

# BEA Regional Statistics

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Maryland State Date Center Annual Meeting  
September 20, 2018



# BEA's Regional Program

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- Statistics provide a picture of the economic activity within a state, metro area, or county.
  - Personal Income statistics
  - Employment
  - Gross Domestic Product
  - Regional Price Parities
  - Personal Consumption Expenditures
  - Satellite Accounts
- Regional Statistics are tied to the National Income and Product Accounts (NIPA).

- Why “Regional”?
  - Comprehensive and consistent data allow for regional comparisons across geographies:
    - States
    - Counties (more than 3,000)
    - Metropolitan Areas (300+)
    - Micropolitan Areas (500+)
    - Others

# Regional Income & Employment Statistics



- Detailed data on the geographic distribution of personal income and jobs
  - Personal Income
    - State Annual (1929 – forward)
    - State Quarterly (1948 – forward)
    - County Annual (1969 – forward)
  - Employment
    - State Annual (1969 – forward)
    - County Annual (1969 – forward)

# What is Personal Income?

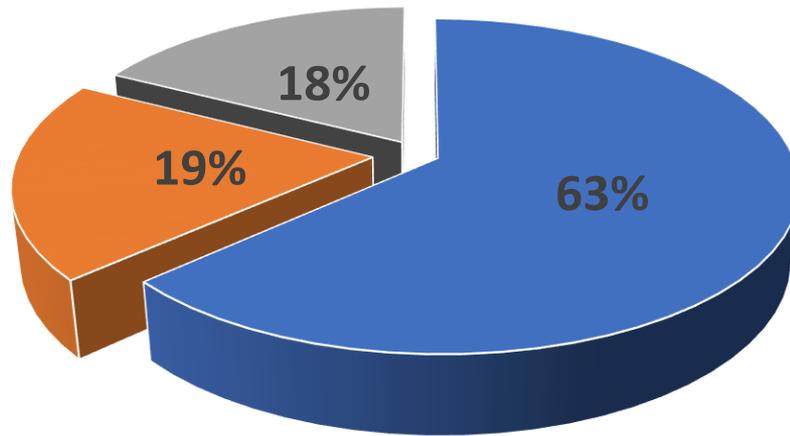
$$\text{Personal income} = \text{Net earnings by place of residence} + \text{Dividends, Interest, and Rent} + \text{Personal Current Transfer Receipts}$$

$$\text{Net earnings by place of residence} = \text{Earnings by place of work} - \text{Contributions for Gov't Social Insurance} + \text{Adjustment for residence}$$

$$\text{Earnings by place of work} = \text{Wages and Salaries} + \text{Supplements to Wages and Salaries} + \text{Proprietors' Income}$$

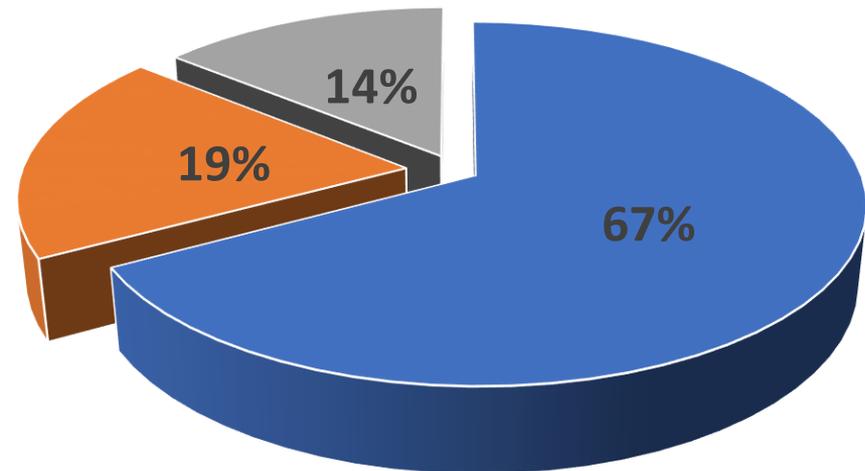
# What is Personal Income?

## Components of Personal Income, U.S. 2016



- Net earnings by place of residence
- Dividends, interest, and rent
- Personal current transfer receipts

## Components of Personal Income, Maryland 2016



- Net earnings by place of residence
- Dividends, interest, and rent
- Personal current transfer receipts

# What is Employment?

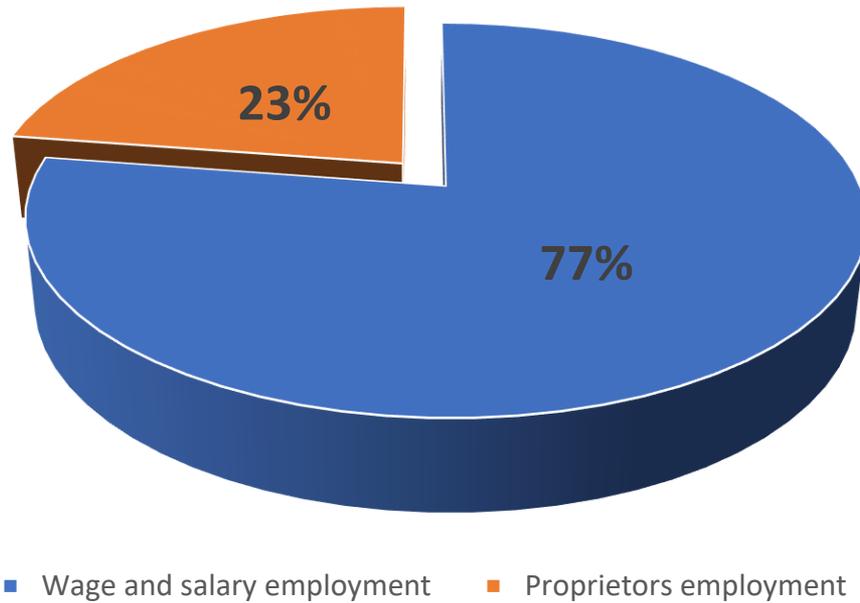
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- Number of jobs, full and part-time
- Consistent with income statistics

