



# State of Utah Budget Stress Testing

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**Governor's Office of Management and Budget**

**Presentation to National Association of State Budget Officers (NASBO)**

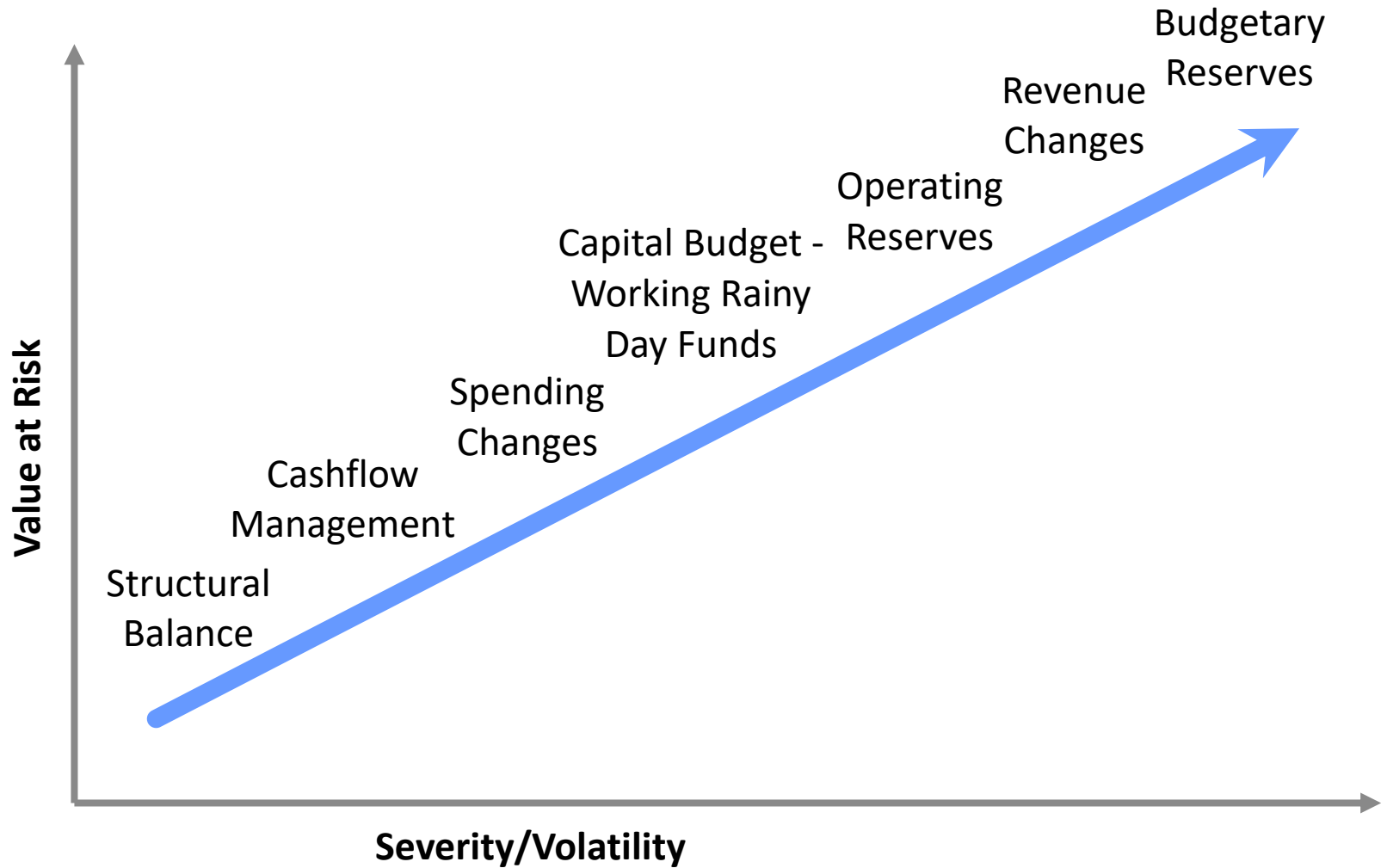
**October 6, 2017**

## State Challenges During Recessions

- Unstable economic conditions impact government revenues
- Tax policy choices may amplify economic instability
- Certain government expenditure patterns are countercyclical
- Expectations of stable government services – people still wants schools, roads, prisons, etc. to function during a recession



# Options for Dealing with Economic Fluctuations



## When Is the Time to Prepare?



## States Have Many Tools That Can Be Used to Manage Budget Over Business Cycle



- Structural balance
  - Understand revenue and expenditure trends
  - Separately identify ongoing and one-time revenues and expenditures
- Cash flow management - timing of spending compared to revenues
- Spending reductions
- Revenue adjustments – tax base, tax rate, fees





- **Budget reserves – broadly defined**
  - Unappropriated balances
  - Operating reserves
  - Capital budget - “Working rainy day funds” (cash funding capital) and unused bonding capacity
  - Nonlapsing balances
  - Restricted fund balances
  - Formal rainy day funds
  - Permanent trust funds

