  - $G_g R_g S_g$ : the contribution of $g$ to overall inequality

# Results

All references to consumption refer to a measure that includes health insurance capped unless otherwise noted.

# Quarterly Equivalized Consumption Means and Medians




- Small declines in real mean and median consumption in 2020.
- Large impact of inflation on 2021 and 2022 nominal values.

# Gini Indexes for Overall Inequality

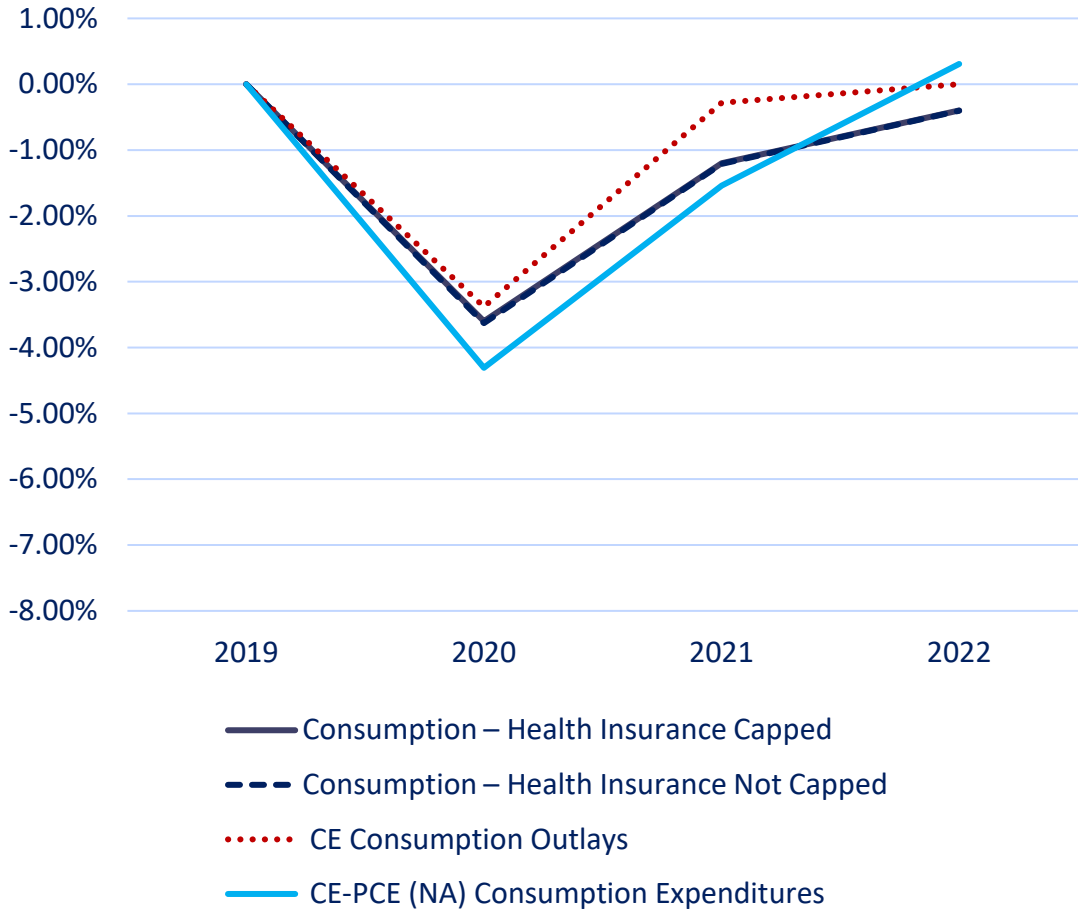
| Consumption/Expenditure Type | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|
| Consumption – Health Insurance Capped | 0.250 | 0.241 | 0.247 | 0.249 |
| Consumption – Health Insurance Not Capped | 0.248 | 0.239 | 0.245 | 0.247 |
| CE Consumption Outlays | 0.355 | 0.343 | 0.354 | 0.355 |
| CE-PCE (NA) Consumption Expenditures* | 0.325 | 0.311 | 0.320 | 0.326 |

| Income Type | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|
| CE Before-tax Income with In-kind Benefits | 0.457 | 0.443 | 0.447 | 0.441 |
| CPS-ASEC Post-tax Income | 0.416 | 0.399 | 0.394 | 0.417 |
| CPS-ASEC-PI (NA) Personal Income** | 0.436 | .0.421 | 0.422 | .0422 |

