

Budget Stress Testing Workshop

Case study analysis

May 2-3, 2024

Pew

Welcome and introductions

Overview of stress testing and the case study approach

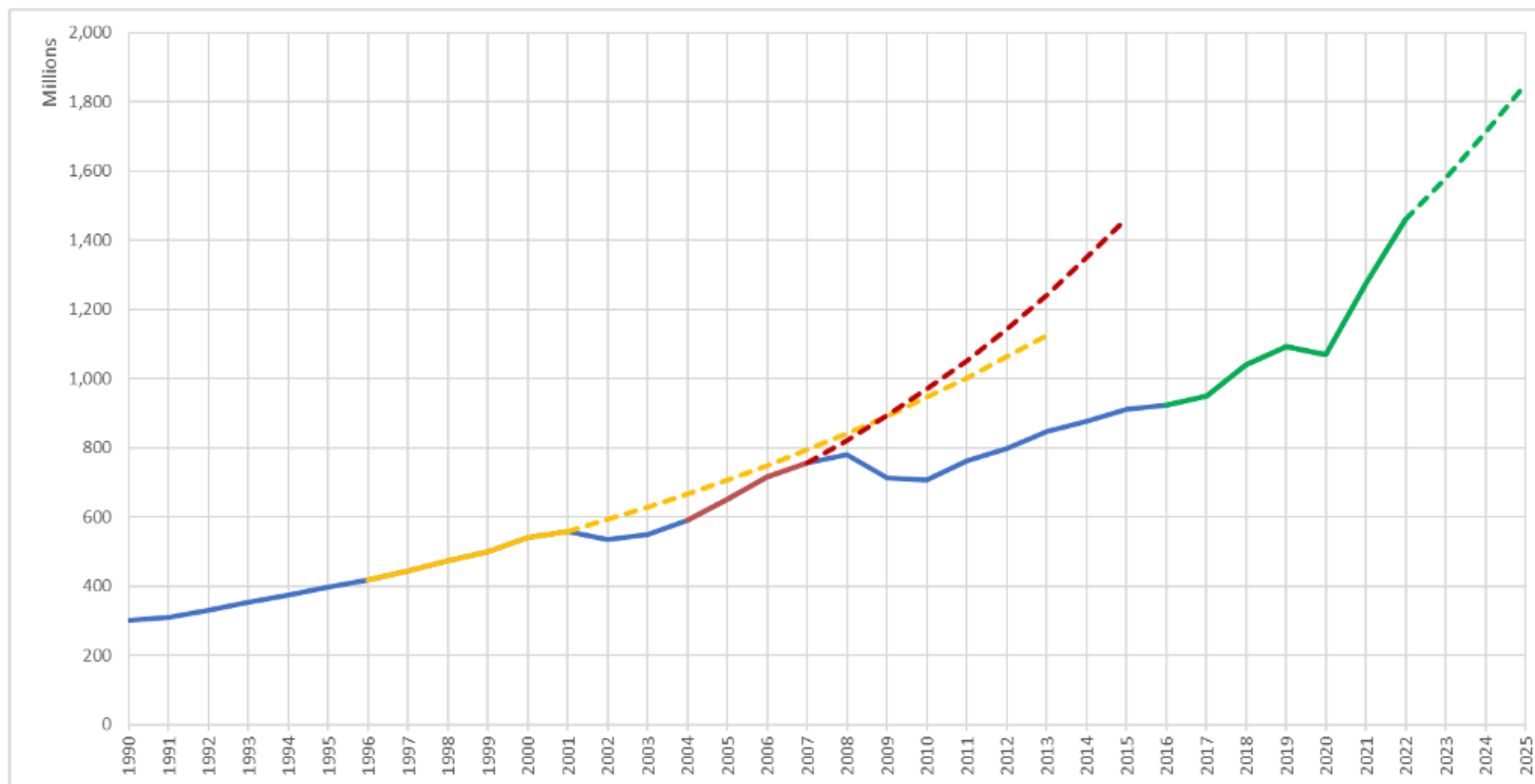
What is a budget stress test?

- Identify possible temporary economic scenarios that could cause budget stress
- Analyze the potential effects on budget conditions
- Compare to budget contingencies

Why stress test?

- Inform rainy day fund targets and annual savings rules
- Help develop plans for a recession, including a range of budget contingencies
- Handling recession well can help policymakers achieve their long-term priorities
 - Thinking cyclically

