

# Health and Human Service Caseload Forecasting Audit

Pacific Northwest Intergovernmental Audit Forum

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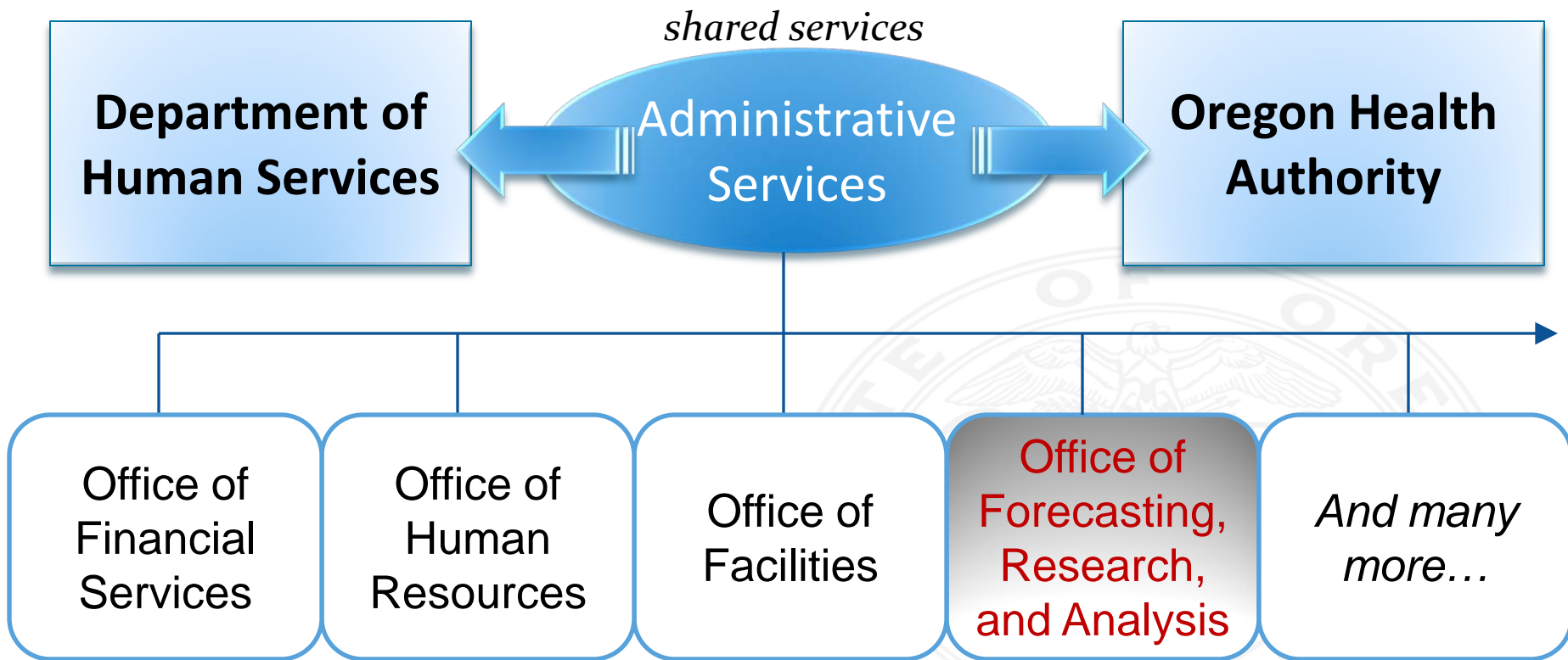
Ian M. Green, MS, Staff Auditor

**Oregon Audits Division**

# Audit Highlights

- Audit of the health and human service caseload forecasting process
- These caseload forecasts drive \$20 billion budget
- We found the need for increased independence and transparency
- Key Finding: Senior management influenced one caseload forecast contributing to budget surplus
- Over-forecasting means less money for legislative priorities

# Background: Org Chart



# Background: Forecast Unit

## Department of Human Services

### Self Sufficiency

- Supplemental Nutrition Assistance Program (households)
- Temporary Assistance for Needy Families - Basic and UN (families: cash assistance)
- Employment Related Day Care (families)

### Child Welfare (children served)

- Adoption Assistance
- Guardianship Assistance
- Out of Home Care
- Child In-Home

### Aging and People with Disabilities

- Long-Term Care: In-Home
- Long-Term Care: Community-Based
- Long-Term Care: Nursing Facilities

### Vocational Rehabilitation Services

### Developmental Disabilities

## Oregon Health Authority

### Medical Assistance Programs

- OHP Plus: Temporary Assistance to Needy Families (Medical)
- OHP Plus: Children (PLM-C & CHIP)
- OHP Plus: Aging and People with Disabilities (ABAD & OAA)
- OHP Plus: Poverty Level Medical Women
- OHP Plus: Substitute Care & Adoption Services

### Other Medical Assistance Programs

- OHP Standard
- KidsConnect

### Addictions and Mental Health

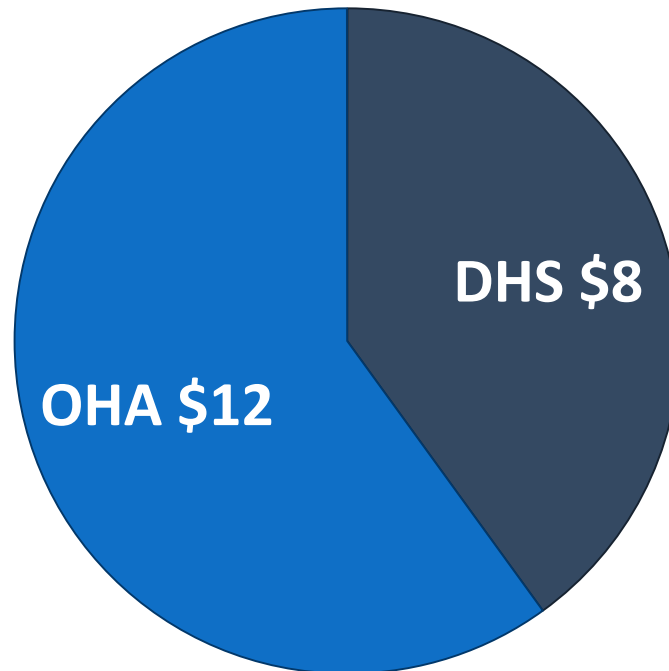
- Total Criminal Commitment
- Total Civil Commitment