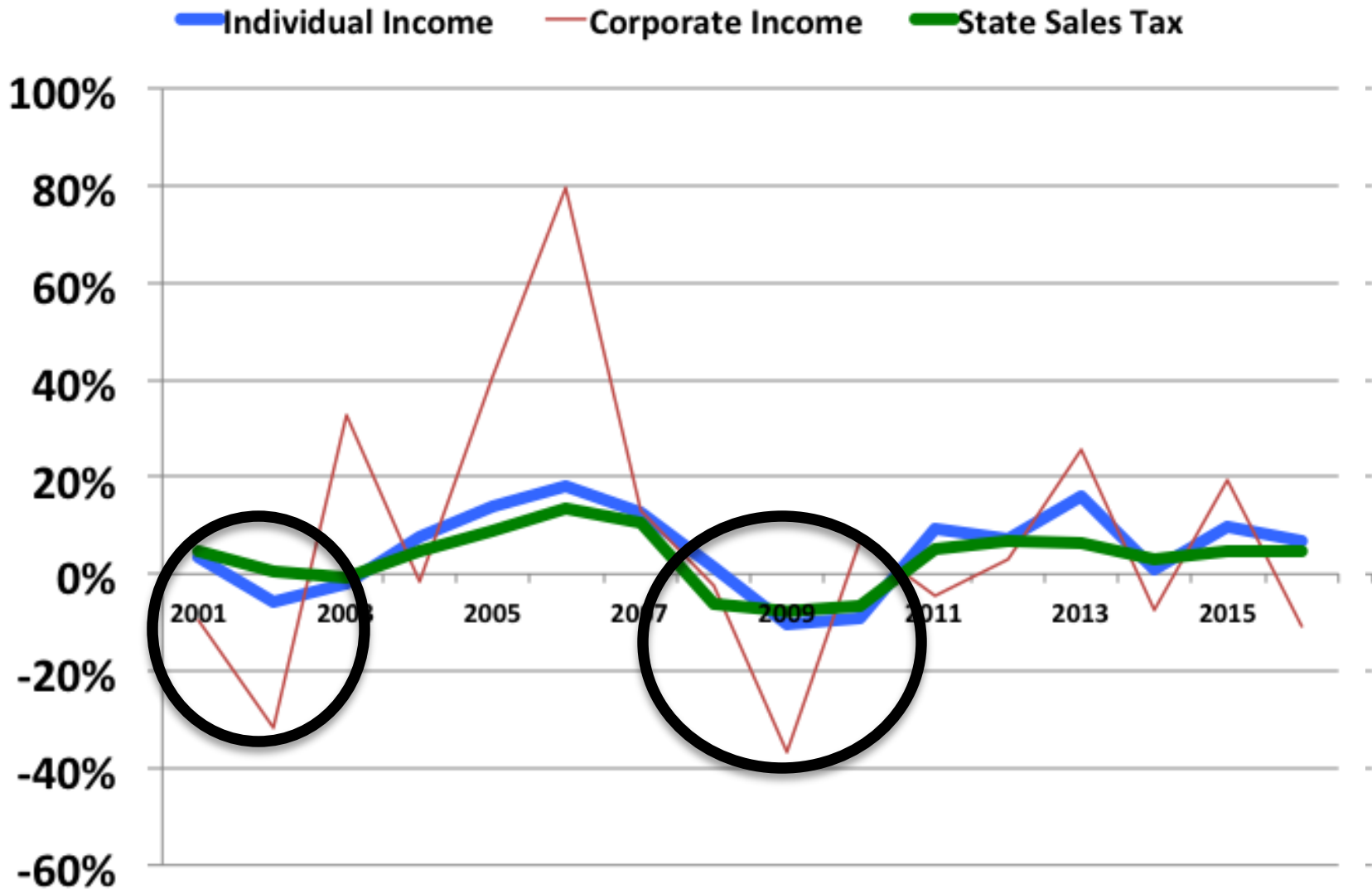


## History of How We Got Here

- State tax reform efforts of mid-2000s included focus on volatility of state's revenue sources
  - Portfolio theory
- Tax Review Commission
  - Tax reform didn't sufficiently address volatility on revenue side, recommended 3-year cycle for revenue volatility study with rainy day fund sizing recommendation
- Trend revenue
- Stress testing



# The Business Cycle Is Real - Utah Revenue Growth Rate History





# Revenue Volatility – How To Measure? What Drives It?

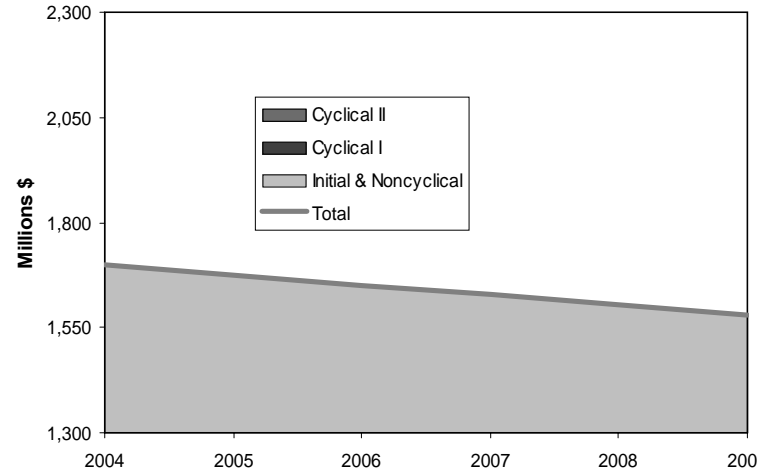
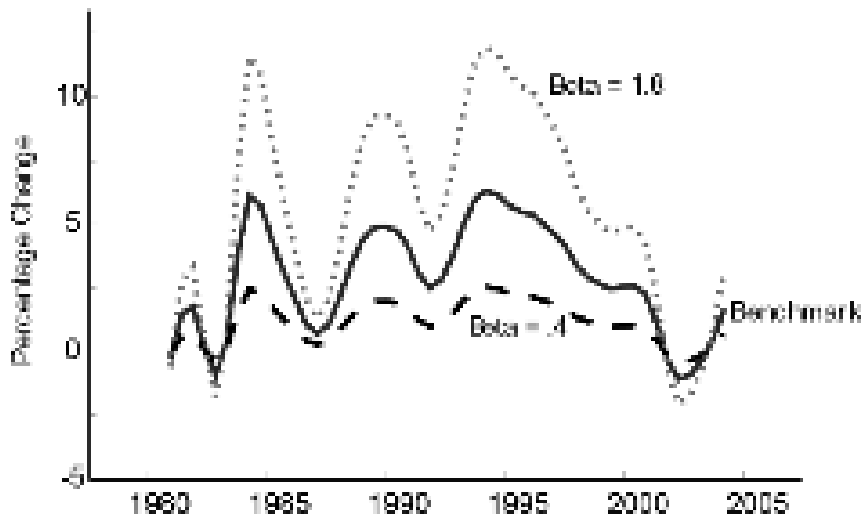


Figure 5. Change in the individual income tax base assuming 0% growth in nonagricultural wages, 2004-2009.