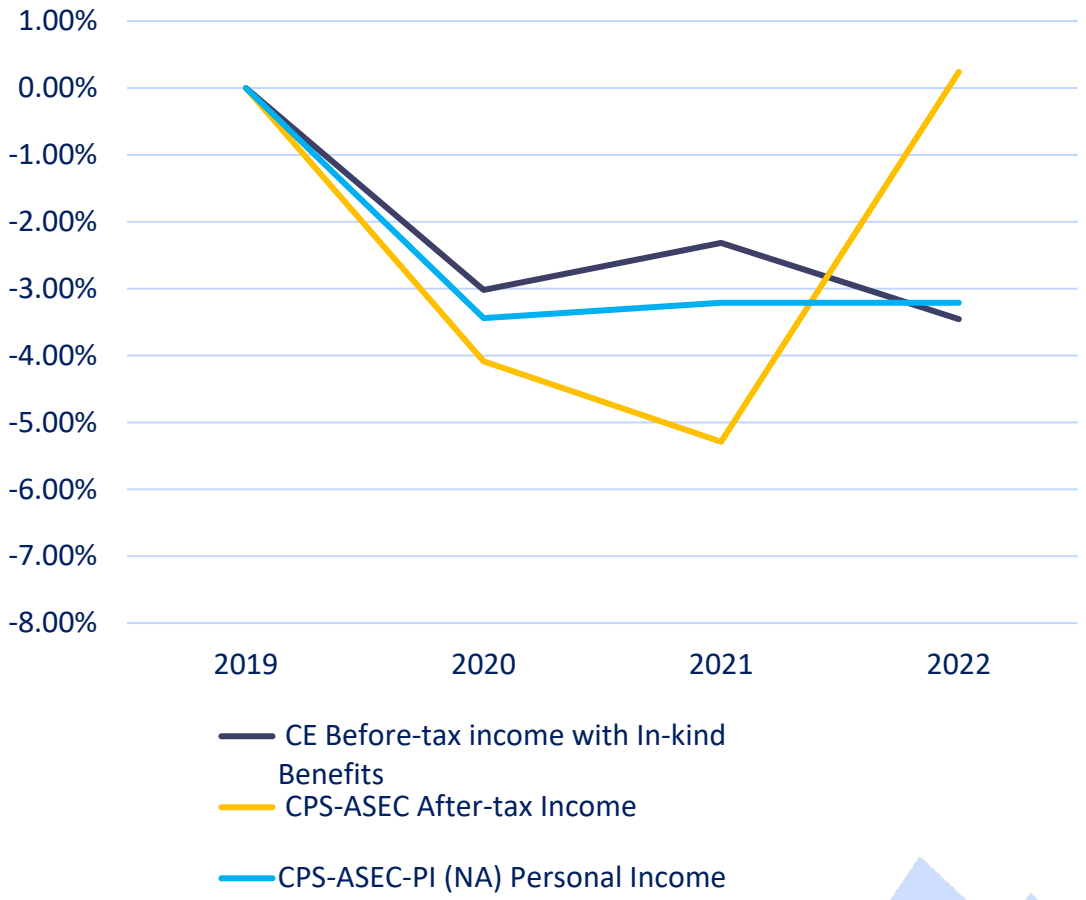
All but NA distributions based on using 3-parameter equivalence scale; NA use square root of CU size.
CPI-ASEC Post-tax income defined as money income net of federal and state taxes and credits, payroll taxes (FICA), and temporary cash payments administered by tax agencies, like rebates or stimulus payments.
*CE-PCE (NA) results for 2022 are provisional; to be re-estimated in March 2025.
**CPS-ASEC- PI (NA) results for 2022 are provisional; to be re-estimated in December 2024.