# Background: Budget Formula



# Background: Budget

**DHS and OHA Combined Budget (in Billions)**



**\$20 Billion Total Funds (\$3.8 Billion General Funds)**

# Why is this audit topic significant?



Cartoon by Ron Leishman

# Why is this audit topic significant? Cont'd

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**“I’d like to run our market domination forecast once more,  
but this time let’s see what happens if we plug evil  
flying monkeys into the equation.”**



# Audit Objective

- To determine if adequate independence, oversight, and transparency exists for the forecast unit to ensure reasonable caseload and expenditure forecasts.



# Four Areas of Review

- Reviewed the caseload forecast methodology
- Analyzed the forecasts for accuracy and statistical bias
- Reviewed the independence of the forecast unit
- Reviewed the transparency of the forecast unit



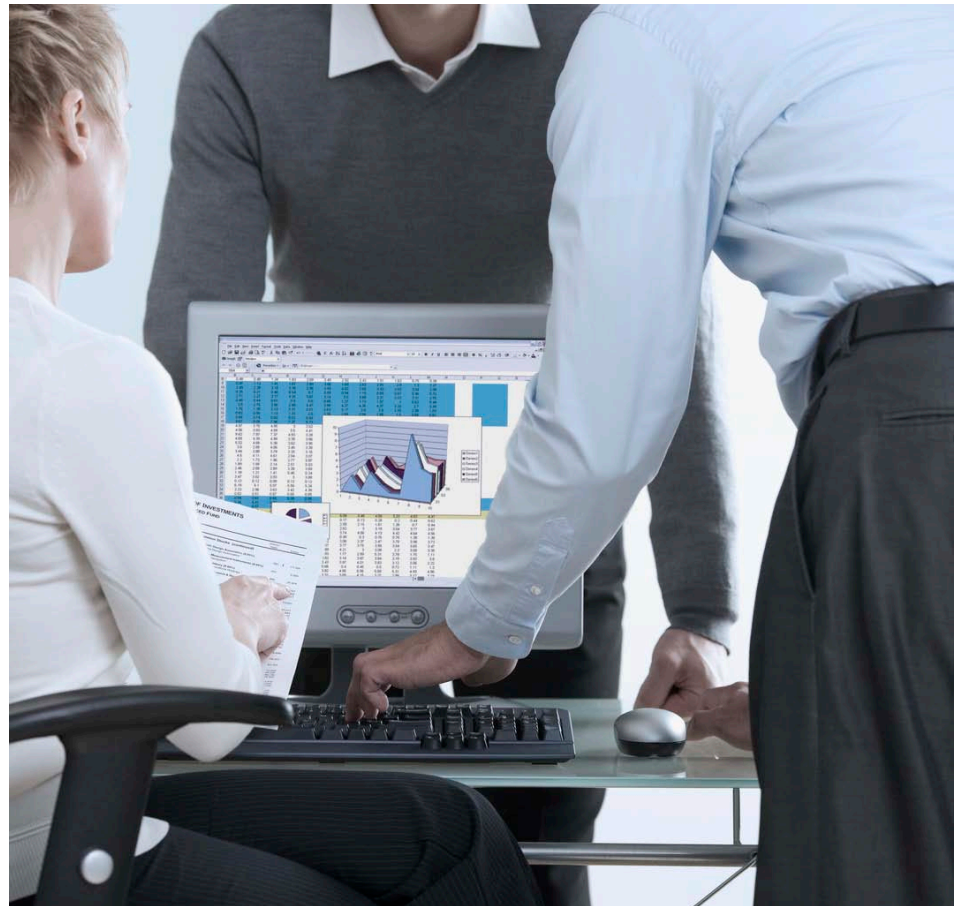
# Caseload Forecast Methodology

- We found the methodology used to be reasonable and that forecasters followed sound practices



# Data Analysis Outline

- Forecast Error Distribution
- Average Error
- Last digit analysis
- Improvement analysis
- Benchmarking

