

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

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Overview: COVID and Consumption Inequality

■ COVID greatly impacted the economy

- ▶ Sudden shutdown private and government sectors of the economy in March 2020
 - Shifts in types of expenditures and consumption
 - Some of these were more affected than others
 - Resulted in trade-offs, substitutions, and changes in home production
- ▶ Unprecedented fiscal response

■ Findings

- ▶ Consumption inequality fell in 2020 but returned to 2019 levels in 2022-2023
- ▶ Decline driven by declining consumption in pandemic sensitive categories of consumption among those at the top of the distribution

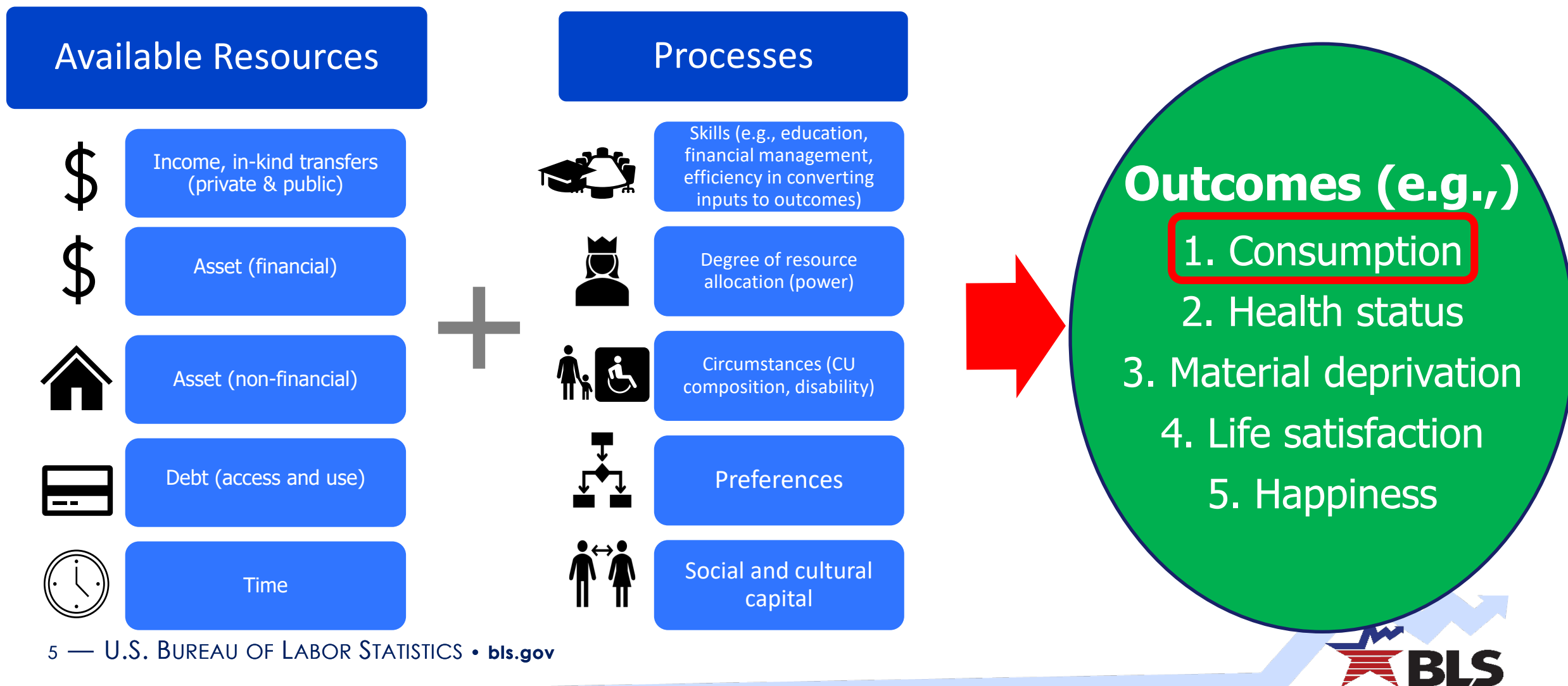
Objectives of this Study

- Construct a “new” measure of consumption for the U.S.
 - ▶ Provide evidence on a dimension of welfare based on data from an expenditure survey as distinct from an income survey
 - ▶ Reflect on the conceptual definition of household level consumption and consistency with welfare theory – e.g., treatment of durables, owner-occupied housing
 - ▶ Add components of consumption previously not included
- Examine drivers of change in inequality through breaking down distributional analysis by type (subcomponents) of consumption
 - ▶ Gini decomposition
 - ▶ Results from 2019-2023

Motivation to Explore Consumption

- There is an old economic argument that current consumption is a better proxy of well-being or welfare than income (Sen, Stiglitz, Fitoussi, 2009)
 - ▶ *It captures the “achievement” of a particular level of welfare, as opposed to the “opportunity” offered by a measure of income*
 - ▶ *It smoothens short-run fluctuations in income*
 - ▶ *It reflects expected future changes in income*
 - ▶ *Formally equals income minus savings and unreported private transfers*
- Development of alternative measure of well-being based on outcomes - allows us to go beyond expenditures to consumption and ultimately to include the value of home production (time allocation) for own consumption
- Comprehensive measures of consumption do not exist in administrative registers - can only be measured from household survey data along with additional data and assumptions

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



Related Research

- Builds on work of Eurostat, ILO, OECD, World Bank, UN, and many researchers including most recently Fisher et al. (2015, 2022) & Meyer, Han, and Sullivan (2024)
- Supports the work of
 - ▶ U.S. Interagency Technical Working Group (ITWG) on Evaluating Alternative Measures of Poverty (2020)
 - ▶ U.S. Committee on National Statistics Panel's report (2023) that focuses on consumption needs as part of a proposed Principal Poverty Measure
 - ▶ OECD joint distributions of income, consumption, and wealth (micro and macro groups)
 - ▶ In-development international Luxembourg Consumption Study (LCS)
 - Expand the cross-national database coverage in the *Luxembourg Income Study project* beyond income (*LIS*) and wealth (*LWS*), drawing initially from household budget survey data
 - Explore differences across countries and within-country time changes
 - 10 countries thus far representing countries identified as: high income, emerging, developing



