

# **ARTG 6900: Visualization Technologies II**

Final Project - *Data Research*

Yuan Hua

How does the U.S. government determine its annual ***Spending Budget***?

*Where the money goes?*

## Domain Questions

### **Category**

How does the U.S. government allocate money on each category every year?

### **Budget Function**

The exact use of each outlay.

### **Most & Least**

For one year/several years, which category that the government spends most&least money on?

### **Trend**

Know the changes of money used on each category over years.

## Possible Data Resource

| **Congressional Budget Office**

| **USA spending.gov**

| **The White House - Office of Management & Budget**

*All the data from these governmental organizations is open to the public.*

## Datasets

### Mandatory Outlays by Category from 1969 to 2018

In billions of dollars | Percentage of GDP

### Discretionary Outlays by Category from 1969 to 2018

In billions of dollars | Percentage of GDP

### Spending Projections by Budget Authority from 2019 to 2029

**Budget Authorities** | Outlays

Budget authority gives a clearer picture of whether an administration is cutting or increasing funding for a department.

## Contexts

*Source: CBO*

*CBO is an office that produces independent analyses of budgetary and economic issues to support the Congressional budget process each year.*

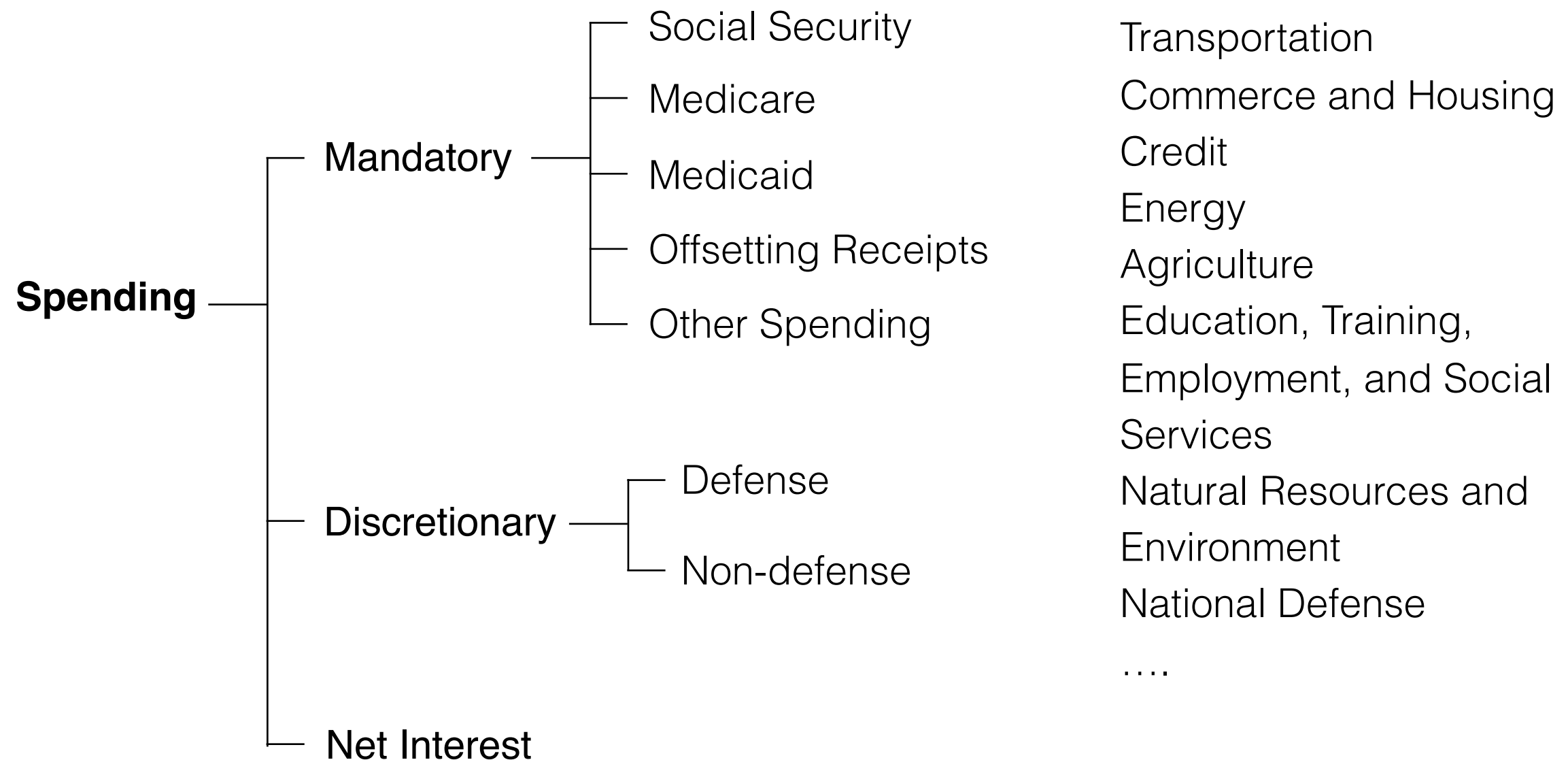
## Data Structure

*Only find it in the  
projection dataset.*



### Major Spending Categories

### Budget Functions & Subfunctions



## Category of Spending

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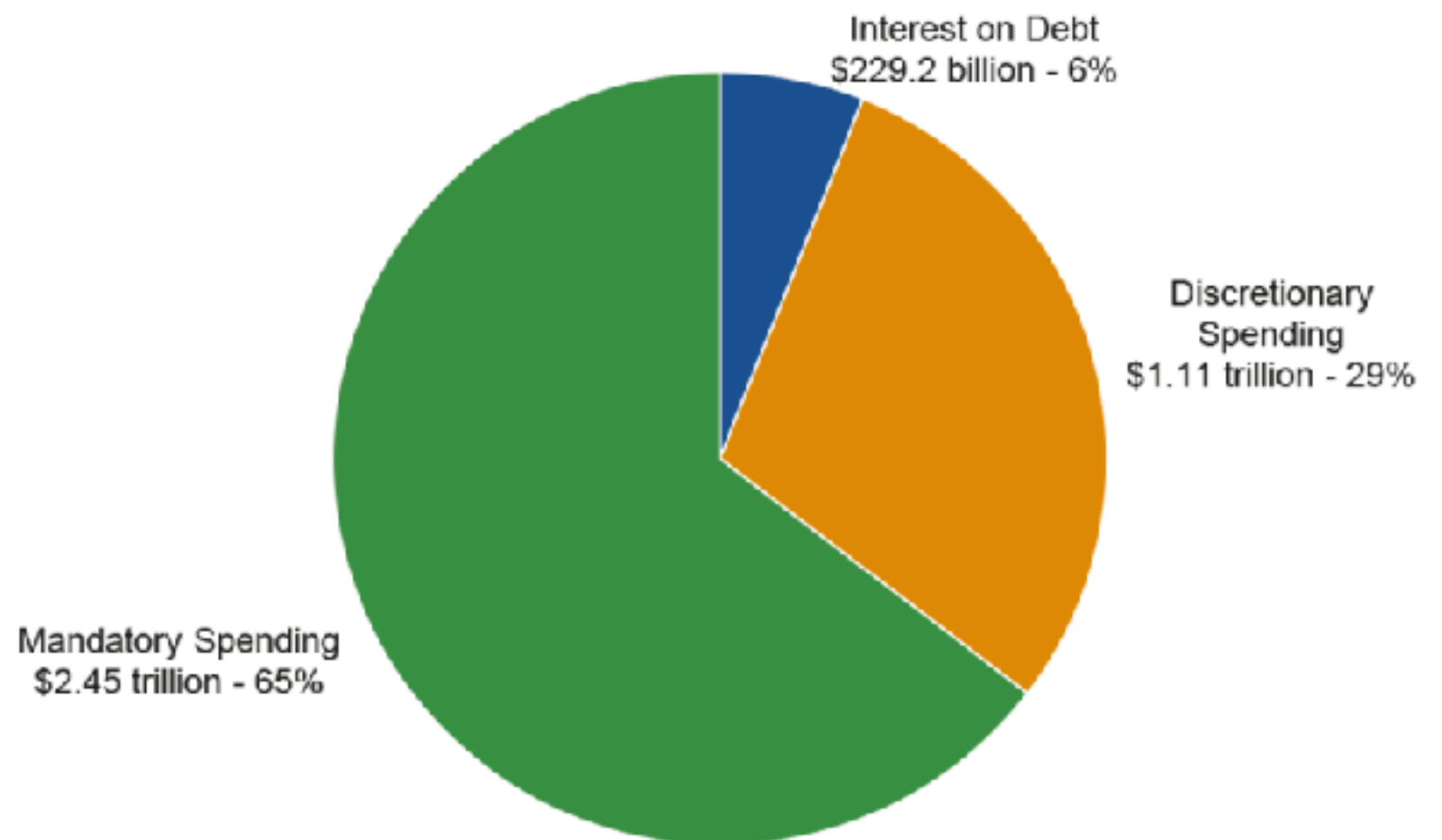
The U.S. Treasury divides all federal spending into three groups:

**Mandatory Spending**

**Discretionary Spending**

**Interest On Debt**

*Show the main  
composition of  
total spending*



FY 2015 Federal Debt (in 2015 dollars)

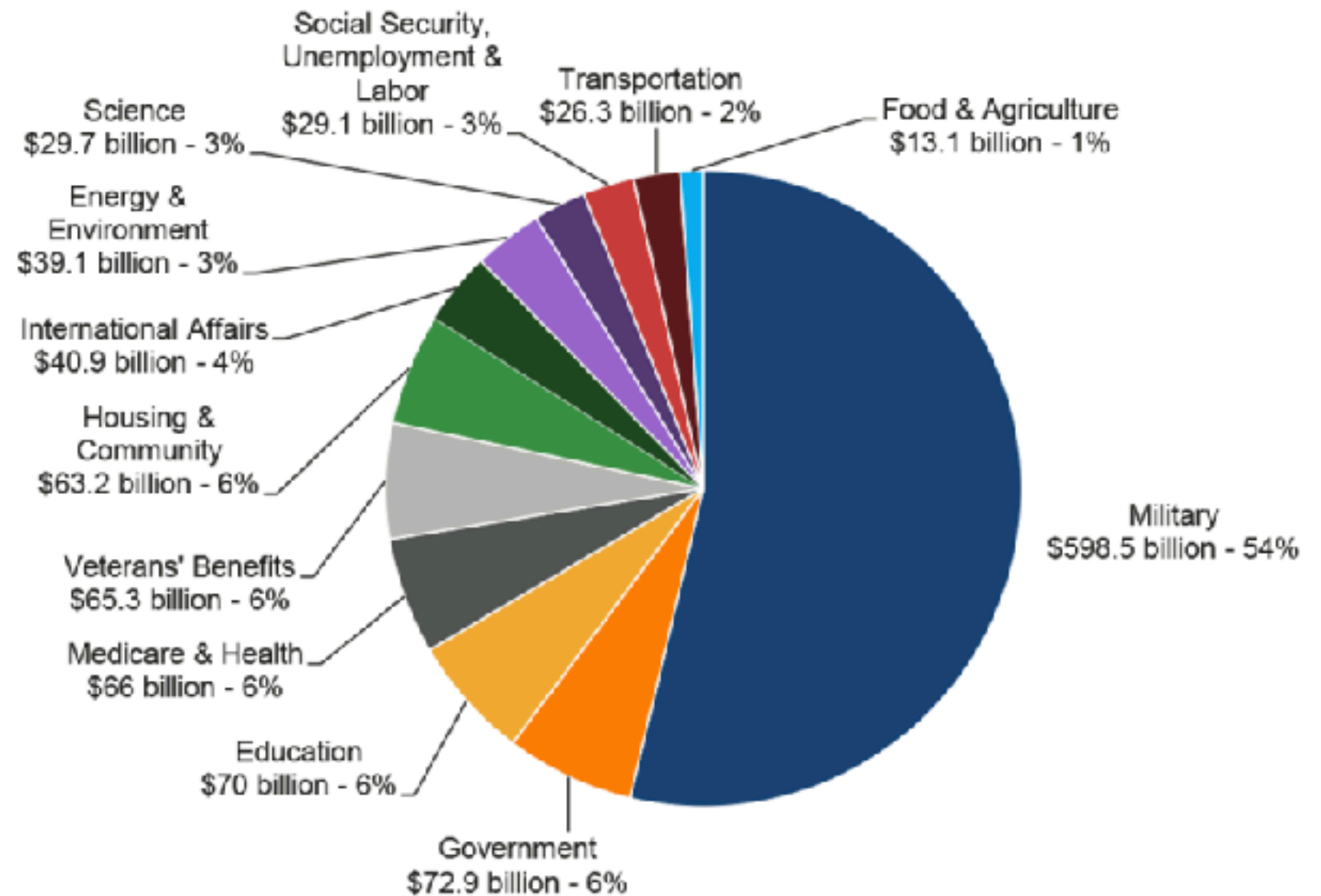


## Discretionary Spending

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Discretionary Spending refers to the portion of the budget that is decided by Congress through the annual appropriations process each year.