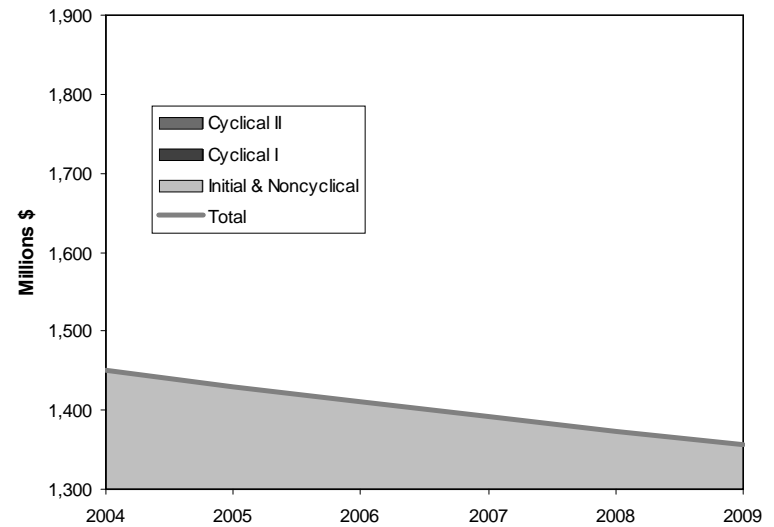
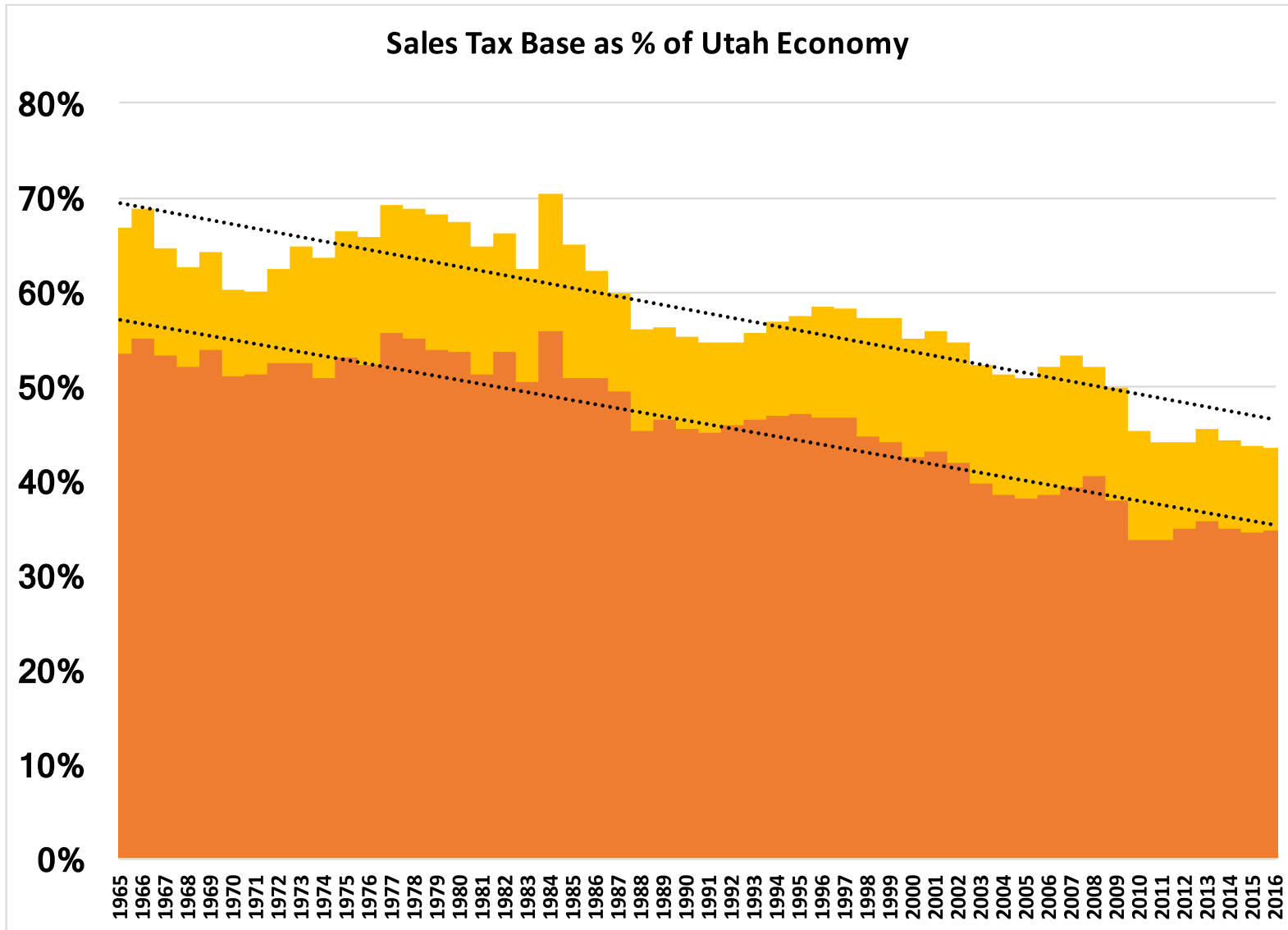


Figure 9. Change in the retail sales tax base assuming 0% growth in nonagricultural wages, 2004-2009.



# Understanding Your Tax Base



# History of How We Got Here

State of Utah  
Federal Funds Commission  
Economic Risk Analysis



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ECONOMIC RISK ANALYSIS  
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## One Example From Report

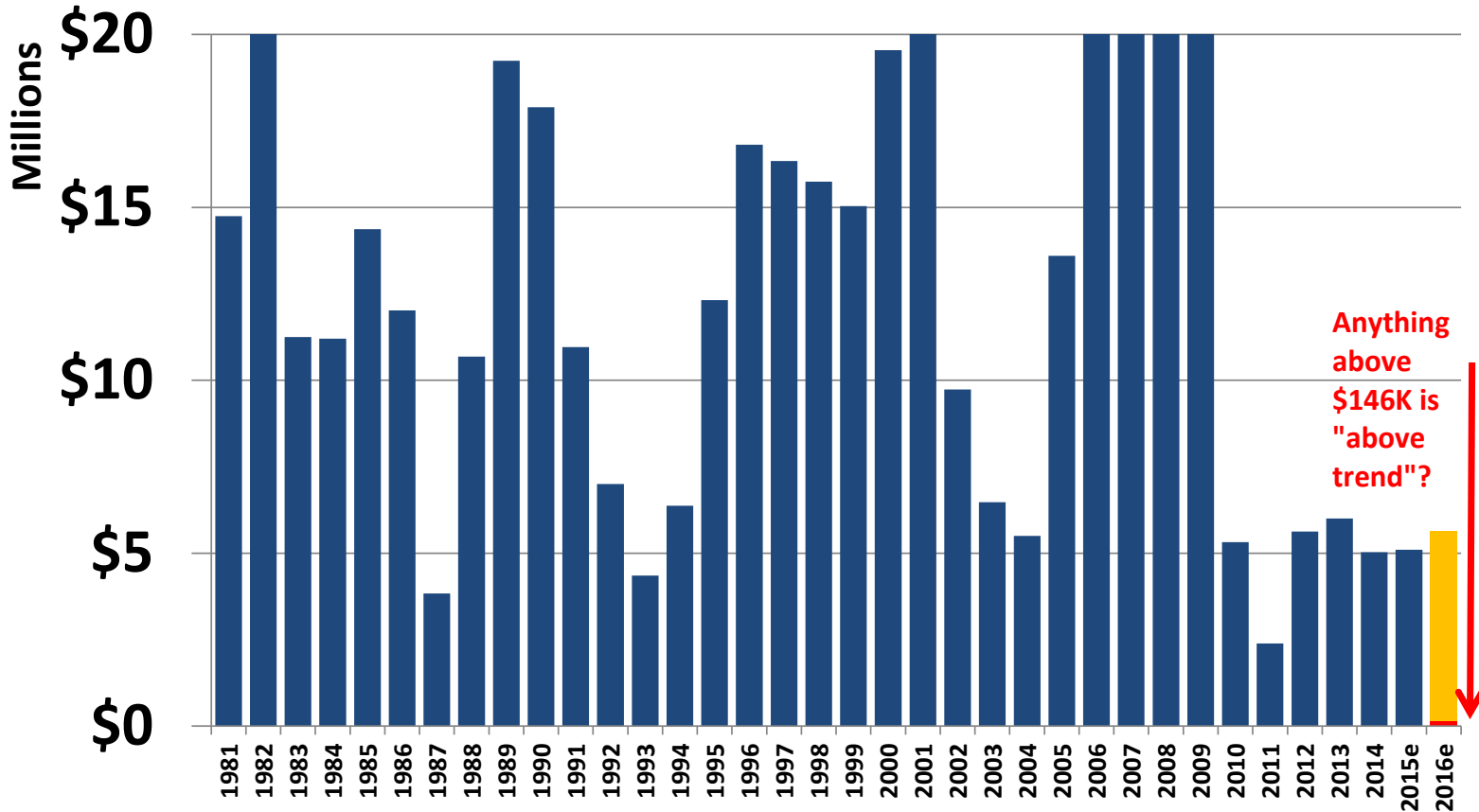


A polite and cheerful man with a buzz cut, Mr. Panarin insists he does not dislike Americans. But he swears that the outlook for them is dire.

"There's a 55-45% chance right now that disintegration will occur," he says. "One could rejoice in that process," he adds, poker-faced. "But if we're talking reasonably, it's not the best scenario for Russia." "Though Russia would become more powerful on the global stage, he says, its economy would suffer because it currently depends heavily on the dollar and on trade with the U.S."