# Percentage Change in Gini Index Relative to 2019

## Consumption/Expenditures




## Income

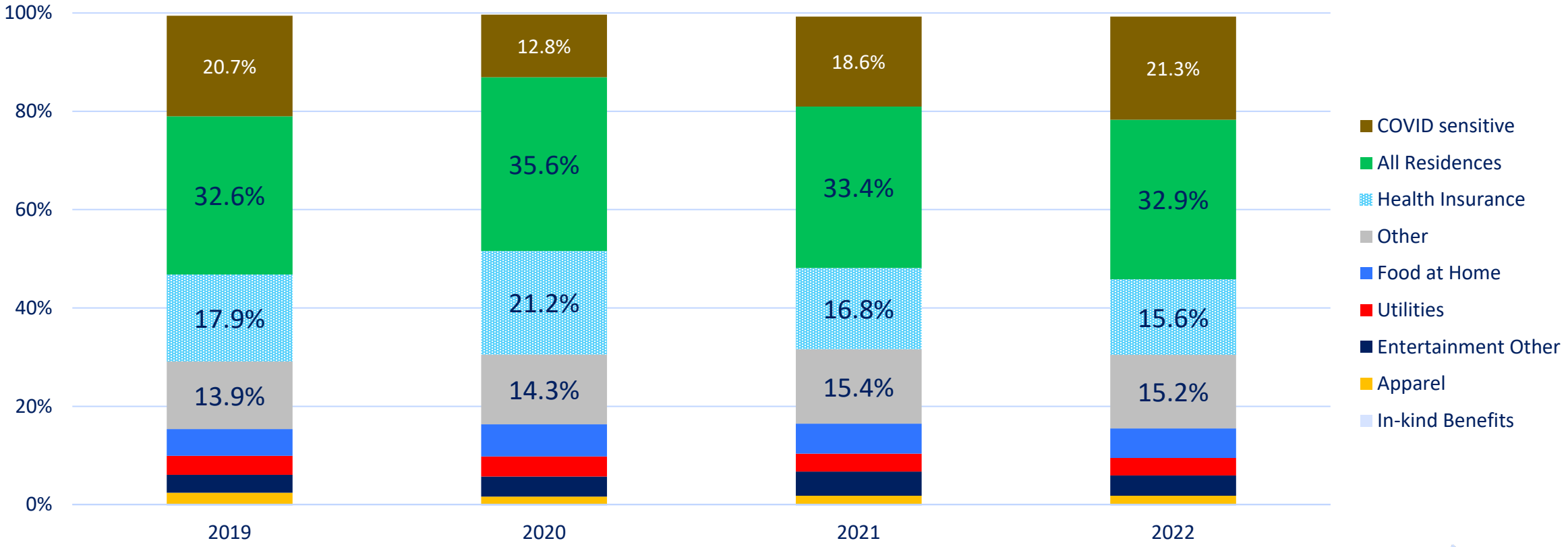


# Consumption Components

| More COVID Sensitive |
| --- |
| Shelter on trips |
| Food away from home |
| Transportation (other than related to owned vehicles) |
| Entertainment fees and tickets |

