Recession Planning in North Carolina
A Work in Progress
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Presentation Overview

1. Context for Recession-Planning Initiative

2. Developing Recession Scenarios

3. Creating Revenue Forecasts for Each Scenario

4. Next Steps

About NC Office of State Budget & Management

- Primary fiscal advisor to the Governor

- Responsible for developing Governor's budget and executing enacted budget

- Recent Changes to Office Structure
  - Old Structure:
    - Separate budget teams with narrow scope
    - Two management teams ("management" and analysis)
  - New Structure
    - Budget Development
    - Budget Execution
    - Demographic & Economic Analysis
    - Cross-Functional Teams (CFTs)

- State faced major _mid-year_ revenue shortfalls in prior recessions:
  - 1990-91 (9.0%)
  - 2000-01 (5.0%)
  - 2001-02 (11.6%)
  - 2008-09 (15.1%)
- State also faced major _year-ahead_ budgets gaps:
  - 1991-92 (~10%)
  - 2001-02 (5%)
  - 2002-03 (9%)
  - 2009-10 (21%)

Responses to Prior Recessions

- Reserves depleted by pre-recession disasters and adverse court rulings

- Responses to mid-year revenue shortfalls
  - Forced reversions
  - Savings Reserve (aka "Rainy Day Fund")
  - Drawing down special-fund balances
  - Accelerating revenues and delaying payments

- Responses to close future-year budget gaps
  - Spending cuts (recurring and non-recurring)
  - Revenue increases (temporary and permanent)
  - Federal assistance

- Create Cross-Functional Team (CFT) for Recession Planning

- Leverage analytical skills and subject-matter expertise across org-chart sections

- Goals:
  - Estimate ranges for revenue shortfalls and/or budget gaps from potential recession scenarios
  - Create mid-year response plans for each scenario with a revenue shortfall
  - Create future-year budget plans for each scenario with an anticipated budget gap

North Carolina's General Fund Revenue System

- Slightly over half of revenues from individual income tax
- Nearly one-third of revenues from sales and use tax
- Corporate income and franchise (capital stock) tax account only about 1/15th of revenues

Savings Reserve & Unreserved Fund Balance

- Balance of $2.01 billion in early FY 2018-19, 8.7% of prior-year budget
- Down to $1.25 billion after $756 million for Hurricane Florence recovery
- Unreserved Fund Balance of $1.7 billion at end of FY 2018-19

OSBM Revenue Forecasting Methods

- Mostly quarterly and semi-annual ARIMAX models
- Mix of in-model and outside-the-model adjustments for recent tax changes
- Weighting of multiple candidate models using different input variables based on model fit

Model inputs

- Subscription to IHS-Markit forecasts for national and state-level economic indicators
- CBO projections for national capital gains realizations
- Manual, judgment-based adjustments

Available Tools

- IHS-Markit baseline and pessimistic scenarios at national and state levels, updated monthly

- Macroeconomic Advisers Macro-Financial Alternatives (MFA) forecasts at national level, updated monthly

- No "in-house" dynamic model of national and state economies

Limits of Existing Methods and Tools

- Only one recession scenario available with all variables at national and state levels

- MFA forecasts only available at national level and with a limited set of variables

- No external forecasts for capital gains realizations in recession scenarios
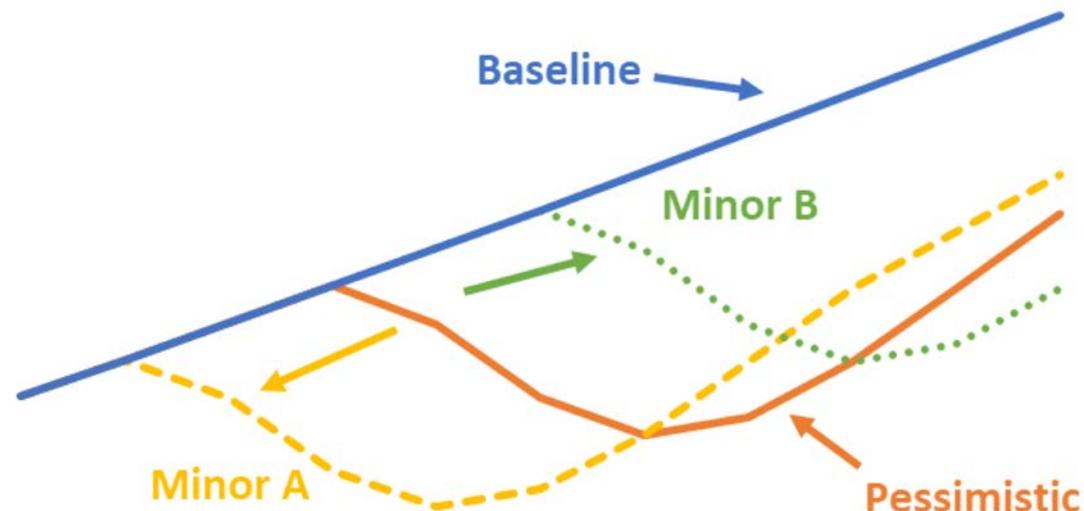
- Six recession scenarios
  - Three different magnitudes: Minor, Moderate, Severe
  - Two timings: Late-2019/Early 2020 and Mid-to-Late 2020
- Minor scenario based on modified IHS "pessimistic"
- Moderate scenario based on MFA "average" recession
- Severe based on weighted average of MFA average and "global slump/financial crisis" scenarios
- Early scenarios to cause mid-year shortfalls and future-year budget gaps
- Late scenarios to cause only mid-year revenue shortfalls