# History of How We Got Here - Trend Revenue

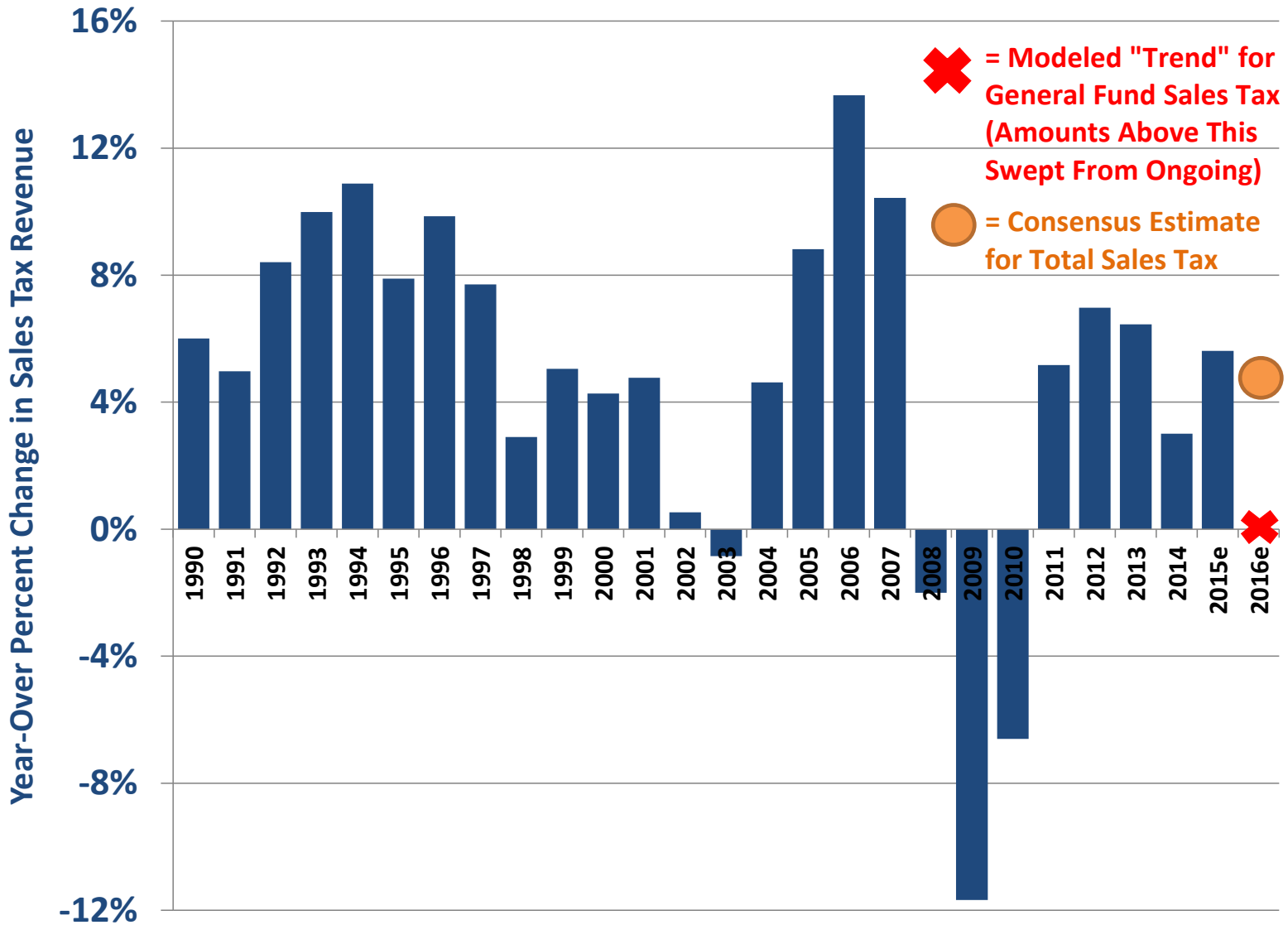
- Ongoing Revenue Swept Because Considered "Above Trend"
- Modeled "Trend"
- Revenue



Note: In an attempt to visually show the amount estimated as being "at trend" in FY 2016 (\$146,000) that is of a different order of magnitude than historical data going back for many decades, chart scaling cuts off at \$20 million. Investment income exceeded \$20 million in FY1982 (\$21M), 2001 (\$28M), 2006-09 (\$40M, \$84M, \$63M, \$25M).



# History of How We Got Here - Trend Revenue



## Budget Stress Testing



- Formal review of “playbook” in a downturn
- Used same consensus process used for annual budget
  - Revenues – GOMB, LFA, Tax Commission
  - Expenditures – GOMB and LFA
- Modeled how state budget likely to respond to different unfavorable economic scenarios
  - Revenues
  - Expenditures
- Categorized budget reserves