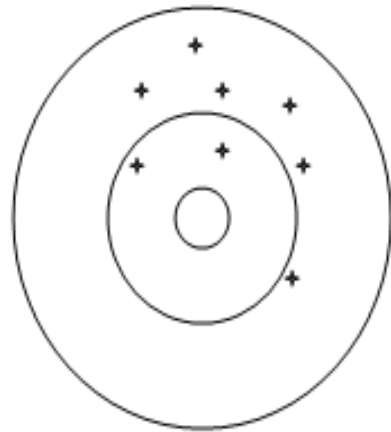


# Key Terms

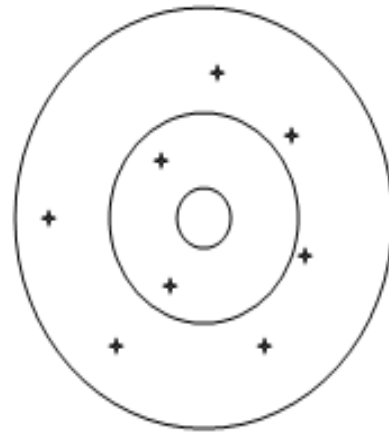
- Bias
- Accuracy

The Ideal Case

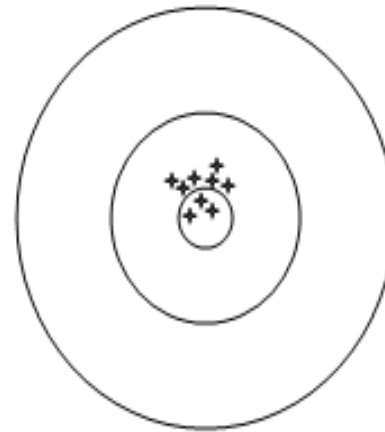
Biased  
Inaccurate



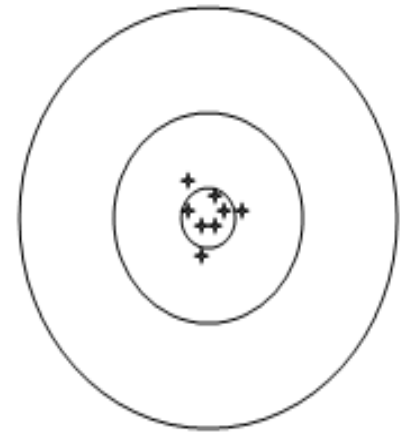
Unbiased  
Inaccurate



Biased  
Accurate



Unbiased  
Accurate



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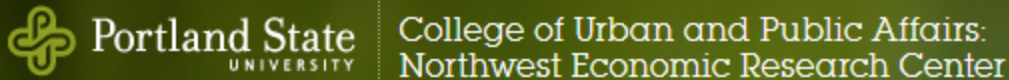
# Data



# Criteria



Office of Economic Analysis



*the signal and th  
and the noise and  
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noise and the noi  
why so many and  
predictions fail—  
but some don't th  
and the noise and  
the noise and the  
nate silver noise*

# Reliability Testing

- Followed GAO “Grey Book” guidelines

GAO-09-680G



- Compared data received to:
  - Source excel files
  - Database queries
- Analyzed for duplicates and missing data
- Checked our budget estimates against budget reports





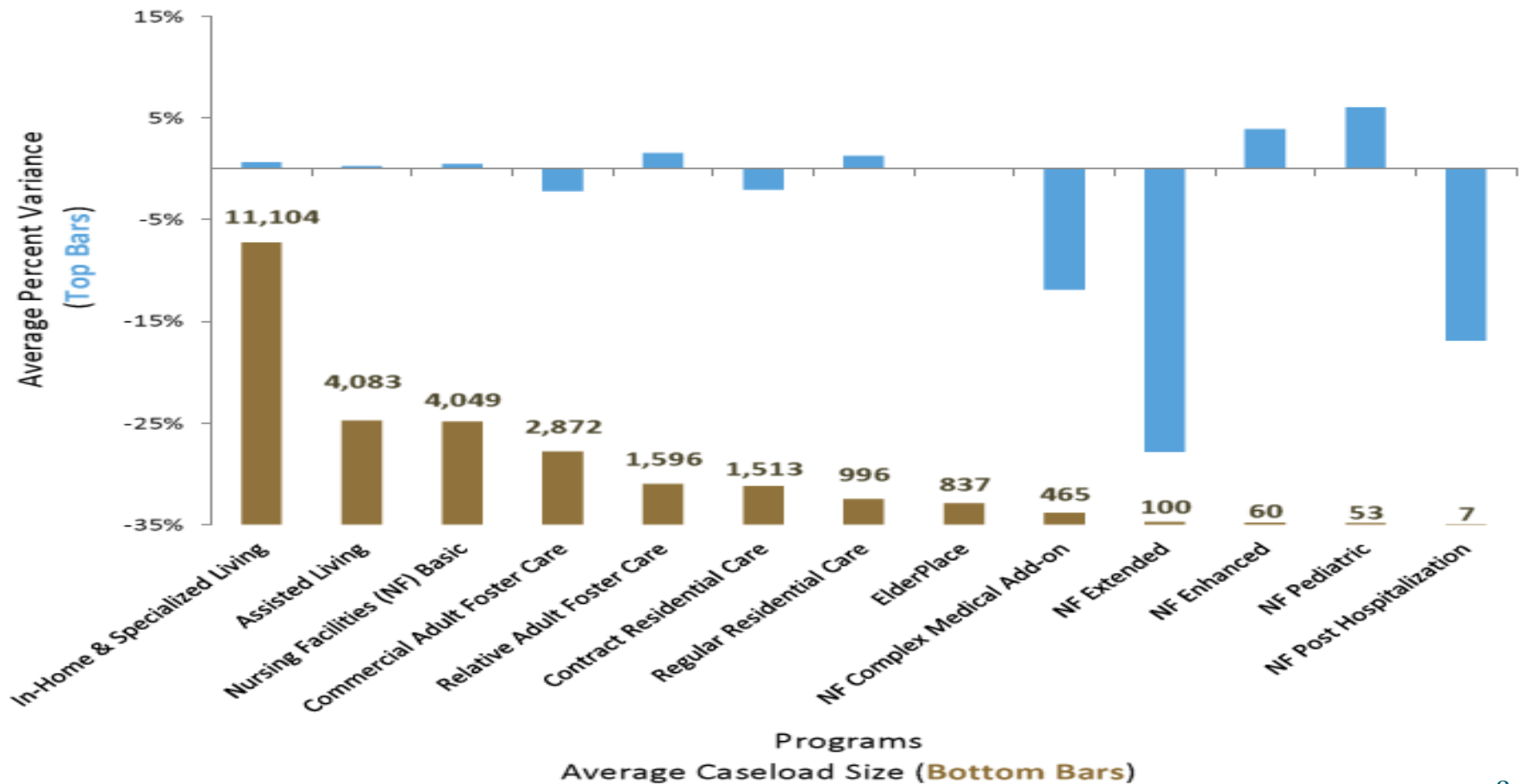
# Forecast Error

- Forecasts further out into future were less accurate
- Absolute errors generally normal
- Errors varied by cycle
  - The recession was associated with higher errors