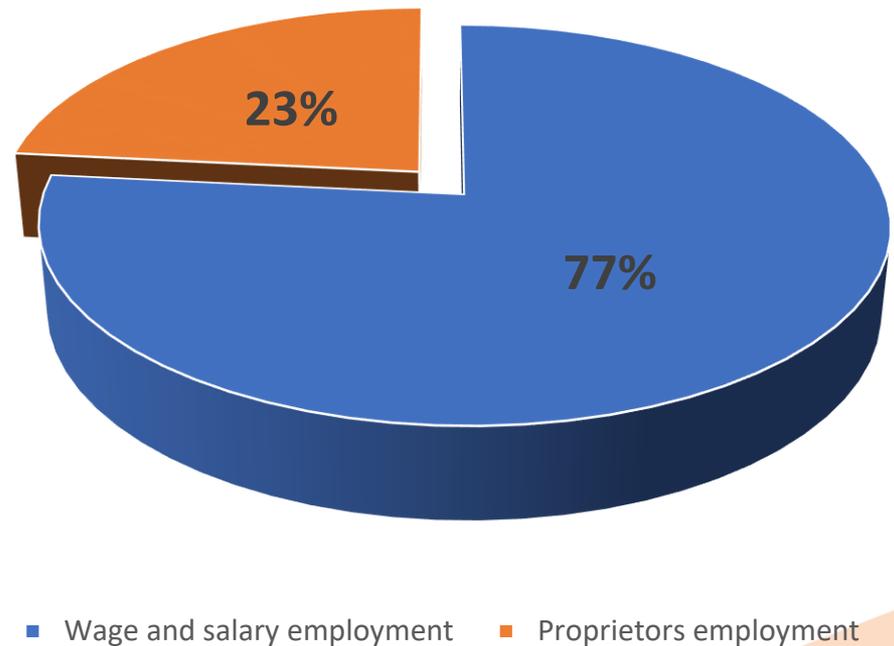
$$\text{Total Employment} = \text{Wage \& Salary Employment} + \text{Proprietors' employment}$$