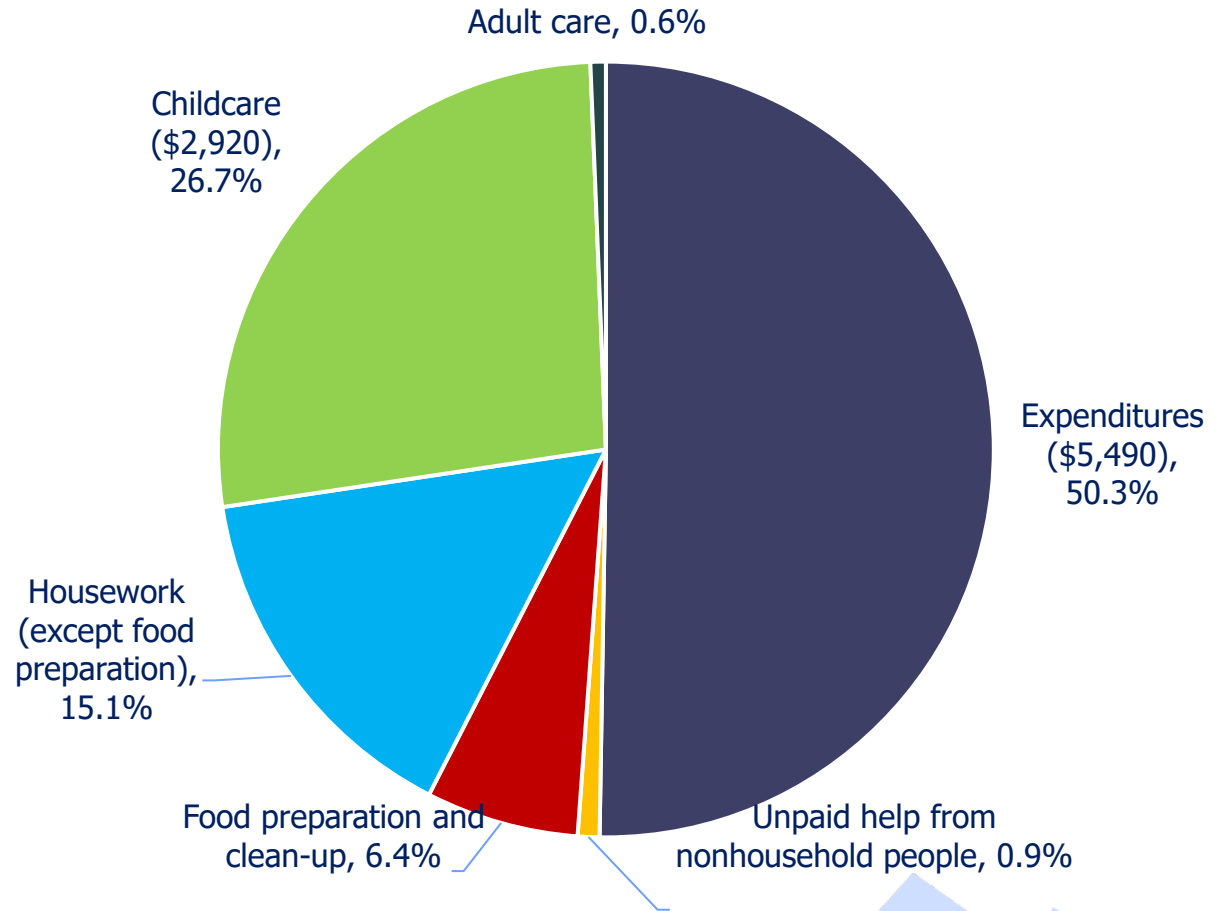
Framework: Consumption Measure

- Designed to reflect how CUs use resources (e.g., income, assets, financial credit, time, in-kind benefits, cultural and social capital) to meet their consumption/material “needs” (excludes what given to others outside CU)
- Based on
 - ▶ Expenditures (or out-of-pocket spending) for most goods and services
 - ▶ Flow of services for
 - Owner shelter
 - Durables
 - ▶ In-kind benefits, public and private
 - ▶ Home production for own consumption
 - ▶ Barter of goods and services and gifts received

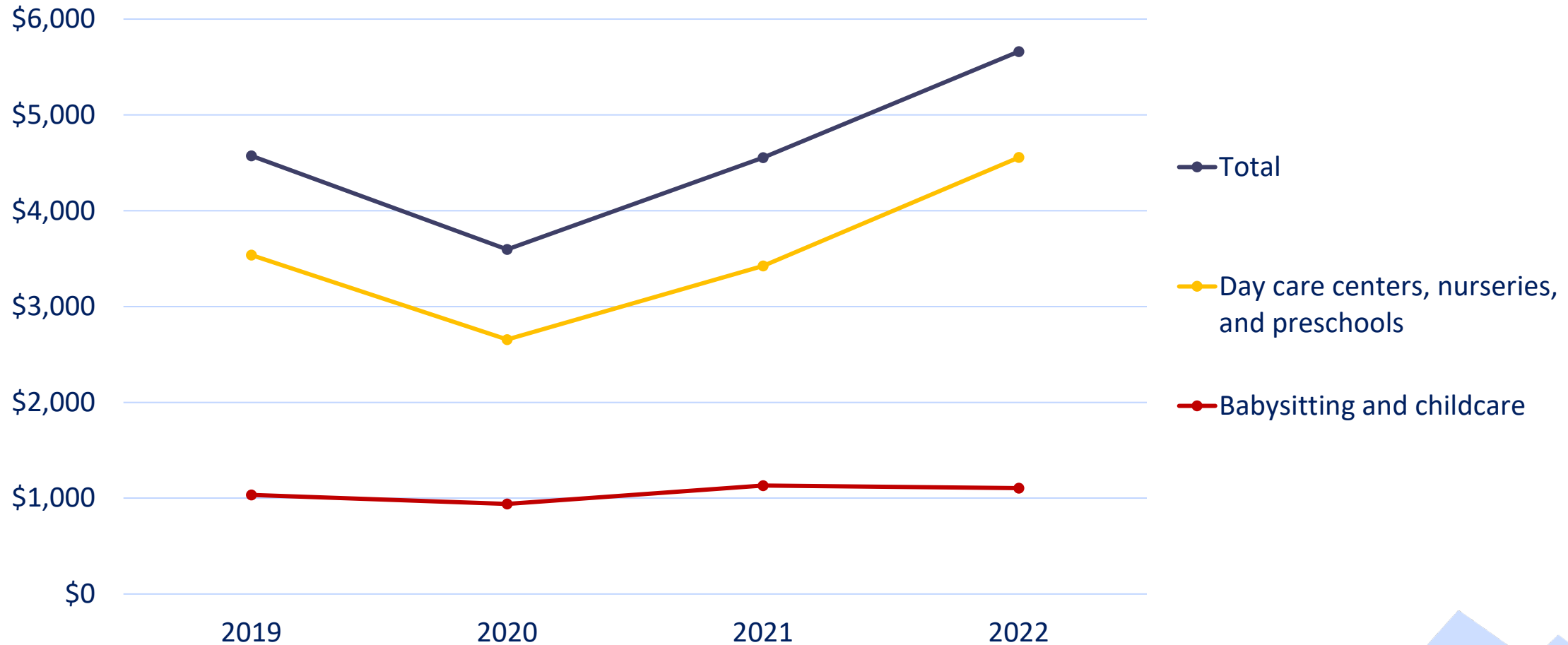
Accounting for Home Production for Own Consumption: Example for CUs with Children

