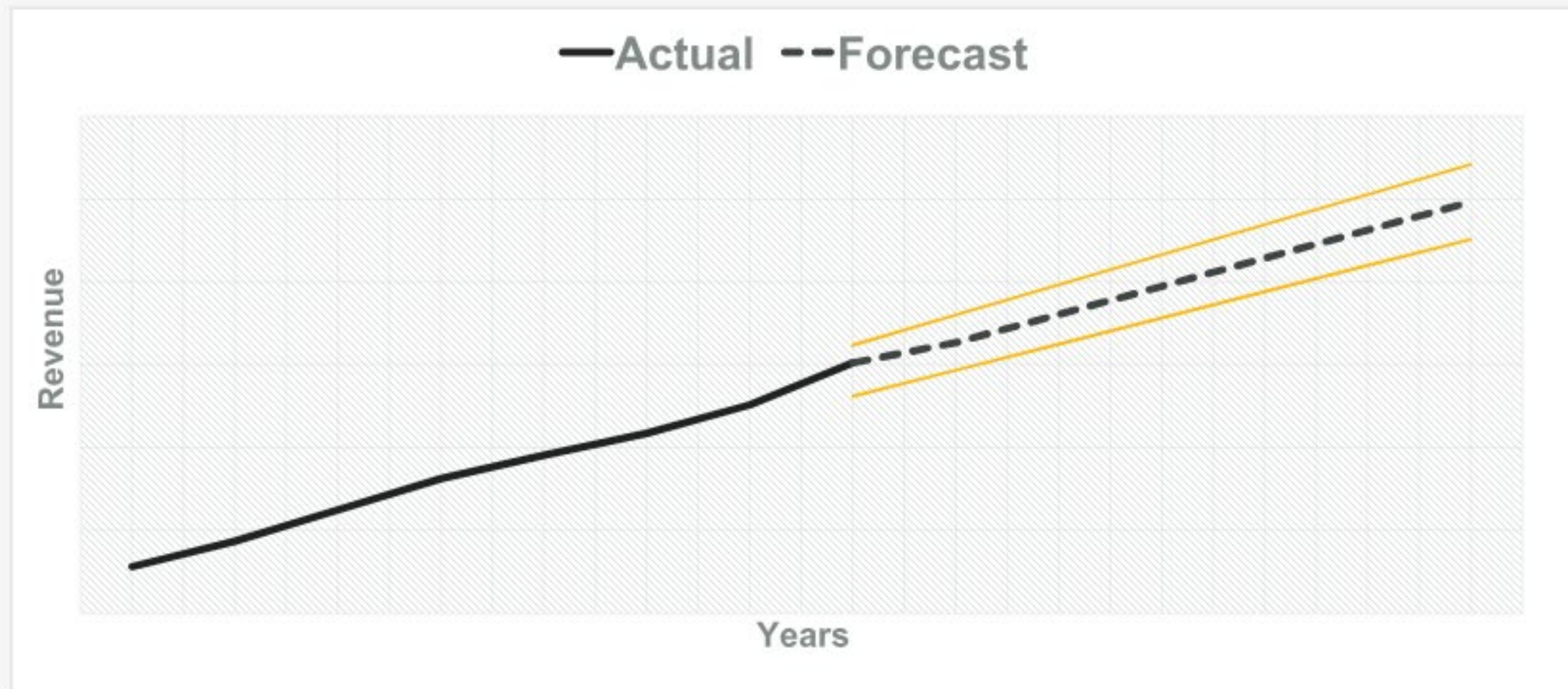# The Who, What, and Why of State Revenue Forecasts

Presentation to the 2023 NCSL Fiscal Skills Building Workshop
Minneapolis, MN
September 26, 2023

What's a Revenue Forecast?

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Why is the Revenue Forecast Important?