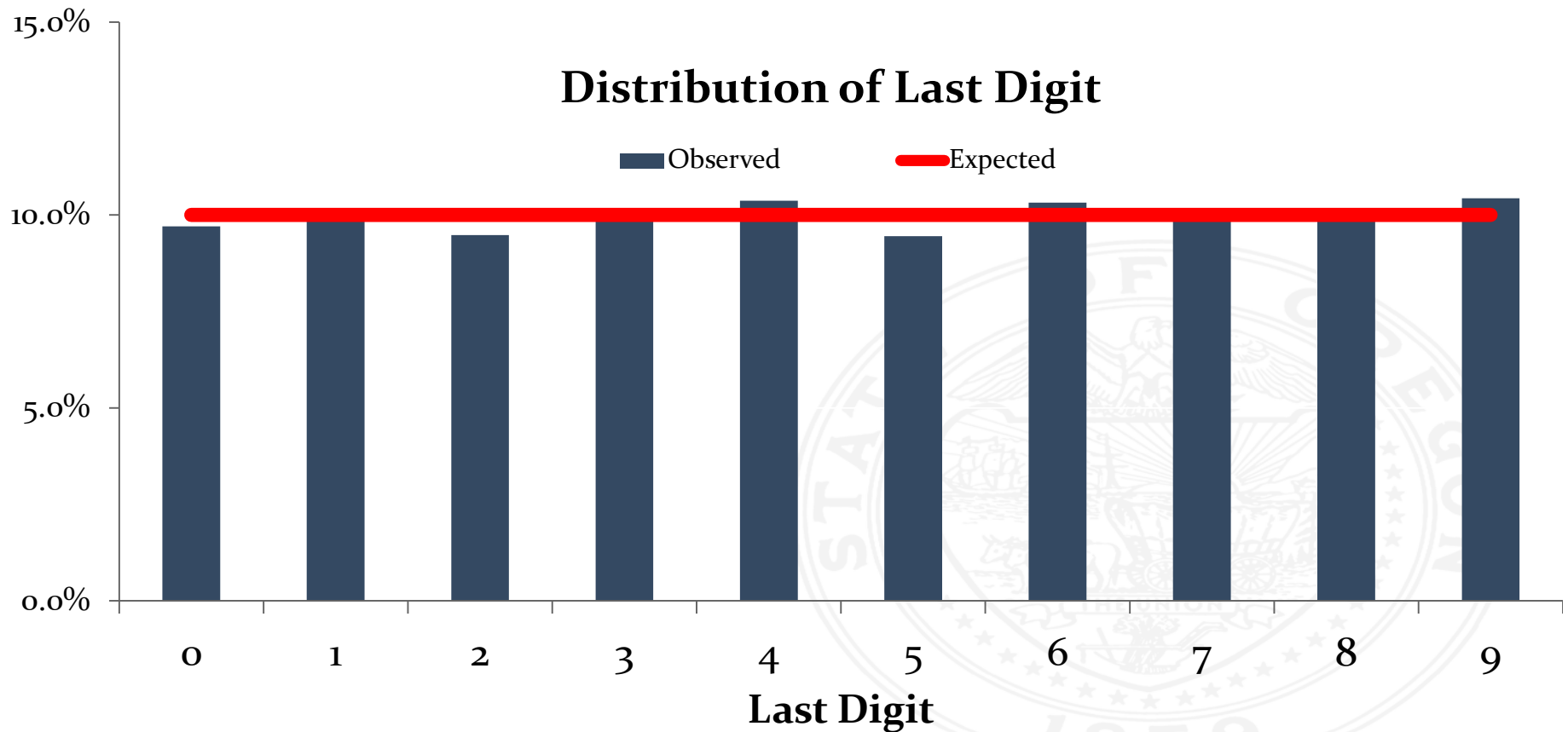
Percent of Variance from Forecast SNAP Caseload	Percent of Absolute Variance from Forecast SNAP Caseload
-2.20%	2.30%
0.07%	0.08%
-0.25%	0.44%
-0.82%	0.89%
-1.17%	1.31%
-1.73%	1.87%
-2.49%	2.57%
-2.96%	3.04%
-3.81%	3.90%
-4.45%	4.50%
-5.21%	5.25%

# Forecast Error Cont'd

Figure 3: Caseload Size and Forecast Variance of Aging and People with Disabilities Forecasts (2009-2011)



# Last Digit Analysis



# Improvement Analysis

- Generally improved (smaller errors)

**Table 2: Forecast Variance between 2008 and 2011**

Program	2008 Forecasts	2011 Forecasts
Self Sufficiency and Vocational Rehabilitation	4.5%	1.0% ↓
Aging and People with Disabilities	1.3%	1.1% ↓
Medical Assistance and Healthy KidsConnect	3.4%	2.5% ↓
Overall	3.1%	1.5% ↓

- Unable to attribute a cause

# Benchmarking



- Similar populations
- Sample of ten caseloads
- Washington was marginally more accurate