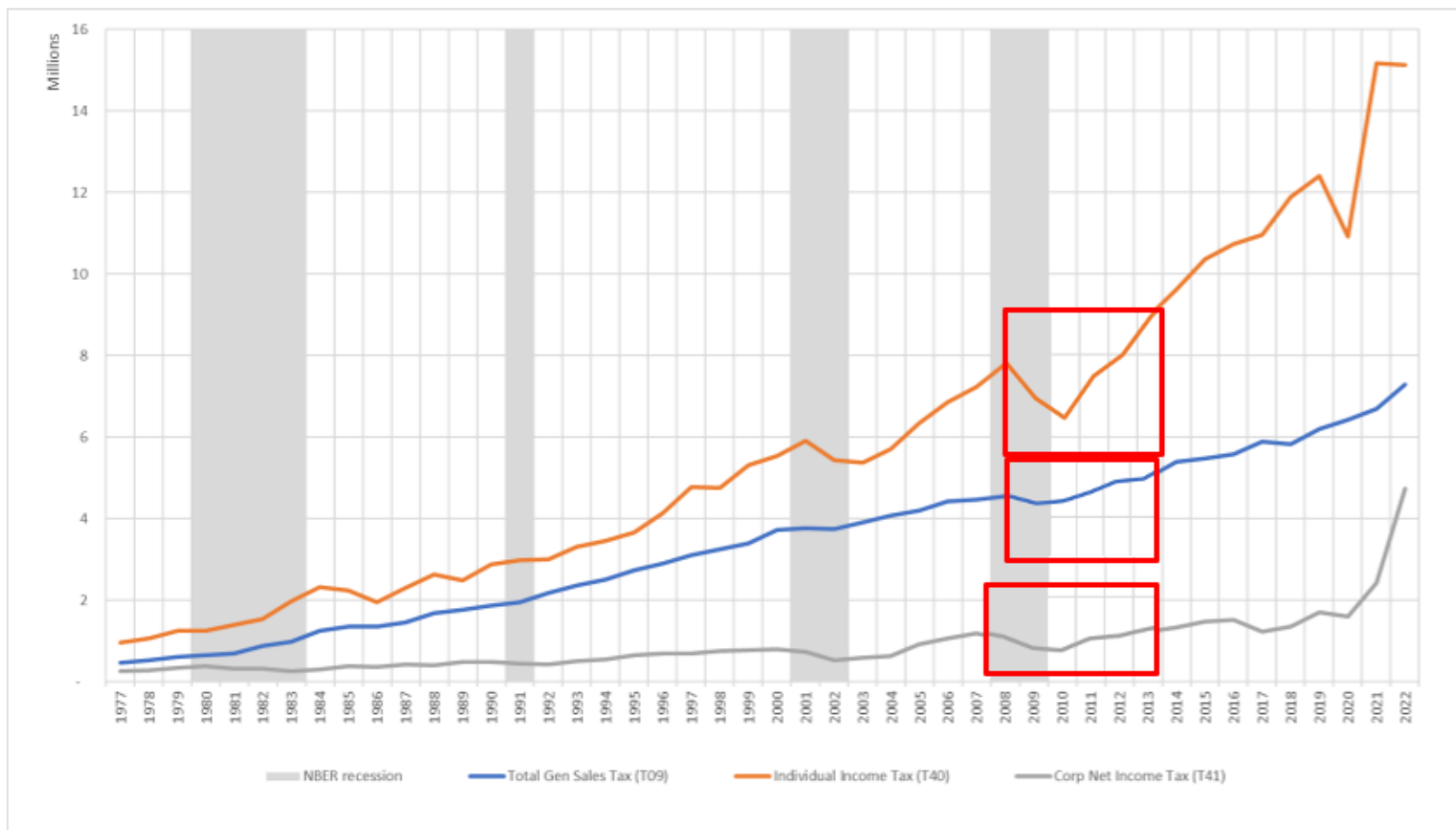
Thinking cyclically



Budget stress testing leading practices

- Examine multiple scenarios, and estimate the likelihood of each
- Include revenue and spending
- Project far enough into the future to account for the full multiyear effects
- Identify a broad list of contingencies for balancing the budget
- Assess whether these contingencies would be sufficient, and present options to improve preparedness

