

# FISCAL RESILIENCY USING TAX-PI

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# Agenda



- Why look at fiscal resiliency?
- About REMI
  - Tax-PI
- Fiscal Resiliency
- Model Demonstration

# Why Look at Fiscal Resiliency?



**Economists' fears of a 2020 recession in the US surge**

**-CBS BUSINESS**

**Majority of economists think the U.S. will enter a recession by 2021, survey finds**

**- WASHINGTON POST**

**As Recession Fears Rise, Skittish Investors Sell Riskiest Junk Bonds**

Signs of weakness in risky corporate bonds are emerging as the Treasury market has begun to send recession signals

**- Wall Street Journal**

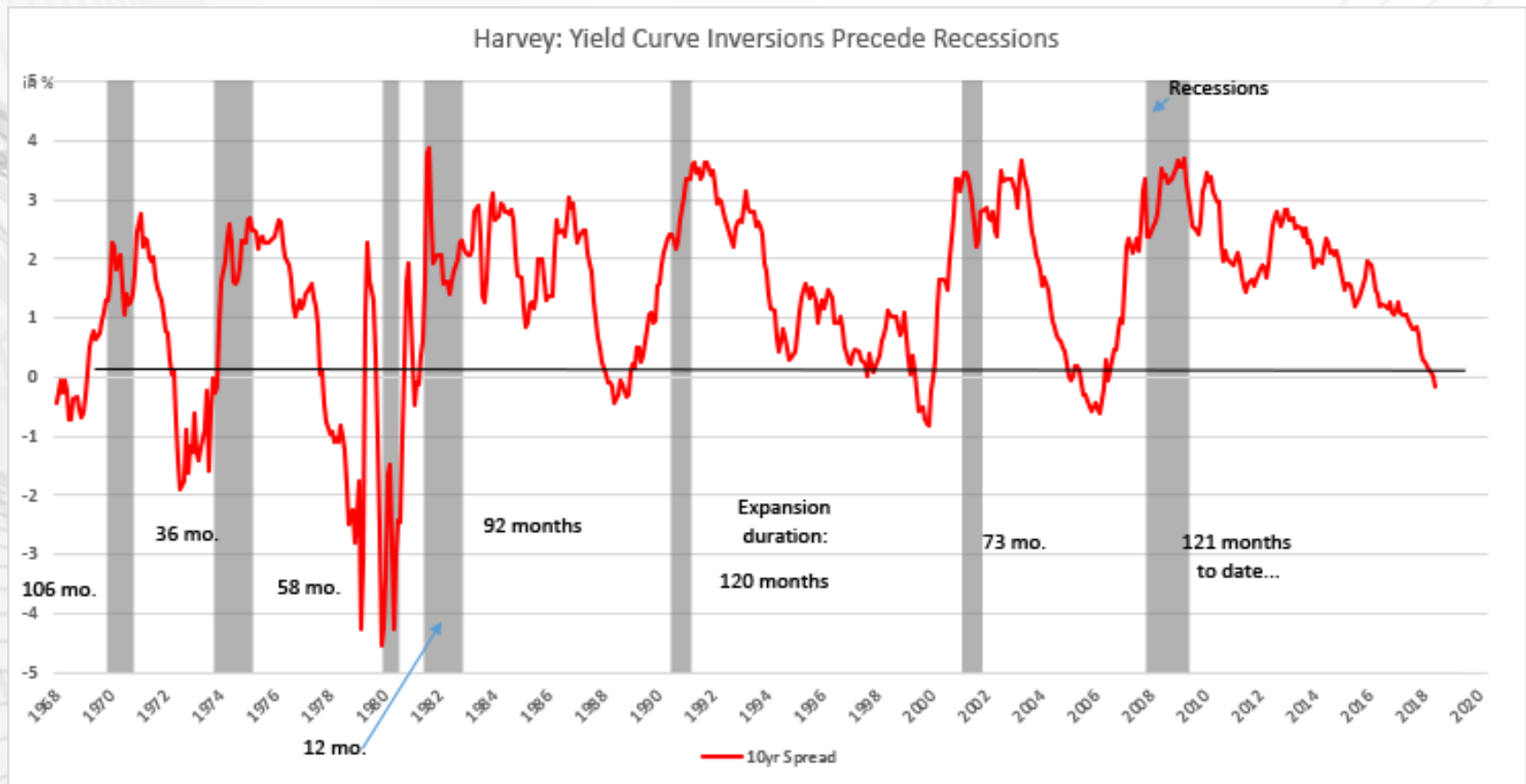
**2 out of 3 people are not prepared for the next economic recession**