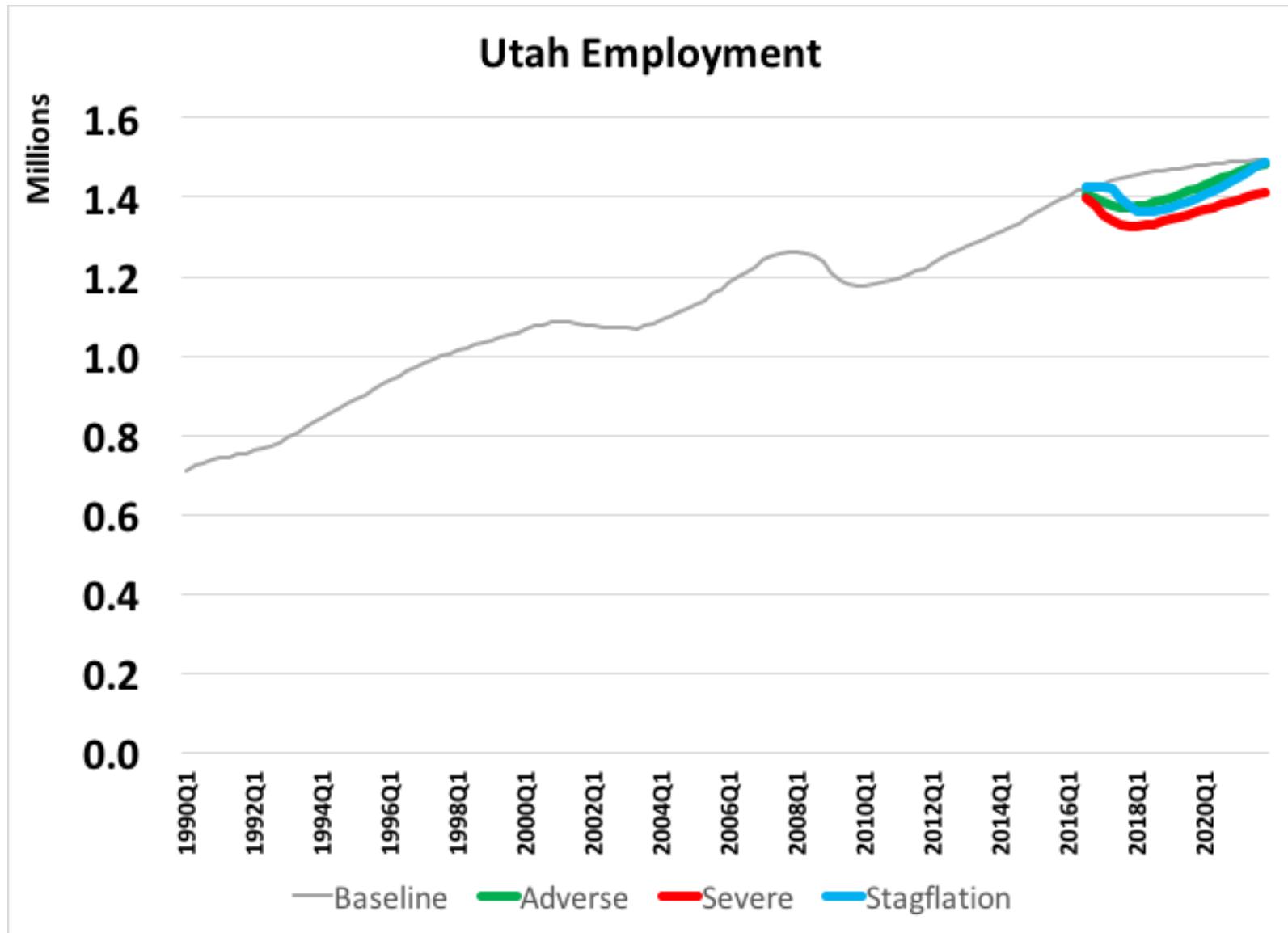


- 2015 review
  - Federal Reserve bank stress test adverse and severe economic scenarios
  - Two-year budget window
- 2016 review
  - Moody's Analytics extended versions of Federal Reserve adverse and severe bank stress test economic scenarios plus alternative stagflation scenario
  - Five-year budget window