# What is Employment?

## Components of Employment, U.S. 2016

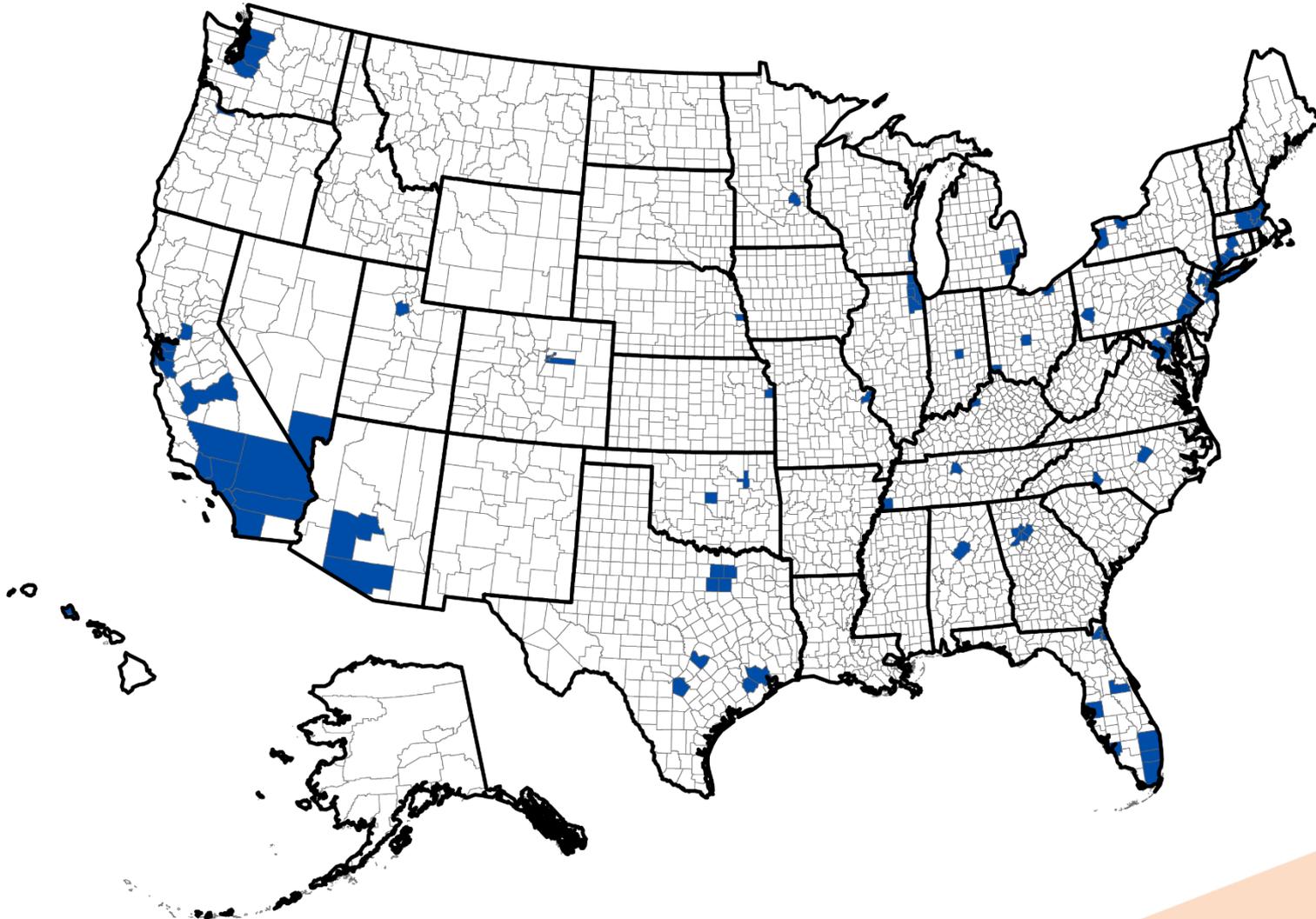


## Components of Employment, Maryland 2016



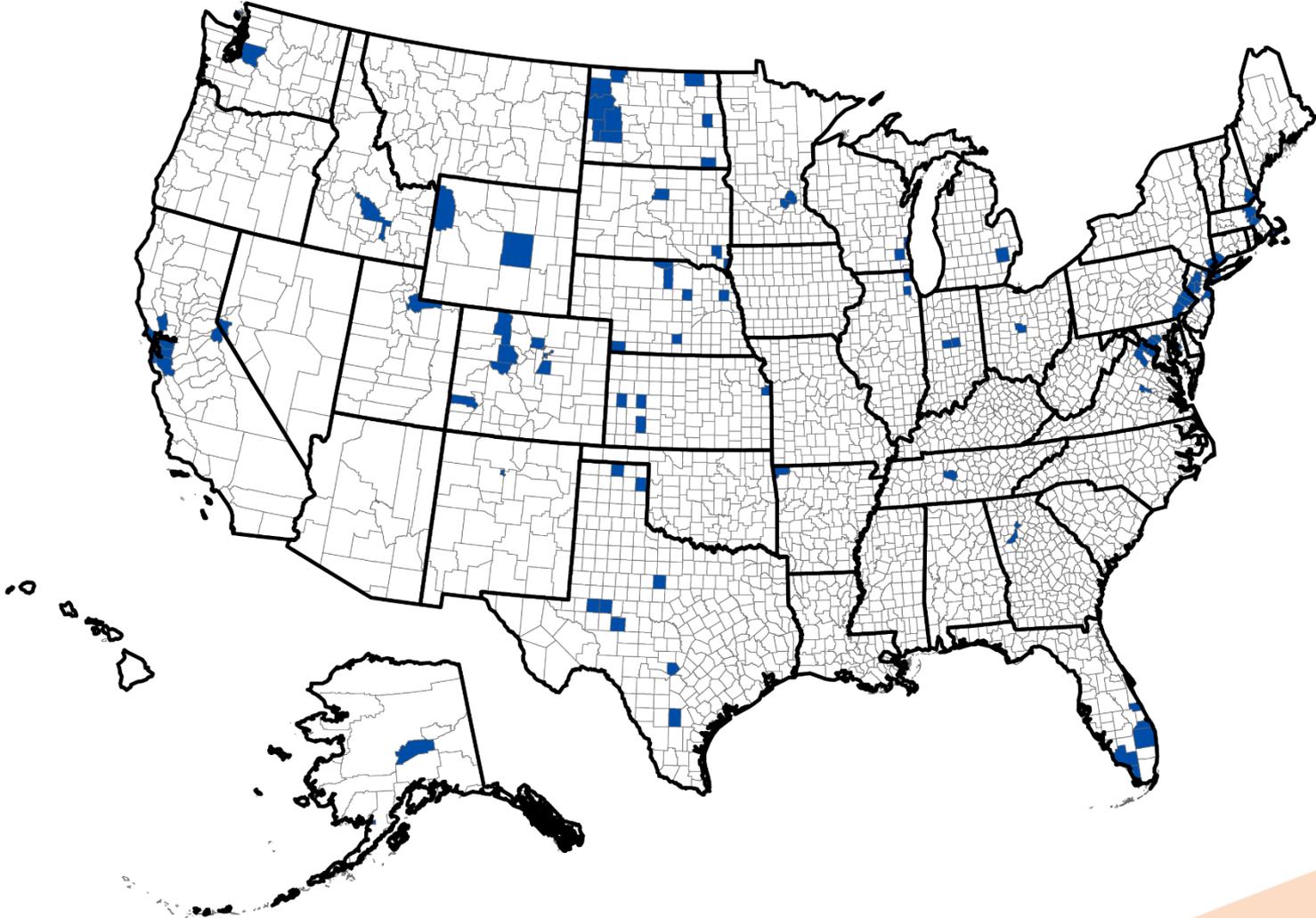
# County Personal Income, 2016

105 counties account for 50% of Total Personal Income

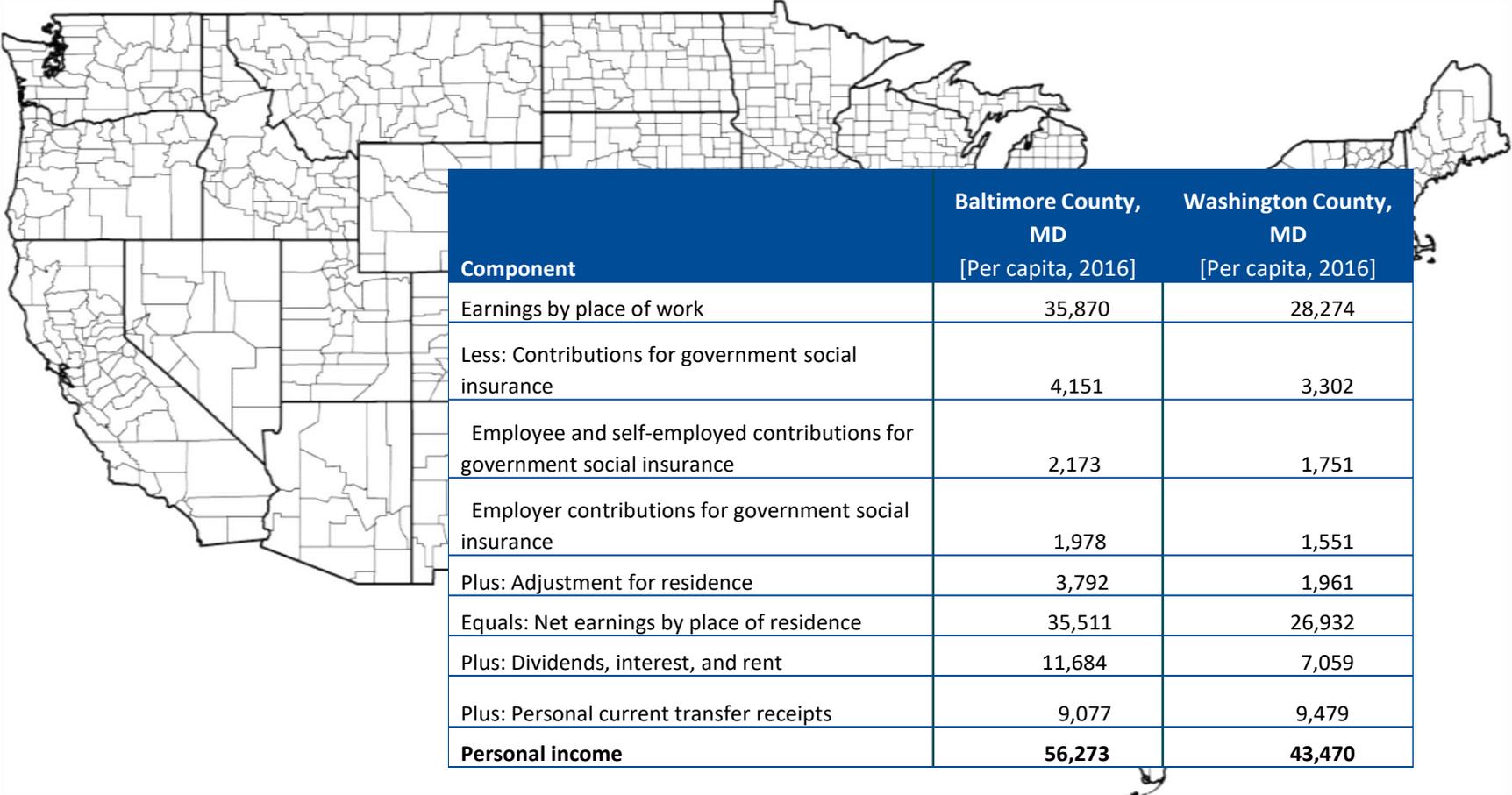


# County Per Capita Personal Income, 2016

## Top 105 counties



# County Personal Income



Component	Baltimore County, MD [Per capita, 2016]	Washington County, MD [Per capita, 2016]
Earnings by place of work	35,870	28,274
Less: Contributions for government social insurance	4,151	3,302
Employee and self-employed contributions for government social insurance	2,173	1,751
Employer contributions for government social insurance	1,978	1,551
Plus: Adjustment for residence	3,792	1,961
Equals: Net earnings by place of residence	35,511	26,932
Plus: Dividends, interest, and rent	11,684	7,059
Plus: Personal current transfer receipts	9,077	9,479
<b>Personal income</b>	<b>56,273</b>	<b>43,470</b>