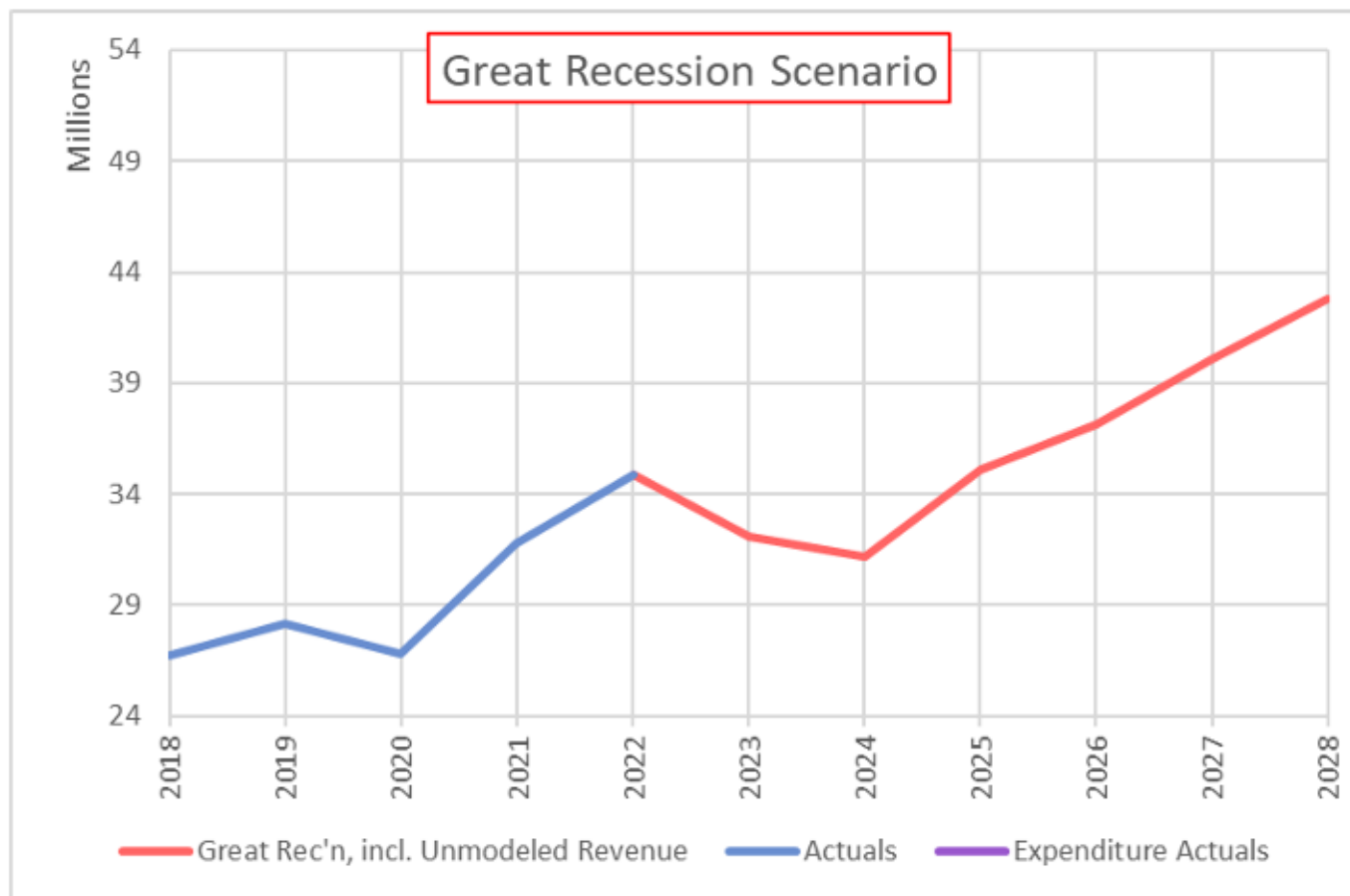
Overview of the case study approach

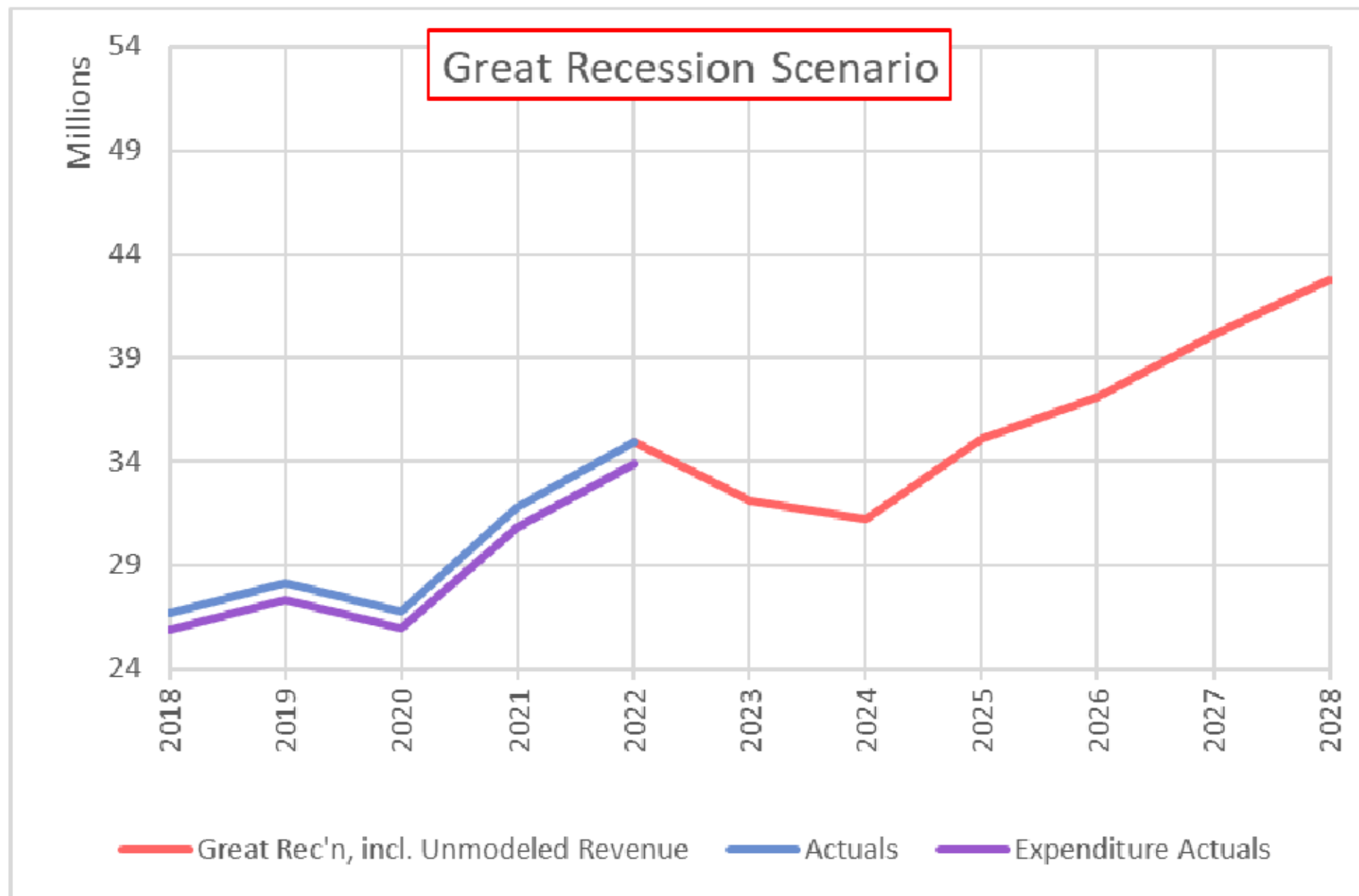


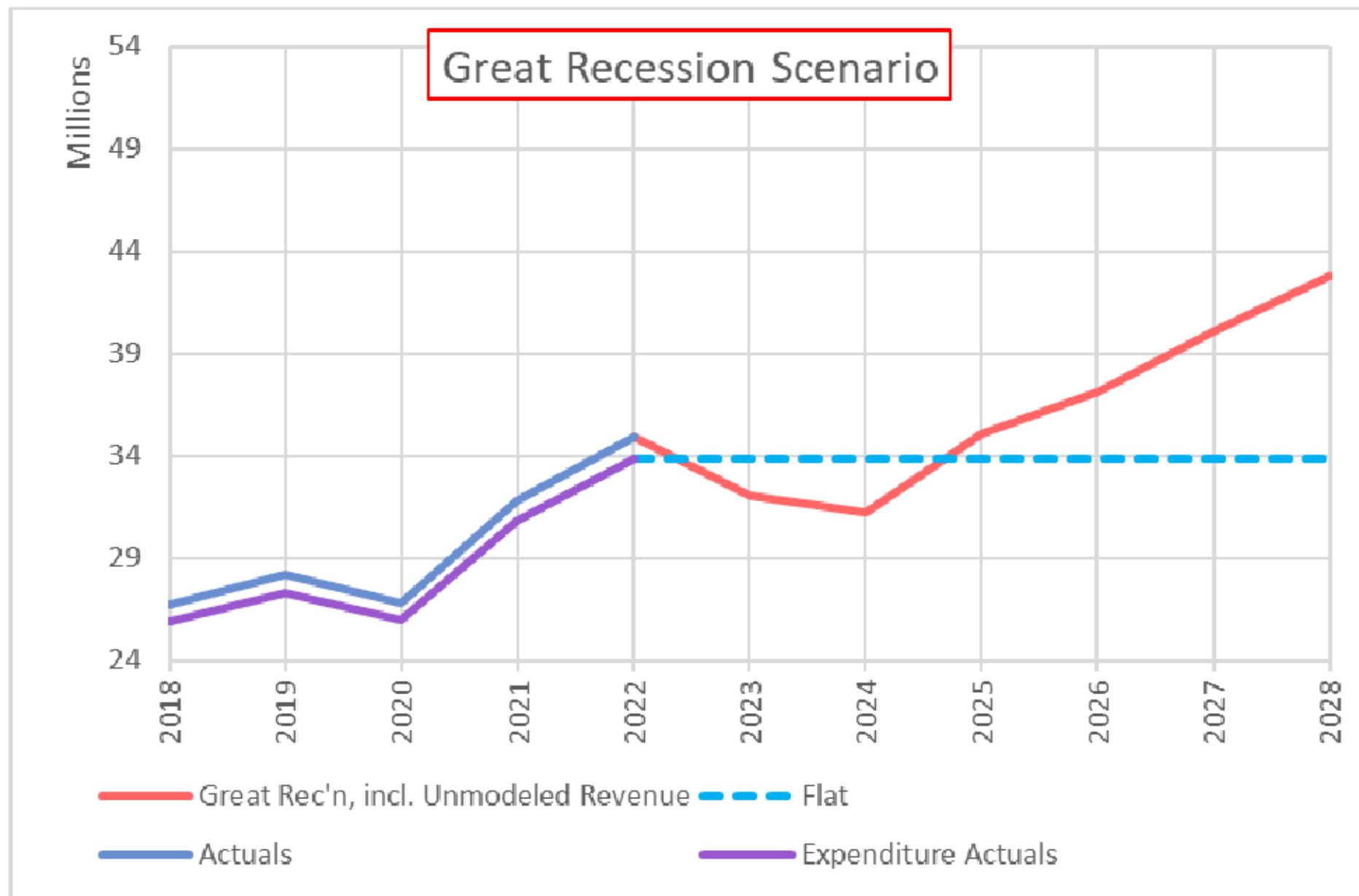
How should we measure the gap?