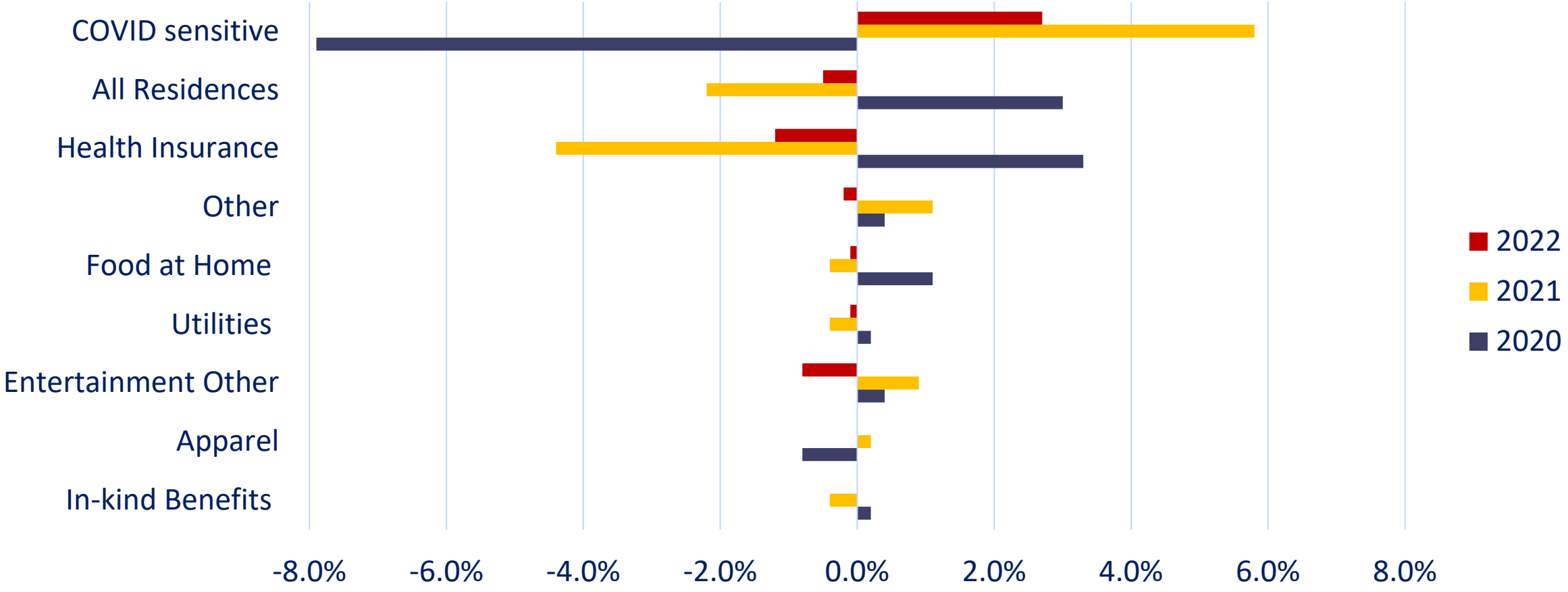
| Less COVID Sensitive |
| --- |
| All residences (rent, owned, vacation home) |
| Utilities |
| Food at home |
| Apparel |
| Health insurance |
| In-kind benefits |
| Other (e.g., other entertainment, vehicle dep.+opp, owned vehicle operations, personal care, reading, tobacco, household operations, household furnishings, shelter at school) |

# Consumption Gini Index Decomposition: Component Contribution Share of Overall Inequality




Using Consumption – Health Insurance Capped

# % Change in Component Contribution Year to Year




For example, the contribution of covid sensitive components to overall inequality fell 7.9% in 2020 from 2019

# Drivers of the Change in Gini Contribution by Component

- Covid sensitive components tend to have
  - High within category Gini and high rank correlation
- From 2019 to 2020
  - Shares declined in covid sensitive components offset by increases in other components
  - Rank correlation and within Gini are relatively stable
  - Results is the shift in consumption patterns leads to lower overall inequality

# Future, Data Challenges, and Questions for Discussion

# Future

- Future improvements and updates to the consumption measure
  - Incorporate Diary-only components
  - Adjust owner shelter insurance for contents
  - Incorporate home production (value added for time) for own consumption
  - Identify components of education that are more related to consumption (e.g., reading, childcare)
- Continue inequality and poverty analysis
- Add joint consumption-income distributions

# Data Challenges (Timeliness vs Precision)

- Food at home expenditures no longer available for the Interview starting 2023Q2
- Timing regarding access non-Interview source data
  - Interview data do not reflect all consumption
  - Final health insurance data not available until *t+2, t* = consumption year
- *If release in November 2023 consumption tables, options*
  - Impute as 80% of global spent at grocery establishments (including farmers markets) following CE Program approach
  - For Diary only items, assume 2024Q1 is like 2023Q1, inflate by CPI-U
  - For health insurance, assume 2022 Medicare and Medicaid values updated by CPI-U

# Questions for Discussion

- Measurement
  - Should a consumption measure be different for inequality versus poverty?
  - For consumption to income comparison
    - Should in-kind health insurance be added to income like other in-kind benefits?
    - When consumption is used for poverty analysis, should work-related expenses be subtracted like for an income-based measure
- Data availability
  - What are the implications for research like this with potentially less data for consumption, no after-tax income, no imputed assets and liabilities, and fewer geographic areas?
  - How can agencies continue to produce relevant data for evidence-based analysis with fewer resources, for example, to study the joint distribution of income, consumption, and wealth?