# Major Data Sources

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- Bureau of Labor Statistics (BLS)
- Internal Revenue Service (IRS)
- Census Bureau
- Social Security Admin. (SSA)
- Center for Medicare/Medicaid Services (CMS)
- Others

# Regional GDP Statistics



- Regional Gross Domestic Product (GDP)
  - GDP by State
  - GDP by Metropolitan Area
  - GDP by County (coming soon)

- Years
  - Annual 1963 – forward
  - Quarterly GDP by State 2005 Q1 – forward
- Components
  - Current and Real (inflation adjusted) dollars
  - Per capita real GDP
  - Quantity Indexes
  - Contributions to Growth

- GDP can be measured in 3 ways:
  - **Expenditures approach**
    - $\text{GDP} = \text{consumption} + \text{investment} + \text{government spending} + \text{net exports}$
  - **Value added approach**
    - $\text{GDP} = \text{gross output (sales)} - \text{intermediate inputs}$
  - **Income approach**
    - $\text{GDP} = \text{sum of charges against production}$

# GDP by State – Methodology

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GDP = Sum of Charges of Production

=

Labor            Compensation of employees

+

Govt            (Taxes on production and imports – Subsidies)

+

Capital            Proprietors' Income (GOS)

+

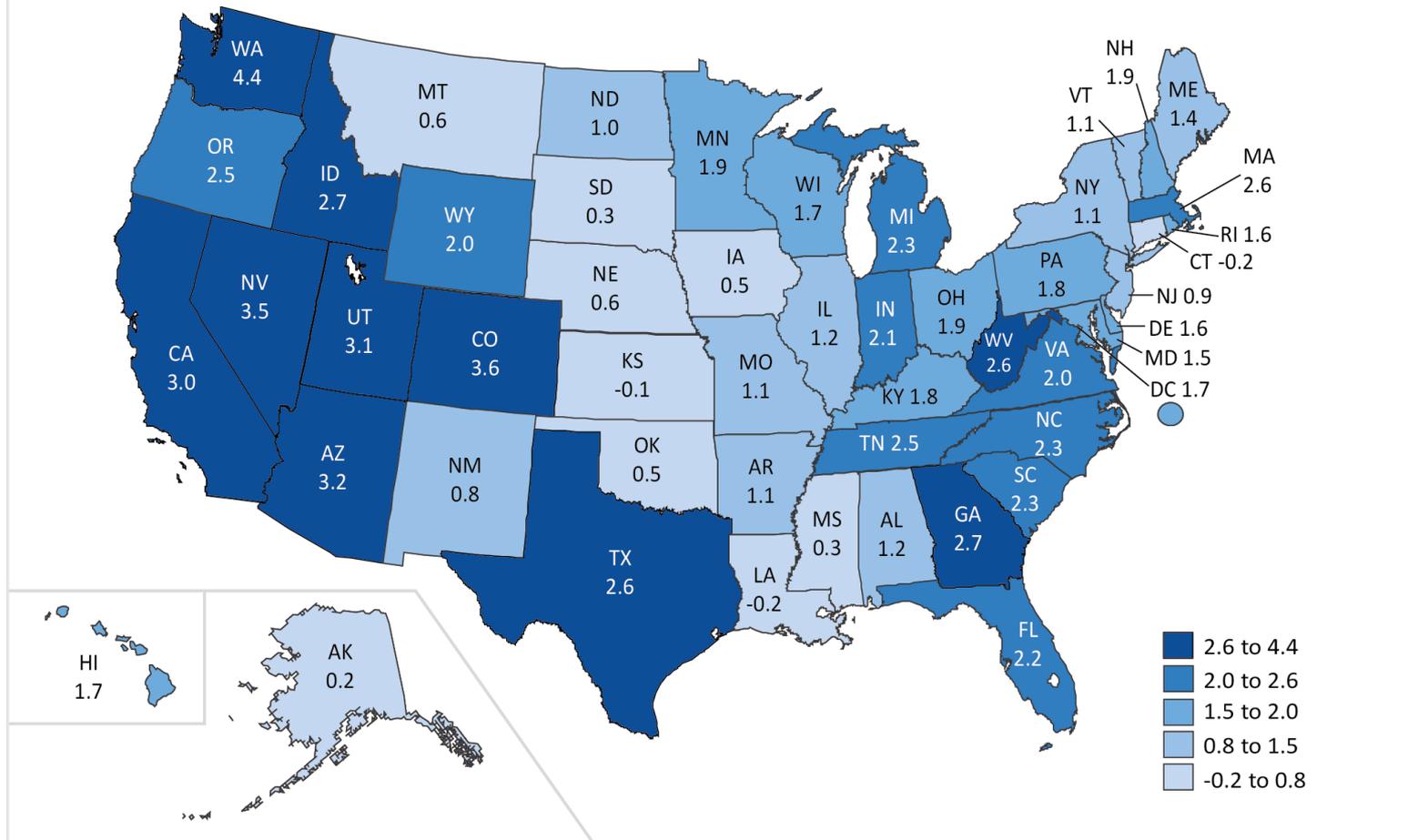
Capital            Corporate Capital Charges (GOS)

Estimation method depends on source data

- **For goods-producing industries**
  - Estimate GDP
  - $\text{Capital} = \text{GDP} - \text{labor} - \text{government}$
- **For services-producing industries**
  - Estimate incomes earned
  - $\text{GDP} = \text{labor} + \text{capital} + \text{government}$