1. Calculate gaps between time paths of key economic indicators in national and state baseline and pessimistic IHS scenarios

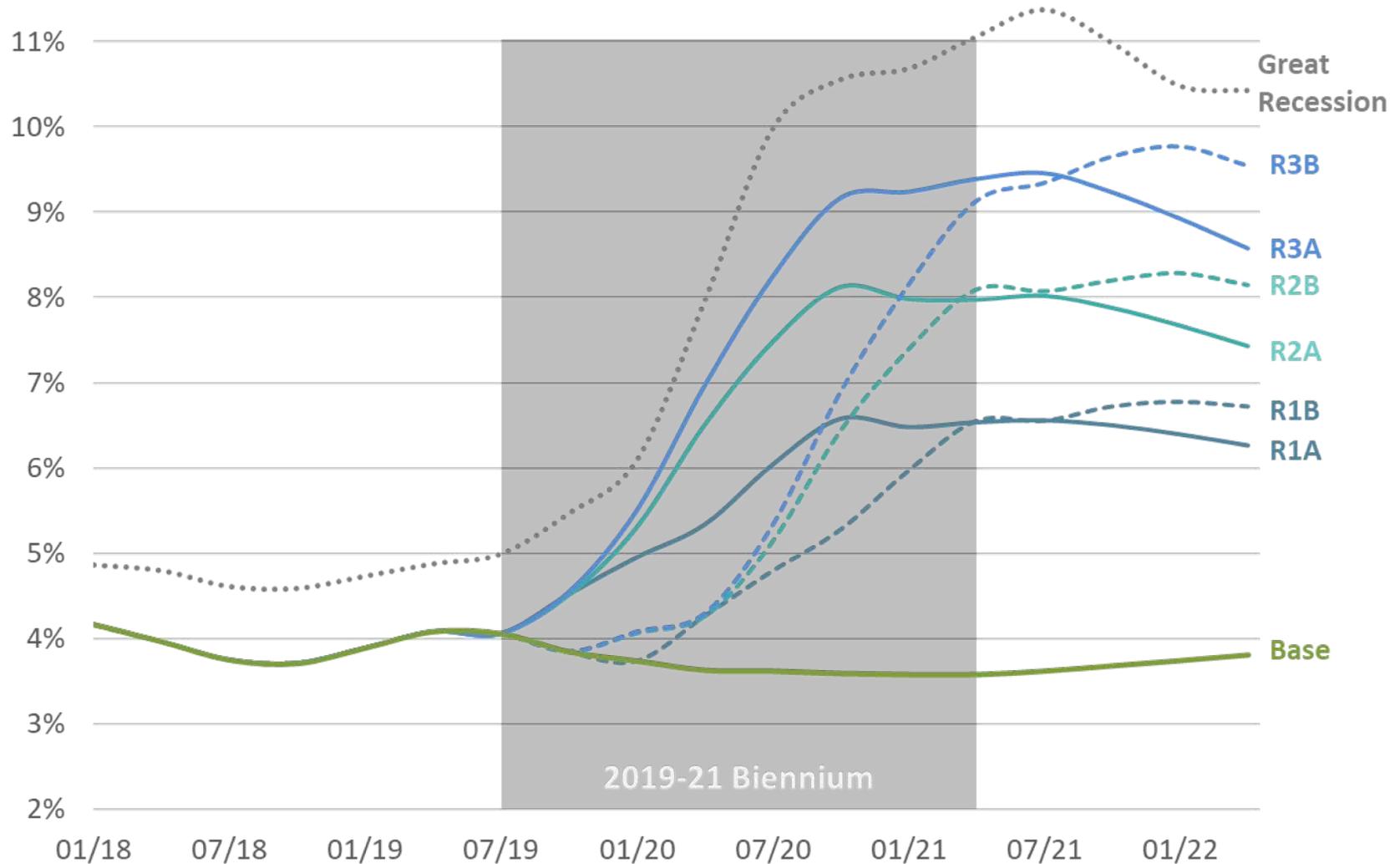2. Use deviations from baseline to create time-shifted pessimistic scenarios for key indicators

1. For MFA-based scenarios, find closest comparable national and state variables to those used as inputs in forecast models

2. Calculate deviations from baseline for the MFA substitute variables in pessimistic scenario

3. Compare deviations in MFA substitute variables in pessimistic scenario and MFA-based scenarios

4. Use "gaps in gaps" to create time paths for proxies of model-input variables

North Carolina Unemployment Rate Under Each Recession Scenario

- Current phase of the budget-gap portion of the project

- Most major revenue sources relatively straightforward
  - Withholding and individual income tax refunds linked to scenario-specific wage forecasts
  - Sales tax linked to scenario-specific forecasts of taxable consumption and investments in structures
  - Corporate income and franchise taxes linked to before-tax corporate profits

Generating Scenario Revenue Forecasts

- Individual income tax estimated and final payments more complicated

- Testing alternative models for estimated payments

- Final payments forecasts required developing new models for capital gains realizations
  - Prior to TCJA, best predictor of final payments was fourth-quarter estimated payments
  - New models based on CBO forecast of capital gains realizations performed well for 2019
  - Developed new models for capital gains realizations based on S&P 500 performance and stock buybacks

Next Steps

- Combine revenue forecasts with expenditure forecasts for each scenario

- Develop alternative options to close revenue shortfalls and budget gaps for each scenario

- Present draft plans to OSBM senior leadership

- Create timeline for updating plans