```
        ┌──────────────┐
        │ Preparation  │
        │      &       │
        │  Submission  │
        └──────────────┘
   ↗                      ↘
┌──────────┐        ┌──────────────┐
│ Audit &  │        │ Consideration│
│Evaluation│        │      &       │
│          │        │   Approval   │
└──────────┘        └──────────────┘
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        │  Execution   │
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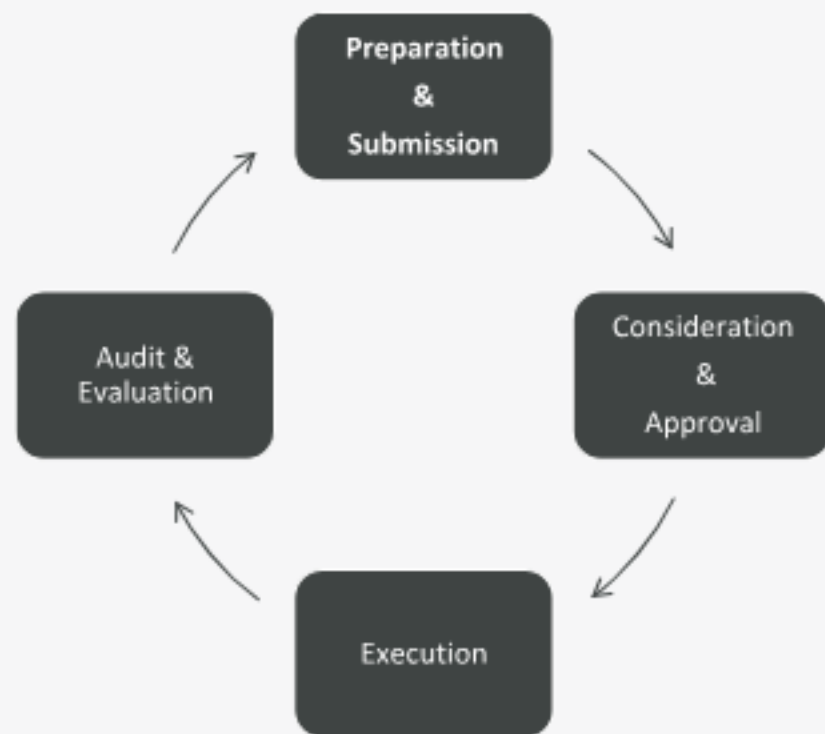
Budget Preparation

Mikesell (2018) suggests that . .

". . . [n]o state, regardless of the stringency of any balanced budget requirement that limits its expenditure to revenues collected or its dexterity at evading these requirements, can survive over the long haul if its revenue cannot cover its expenditures. **In any year, the forecast establishes the maximum amount to be appropriated**, and states may appropriate all the way to that limit. Hence, attention to the revenue forecast is critical."

Revenue Forecasting Decision Processes

10 States

EXECUTIVE

Forecast by executive branch staff without input from the legislature or non-partisan experts.

12 States

SEPARATE

Executive branch forecast plus an independent forecast by legislative branch fiscal staff.

28 States

CONSENSUS

NASBO (2021) indicates . . . "[a] revenue projection developed in agreement through an official forecasting group representing both the executive and legislative branches."

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Advantages of Consensus Forecasting

"Then we are agreed nine to one that we will say our previous vote was unanimous!"

- **Single agreed upon forecast**
  - **focus on allocating funds not arguing over dueling forecasts**
- **Other potential advantages**
  - **accuracy**
  - **transparency**
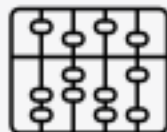 - **political acceptance**

Revenue Forecasting Methods

NAÏVE
- Judgmental
- Expert

EXTRAPOLATIVE
- Trend
- Univariate

ASSOCIATIVE
- Multivariate
- Econometric

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Forecast Rationale

HOW TO SPOIL THE CHANGE STEW
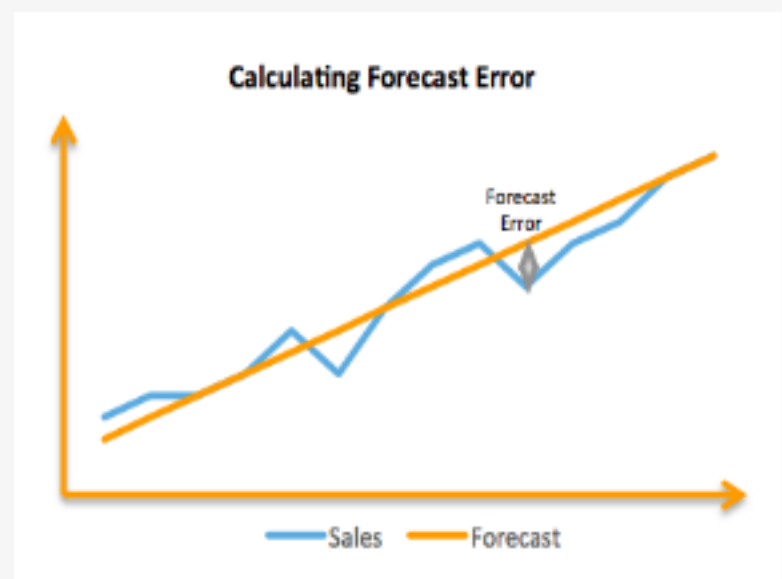
OOPS, I FORGOT THE PURPOSE

- **Questions about forecast rationale**
  - Is it systematic?