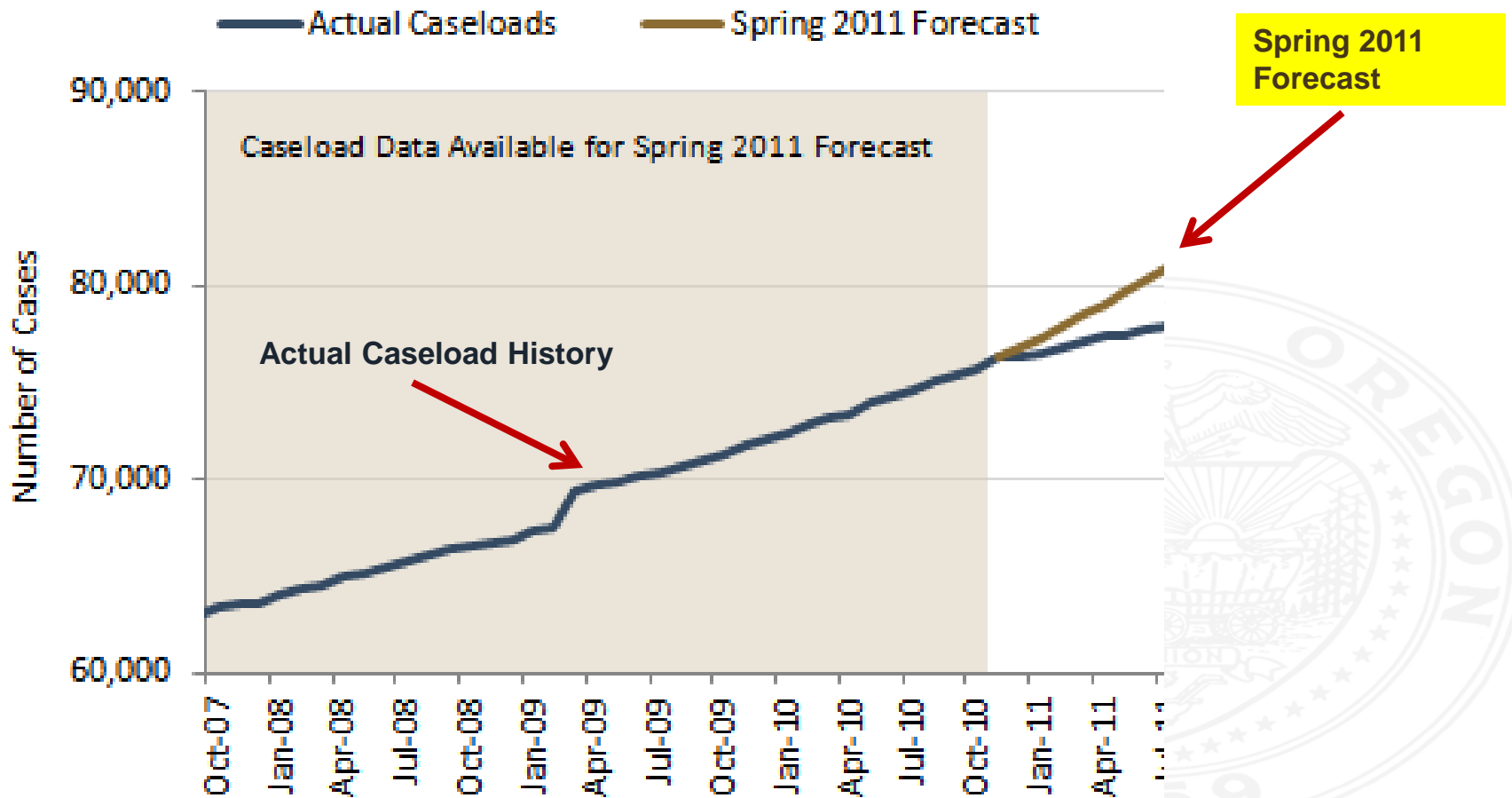


# Analysis Recap

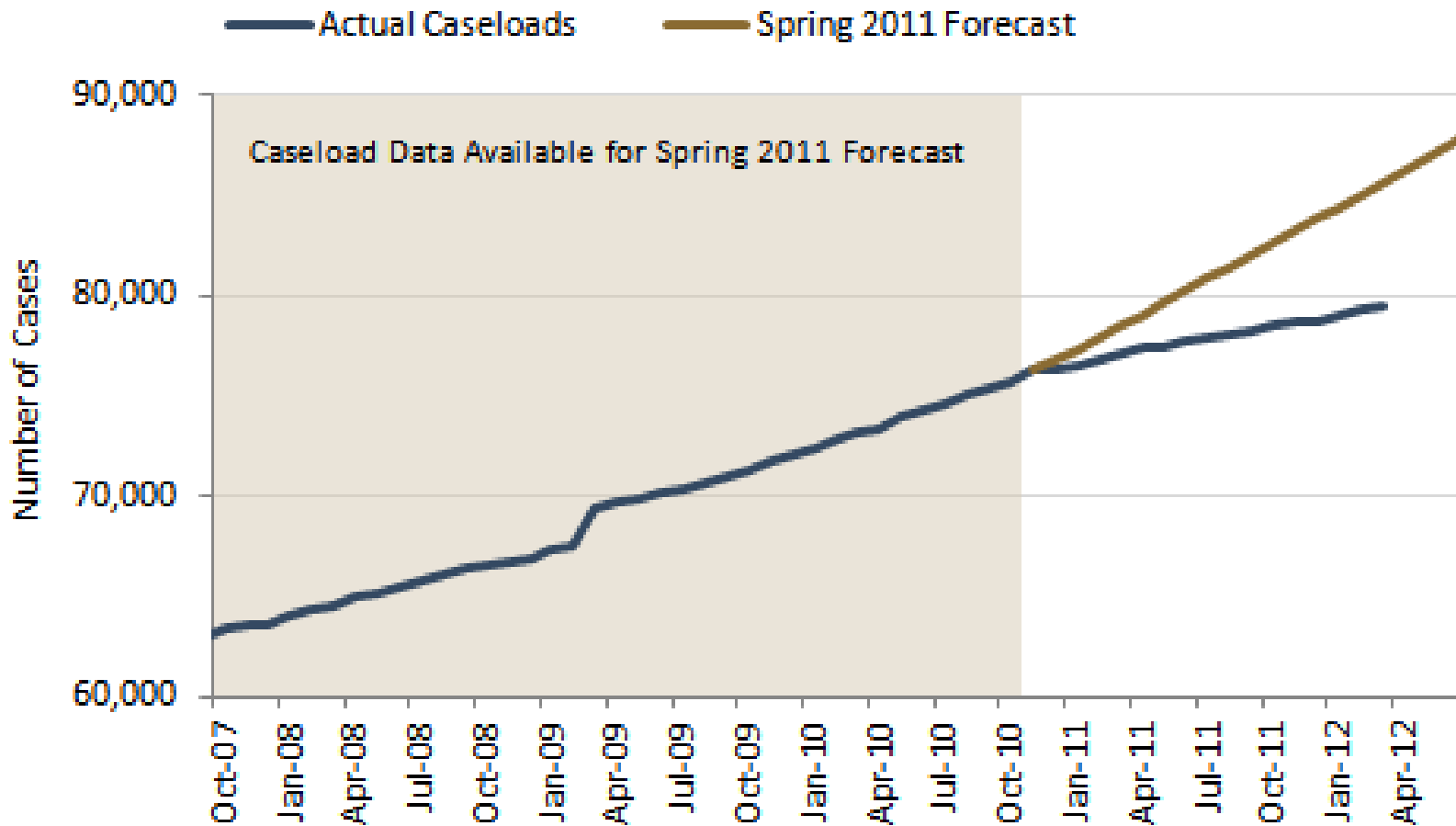
- Generally accurate and unbiased
- Error rates have improved
- Performance similar to best practice state