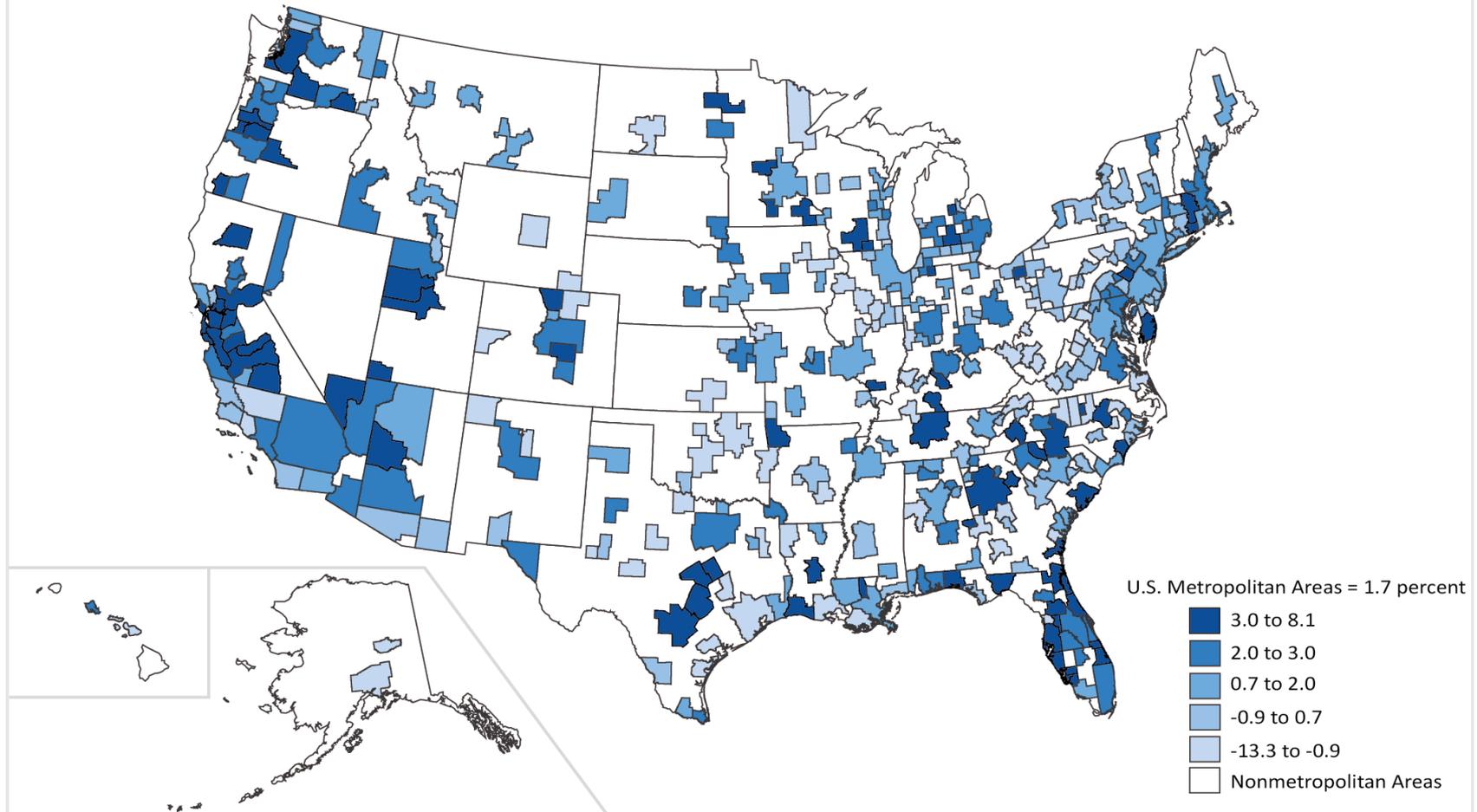
# Real GDP growth in 2017

Chart 1. Percent Change in Real GDP by State, 2016–2017



# GDP by Metropolitan Area

Percent Change in Real Gross Domestic Product (GDP) by Metropolitan Area, 2016



- Census Bureau
  - Economic Census data for 1997, 2002, 2007, and 2012
  - Census of Governments
  - Tax data from State and Local Government Finances
- BEA Income estimates
  - Wages & supplements to wages
  - Proprietors' income
- Other miscellaneous data

# Relation of Personal Income to GDP



	GDP	Personal Income
Place of work	✓	
Place of residence		✓
Accrual basis	✓	✓
Disbursement basis		✓
Wages and salaries	✓	✓
Proprietors' income	✓	✓
Employer contributions for employee pension and insurance funds	✓	✓
Contributions for government social insurance	✓	✓
Taxes on production and imports less subsidies	✓	
Corporate income	✓	
Receipts on assets (dividends, interest)		✓
Transfer receipts (Social Security benefits, Medicare, Medicaid)		✓

# Regional Price Parities Statistics



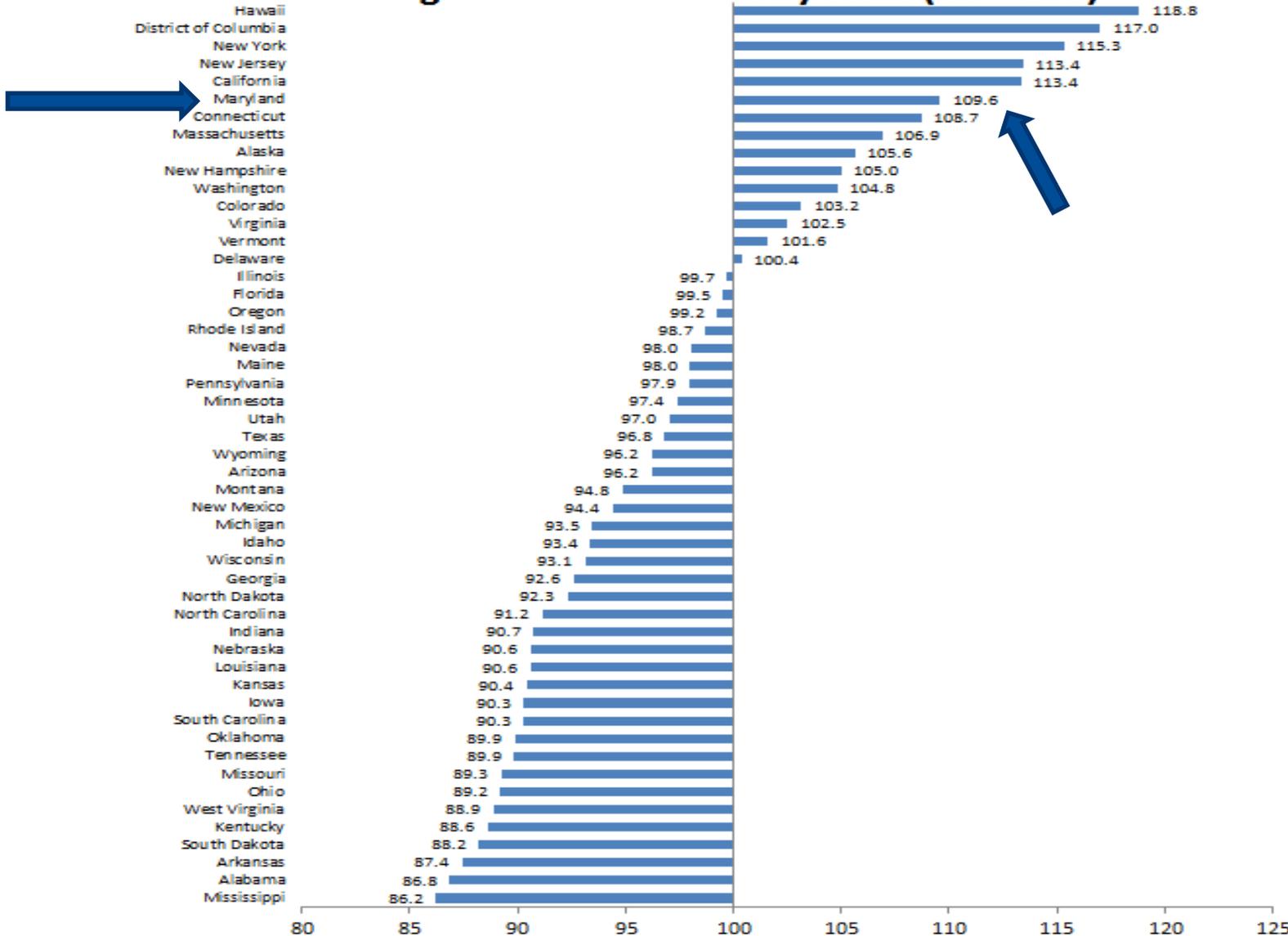
**Regional Price Parities (RPPs)** Price indexes that measure price level differences for one period of time within the U.S.