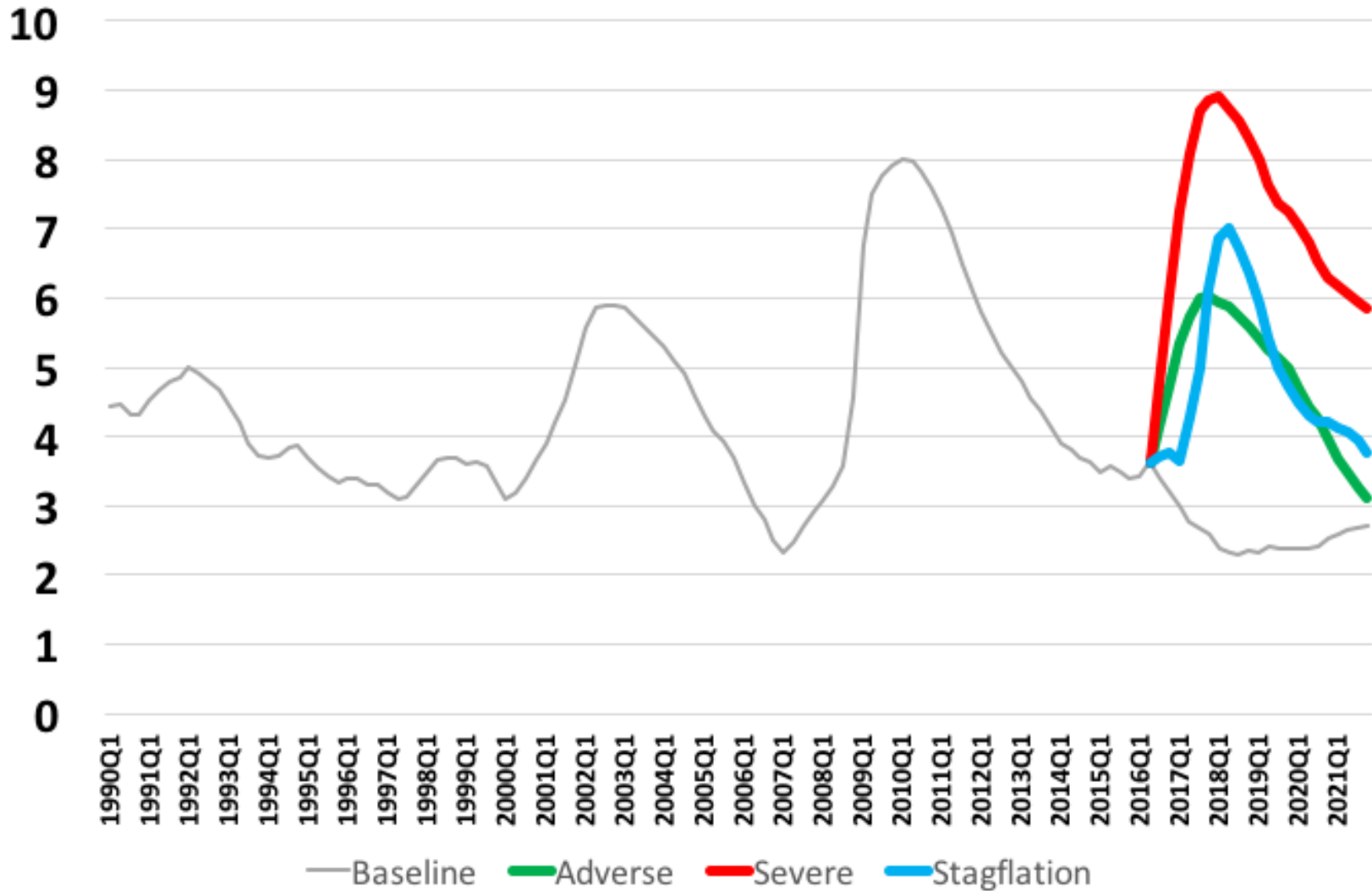


# Budget Stress Testing – Economic Scenarios

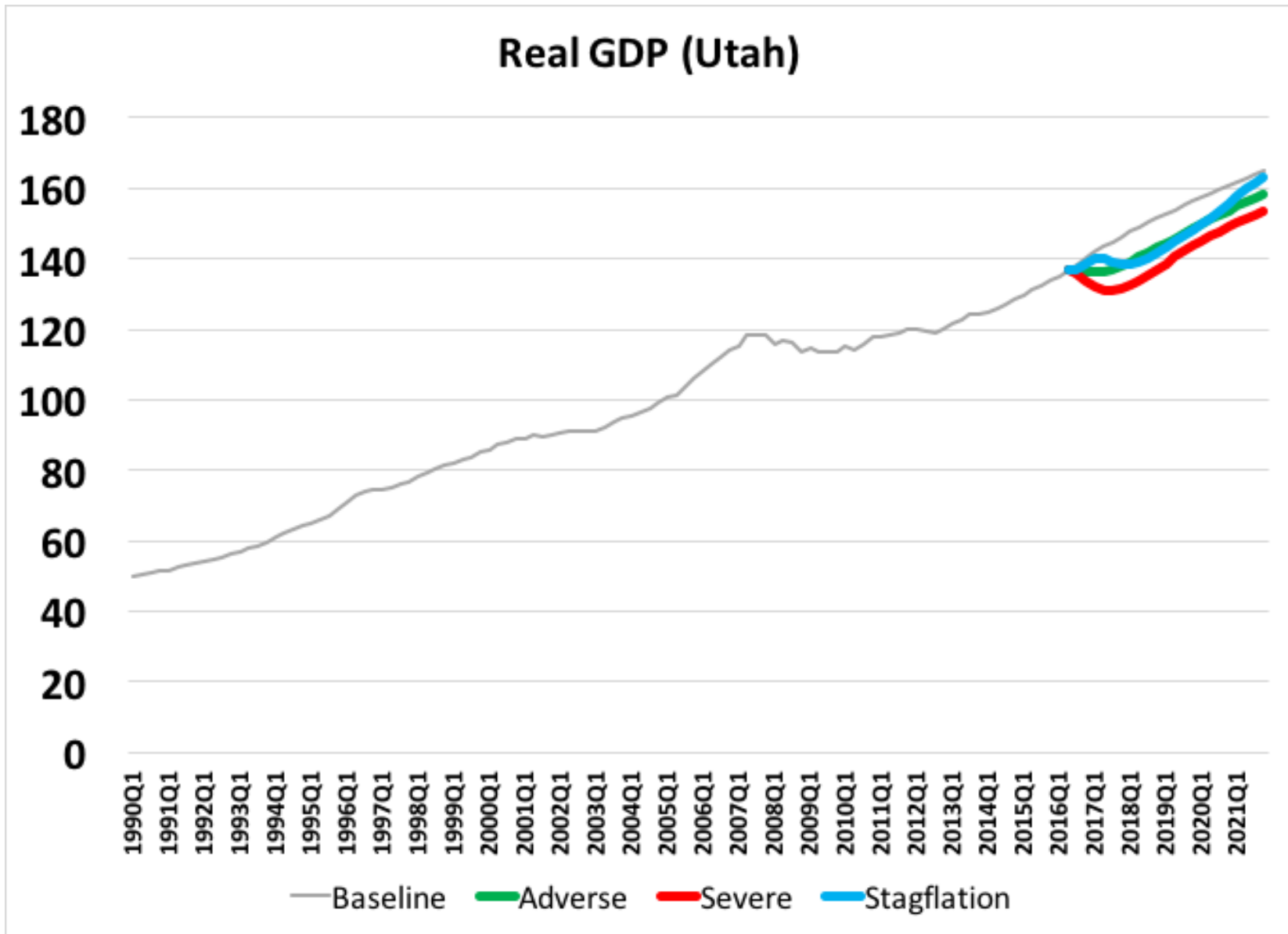


# Budget Stress Testing – Economic Scenarios

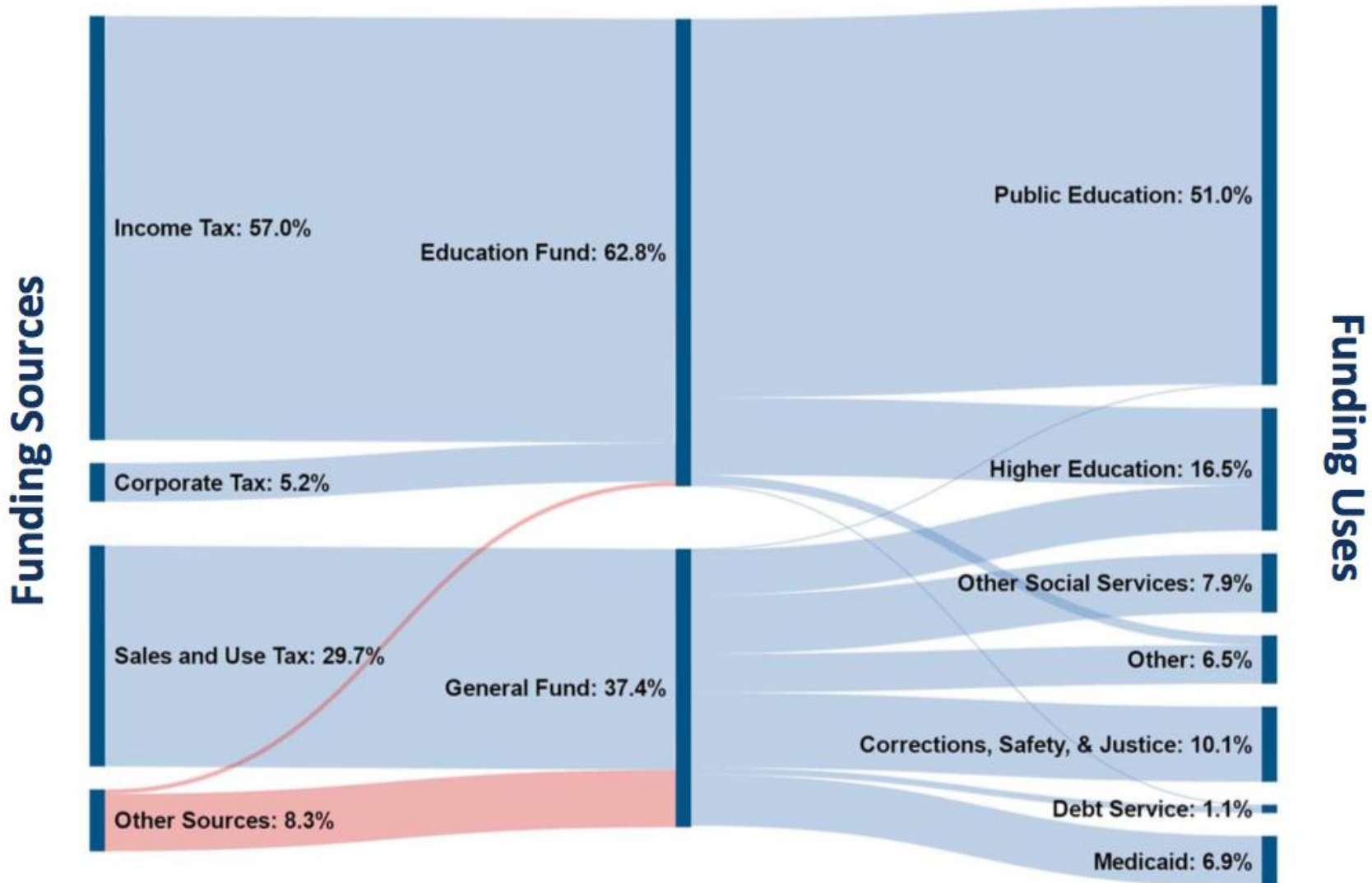
## Unemployment Rate



# Budget Stress Testing – Economic Scenarios



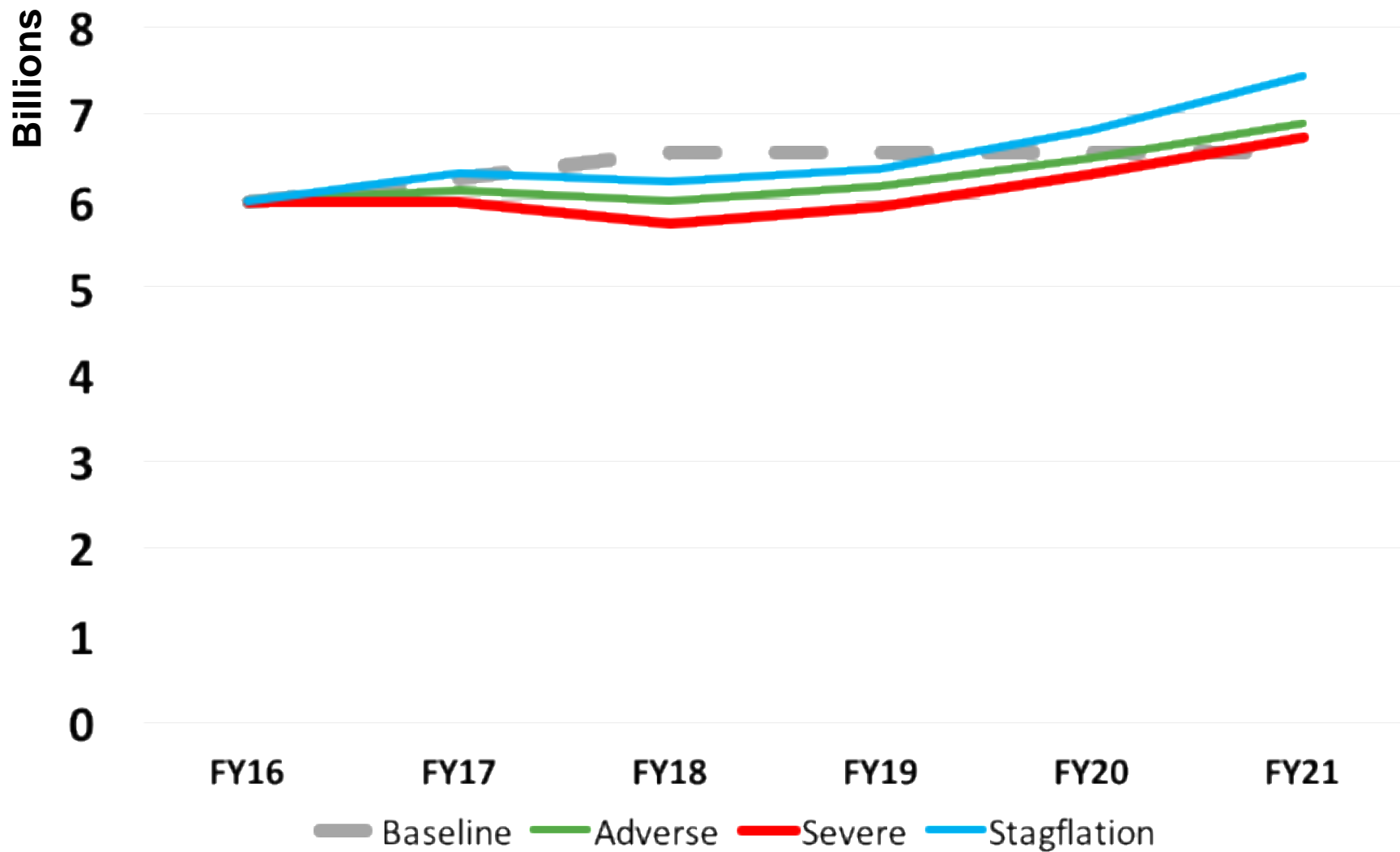
# Utah Budget – Basic General Fund / Education Fund Structure



- Used state's standard revenue projection models to estimate potential impacts on major tax revenue sources