*Show the  
composition of  
discretionary  
spending*



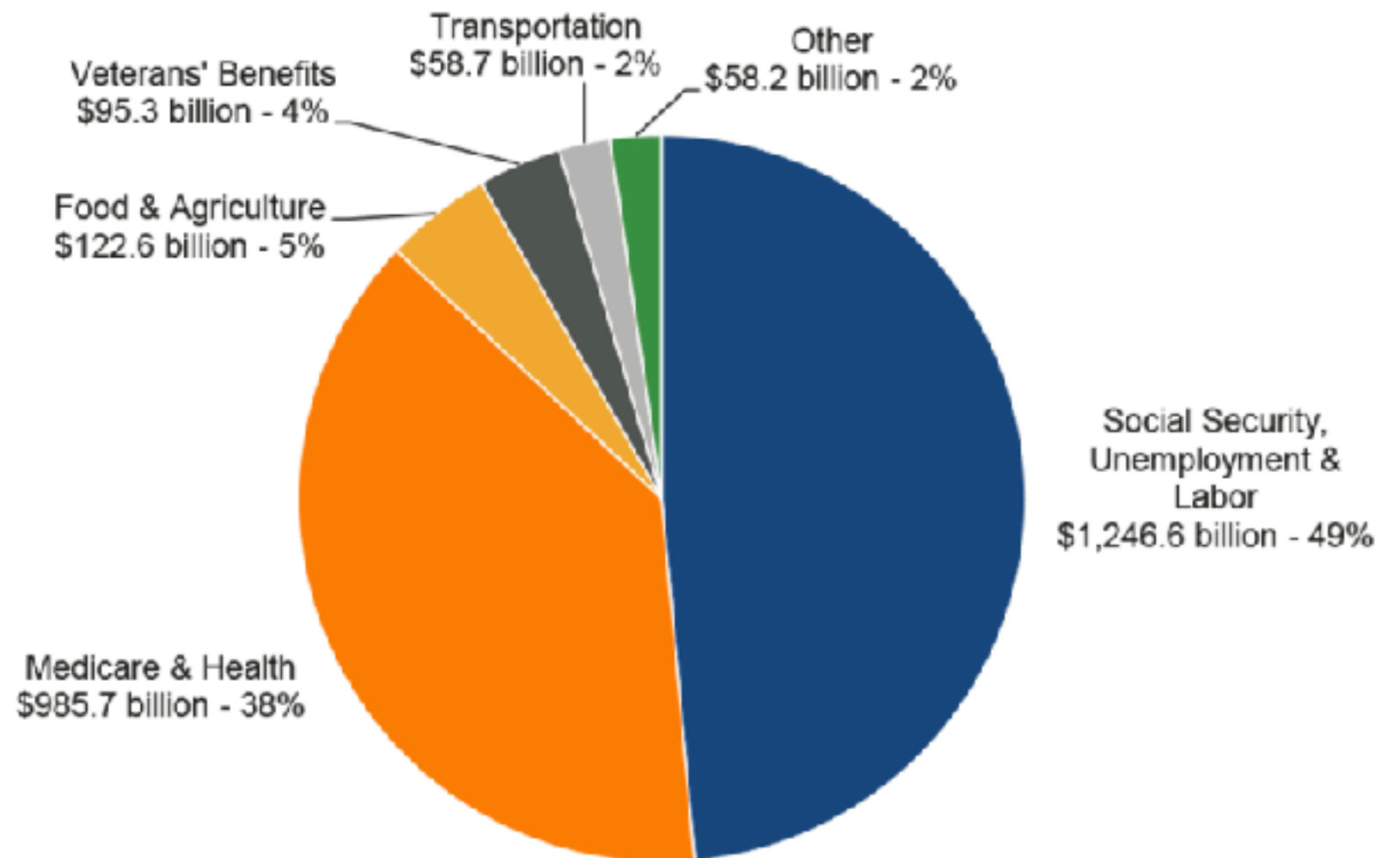
Discretionary Spending 2015: \$1.11 Trillion

# Mandatory Spending

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Mandatory spending is spending that Congress legislates outside of the annual appropriations process

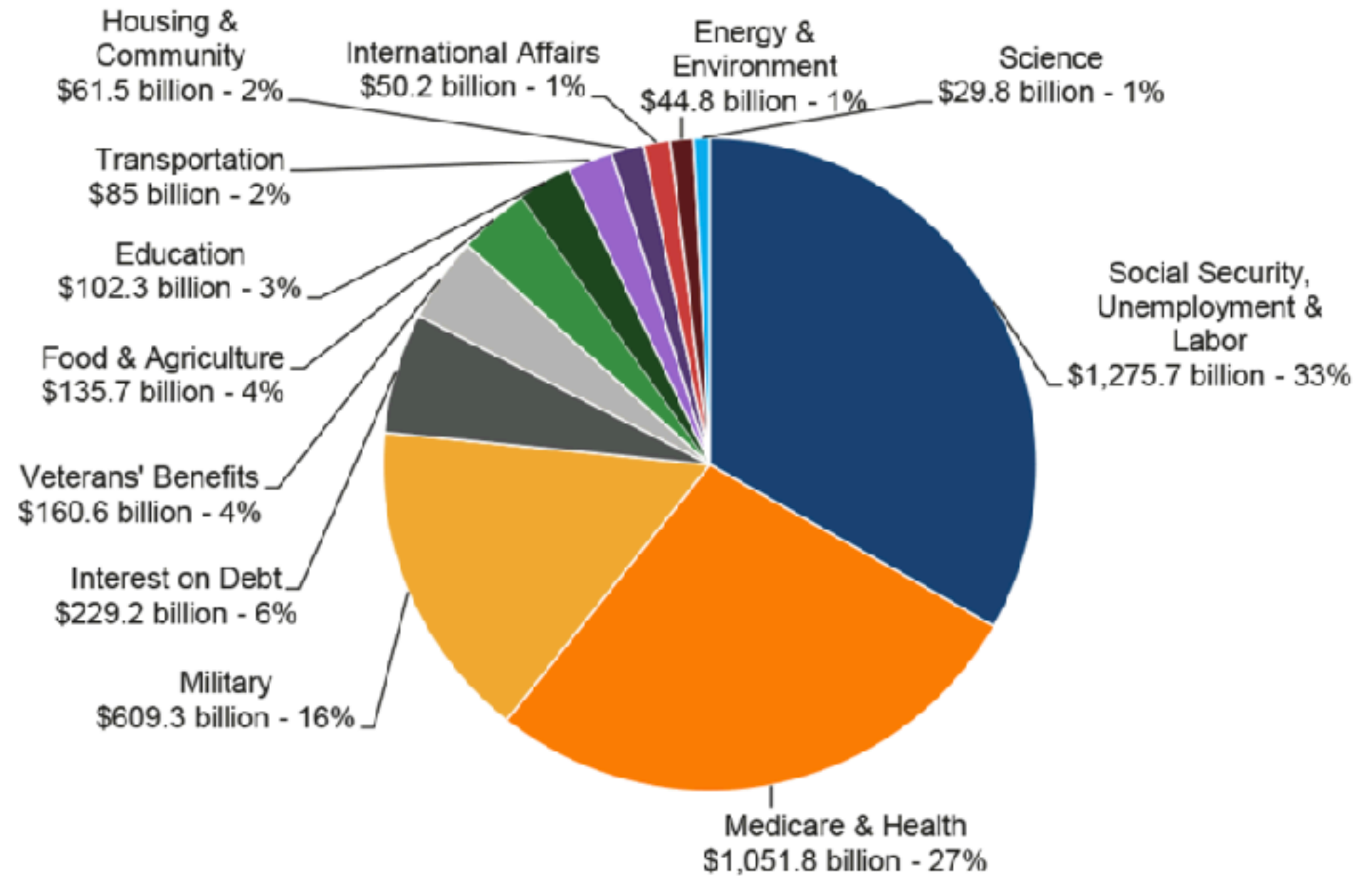
*Show the composition of mandatory spending*