**Real Personal Income** Personal income at RPPs divided by the national PCE price index.

- Annual 2008 – forward
- Industries
  - Goods
  - Rents
  - Services
- Components
  - Per capita real personal income
  - Implicit regional price deflator

# Regional Price Parities (RPPs)

## 2015 Regional Price Parities by State (US = 100)



# State Regional Price Parities (RPPs) 2015



- RPPs show percent difference in price levels:

$$109.7 / 100 = 0.097$$

Price level in Maryland is 9.7% higher than the national average.

$$115.3 / 109.7 = 1.051$$

Price level in New York is 5.1% higher than in Maryland.

Selected States	2015 Regional Price Parities			
	All Items	Goods	Services	
			Rents	Other
Maryland	109.7	103.5	123.9	107.0
California	113.4	103.6	147.3	106.1
Hawaii	118.8	109.2	163.4	104.3
Mississippi	86.2	93.9	63.1	93.9
New York	115.3	108.6	133.9	111.5
All States*	100.0	99.4	101.1	100.0

\* Includes the District of Columbia

# RPPs and Real Personal Income

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$$\text{Real PI} = \frac{\text{PI at RPPs}}{\text{PCE Price Index}}$$

$$\text{Implicit Regional Price Deflator (IRPD)} = \frac{\text{PI}}{\text{Real PI}}$$

# RPPS and Real Personal Income – Source Data

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- Bureau of Labor Statistics (BLS), Consumer Price Index program.
  - Detailed expenditure categories
  - Large sample :
    - 1,000,000+ price observations per year
- Census Bureau, American Community Survey (ACS).
  - Detailed rent price levels
  - Large sample :
    - 500,000+ price observations per year
- BEA, National PCE Price Index
- BEA, RID Personal Income

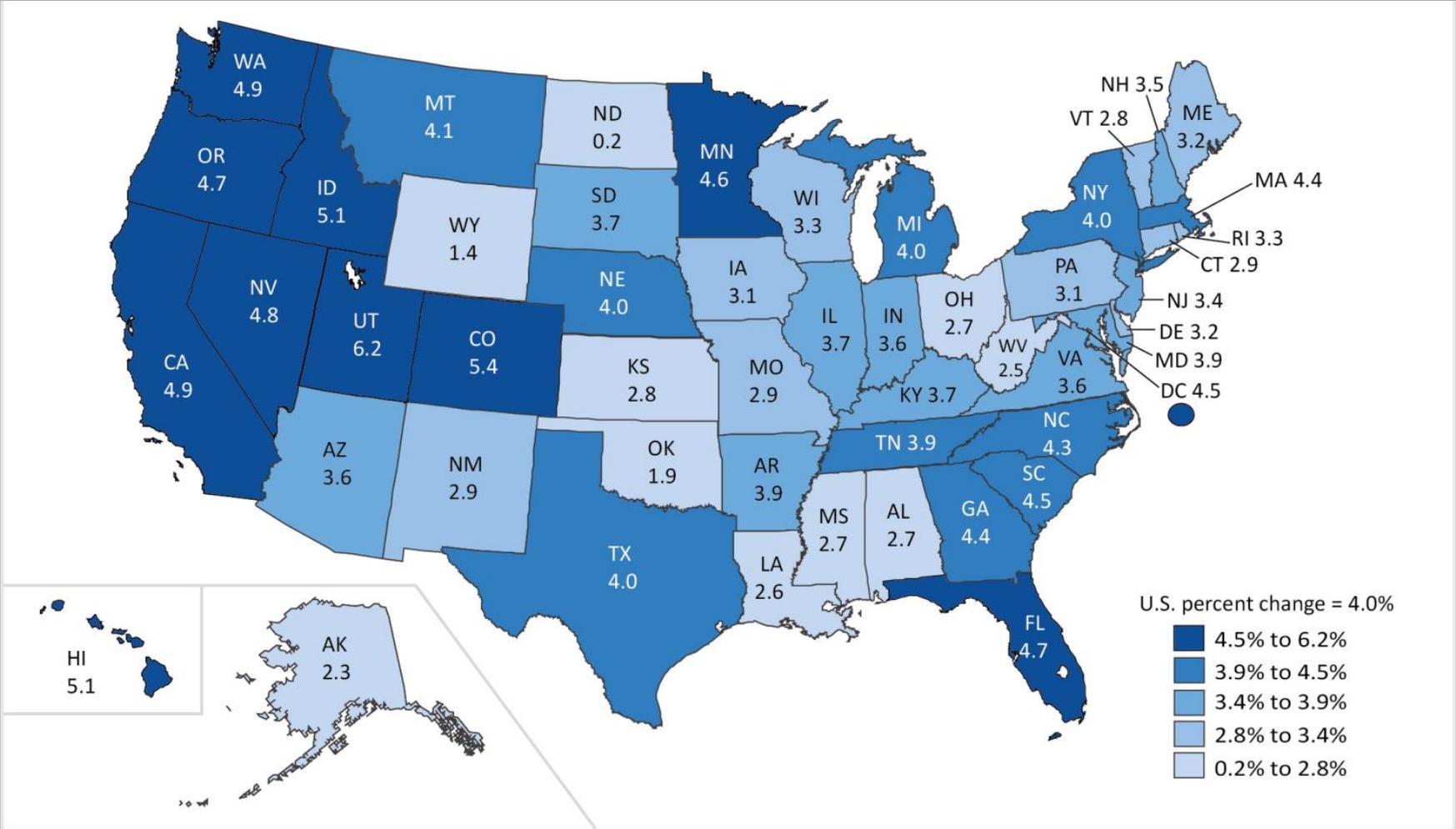
# Regional Personal Consumption Expenditure Statistics