**-Business Insider**

**Nearly half of U.S. financial chiefs see recession within a year**

**-CBS**

# Why Look at Fiscal Resiliency?



Source: Duke Today

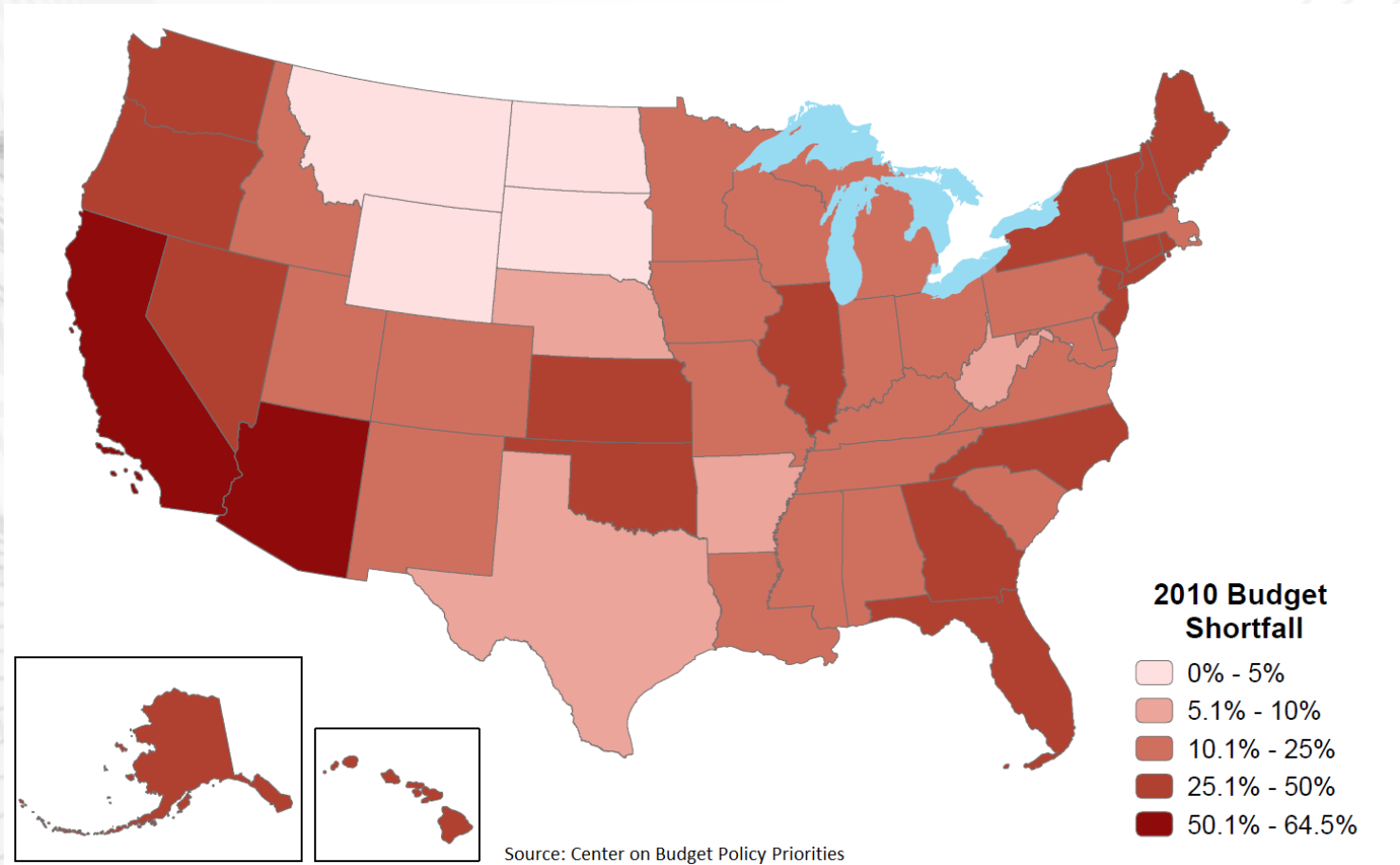
# Why Look at Fiscal Resiliency?