Mandatory Spending 2015: \$2.45 Trillion

# Total Federal Spending

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*Show the  
composition of  
total spending*

## Visualization Insights

### Category

How does the U.S. government allocate money on each category?

### Most & Least

For one year/several years, which category that the government spends most&least money on?

### Budget Function

The exact use of each outlay.

### Trend

To show the changes of money used on each category over years.

## Precedent Research

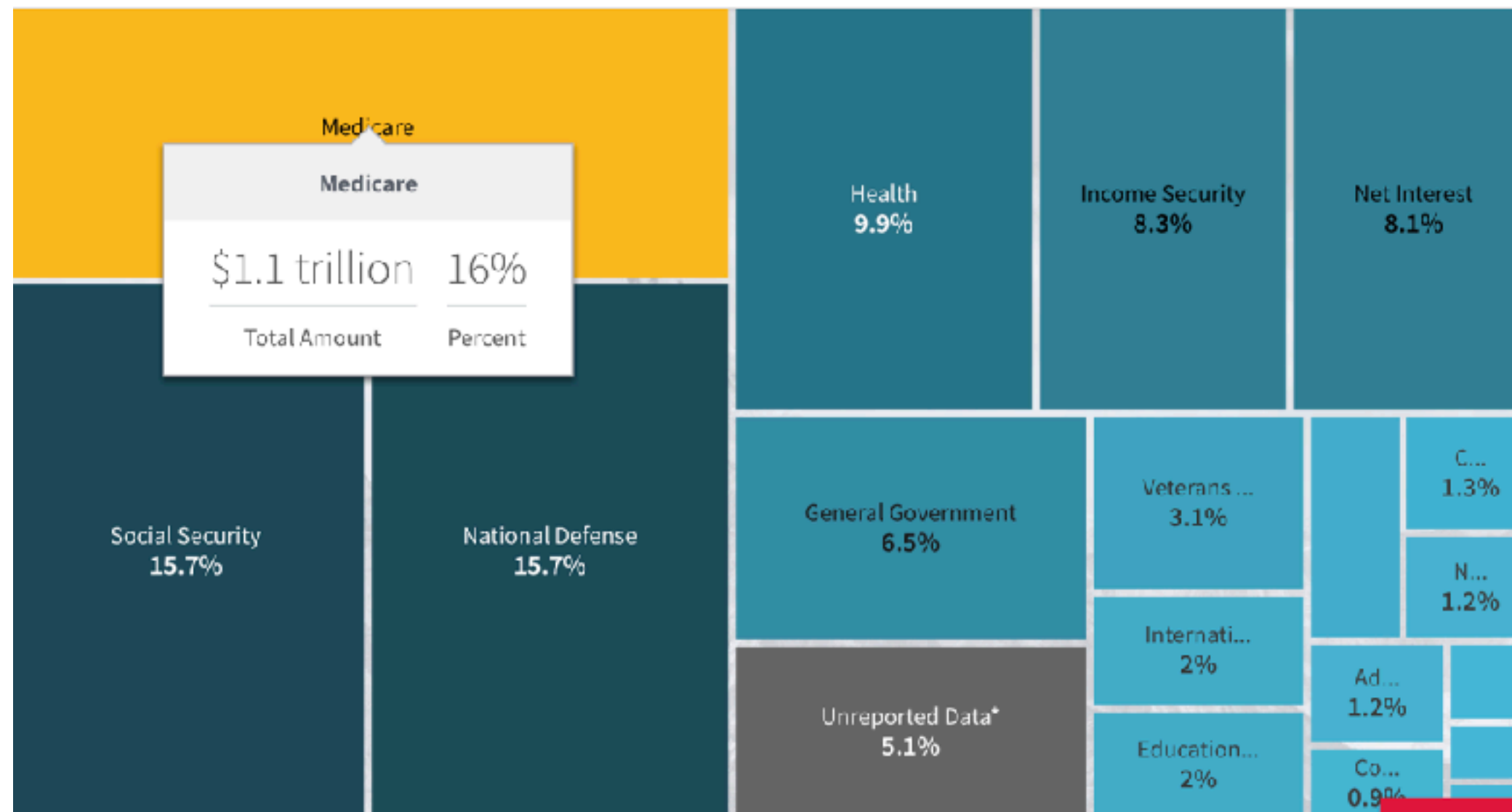
Category

|  
Most & Least

Budget Function

*Composition +  
Comparison:  
Treemap*

### Spending by Budget Function in 2018



src: [https://www.usaspending.gov/#/explorer/budget\\_function](https://www.usaspending.gov/#/explorer/budget_function)