  - Is it data-driven?
  - Does it link revenue and macroeconomic expectations?
- **Questions about economic expectations**
  - Is there an official economic forecast?
  - Is it the basis for the revenue forecast?
  - Are the economic expectations reasonable?
- **Questions about revenue expectations**
  - Is the link between revenue and the economy estimated?
  - Are econometric revenue models used?
  - Are revenue expectations reasonable?

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Revenue Forecast Accuracy


Calculating Forecast Error

- **Forecast Error = Actual - Forecast**
  - Error < 0, overestimate
  - Error > 0, underestimate
- **Goal for Forecast Error**
  - ± 2%
- **Pew (2011)**
  - FY 1987-2009: Median = ± 1.5%
- **Franklin, Bourdeaux, and Hathaway (2019)**
  - FY 2015-17: Median = 1.5%
- **Willoughby et al. (2008), Pew (2011)**
  - In recession, 5%-10% or more

Challenges of Forecast Error

Calculating Forecast Error

- **Overestimates are the worst case**
  - political and economic "pain"
  - require tax hikes, spending cuts, or use of budgetary reserves
- **Underestimates can also be challenging**
  - Should the surplus be spent?
  - Should it be deposited in the "rainy day" fund?
  - Should taxes be cut?

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Is Forecast Error Getting Worse?
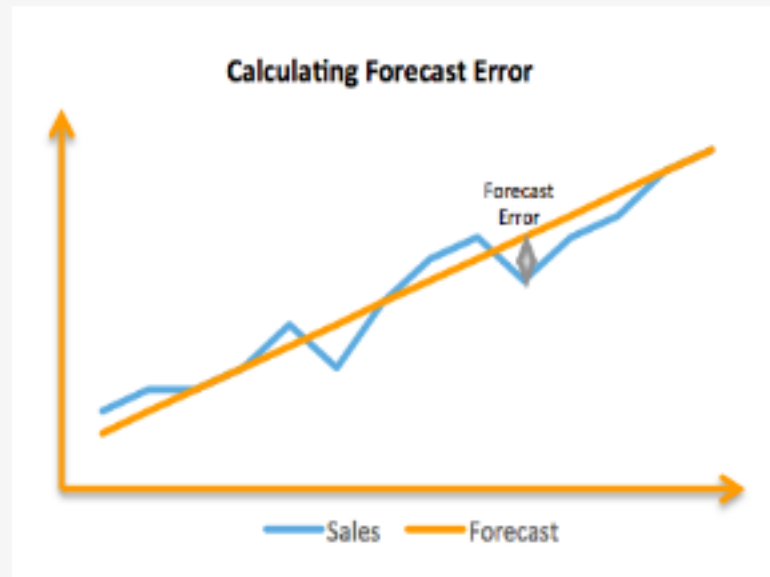
- **Forecast error varies with the economy**
  - positive during recovery
  - negative during recession
- **Recent History**
  - over time forecast error seems to have worsened and become more problematic
  - forecast error is much larger than average during recessions
  - recession driven forecast error has gotten worse over time
  - forecast error more often produces surpluses not shortfalls

Revenue Monitoring

- **When? How often?**
  - Monthly
  - Quarterly
  - When is a trend a trend?
- **What should we monitor?**
  - YTD actual collections vs. YTD forecast target
  - YTD actual collections vs. actual collections for same period prior year
  - Growth required for remainder of fiscal year to achieve annual forecast target

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Reflection, Evaluation

1
___

BIAS

Do models tend to overestimate or underestimate?

2
___

AVERAGE ERROR

What's the typical percentage miss plus or minus?

3
___

MODEL VS. VARIABLE ERROR

How much of the forecast error is due to the model invalidity vs. error in the economic forecast?

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Thank You.

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