Federal policy tools to combat a recession may be exhausted

- Federal budget deficit was \$779 Billion in 2018
  - May not be political appetite for federal spending to stimulate economy in the event of a recession
- Quantitative Easing (QE) may not be used again
- The federal funds rate is already fairly low
  - Currently at 2.25%

# Why Look at Fiscal Resiliency?





# About REMI



REMI's 38-year history of rigorous academic research and software development has led to the development of the industry standard in macroeconomic research methodology:

## Input-Output

Close analysis of inter-industry relationships

## Econometrics

Advanced statistical analyses underpinning the model

## General Equilibrium

Estimate of long-run stability of the economy allows for analysis of policy decisions

## Economic Geography

Effects of geographic concentration of labor and industry



Integrated REMI economic modeling approach



DECD

State of Connecticut  
Department of Economic and  
Community Development



Iowa Department of  
**REVENUE**



**LOUISIANA**  
DEPARTMENT of REVENUE

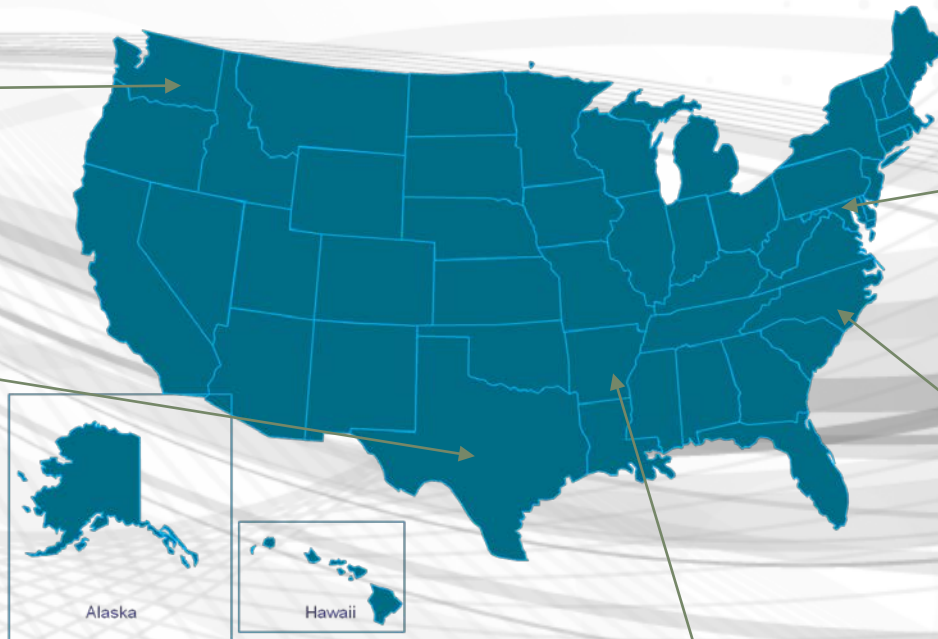


# Prior Tax Analyses



**Washington:**  
Aerospace tax  
credit analysis

**Texas:** Statutory  
impact analysis  
requirement for  
appropriations  
legislation



**Maryland:**  
Corporate  
tax rate  
reduction  
analysis

**North  
Carolina:**  
Medicaid  
expansion  
analysis

**Arkansas:** Big River Steel  
manufacturing facility analysis



# What is Tax-PI?



**Tax-PI** is the only commercially available dynamic macroeconomic and fiscal impact analysis tool.

Tax-PI allows users to understand the deep linkages and relationship between a budget and its economic foundation.