# Lessons Learned



# Lessons Learned





# Review of Independence



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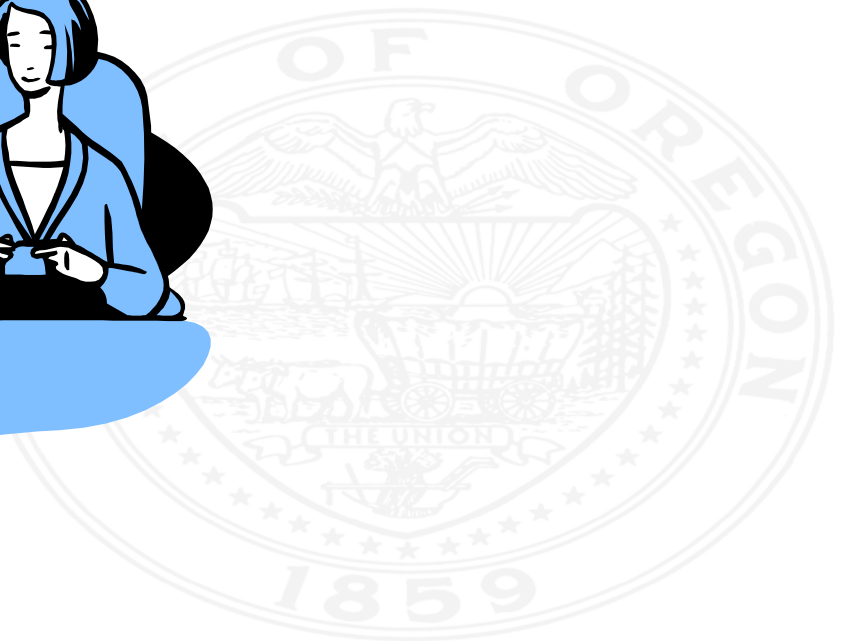
# Criteria

- Review of other forecast organizations
  - Washington State's Caseload Forecast Council
  - Oregon's Office of Economic Analysis (e.g. Corrections)
- Research Articles on Forecasting
- Governance Structure
- *Similar to Auditor Independence*



# Audit Steps

- Interviews
- Review of Governance Documentation



# Lessons Learned



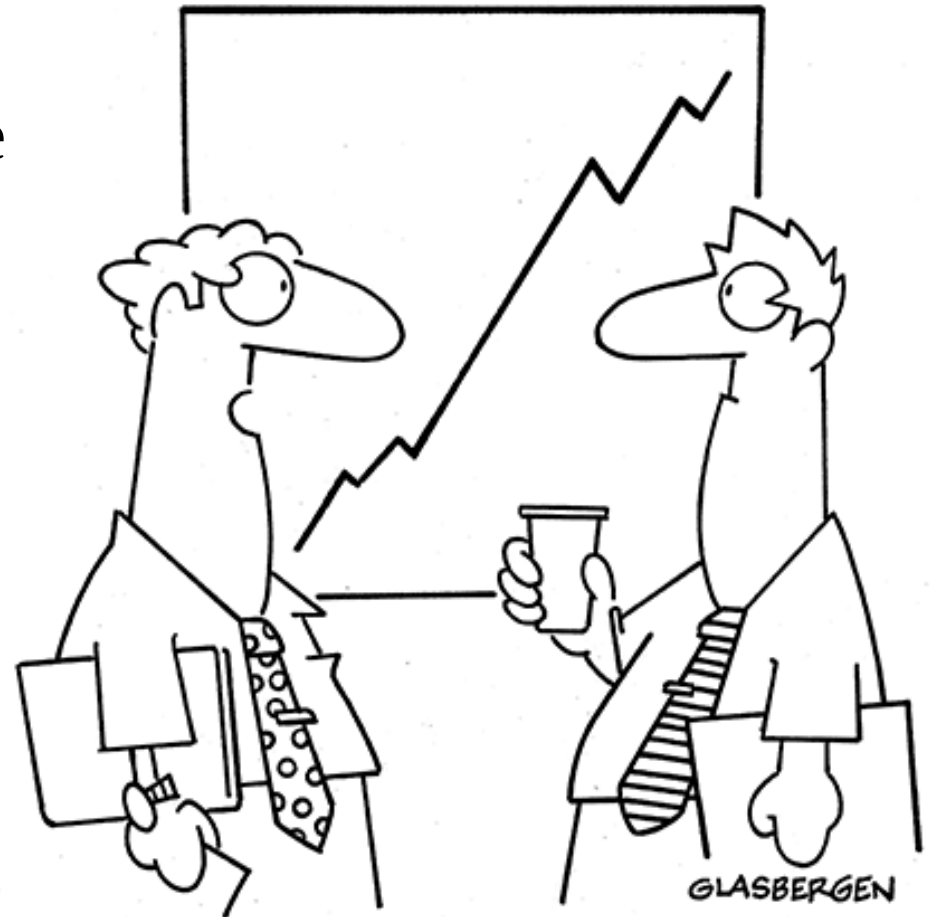
- We got lucky!
- Expand interviews to recent departures
- Another lesson was to ask more direct questions