**PCE** is a comprehensive measure of household consumption at the state level

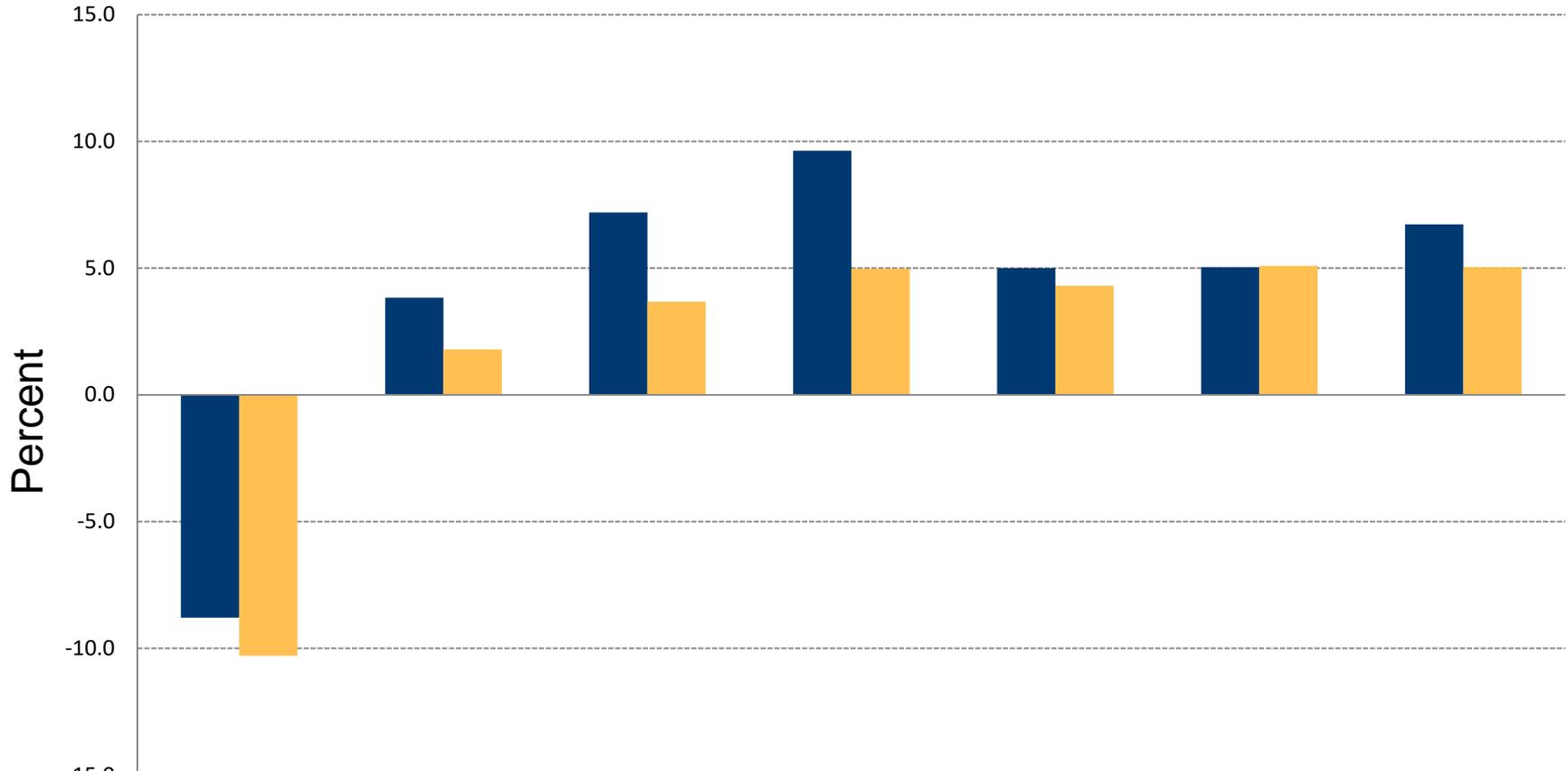
- Annual 1997 – forward
  
- 16 spending categories
  - 8 categories of goods
  - 7 categories of services
  
- Components
  - Personal Consumption expenditures
  - Per capita personal consumption expenditures