## **Tax-PI is uniquely customizable to your state**

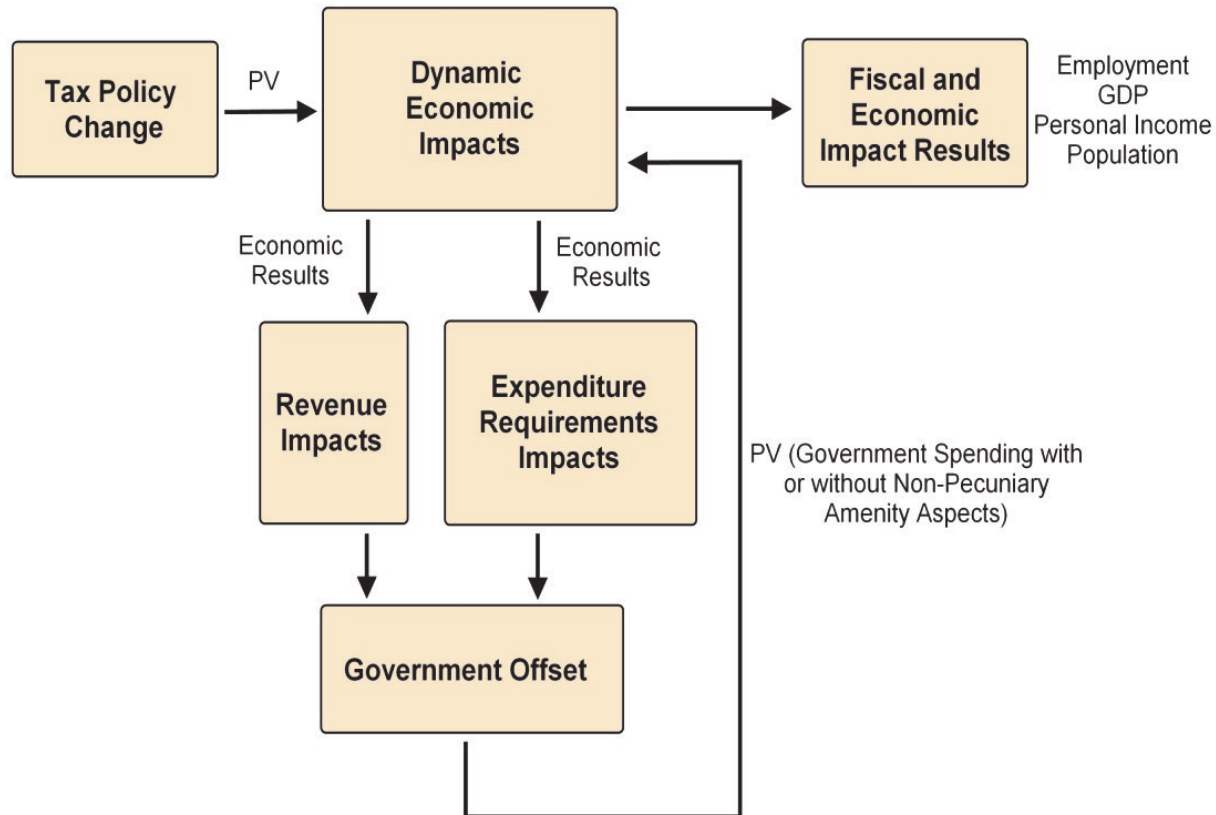
User-defined revenue and expenditure categories