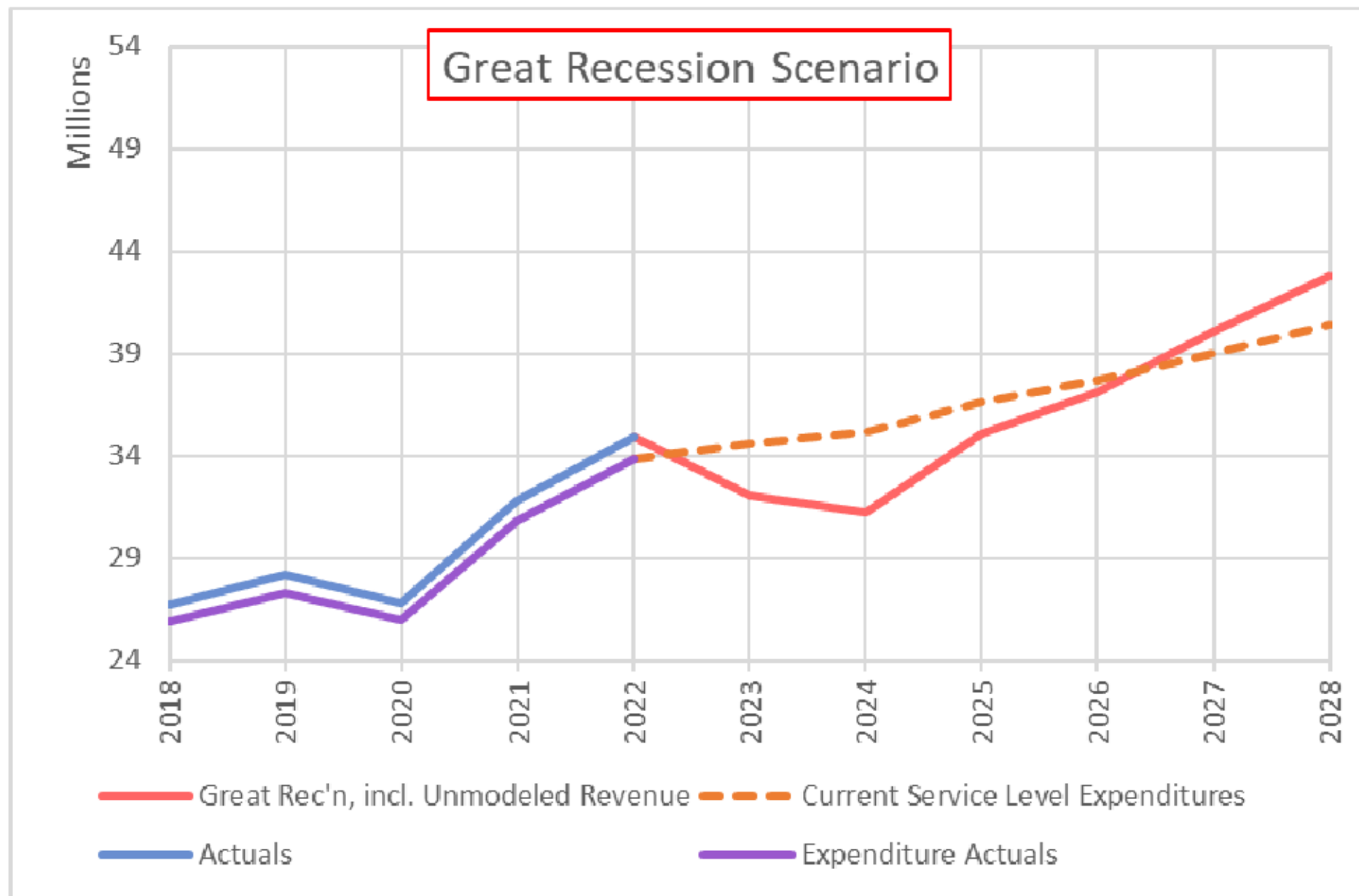
What do we compare this to?

What are policymakers' goals in a recession?