# Contact Information

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# APPENDIX

# Appendix Table for Slide 14 Figure.
# Quarterly Equivalized Consumption Means and Medians

| Year | Mean | Real Mean (2019 dollars) | Median | Real Median (2019 dollars) |
|---|---|---|---|---|
| 2019 | $10,041 | $10,041 | $8,998 | $8,998 |
| 2020 | $10,021 | $9,899 | $9,073 | $8,962 |
| 2021 | $10,990 | $10,369 | $9,915 | $9,355 |
| 2022 | $12,172 | $10,633 | $10,970 | $9,583 |

# Appendix Table Left-side for Slide 16 Figure. Percentage Change in Consumption/Expenditure Gini Index Relative to 2019

| Year | Consumption – Health Insurance Capped | Consumption – Health Insurance Not Capped | CE Consumption Outlays | CE-PCE (NA) Consumption Expenditures |
|---|---|---|---|---|
| 2019 | 0.00% | 0.00% | 0.00% | 0.00% |
| 2020 | -3.60% | -3.63% | -3.38% | -4.31% |
| 2021 | -1.20% | -1.21% | -0.28% | -1.54% |
| 2022 | -0.40% | -0.40% | 0.00% | 0.31% |

# Appendix Table Right-side for Slide 16 Figure. Percentage Change in Income Gini Index Relative to 2019

| Year | CE Before-tax Income with In-kind Benefits | CPS-ASEC Post-tax Income | CPS-ASEC-PI (NA) Personal Income |
|---|---|---|---|
| 2019 | 0.00% | 0.00% | 0.00% |
| 2020 | -3.02% | -4.09% | -3.44% |
| 2021 | -2.32% | -5.29% | -3.21% |
| 2022 | -3.46% | 0.24% | -3.21% |

# Appendix Table for Slide 18 Figure. Consumption Gini Index Decomposition: Component Contribution Share of Overall Inequality

| Year | In-kind Benefits | Apparel | Entertainment Other | Utilities | Food at Home | Other | Health Insurance | All Residences | COVID sensitive |
|---|---|---|---|---|---|---|---|---|---|
| 2019 | -0.6% | 2.4% | 3.7% | 3.9% | 5.5% | 13.9% | 17.9% | 32.6% | 20.7% |
| 2020 | -0.4% | 1.6% | 4.1% | 4.1% | 6.6% | 14.3% | 21.2% | 35.6% | 12.8% |
| 2021 | -0.8% | 1.8% | 5.0% | 3.7% | 6.2% | 15.4% | 16.8% | 33.4% | 18.6% |
| 2022 | -0.8% | 1.8% | 4.2% | 3.6% | 6.1% | 15.2% | 15.6% | 32.9% | 21.3% |

Using Consumption – Health Insurance Capped

# Appendix Table for Slide 19 Figure.
# % Change in Component Contribution

| Component | 2019 to 2020 | 2020 to 2021 | 2021 to 2022 |
|---|---|---|---|
| In-kind Benefits | 0.2% | -0.4% | 0.0% |
| Apparel | -0.8% | 0.2% | 0.0% |
| Entertainment Other | 0.4% | 0.9% | -0.8% |
| Utilities | 0.2% | -0.4% | -0.1% |
| Food at Home | 1.1% | -0.4% | -0.1% |
| Other | 0.4% | 1.1% | -0.2% |
| Health Insurance | 3.3% | -4.4% | -1.2% |
| All Residences | 3.0% | -2.2% | -0.5% |
| COVID sensitive | -7.9% | 5.8% | 2.7% |

Using Consumption – Health Insurance Capped