Automatic budget-balancer: demand- or revenue-driven

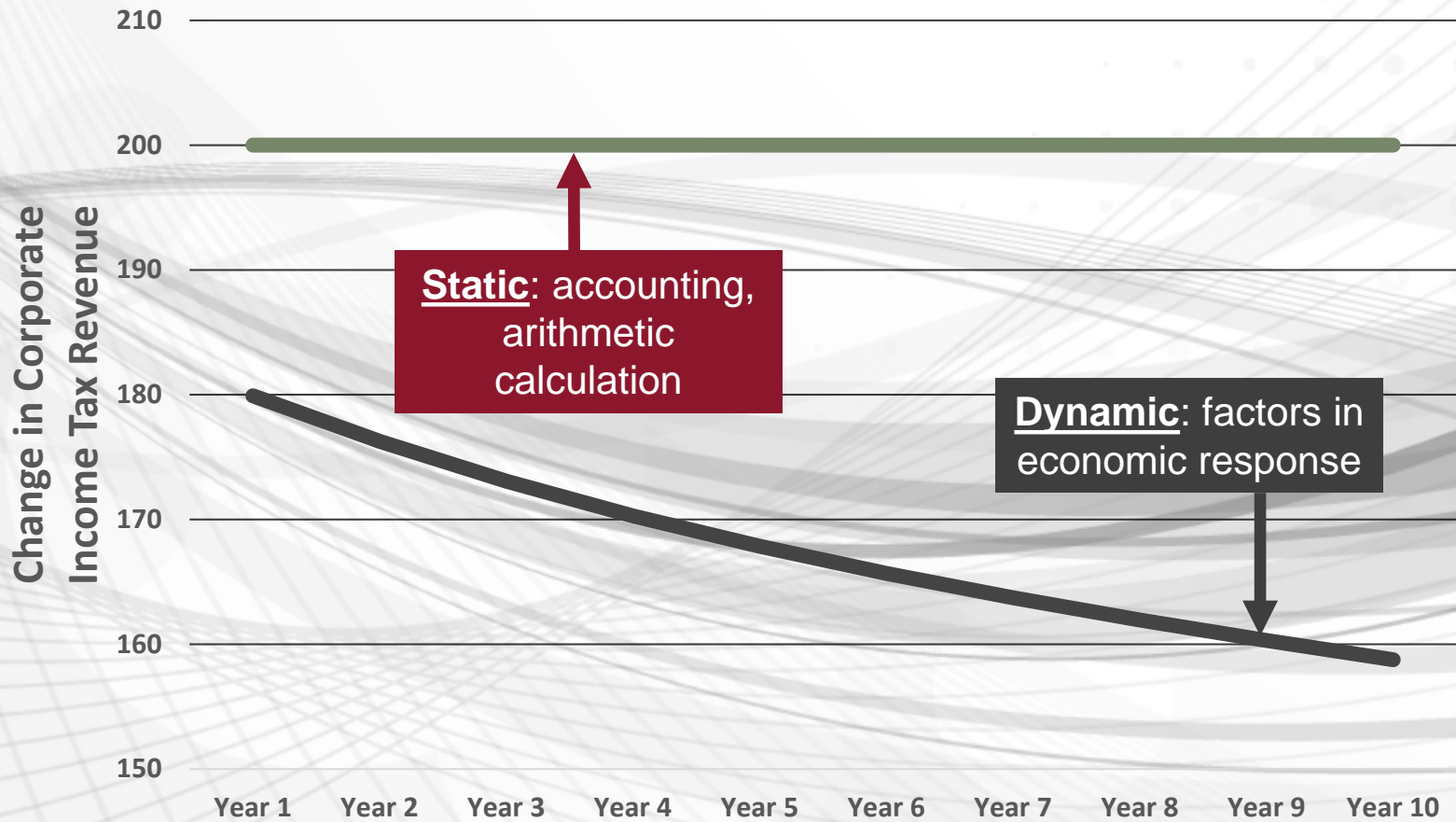
Accommodates state's economic, demographic, fiscal projections

# Dynamic Fiscal Analysis

## Tax-PI Model Structure Overview



# Dynamic vs. Static Example: Raise Corporate Tax by \$200M



# Modeling Process Review

## User Calibration

- State Expenditures
- State Revenues

## Build Simulation

- Economic development
- Tax policy

## Dynamic Results

- Demographic
- Economic
- Fiscal

## Revenue Change

### Example Analysis

- Budget impacts of trading a capital gains tax for a sales tax.
- Budget impacts of trading a mineral severance tax for a personal income tax.
- Economic impacts of an increase in property taxes.