Levy Institute of Bard College Group (2021; 2025)

- Calculated from synthetic file of U.S. CE Interview 2019Q3 augmented with data from American Time Use Survey (ATUS)
- Augmented Consumption Expenditures
 - ▶ Exp + REQ + Home Production for Consumption
- Home production valued
 - ▶ Market (replacement) value
- Monthly average for CUs with children: \$10,023
 - ▶ Childcare share: 26.7%
 - ▶ Adult care share: 0.6%



Annual Average Expenditures for Services Using CE Integrated Data: Married Couple with Oldest Child Less Than 6 Years of Age



Empirical: Consumption Measure

- Designed to reflect how CUs use resources (e.g., income, assets, financial credit, time, in-kind benefits, cultural and social capital) to meet their consumption/material “needs” (excludes what given to others outside CU)

- Based on

- ▶ Expenditures (or out-of-pocket spending) for most goods and services

- ▶ Flow of services for

- Owner shelter

from Household Budget Surveys

- Durables

- ▶ In-kind benefits, public and private

impute

- ▶ Home production for own consumption

- ▶ Barter of goods and services and gifts received

not available

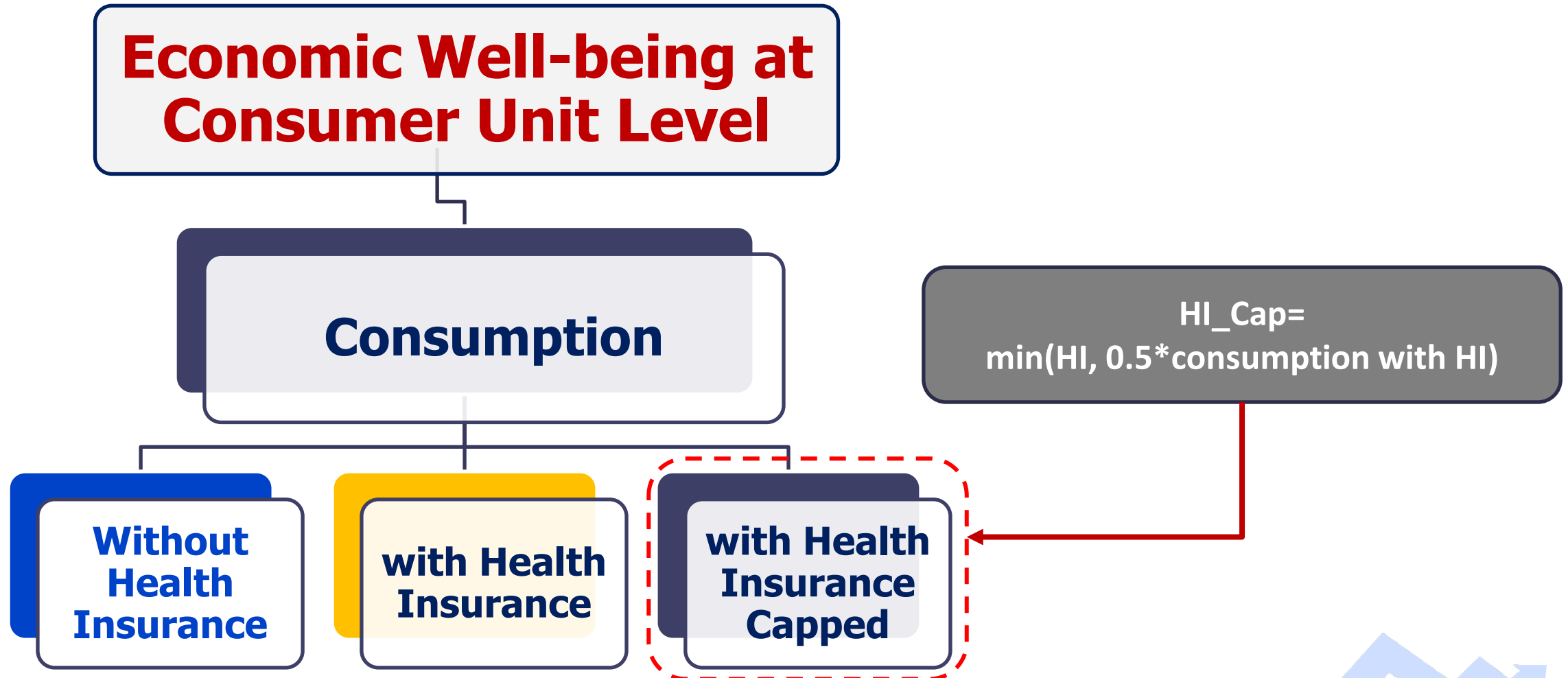
- ▶ Expenditures for childcare and adult care