# Precedent Research

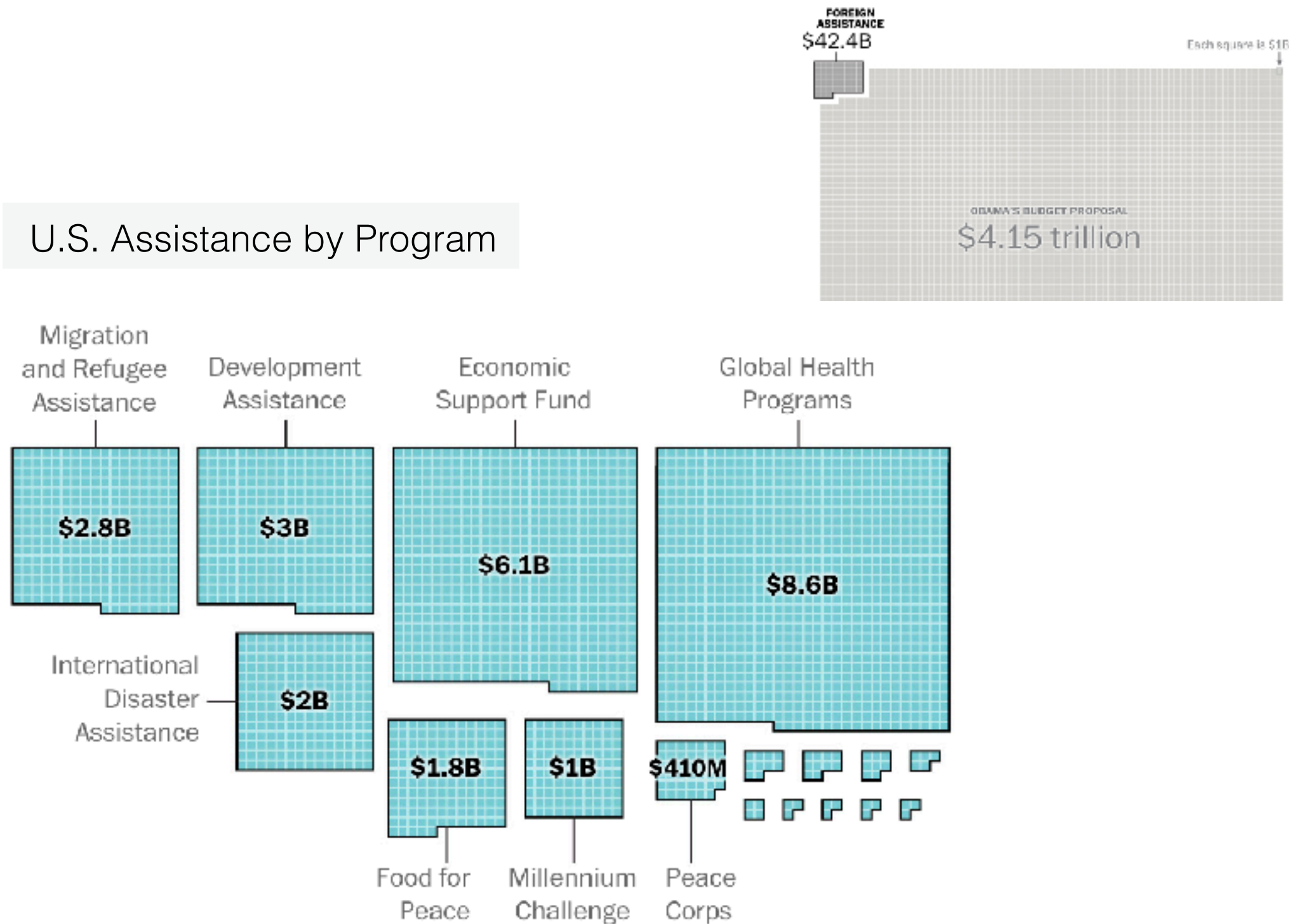
Category

Most & Least

Budget Function

*Composition+  
Comparison:  
Treemap*

## U.S. Assistance by Program



## Precedent Research

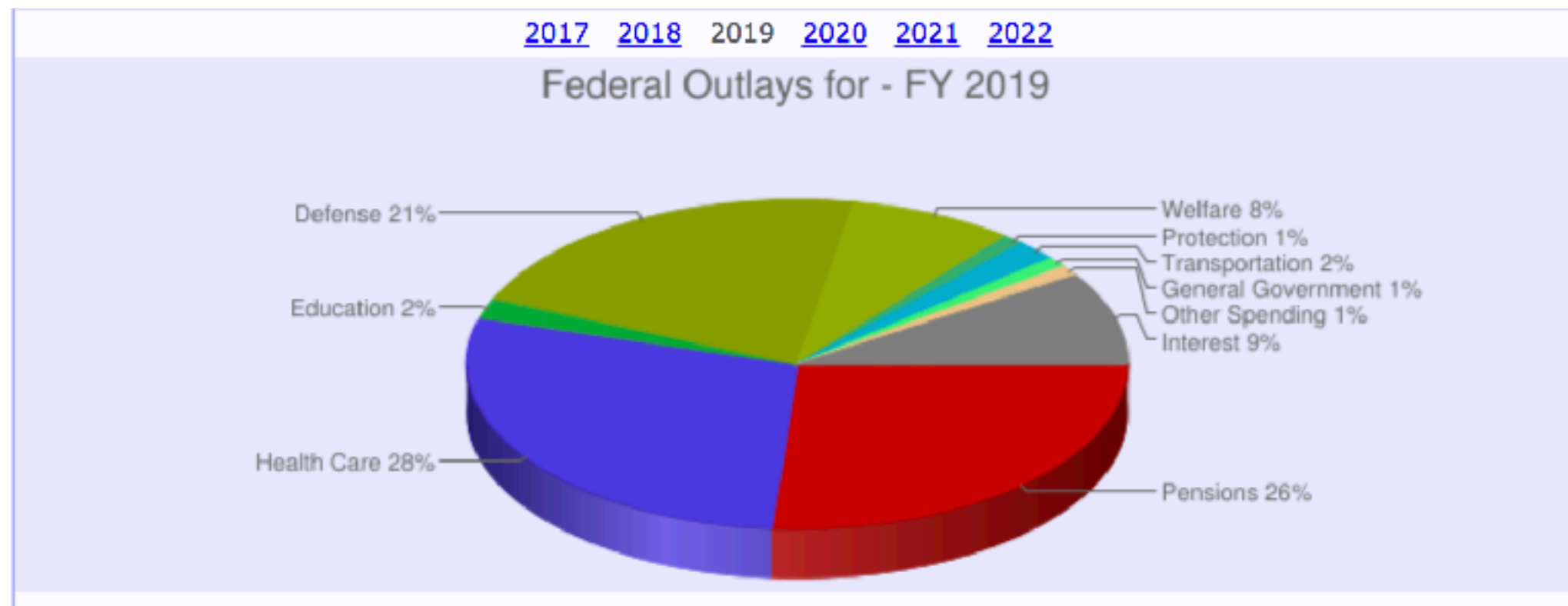
Category

Most & Least

Budget Function

*Composition+  
Comparison:  
Piechart*