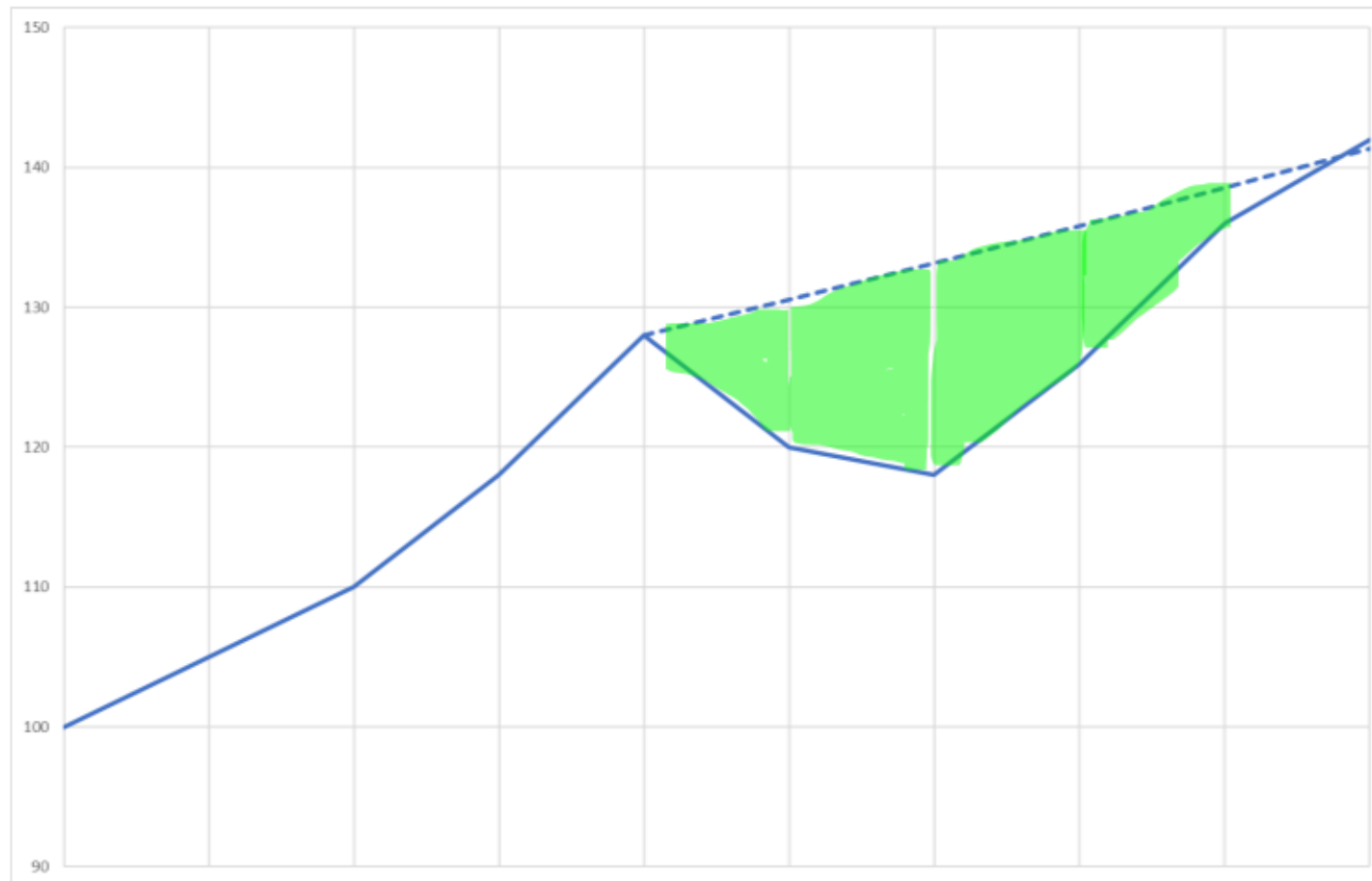


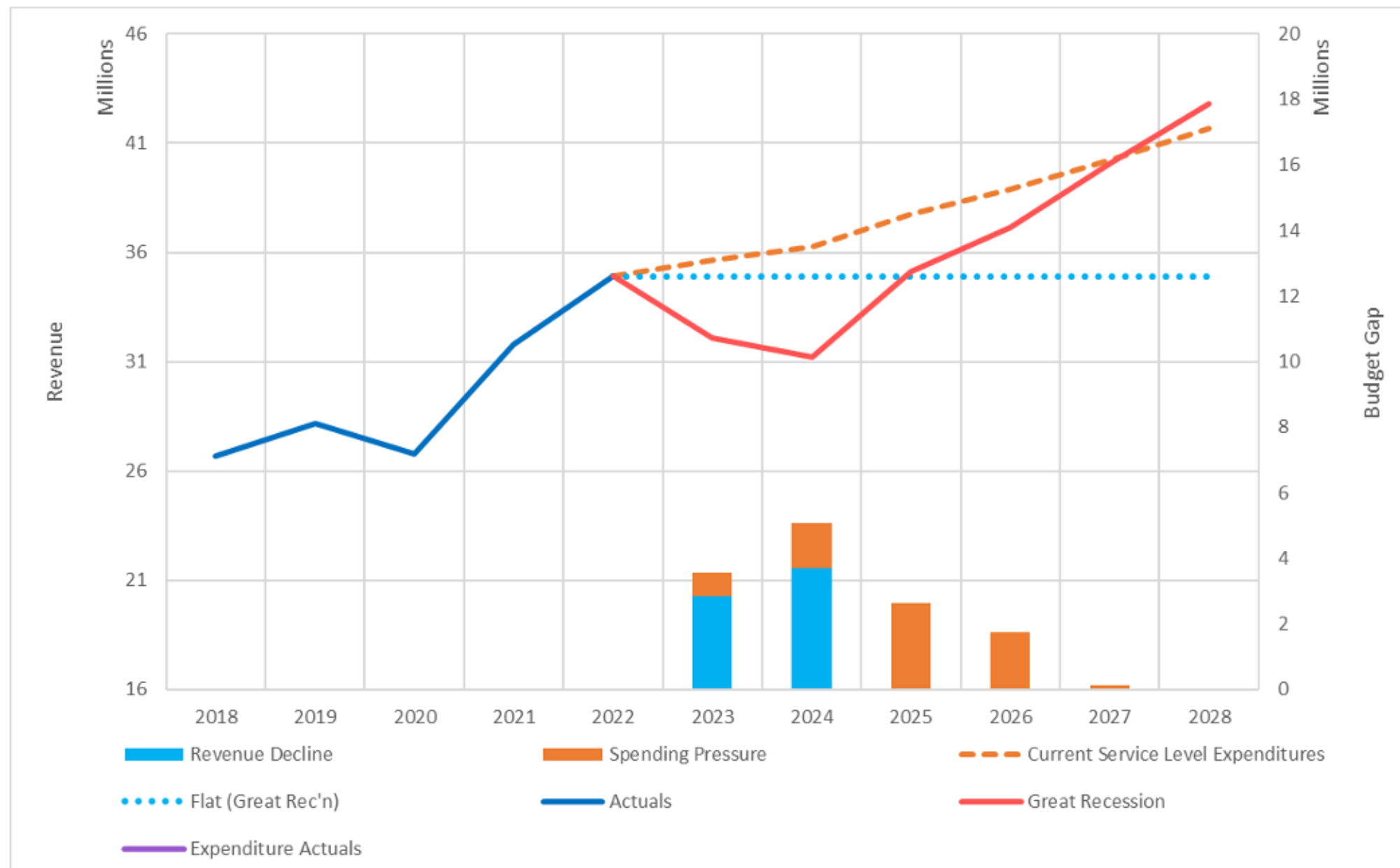




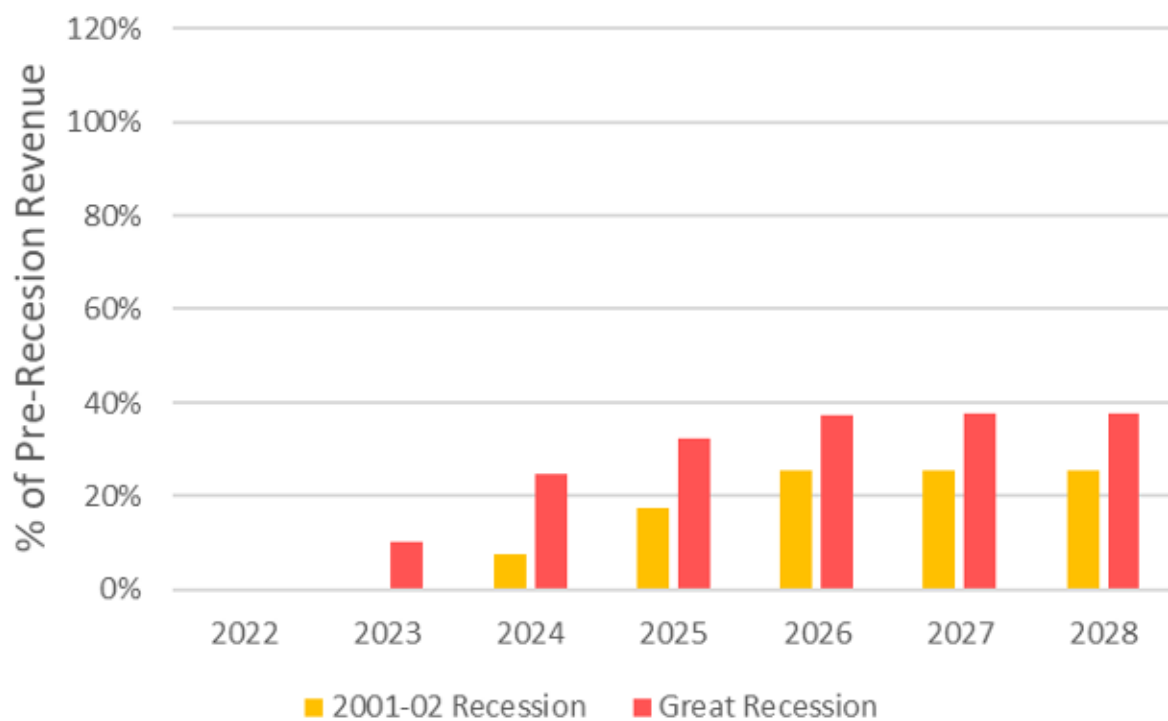


How many years to cover?