exclude

Treatment of Health and Education

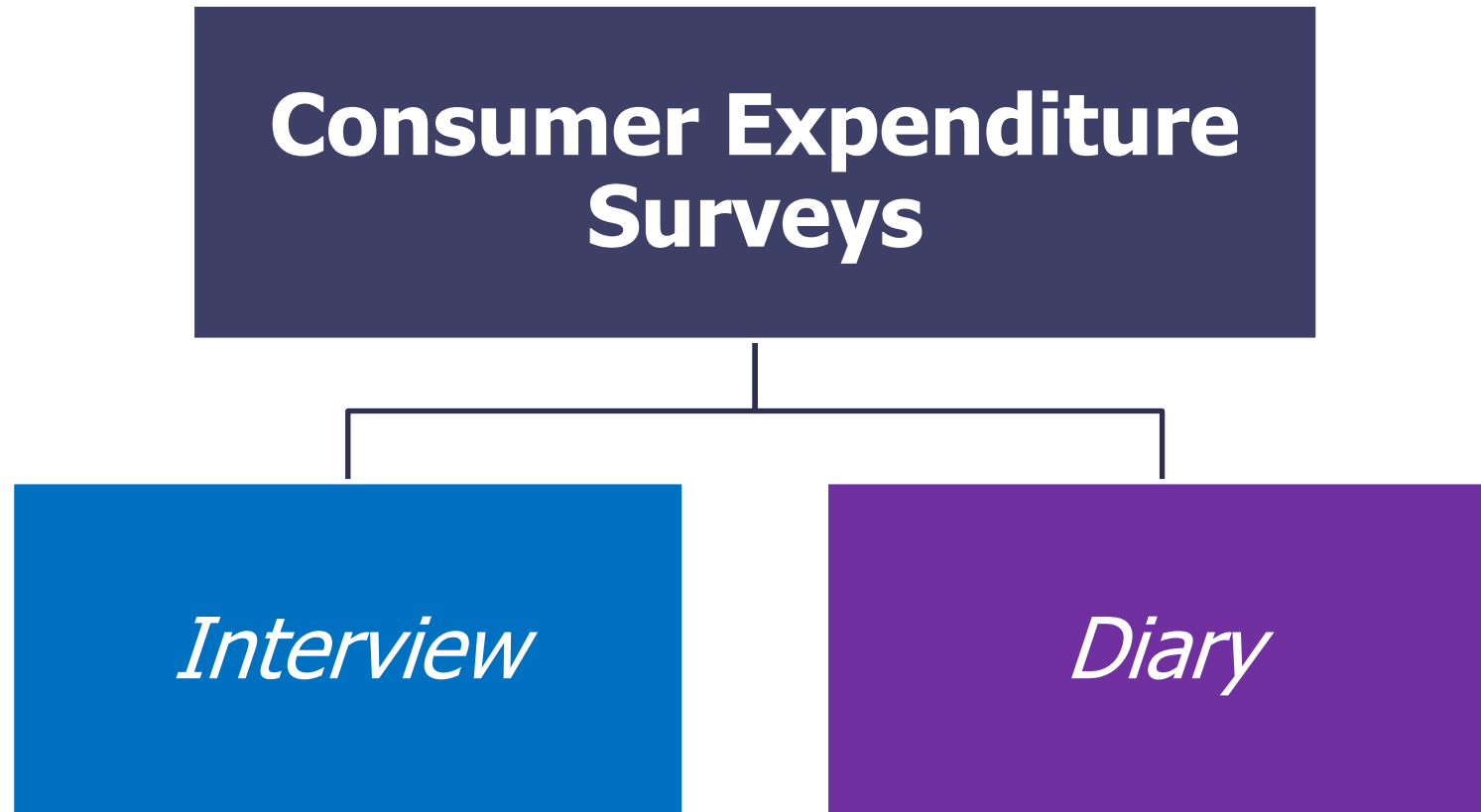
- Researchers recommend excluding health expenditures for goods and services
 - ▶ Greater expenditures not equal to greater well-being
- More controversial, exclude education from consumption
 - ▶ Consumption or investment in human capital so more like investment
- *Our choices for empirical analysis*
 - Include health insurance (with a cap)
 - Out-of-pocket health insurance premiums for private insurance +
 - Employer share of private health insurance +
 - Full value of publicly provided health insurance
 - Exclude out-of-pocket education expenditures

Concepts of Consumption



NOTE: None of these measures include "Education"

Primary Data: U.S. Consumer Expenditure Surveys



CE Survey: For Whom and Samples

- Consumer unit (CU): people living at the same address who share living expenses (in most cases, CUs are the same as households)
- Interview and Diary have their own samples (the same CU does not participate in both): nationwide household samples represent the entire U.S. civilian noninstitutional population

Data for Empirical Analysis

Most Goods and Services: *CE Interview Survey*

- Recall of 3-months of data; collected up to 4 times for each consumer unit (2019Q2-2024Q1)
- Out-of-pocket spending for most goods and services
- Rental equivalence
 - ▶ Primary residence
 - ▶ Second homes and vacation properties
- Characteristics to impute market rents when in-kind rental assistance
- Stock of cars and trucks

Other Goods and Services: *CE Diary*

- Two consecutive weeks of daily recordkeeping (2019-2023)
- Out-of-pocket spending for more frequently purchased goods and services with shorter recall (e.g., personal care goods and services, non-prescription drugs)

Other Sources

- In-kind government benefits (e.g., rents, school meals)
 - ▶ CPS-ASEC (households/members)
 - ▶ Government agencies
- Public health insurance
 - ▶ Centers for Medicare and Medicaid Services (CMS), CMS Medicare Trustees Report, National Health Expenditure (NHE), agency budgets
- Private health insurance
 - ▶ Medical Expenditure Panel Survey Insurance Component
 - ▶ Centers for Medicare and Medicaid Services (CMS)
- College room and board
 - ▶ U.S. Department of Education Statistics
- Boarding school room and board
 - ▶ “Average Cost of Private Schools” (Hanson, 2024)
- Renter-like owned home insurance
 - ▶ National Assoc. of Insurance Commissioners Reports



Inequality Analysis

- *Goal:* examine drivers of change in inequality through breaking down distributional analysis by type (subcomponents) of consumption
- Data preparation
 - ▶ Group consumption components into 2 groups
 - COVID-sensitive
 - Less COVID-sensitive
 - ▶ Equivalized consumption using 3-parameter equivalence scale
 - ▶ Person weighted distributions: $\text{FINLWT21} * \text{fam_size}$
- Inequality indexes
 - ▶ Overall
 - ▶ Gini decomposition of consumption inequality by category of consumption



Consumption Categories for Gini Decomposition

More COVID Sensitive

Food away from home

Shelter on trips

Away from home school shelter and food

Public transportation

Entertainment fees and tickets

Less COVID Sensitive

Food at home

All residences (rent, owned, vacation home) and utilities

Consumption and operation of vehicles

Apparel

Health insurance

In-kind benefits

Other (e.g., other entertainment, personal care, reading, tobacco, household operations, household operations and furnishings)