“are you aware of a time when a forecast was influenced by management”

# Findings/Results

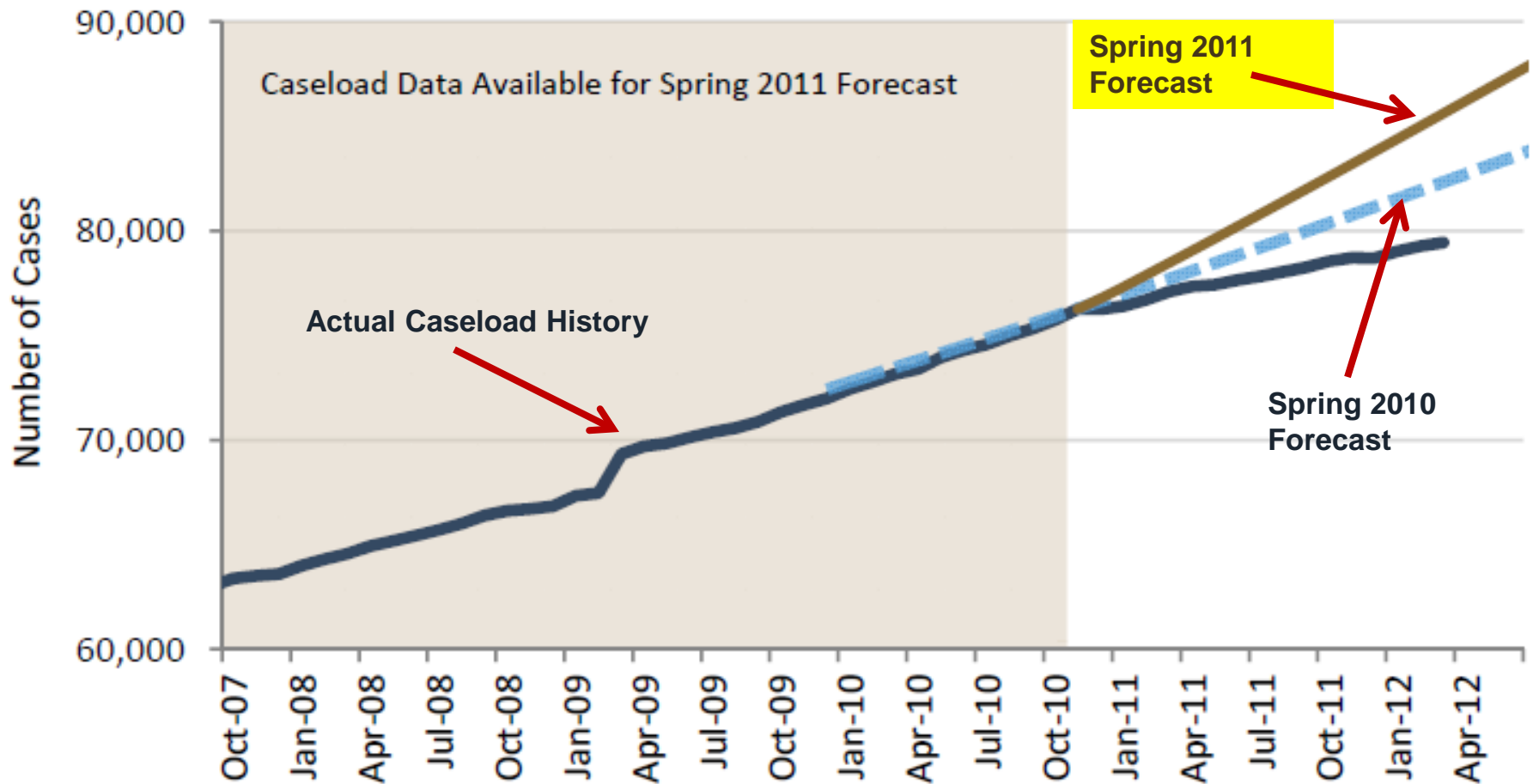
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- We found one instance of management influence for one caseload forecast during the spring 2011 forecast - *Aid to Blind and Disabled Program*