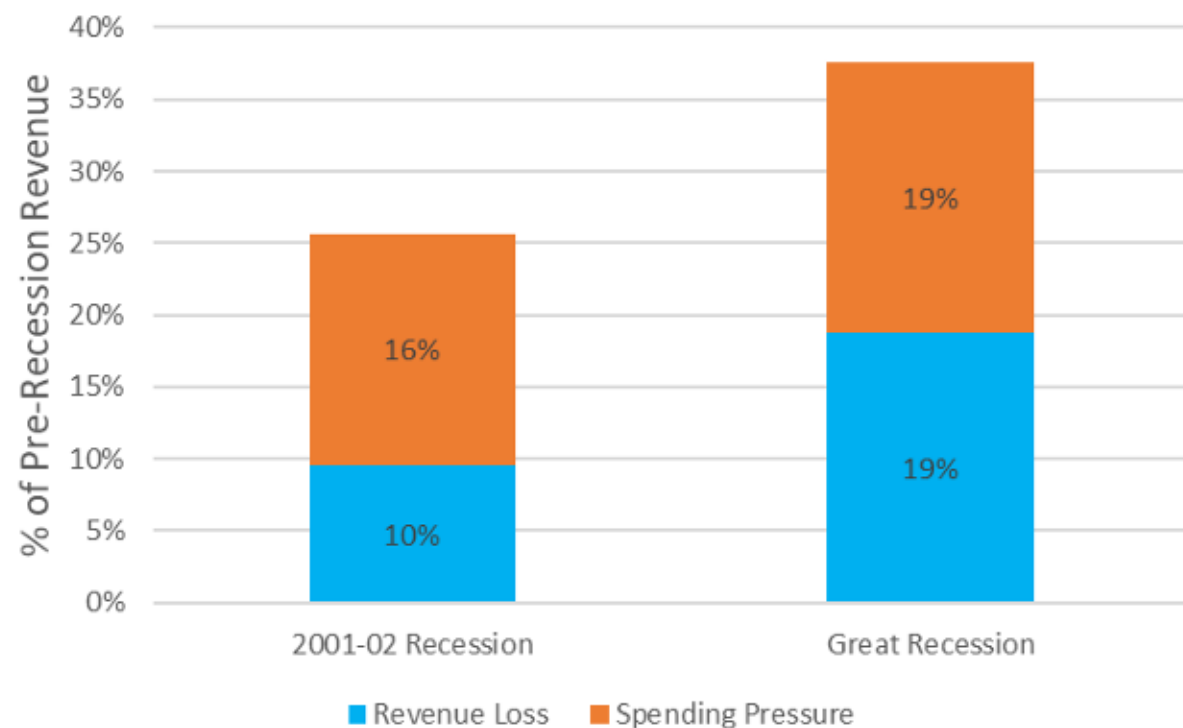




Cumulative Gap by Year



Cumulative Gap



Strengths and limitations of the case study approach

Strengths

- Easy to do with limited capacity
- Tied to the state's historical experience
- Easy to explain

Limitations

- Less flexibility
- Limited detail on cause and effect relationships
- Not directly connected to current economic conditions/trends

Context is key

- Incorporate data about the economic severity of the selected recessions
- What is the frequency of such recessions or revenue declines?

Choosing historical case study periods

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Choosing historical case study periods

Calculate:

- Calculate annual growth rates
- Plot levels and growth rates
- Apply conditional formatting

Case study events to consider:

- 2001-02 recession
- Great Recession
- Earlier recessions?
- Revenue slowdown
- Industry or state-specific shock

Things to consider:

- Examine total revenue
- Examine individual tax streams
- Note the timing of when revenue growth begins to slow down and when it declines
- Other types of scenarios, e.g.:
 - Anemic short-term growth forecast
 - Average of past recessions
 - “Half as bad as the Great Recession”

Choosing which tax streams to analyze

Choosing which tax streams to analyze

Calculate:

- Each tax stream's share of the total
- Re-sum modeled and unmodeled tax streams and calculate growth rates

Things to consider:

- Analyze each tax stream independently
- Adjusting for tax policy changes is important
- Should you include pre-recession trends (e.g. revenue boom or slow down) as part of the scenario?
- Feel free to focus on a few tax streams during the workshop and address the rest later

Forward-looking simulations

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Forward-looking simulations

Calculate:

- Apply growth rates from case study periods to current revenue
- Project the “unmodeled” tax streams using a long-term average growth rate

Things to consider:

- How many years to project? We recommend a minimum of 3 or 4
- Should you include pre-recession trends (e.g. revenue boom or slow down) as part of the scenario?

- Should you consider a scenario that accounts for where you currently are in the business cycle?
- Alternative methods for calculating recession effects. e.g.:
 - Revenue level compared to a long-term trendline
 - Growth rate relative to a long-term average growth rate

Calculating comparison points

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Calculating comparison points

Calculate:

- Flat baseline
- Historical revenue growth rate baseline
- Current service level baseline
- Historical expenditure growth rate baseline
- Recessionary “spending stress” scenario

Things to consider:

- The “budget stress” experienced and the appropriate savings level, depends both on revenue performance and policymakers’ goals

- e.g., slow revenue growth early in a recession could result in budget stress if spending demand or expectations outpace revenue
- Including multiple comparison points can illustrate the implications of different goals
- Methods of calculating average growth rates:
 - arithmetic mean
 - compound annual growth rate (CAGR)
 - trend line (exponential or linear)

Calculating budget gaps

Calculating budget gaps

Calculate:

- Annual gaps
- Cumulative gaps
- Gaps as a percent of pre-recession revenue or expenditure.
- Create charts to summarize

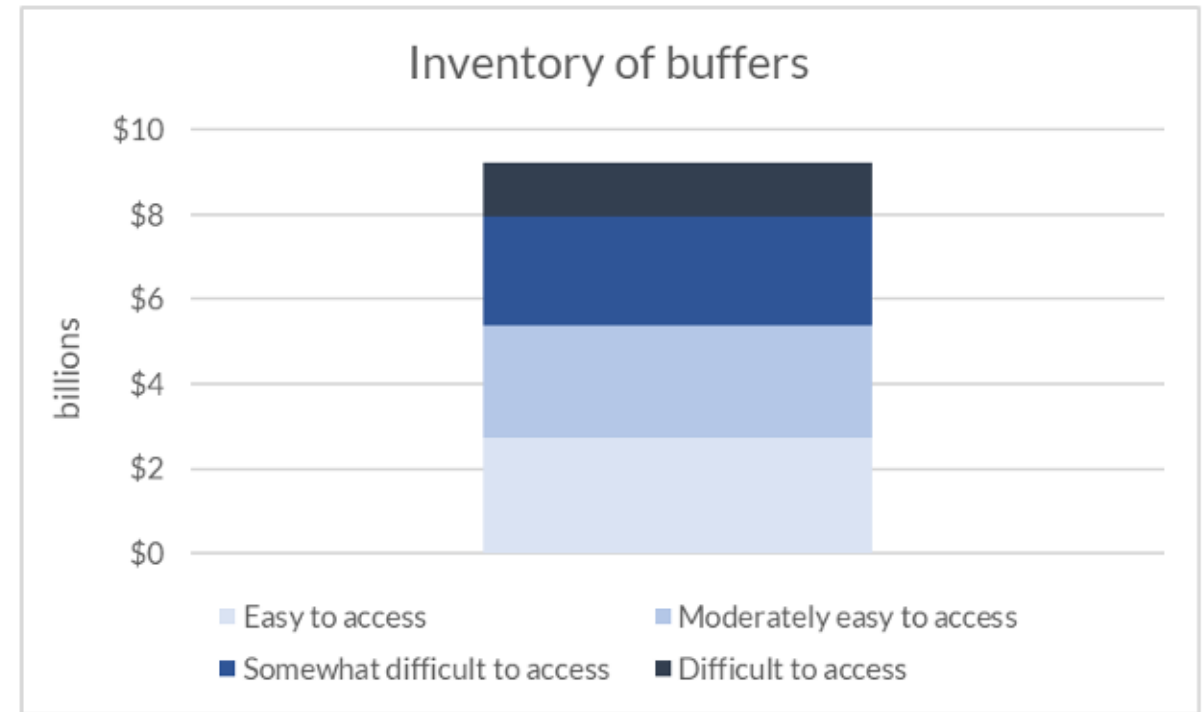
Things to consider:

- Combining multiple comparison points into the same analysis
- Are revenue and expenditure directly comparable? Or does each need its own baseline?