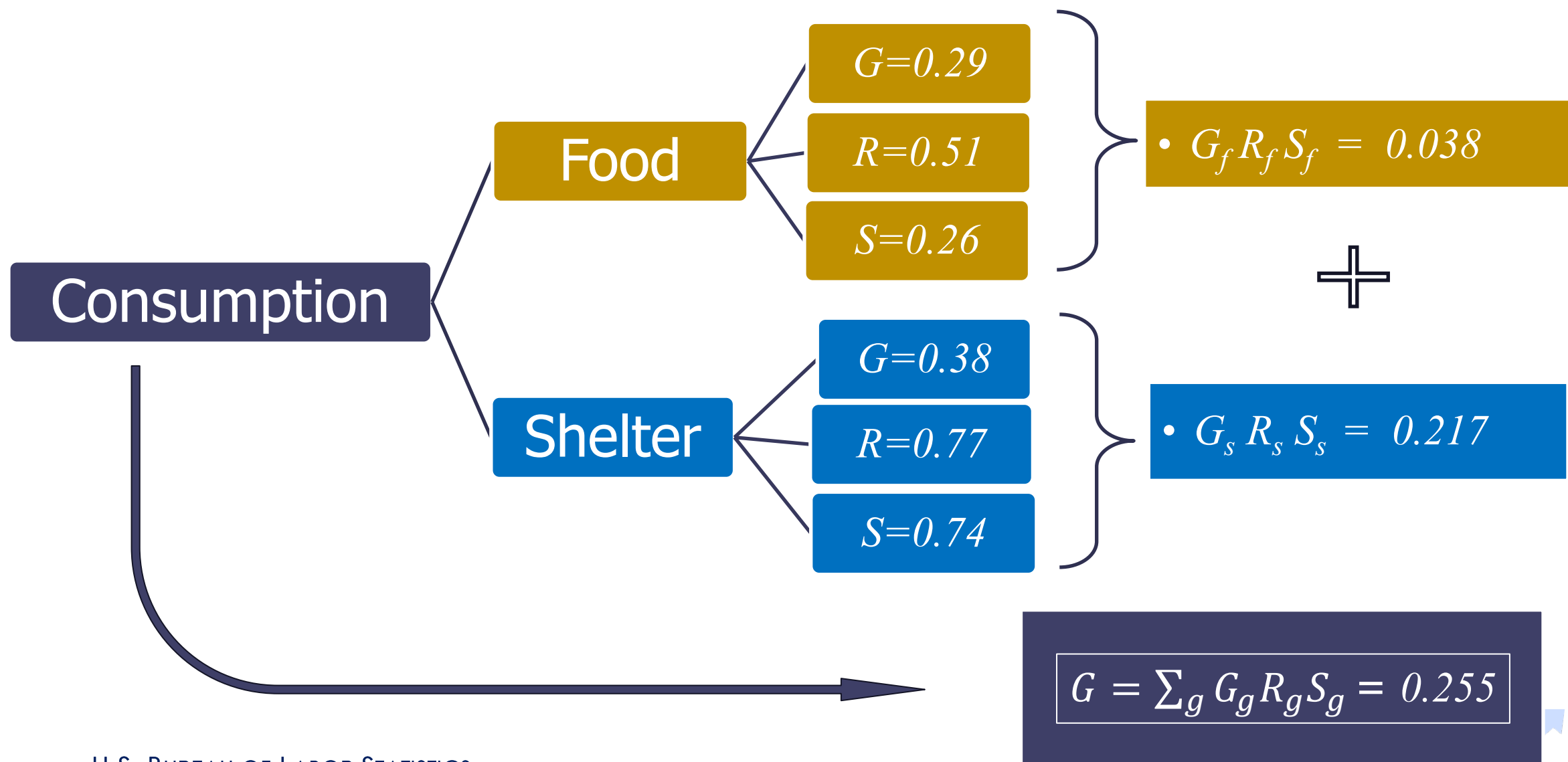
Decomposition of Gini Inequality by Consumption Category

- 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

Gini Decomposition

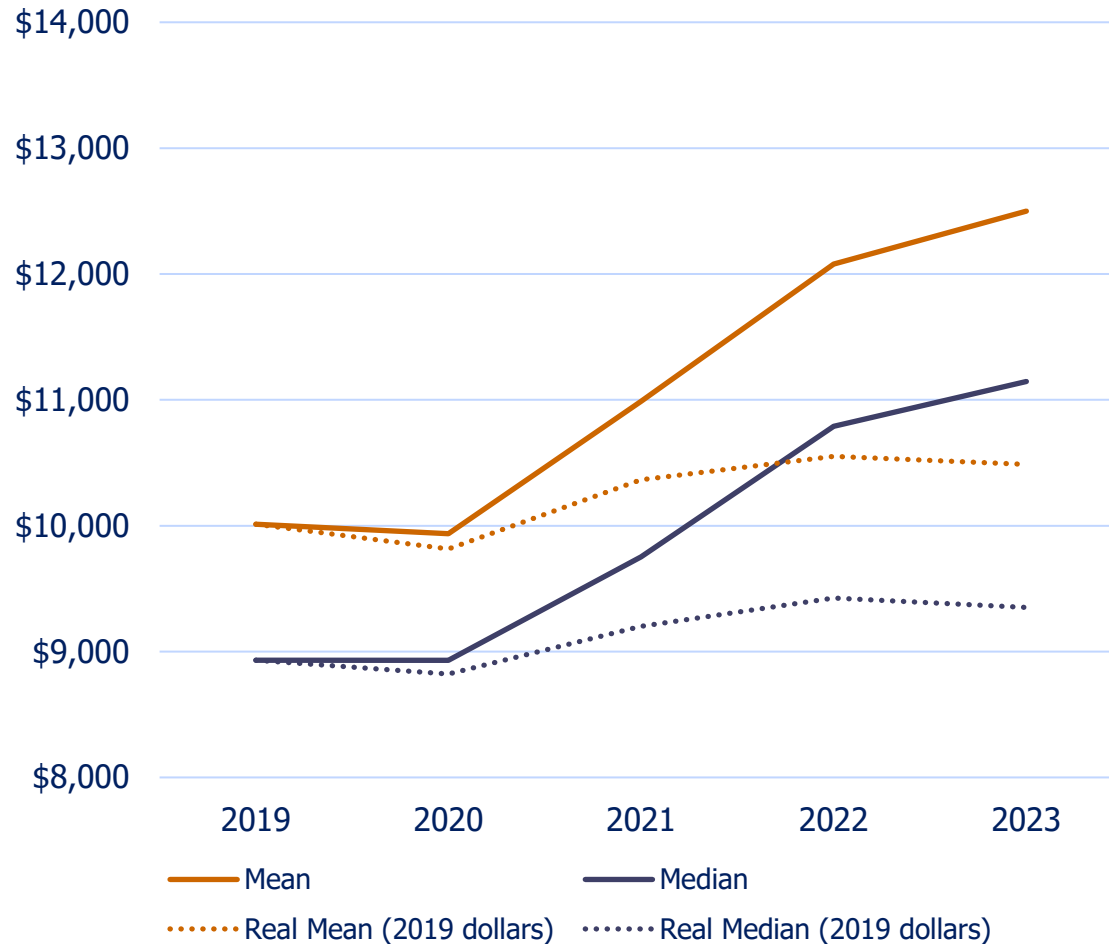


Results

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



Over Time: Quarterly Equivalized Means and Medians



- Small declines in real mean and median consumption in 2020
- Large impact of inflation on 2021-2023 nominal values
- *Assumption:* higher consumption, higher welfare