# Percent Change in Total PCE, 2015-2016



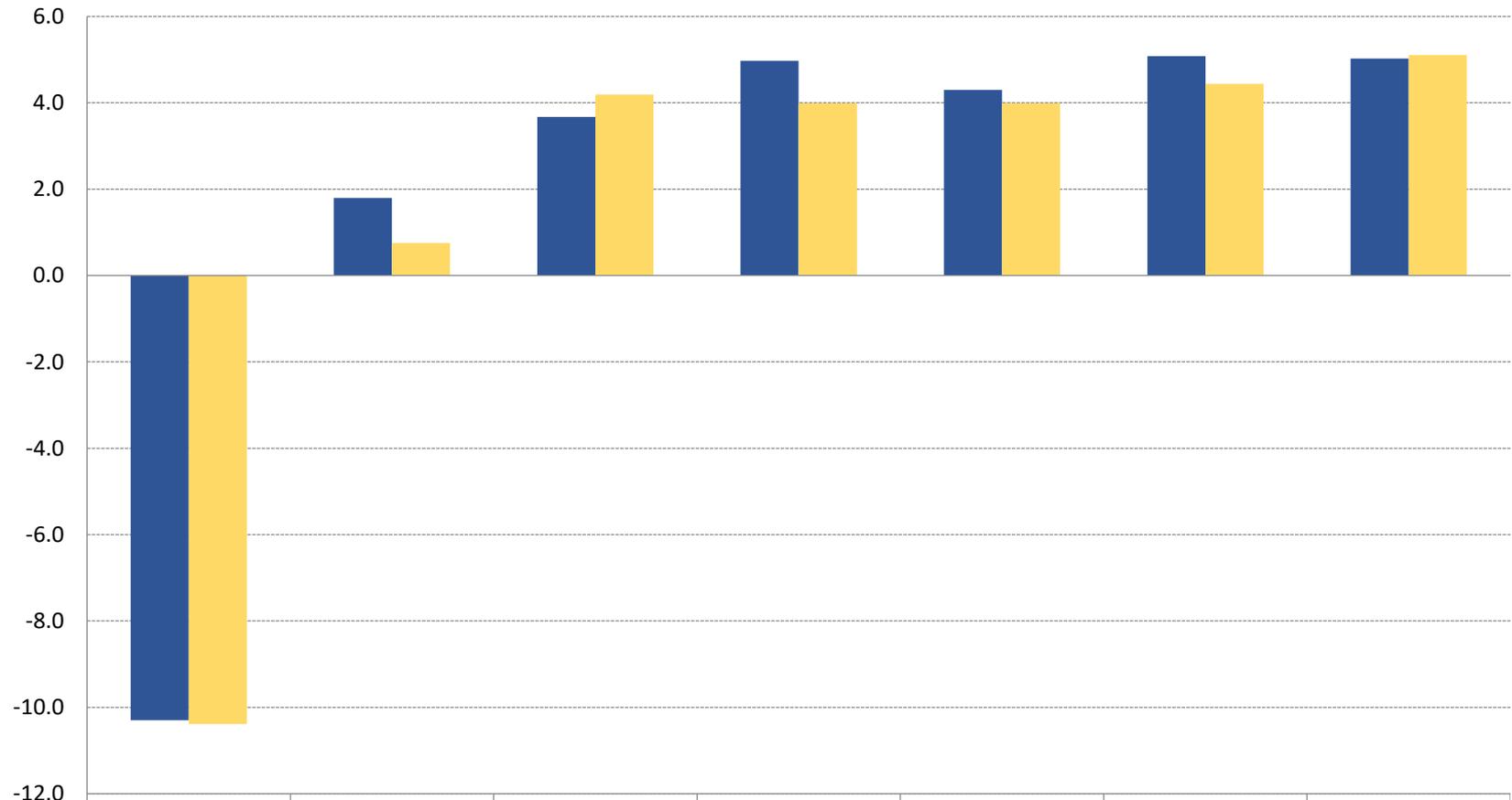
U.S. Bureau of Economic Analysis

# Utah PCE Category Growth, 2016



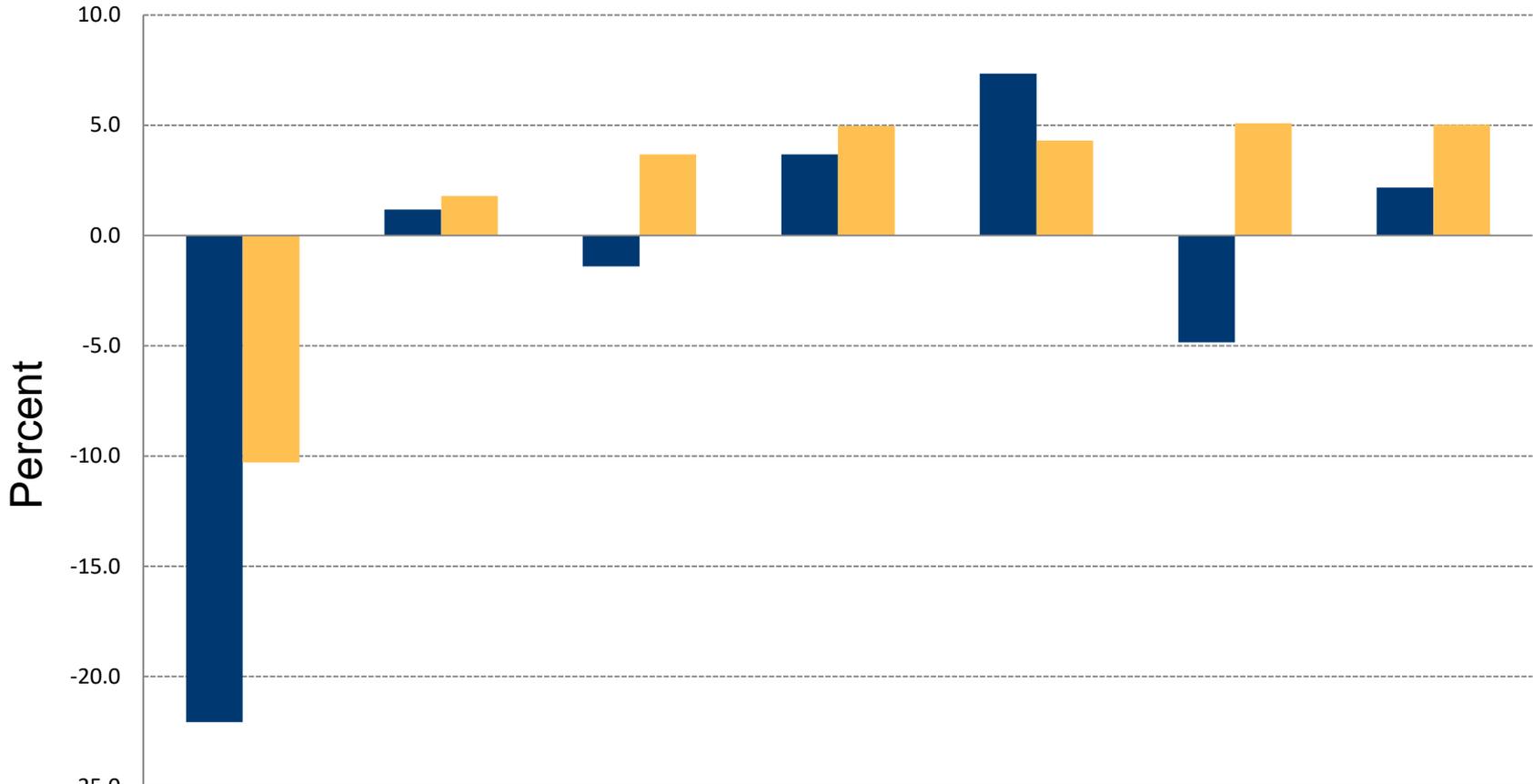
	Gasoline and other energy goods	Off-premises food and beverages	All other goods	Health care	Housing and utilities	Food services and accommodations	All other services
■ Utah	-8.8	3.8	7.2	9.6	5.0	5.0	6.7
■ United states	-10.3	1.8	3.7	5.0	4.3	5.1	5.0

# Maryland PCE Category Growth, 2016



	Gasoline and other energy goods	Off-premises food and beverages	All other goods	Health care	Housing and utilities	Food services and accommodations	All other services
■ United States	-10.3	1.8	3.7	5.0	4.3	5.1	5.0
■ Maryland	-10.4	0.8	4.2	4.0	4.0	4.4	5.1

# North Dakota PCE Category Growth, 2016



	Gasoline and other energy goods	Off-premises food and beverages	All other goods	Health care	Housing and utilities	Food services and accommodations	All other services
■ North Dakota	-22.1	1.2	-1.4	3.7	7.3	-4.8	2.2
■ United States	-10.3	1.8	3.7	5.0	4.3	5.1	5.0

# Personal Consumption Expenditures (PCE) – Source Data

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- State-level data
  - Economic Census (EC)
  - Quarterly Census of Employment and Wages (QCEW)
  - Other annual data
- Census of Retail Trade and Census of Services (most goods and some services)
  - Geographic Area Series
  - Subject Series – Product Lines
  - Subject Series – Receipts/Revenue by Class of Customer
- Other data sources (mostly services)
  - American Community Survey
  - Energy Information Administration
  - National Center for Education Statistics
  - Center for Medicare and Medicaid Services
  - Survey of Consumer Finance

# Dissemination of BEA Regional Statistics



- [www.bea.gov](http://www.bea.gov)
- Press Releases
- Survey of Current Business

# Research and Future Developments



- **Arts and Cultural Production Satellite Account**
  - Collaborative work between BEA and the National Endowment for the Arts (NEA)
  - Value Added (GDP), Employment, & Compensation
- **Outdoor Recreation Satellite Account**
  - Collaborative work between BEA and the Federal Recreation Commission
  - Researching feasibility of state level estimates
- **Ocean Satellite Account**
  - Collaborative work between BEA and the National Oceanic and Atmospheric Administration

# GDP by County - Prototype

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- Prototype release November 2018
- All U.S. counties
- Total, Goods, Services, Government
- 2013 - 2015

# Contact Information

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