### Federal Budget Spending Estimates 2017–2022





## Precedent Research

Category

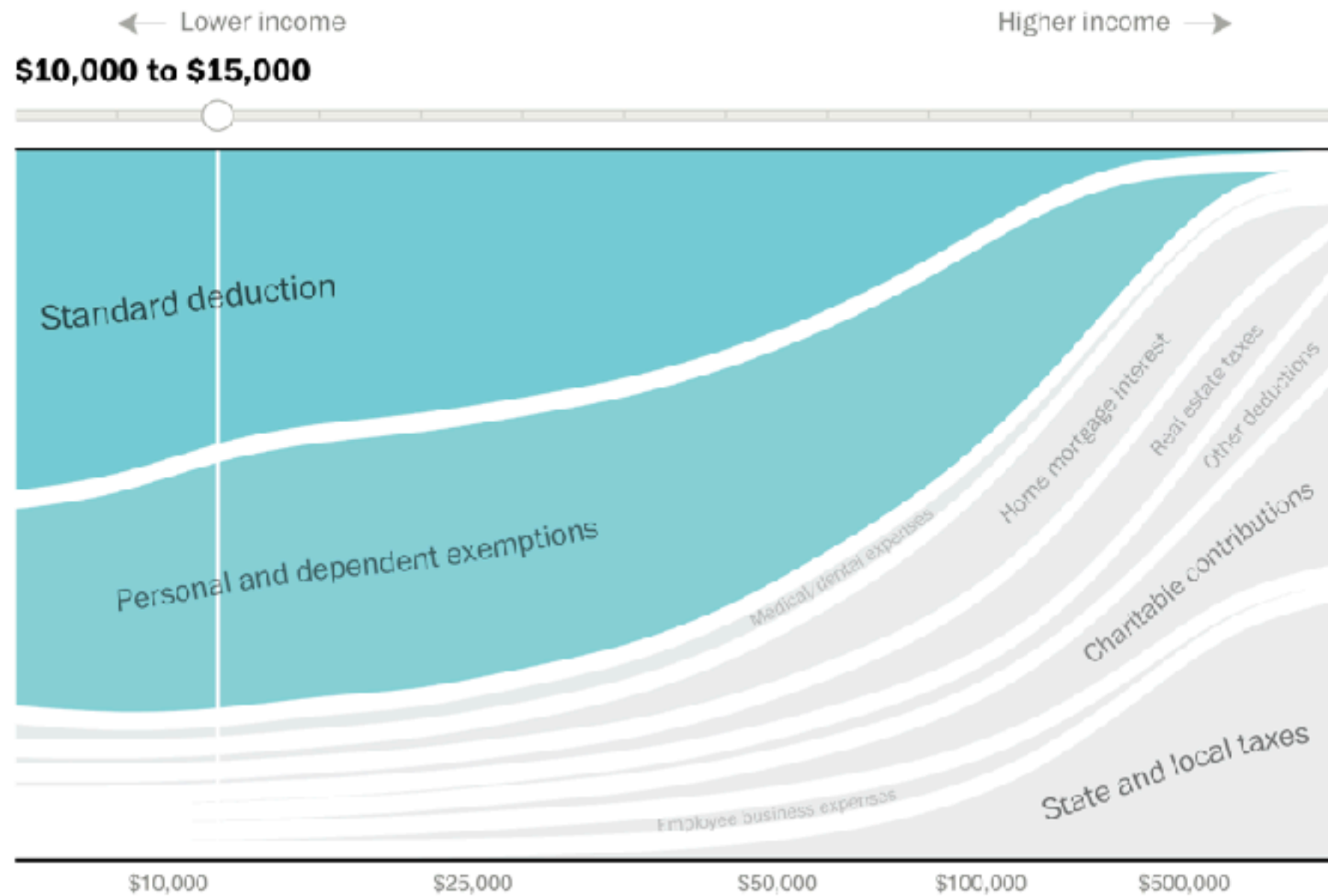
|

Most & Least

Budget Function

*Composition+  
Comparison:  
Line Chart*

### Most Beneficial Tax Deductions and Exemptions in 2015





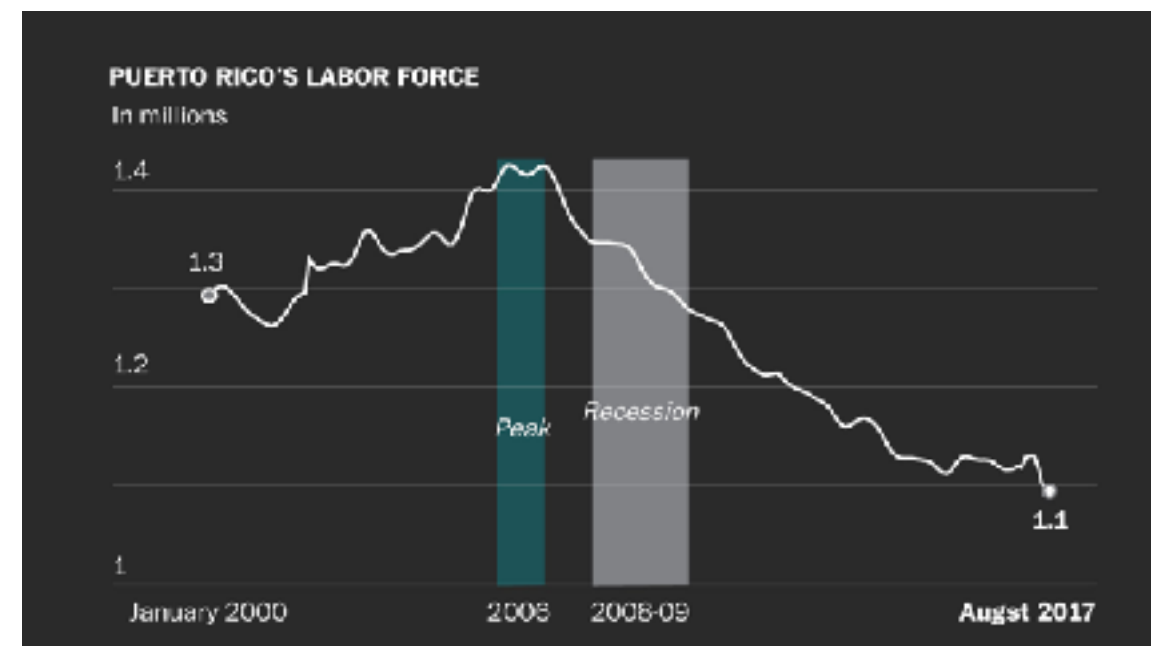
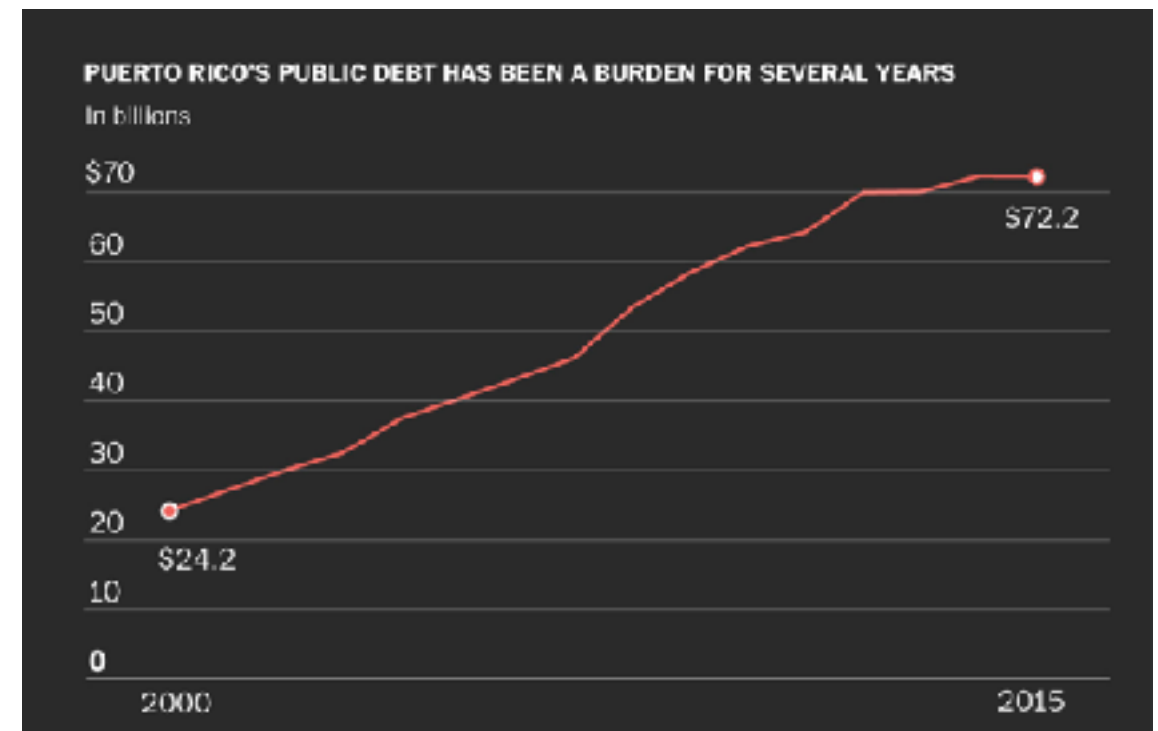
# Precedent Research

## Trend

*Comparison+*  
*Continuity:*  
*Line Chart*

## Puerto Rico's Public Debt and Labor Force

src: [https://www.washingtonpost.com/graphics/2017/national/puerto-rico-hurricane-recovery/?utm\\_term=.46be037c8cb3](https://www.washingtonpost.com/graphics/2017/national/puerto-rico-hurricane-recovery/?utm_term=.46be037c8cb3)