  - Individual income
  - Sales and use
  - Corporate income
  - Other



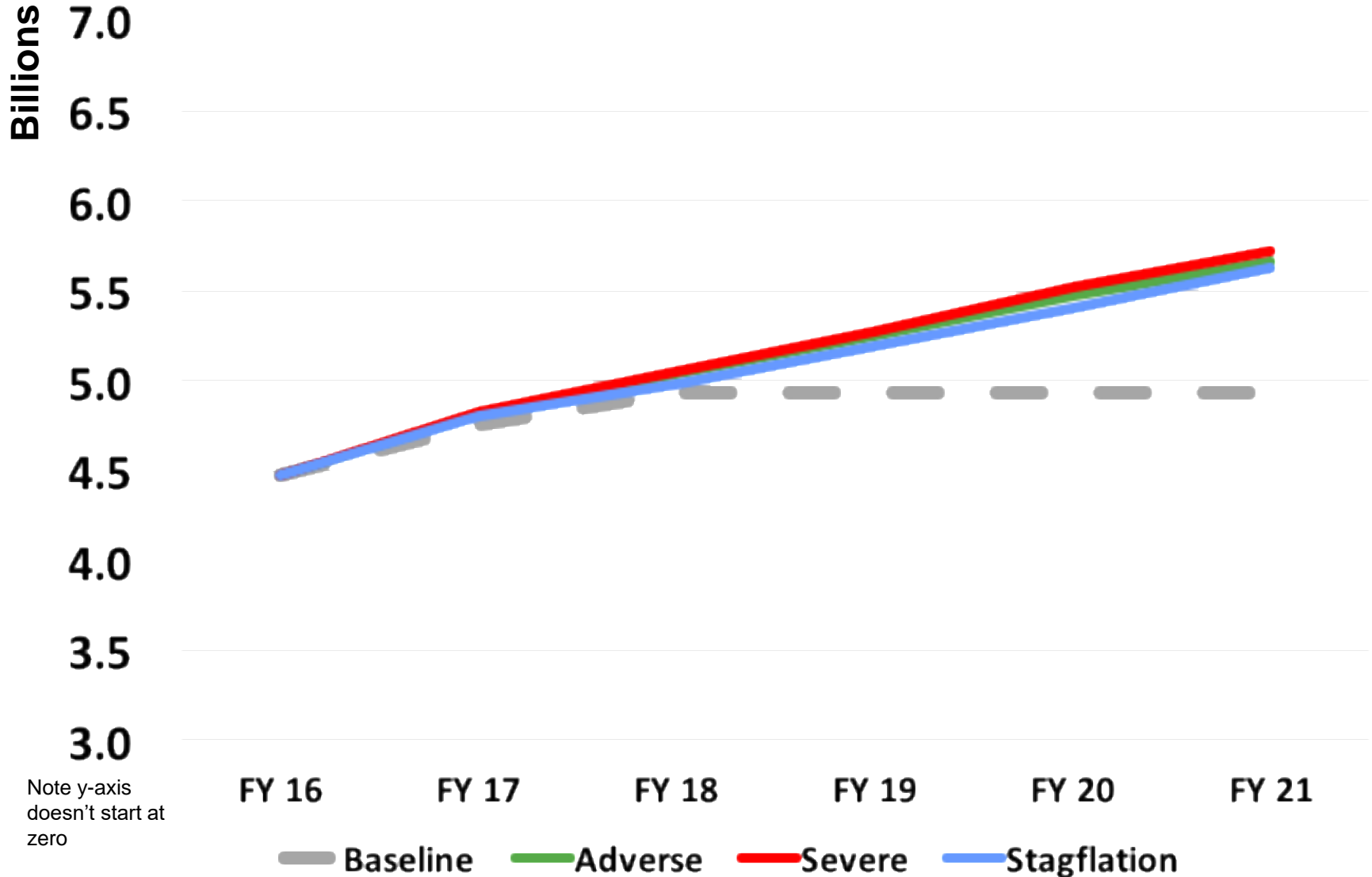
# Budget Stress Testing – Revenue Impacts of Economic Scenarios



- Estimate potential impacts on major expenditure categories
  - Public education
    - Mainly driven by demographics
    - Minimal short-term recession impact
  - Higher education
    - Increased enrollments, with lag
  - Medicaid
    - Increased enrollments
  - Retirement contributions
    - Increased contributions, but over time