## Expenditure Change

### Example Analysis

- Budget impacts of additional funding for workforce training.
- Budget impacts of expanding Medicaid.
- Budget impacts of financial incentives.
- Increased transportation spending.



# Fiscal Resiliency

# Fiscal Resiliency



The reduction of potential budget deficits in the face of an unforeseen event

- Resilient to:
  - National Recessions
    - Reductions in output and stock market declines may alter regional positions
      - E.G. DC housing prices fell less than CA during the national recession.
  - Specific Revenue Shocks
    - Industry: Vulnerable to industry shifts
      - E.g. Houston is dependent on oil production/refining
    - Customer: Vulnerable to change in outlays
      - E.g. D.C. metro is reliant on federal contracting
    - Specific Tax
      - E.g. California is reliant on capital gains tax

# Fiscal Resiliency

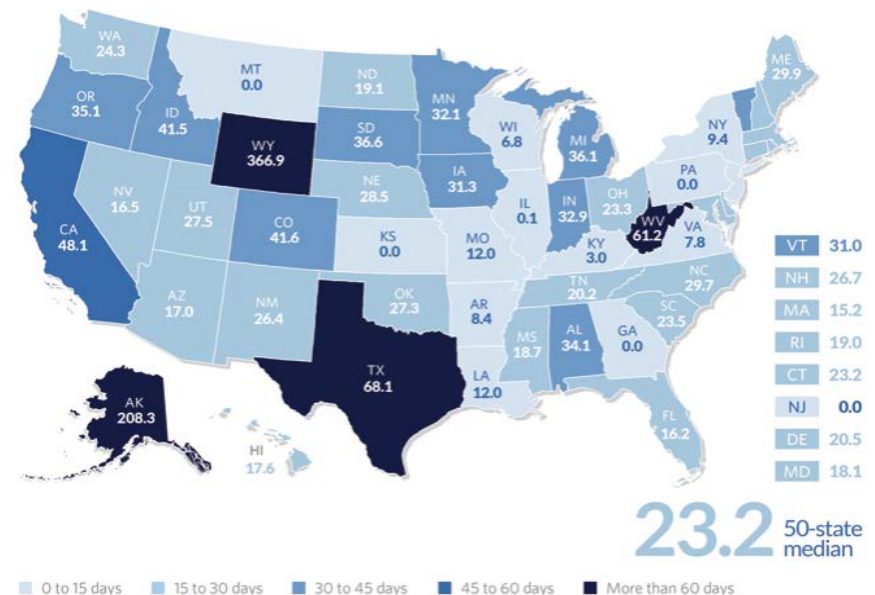
- Common methods to prepare for shocks:
  - Leverage periods of economic growth by building budgetary reserves
  - Decrease reliance on volatile revenue sources

# Fiscal Resiliency

- Leverage periods of economic growth by building budgetary reserves
  - Countercyclical demand for Medicaid and Unemployment insurance often leads to financial stress on expenditures
    - More resilient states tend to prepare for these expenditure needs by developing rainy day funds

## Rainy day fund highlights

Days Each State Could Run on Only Rainy Day Funds in FY 2018



Source: Pew analysis of data from the National Association of State Budget Officers

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- Decrease Reliance on Volatile Revenue Sources
  - Severance Taxes on Oil and Mineral Resources along with Corporate Taxes are the most volatile sources of state revenue
  - State budget volatility varies greatly (Pew Trusts)
    - Highest Volatility – Alaska, Wyoming, and North Dakota
    - Lowest Volatility – South Dakota, Kentucky, and Maryland

What happens if there is a negative production shock to mineral resources?



# Model Demonstration

# Demonstration Outline



- Scenario 1: Diversifying tax revenue via the introduction of a Personal Income Tax\*
  
- Methodology
  - \$334M increased revenue from new PIT
    - Levied on Personal Income minus transfer payments
  - \$334M decreased revenue from severance taxes
    - Coal, natural gas, and oil extraction

# Model Diagram