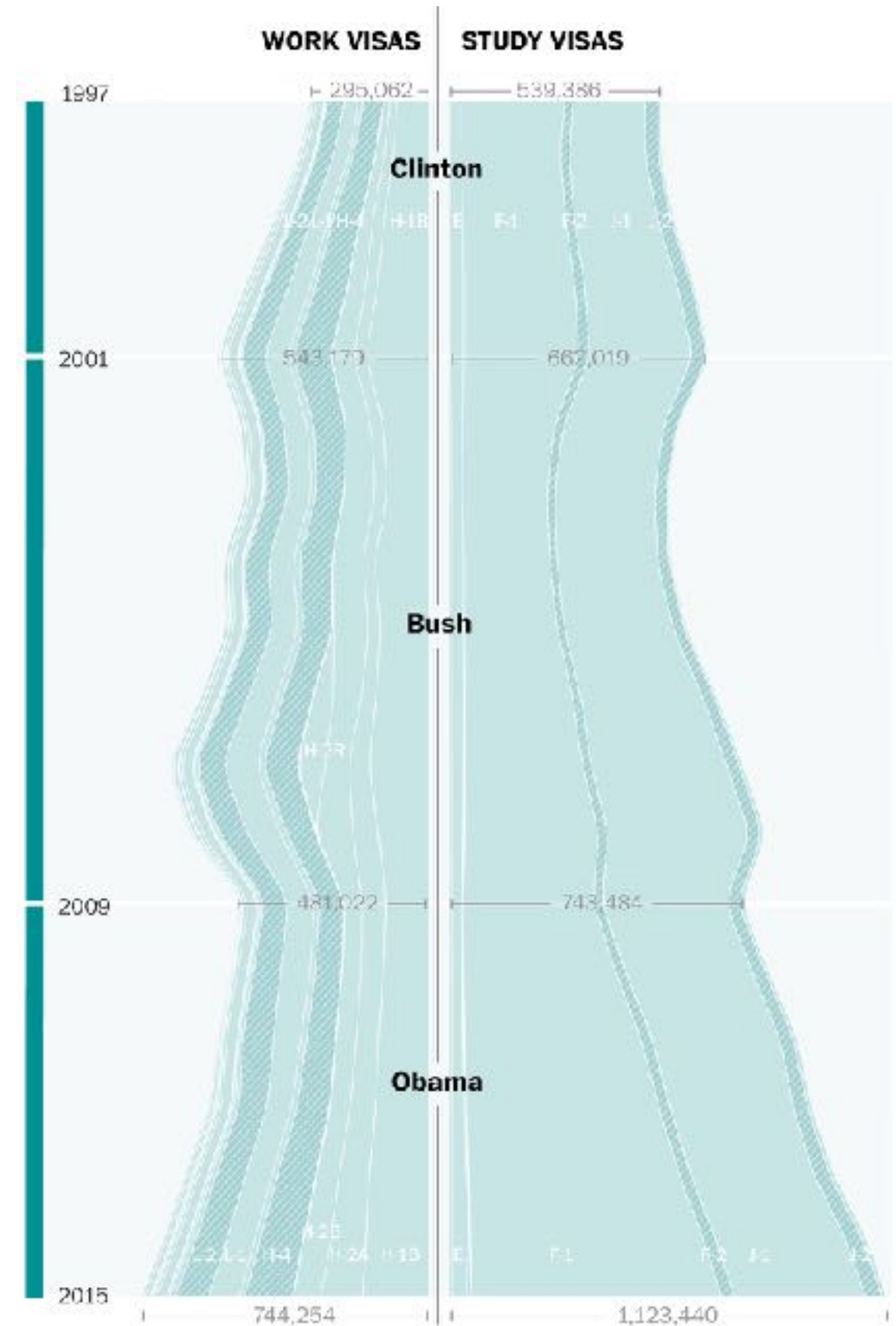
# Precedent Research

## Trend

*Comparison+*  
*Continuity:*  
*Line Chart*

## Visa Policy in Different President's Tenure

src: <https://www.washingtonpost.com/graphics/national/visas-impact/>

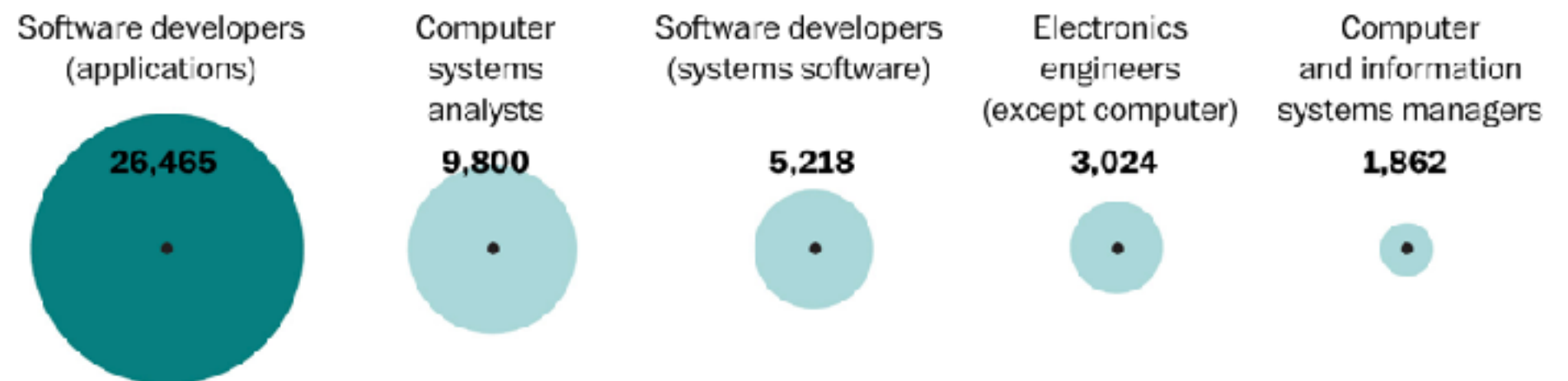


## Precedent Research

### Trend

*Comparison+  
Continuity:  
Area of Circles*

Occupations with More Than 1,000 Permanent Labor Certificate in 2015

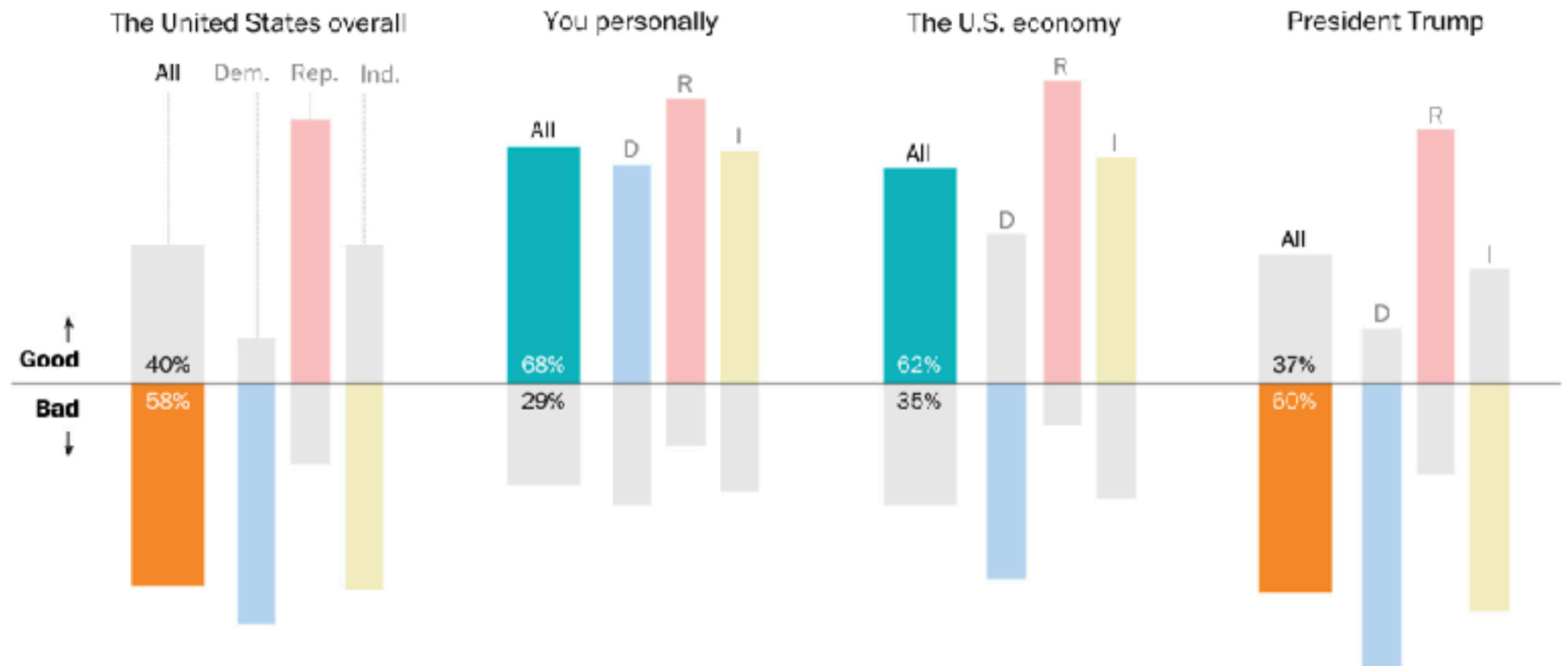


# Precedent Research

## Trend

*Comparison+*  
*Continuity:*  
*Bar Chart*

Would you say 2017 has been a good or a bad year for...



**Thank You**

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