Comparing budget gaps to available contingencies

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Utah example: risks vs. buffers



Source: Utah Office of the Legislative Fiscal Analyst and Governor's Office of Planning and Budget, Budget Stress Testing 2022

Utah's inventory of buffers

- **Easy to access:**

- Cash-funded buildings and roads (account for potential debt service)
- Medicaid buffers
- Capital improvements at 0.9% to 1.5%

- **Moderately easy to access:**

- Unclaimed property
- Nonlapsing balances
- Water project earmarks
- General Fund State Infrastructure Banks
- Public Education Economic Stabilization Restricted Account
- Outdoor Recreation Infrastructure Restricted Account

- **Somewhat difficult to access:**

- Transportation Investment Fund (TIF)
- General Fund restricted fund balances
- Capital improvements up to 0.9%
- Cash and investment in water loans

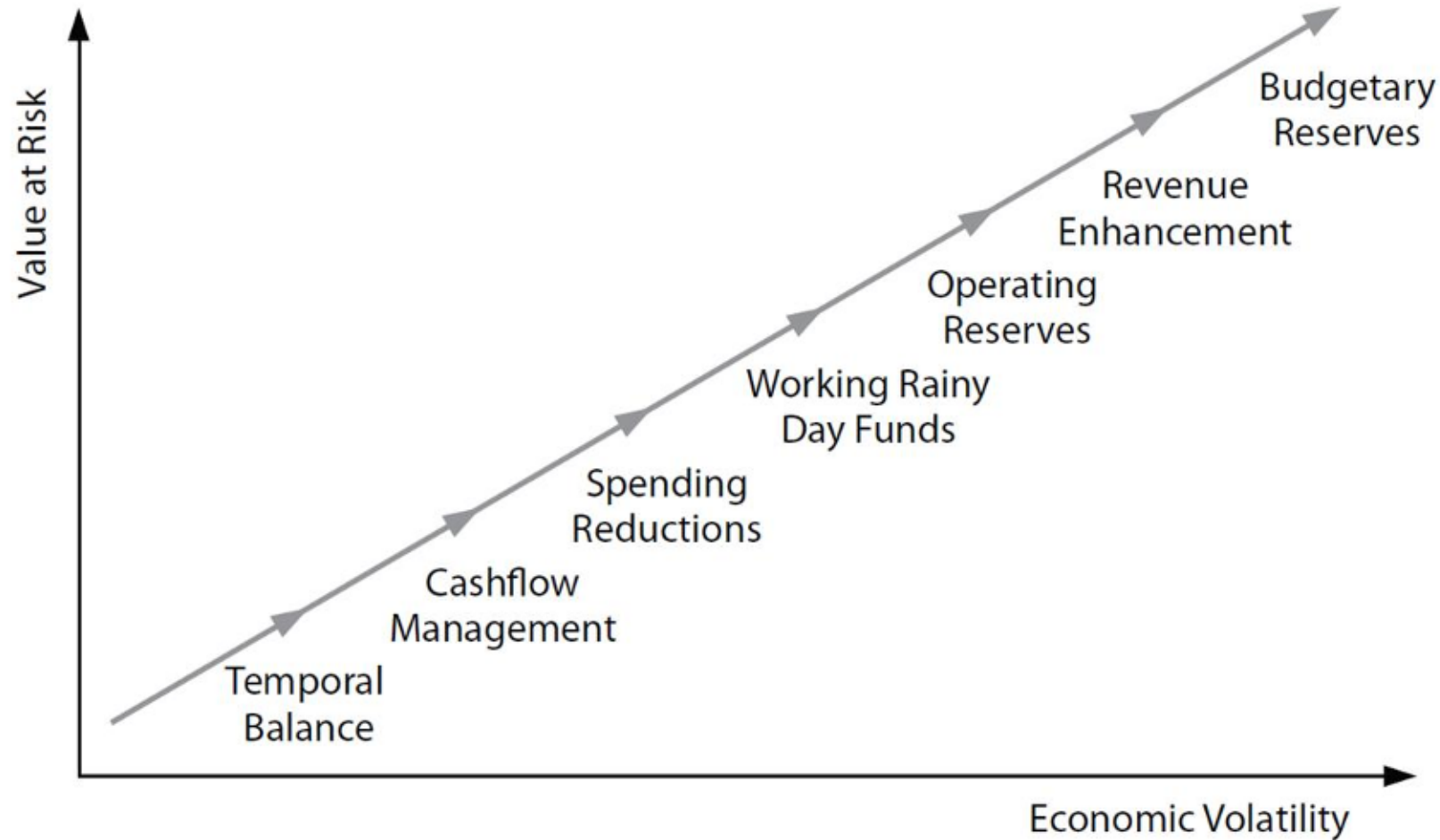
- **Difficult to access:**

- Formal rainy day funds
- Disaster Recovery Account

Steps to build a fiscal toolkit

1. Assess all available fiscal tools
2. Calculate the budget value of each tool
3. Consider ease of access and tradeoffs of each tool
4. Determine how tools align with stress test results

Utah's fiscal toolkit



Source: Utah Office of the Legislative Fiscal Analyst, 2020 Pandemic Budget Stress Testing

Utah's fiscal toolkit definitions

- **Temporal balance:** matching the timing or term of revenue with that of spending – balancing ongoing revenue with ongoing expenditures and one-time revenue with one-time expenditures
- **Cashflow management:** carrying previous-year revenue balances into subsequent fiscal years before spending them
- **Spending reductions:** cutting state spending, including projects that can be delayed or lower-impact programs that can be eliminated or reduced
- **Working rainy day funds:** utilizing ongoing cash invested in infrastructure that can then be replaced with debt financing
- **Operating reserves:** utilizing unspent program balances, restricted account balances, and spending buffers that can be accessed relatively easily
- **Revenue enhancements:** raising taxes or fees
- **Budgetary reserves:** formal rainy day funds that can only be used when the state is in a deficit