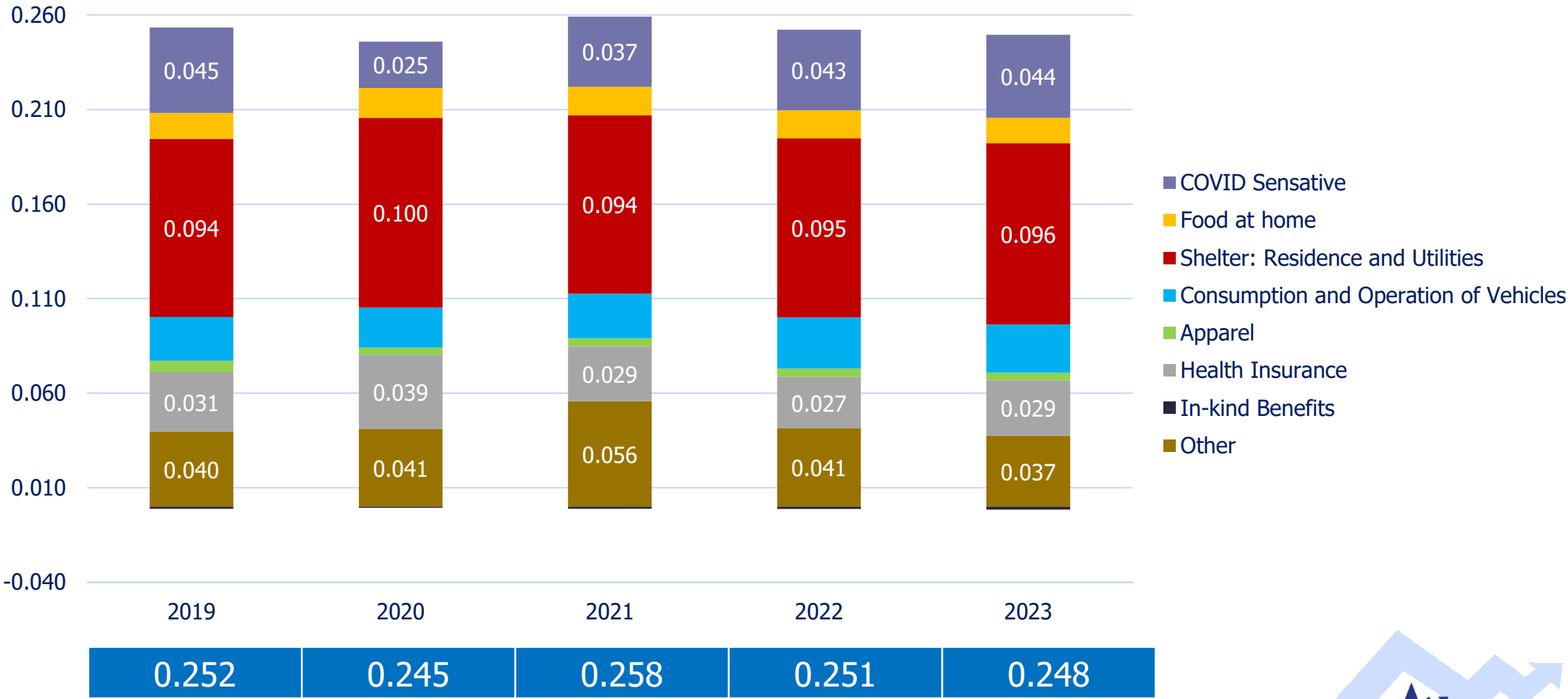
Consumption Inequality Measures ^(CE)

	2019	2020	2021	2022	2023
Gini	0.252	0.245	0.258	0.251	0.248
Theil	0.112	0.109	0.129	0.111	0.108
Mean log deviation	0.106	0.102	0.113	0.105	0.103
90/10	3.010	2.893	2.989	2.996	2.970
90/50	1.767	1.714	1.734	1.749	1.754
50/10	1.703	1.688	1.723	1.713	1.693

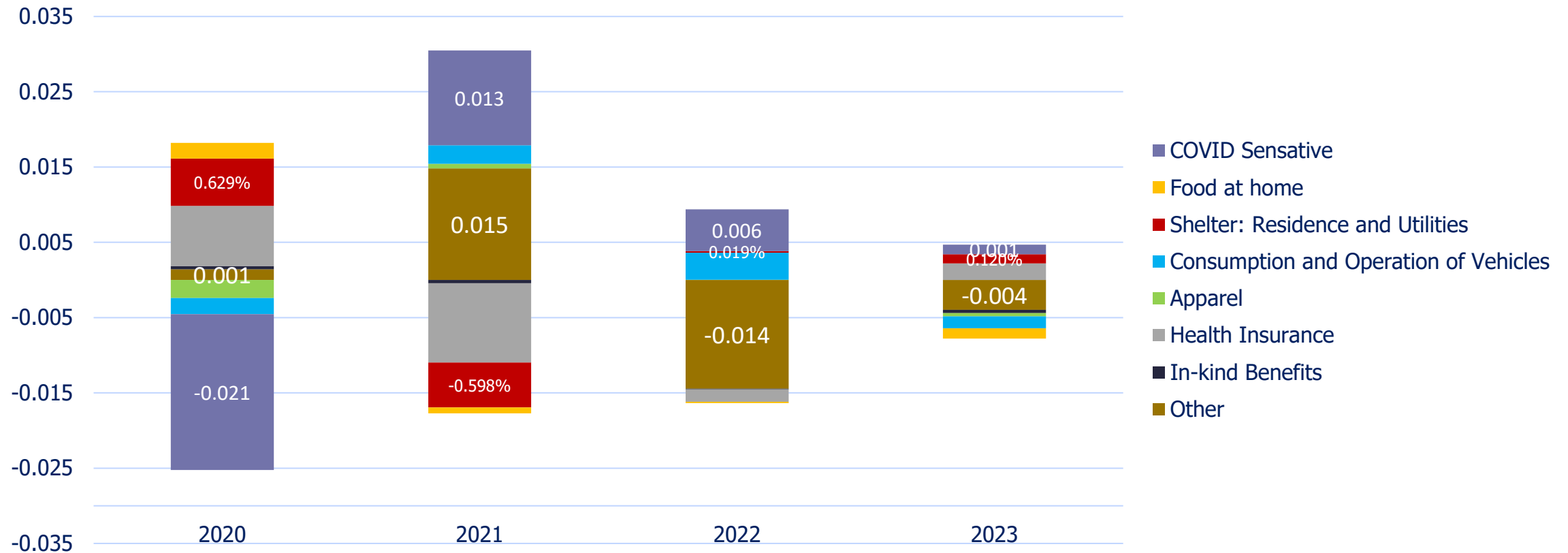
Post-tax Income ^(Current Pop. Survey-Annual Social and Economic Supplement)