# Budget Stress Testing – Expenditures



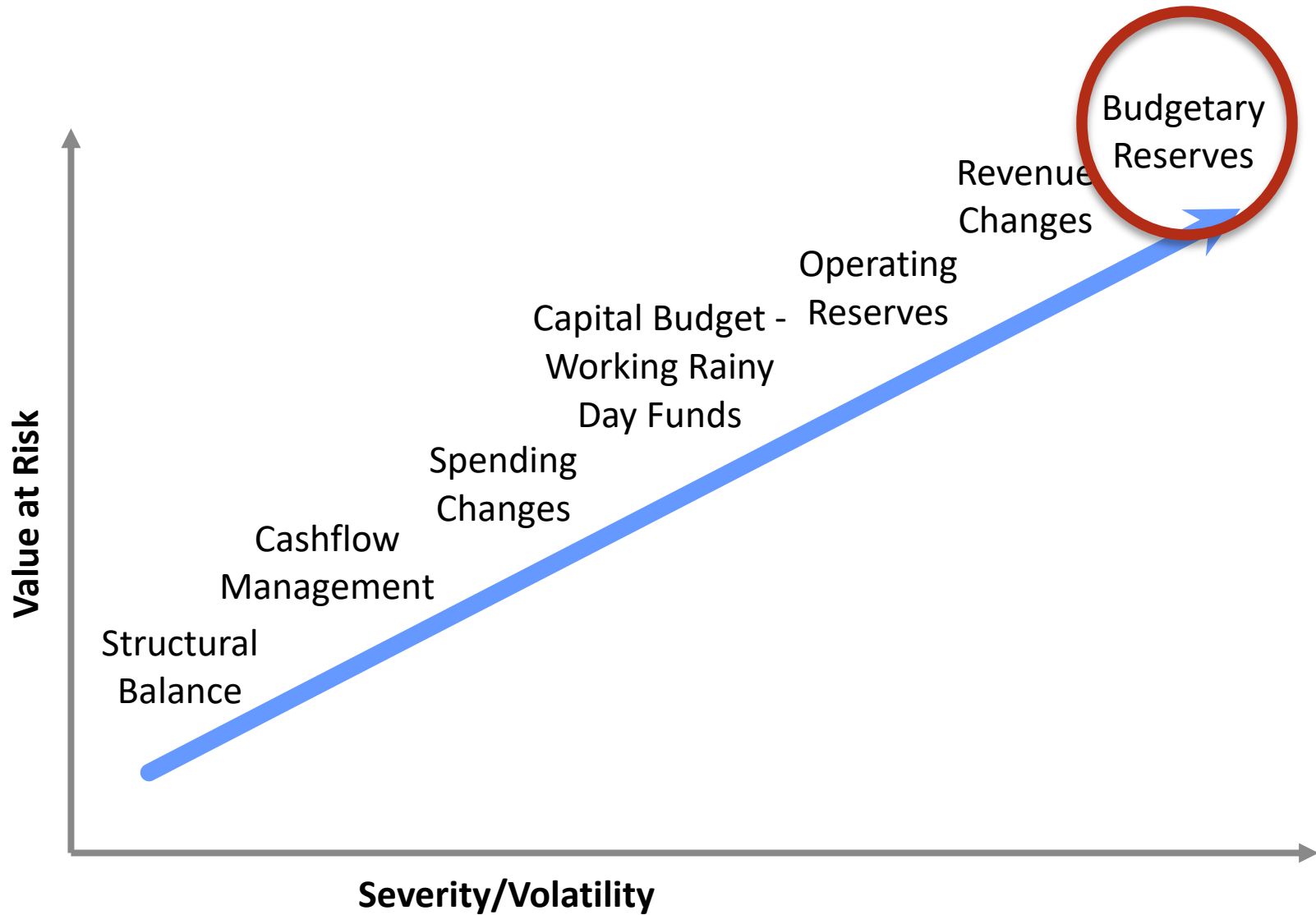


## What did Utah Do During the Great Recession?

Session	FY	Budget Cuts	Revenue Increases	Revenue Multiplied	Shortfall	Cut % Shortfall	Rev % Shortfall	GF/EF Budget	Cut % Budget	Rev % Budget
2008S2	2009	\$161			\$354	45.5%	0.0%	\$5,574	2.9%	0.0%
2008S2	2010	\$251			\$272	92.3%	0.0%	\$5,413	4.6%	0.0%
2009	2009	\$116	\$2	\$6	\$521	22.3%	1.2%	\$5,413	2.1%	0.1%
2009	2010	\$317	\$59	\$177	\$685	46.3%	25.8%	\$5,162	6.1%	3.4%
2010	2010	\$70			\$208	33.7%	0.0%	\$4,845	1.4%	0.0%
2010	2011	\$75	\$43	\$43	\$482	15.6%	8.9%	\$4,770	1.6%	0.9%
		\$990	\$104	\$226	\$2,522	39.3%	9.0%	\$31,177	<b>3.2%</b>	<b>0.7%</b>



# Options for Dealing with Economic Fluctuations

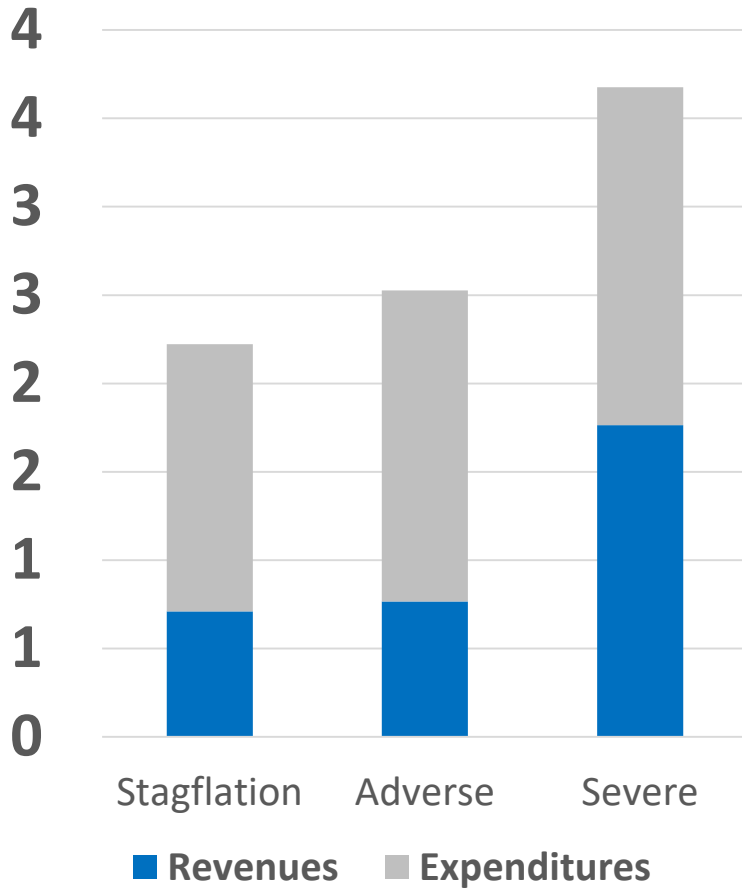


- **Easily Accessible:**
  - Unappropriated balances, operating reserves, capital budget for buildings
- **Moderately Accessible:**
  - Nonlapsing balances, capital budget for roads, capital improvements relief valve
- **Somewhat Difficult to Access:**
  - Capital improvements corpus, restricted fund balances
- **Difficult to Access:**
  - **Formal rainy day funds**
- **Very Difficult to Access:**
  - Permanent trust funds (75% vote)



# Budget Stress Testing – Comparison of Risks and Reserves

## Multi-Year Potential Risk (\$B)



## Reserves/Offsets (\$B)