Rainy day funds: Pew's research and best practices

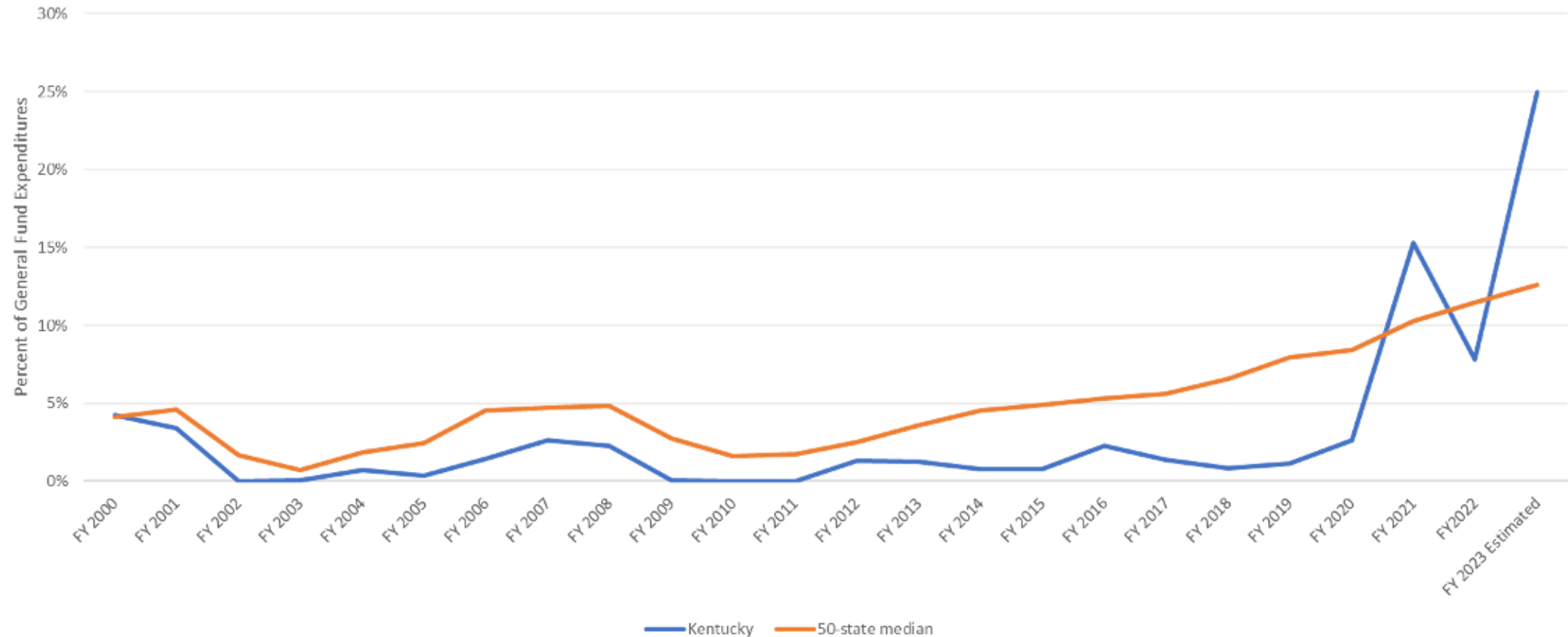
Pew's research on rainy day funds



Rainy day funds: best practices

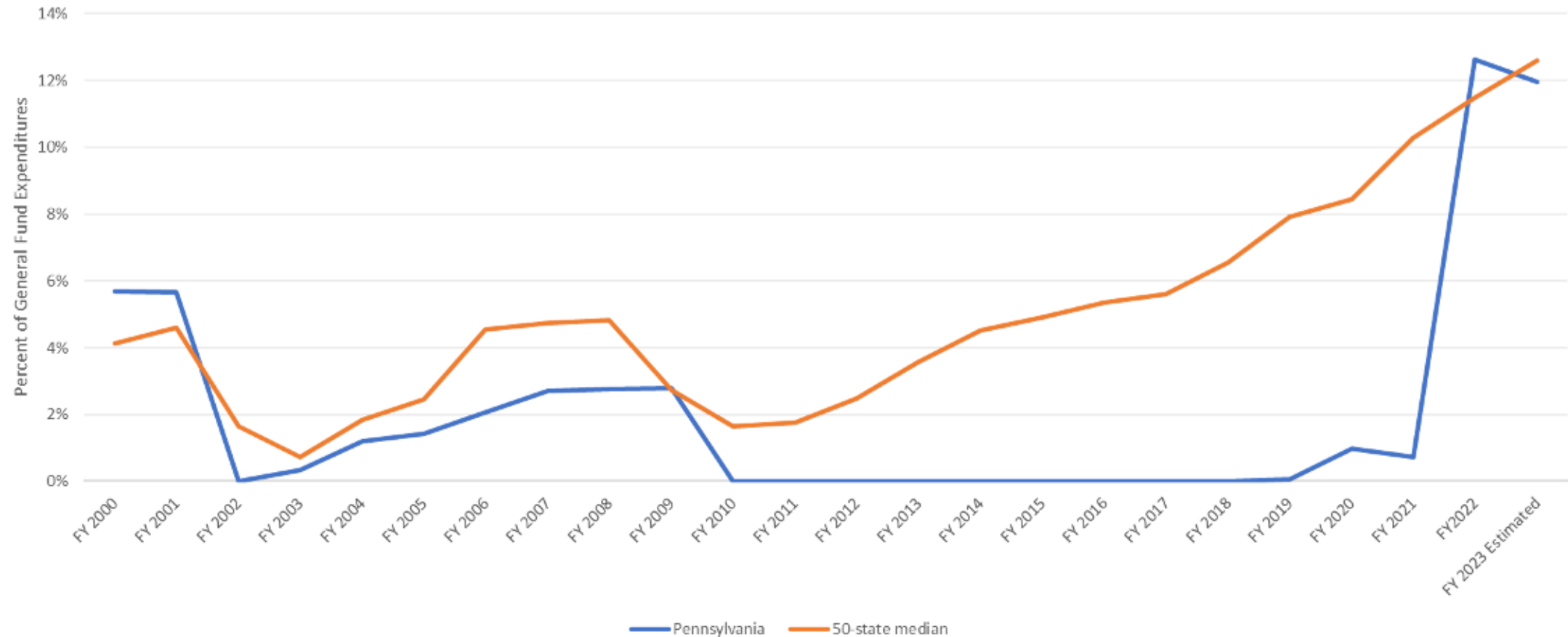
- The purpose of the rainy day fund should be clear and well-defined in statute
- Recurring budget stress tests should inform the size of the rainy day fund
- Deposits and withdrawals should be tied to volatility

Kentucky's rainy day fund balance



Source: The Pew Charitable Trusts, Fiscal 50, State Trends and Analysis

Pennsylvania's rainy day fund balance



Source: The Pew Charitable Trusts, Fiscal 50, State Trends and Analysis

Wyoming's rainy day fund balance



Source: The Pew Charitable Trusts, Fiscal 50, State Trends and Analysis

Discussion questions

- Given the high level of savings that each state in this room is currently experiencing, what conversations are policymakers and budget staff in your state having around current deposit rules and caps?
- Has your thinking around your state's rainy day fund changed over the last few days now that you have additional data?

Review and reflect on results

Review and reflect on results

- Spend 15-20 minutes sharing your state's analysis.
- *Based on preliminary results, what stood out?*
- *What still needs refinement?*
- *What challenges did you face from yesterday or today?*
- *How can policymakers use these results (and the subsequent report)?*
- *Do you have confidence in current rainy day fund levels?*
- *What questions do you have for us? What can we clarify or expand on?*

Summary and next steps

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Summary and next steps

- We hope this workshop provided a good foundation for your first stress test.
- As you expand on this work and begin drafting a report to share with policymakers, Pew is available to review and provide feedback on your results/report.
- We will reach out at the end of the month to see where/how we can be helpful in finalizing the report.

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