	2019	2020	2021	2022	2023
Gini	0.416	0.399	0.394	0.417	0.416

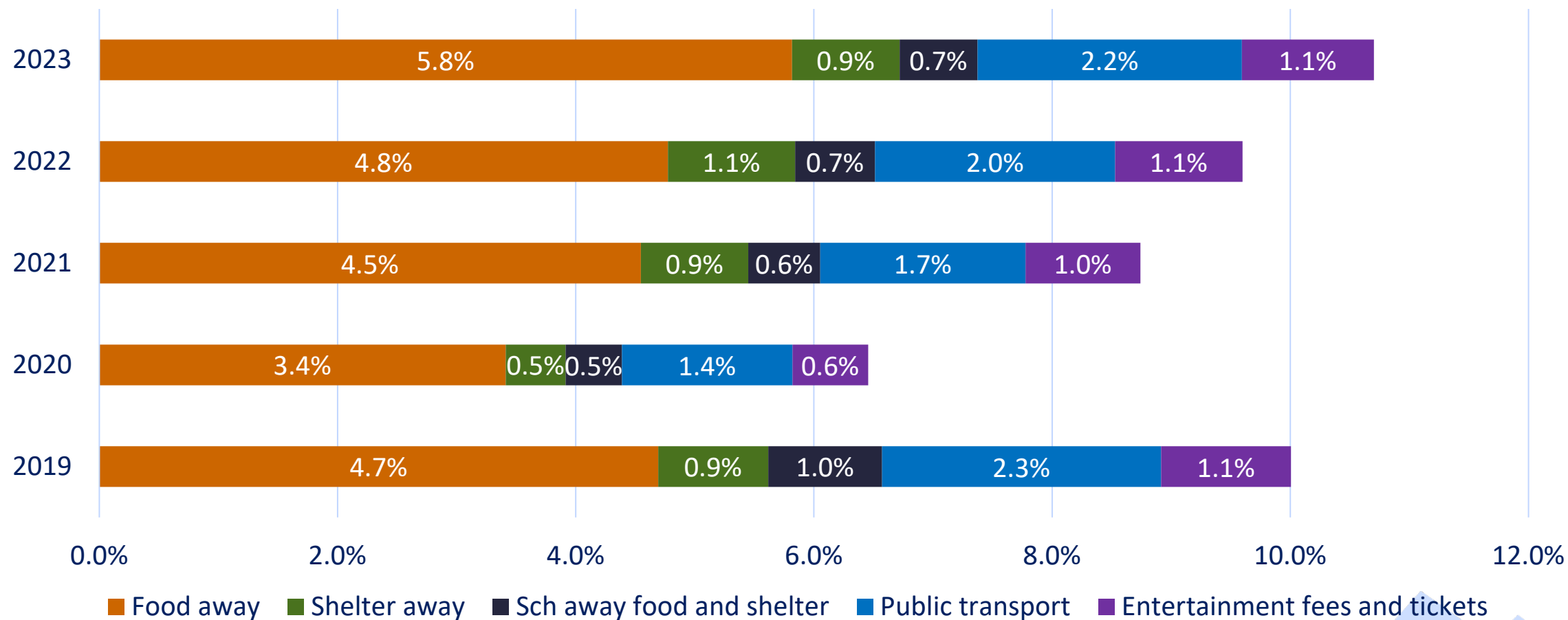
Contribution Consumption Components to Overall Inequality



Contributions to the 1-year Change in Gini



Shares of COVID-Sensitive Components of Consumption



Drivers of the Change in Gini Contribution by Category

- Covid sensitive categories tend to have
 - ▶ High within category Gini
 - ▶ High rank correlation
- From 2019 to 2020
 - ▶ Shares declined in covid sensitive categories offset by increases in other categories
 - ▶ Within Ginis relatively stable
 - ▶ Rank correlations relatively stable (exceptions: food away from home & public transportation relatively lower rank correlations in 2020)
 - ▶ Result: shift in consumption patterns led to lower overall inequality

Future Plans

- Continue consumption inequality and poverty research
 - ▶ Role of debt to “achieve” consumption
- Add joint distribution of consumption-income (wealth)
- Address
 - ▶ Challenges arising from changes in CE Surveys data collection instruments and samples
 - ▶ Trade-off in timeliness versus precision (e.g., health insurance)
 - ▶ Valuing home production for own consumption
 - ▶ Continuing research on health insurance
 - ▶ Treatment of education
- Continue cooperation with the Luxembourg Consumption Study