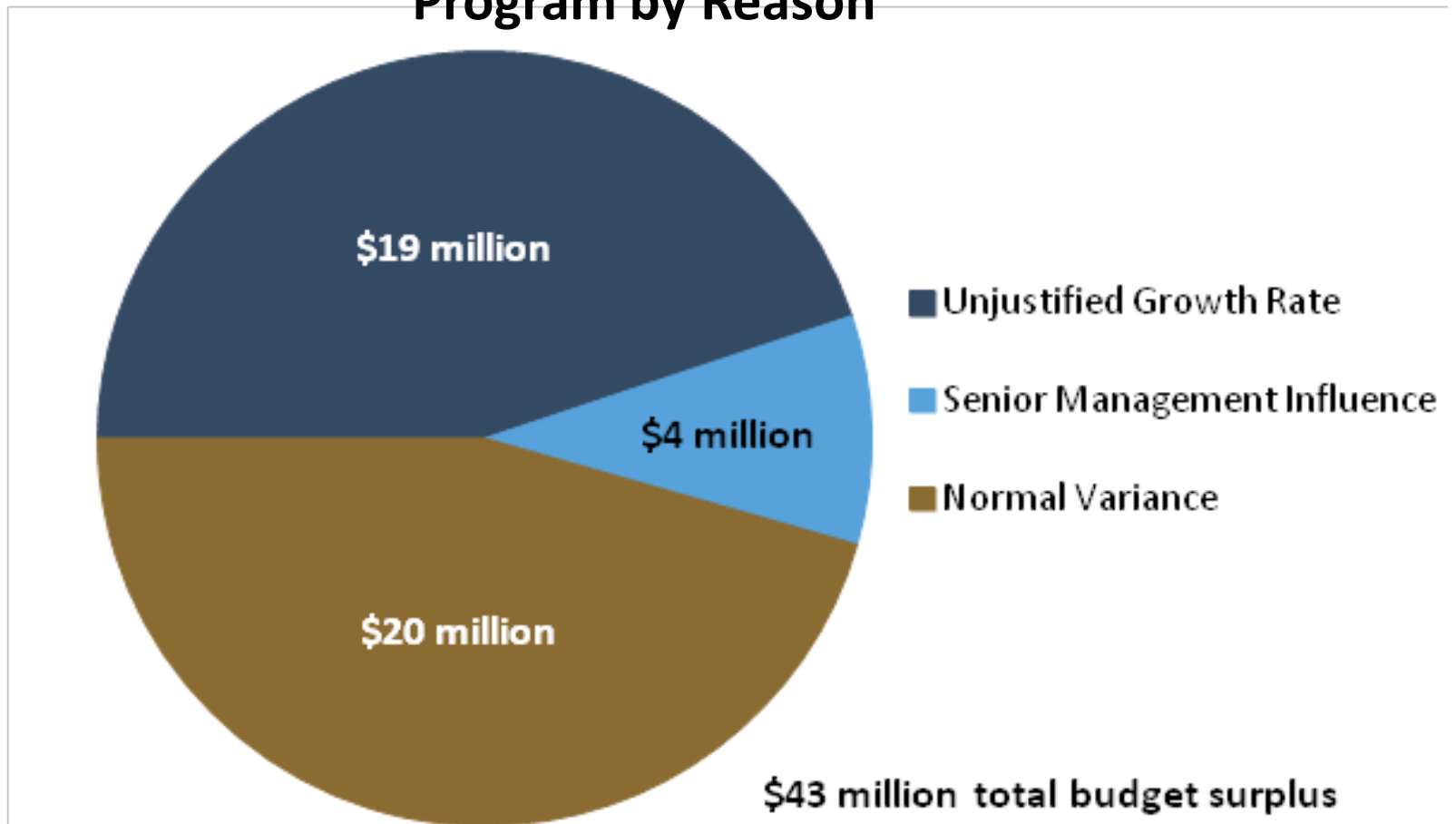
**“Nobody can accuse us of lying. *The chart is lying.*”**

# Aid to Blind and Disabled Caseload and Forecast History



# Effect

## 2011-13 Budget Surplus for the Aid to Blind and Disabled Program by Reason



# Recommendations

- Policy oversight committee
- Administrative oversight by external agency

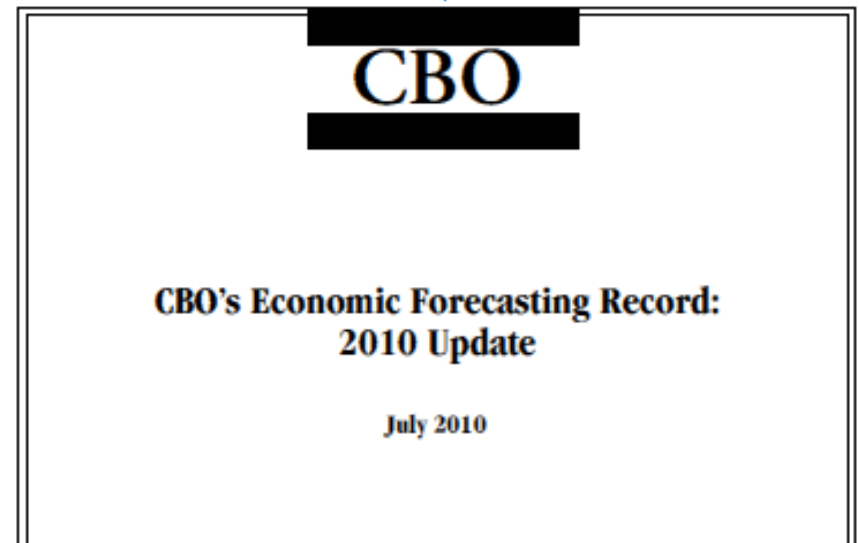




# Review of Transparency

- Reports back to 2006 published online
- Not published:
  - Methodology
  - Minutes
  - Performance Measures
  - Contact Information
  - Committee Membership
  - Tracking Report

CBO tracks accuracy back to the 1970's



# Recap of Key Points



# Questions



# Contact Information

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