Contact Information

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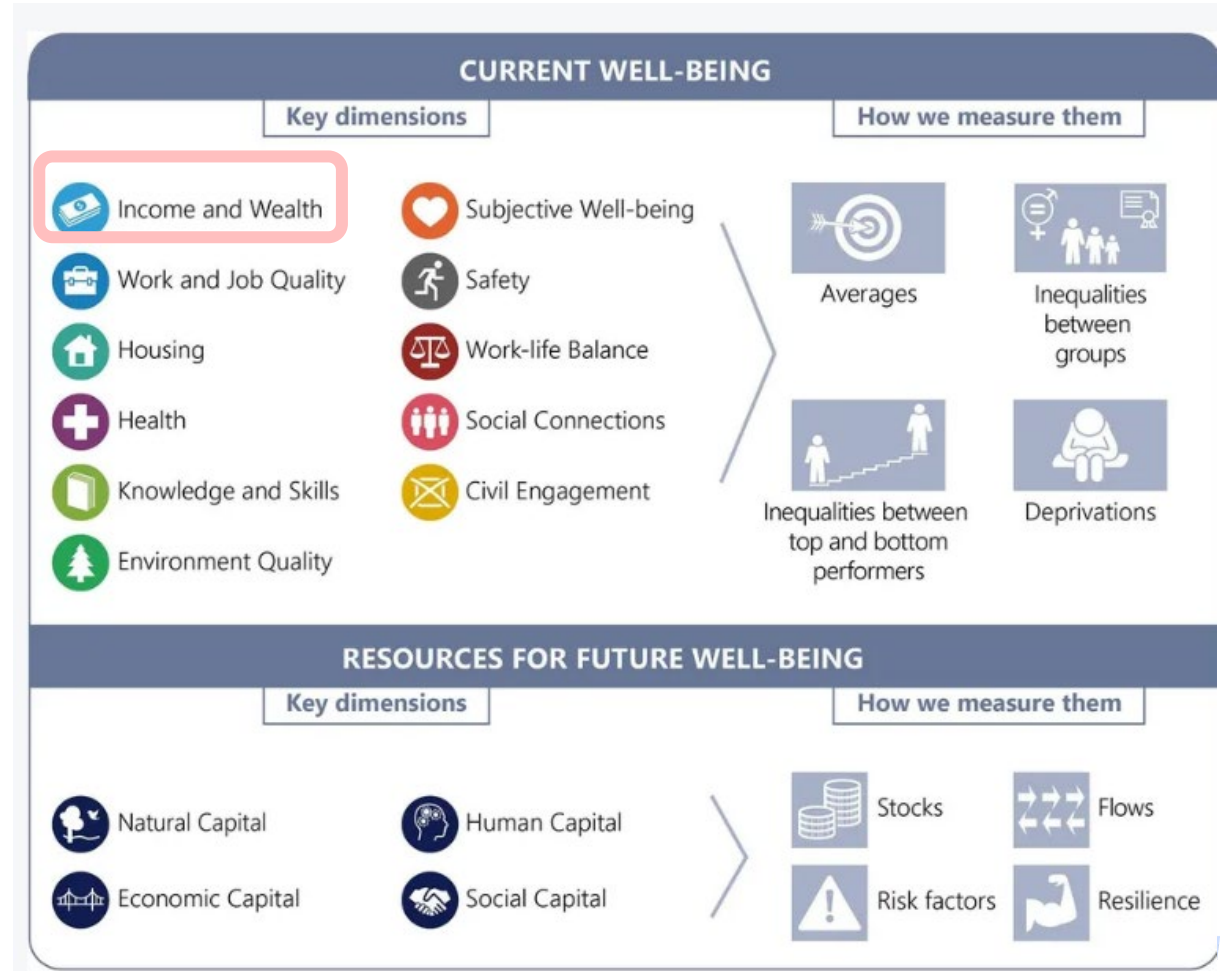
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Caveat: Consumption is Only Part of the Puzzle

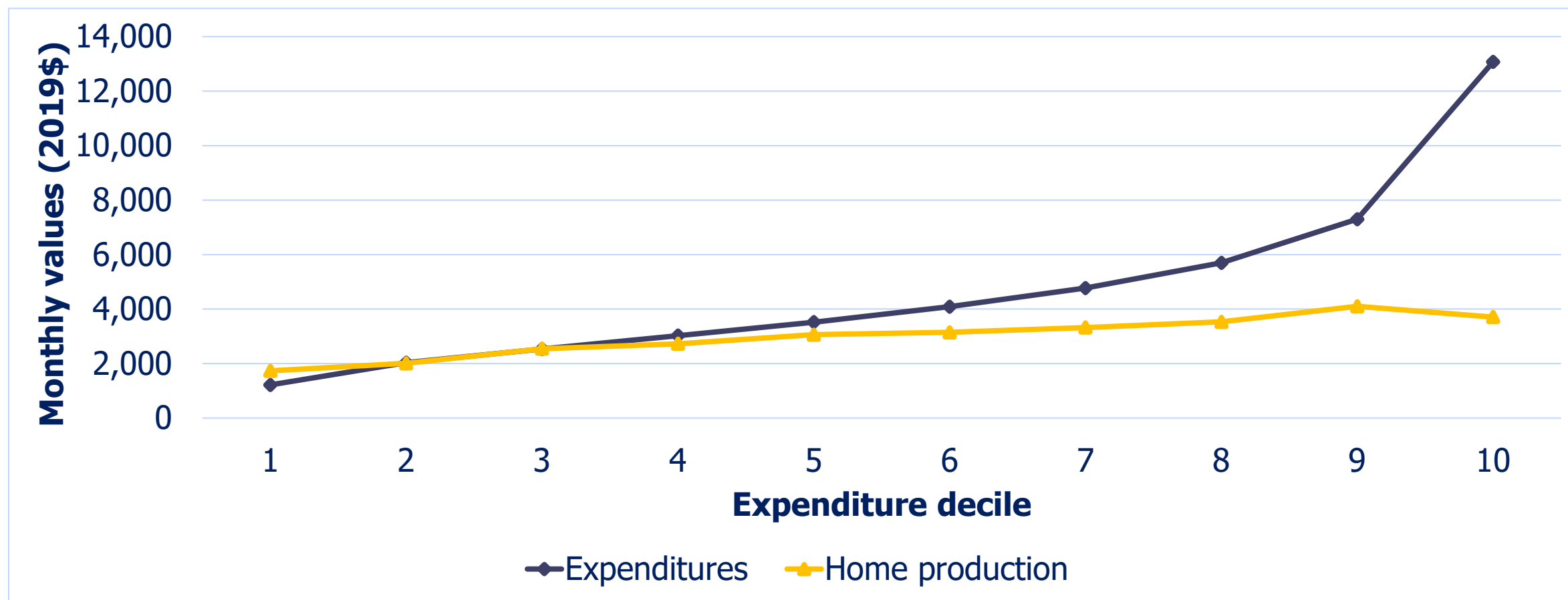
Inconsistency Across Measures

- Consumption > expenditures
 - ▶ Own home without debt
 - Consumption > income
 - ▶ Fund with debt (credit cards, loans)
 - ▶ Liquidate savings
 - ▶ Borrow from own savings or home equity
 - Consumption high but
 - ▶ Low economic security
 - ▶ Difficulty meeting expenses
- ❖ Joint distributions: Distributional national accounts, Material Conditions Index, etc.

OECD Multidimensional Well-being



Average Monthly Values of Expenditures and Home Production by Expenditure Decile, 2019



Gini Coefficients for Expenditures and Augmented Expenditures by Presence of Children: 2019

Line		No children	With children	All
1	Expenditures	0.360	0.339	0.357
2	Augmented Expenditures =(Expenditures + Home Production)	0.318	0.238	0.325
3	Change (Line 1 - Line 2)	0.042	0.101	0.032