RTD Sales and Use Tax Forecast

Robert McNown, Richard Wobbekind, Miles Light, and Brian Lewandowski
October 22, 2019
Presentation Outline

- Economic overview
- Model development
- Uncertainty
- Forecasts and revisions
- Comparison with Colorado Legislative Council and OSPB
Real GDP Growth

Percent Change, SAAR

Sources: Bureau of Economic Analysis and Moody’s Analytics.
National Employment

Month-over-Month Change, 12-Month Average

Thousands, Month-over-Month, 12-Mo Average

Sources: Bureau of Labor Statistics (Seasonally Adjusted), Moody’s Analytics, and NBER.
Moody’s Baseline Growth Expectations

- Trade policy
- Decreasing confidence
- Deficit-financed tax cuts
- Increased government spending
- Tight labor market
- Stable inflation
- Decreasing manufacturing index

Source: Moody’s Analytics.
State Employment Growth
Year-over-Year August 2019

Source: Bureau of Labor Statistics (Seasonally Adjusted).
Index of Consumer Confidence

Sources: The Conference Board and National Bureau of Economic Research.

Mountain Region

United States

Recession

1985=100

1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019

Packet Pg. 106
**Interest Rates**

Sources: Federal Reserve.

![Graph showing interest rates](image)

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Packet Pg. 107
Leeds Business Confidence Index

Index (50=Neutral)

Source: Business Research Division.
Colorado Change in Population

- Colorado’s population increases
  - 79,800 in 2018
  - 76,300 in 2019
- 7th-fastest state for percentage growth
- 8th-fastest state for absolute growth
- 88% of growth along Front Range
- Continued net migration into the state

Sources: Colorado Demography Office, U.S. Census Bureau, and the Business Research Division.
Colorado Employment Growth

Jobs Added

Thousands

Sources: Colorado Department of Labor and Employment and the Colorado Business Economic Outlook Committee.
Regional Employment Growth and Unemployment

Employment Growth Rate
August 2019 YoY

- Colorado Springs: 2.4%
- Grand Junction
- Greeley
- Denver-Aurora-Lakewood
- Boulder
- Fort Collins
- Pueblo

Unemployment Rate
August 2019 YoY

- Colorado: SA 2.8%, NSA 2.7%
- Colorado Springs
- Grand Junction
- Greeley
- Denver-Aurora-Lakewood
- Boulder
- Fort Collins
- Pueblo

Sources: CES (Not Seasonally Adjusted) and LAUS (Not Seasonally Adjusted).
Inflation


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**All Items**

- United States
- Denver-Aurora-Lakewood MSA

**Core Inflation**

- United States
- Denver-Aurora-Lakewood

**Shelter**

- United States
- Denver-Aurora-Lakewood

**Medical Care**

- United States
- Denver-Aurora-Lakewood
## Colorado Ranking Among Other States

<table>
<thead>
<tr>
<th>Metric</th>
<th>1-Year</th>
<th>3-Year</th>
<th>5-Year</th>
<th>10-Year</th>
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<td>Real GDP Growth</td>
<td>6</td>
<td>3</td>
<td>5</td>
<td>6</td>
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<td>Employment Growth</td>
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<td>Population Growth</td>
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<td>7</td>
<td>5</td>
<td>3</td>
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<td>Personal Income Growth</td>
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<td>Average Annual Pay % Growth</td>
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<td>Unemployment Rate</td>
<td>6</td>
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<td>Labor Force % Growth</td>
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<td>LFPR</td>
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<td>FHFA Home Price Index Growth</td>
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Potential Headwinds for 2020

International/National
• Global growth
• Value of the dollar
• Trade/Tariffs
• Politics

State
• Commodity prices/cycle
• Housing affordability
• Talent shortage
• Energy market
Model Development: Key Economic Drivers

Short-term and medium-term forecasts
- Employment: U.S. and Colorado
- Real gross domestic product: U.S.
- Personal income: Colorado
- Retail sales and taxable sales: U.S. and Colorado

Long-term forecasts
- Population projections from U.S. Census and State Demography Office
- Projections by age groups for U.S., Colorado, and RTD District
- Population age distributions affect savings, labor supply, productivity, output, and household expenditures
Colorado Sales Taxes and RTD Tax Revenue

Sources: Colorado Office of the State Controller and the Colorado Department of Revenue.

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## Short-Term Forecast

RTD Sales and Use Tax Revenues

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<thead>
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<th>Year</th>
<th>Sales Tax Revenue</th>
<th>Use Tax Revenue</th>
<th>Total Revenue</th>
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<tr>
<td>2019</td>
<td>3.8%</td>
<td>-6.3%</td>
<td>2.7%</td>
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<tr>
<td>2020</td>
<td>1.1%</td>
<td>10.8%</td>
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aHistorical data.
## Error Tracking

### January-August 2019
- Error +0.3%

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</tbody>
</table>

Note: A positive number represents BRD forecasts exceeding actual revenue.
Medium-Term Scenario Planning

RTD Revenue

$ Millions

- Optimistic Scenario
- Baseline Scenario
- Pessimistic Scenario


$ Millions

- $500
- $550
- $600
- $650
- $700
- $750
- $800
- $850
- $900

Attachment: RTD_Sales_and_Use_Tax_Forecast_October_2019 Final (3979 : Sales and Use Tax Update)
## Forecast Comparison

<table>
<thead>
<tr>
<th></th>
<th>Colorado Economic Indicators</th>
<th>Business Research Division</th>
<th>Colorado Legislative Council</th>
<th>Office of State Planning and Budgeting</th>
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<tbody>
<tr>
<td><strong>Personal income (% change)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2018</td>
<td></td>
<td>5.7%</td>
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<tr>
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<td>3.3%</td>
<td>5.6%</td>
<td>5.4%</td>
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<td>2020</td>
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<td>0.2%</td>
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<td>5.0%</td>
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<tr>
<td><strong>Employment (% change)</strong></td>
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<td>2.4%</td>
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<tr>
<td>2019</td>
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<td>2.0%</td>
<td>1.9%</td>
<td>1.8%</td>
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<tr>
<td>2020</td>
<td></td>
<td>1.3%</td>
<td>1.1%</td>
<td>1.5%</td>
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</tbody>
</table>

Note: BRD, Colorado Legislative Council, and Office of State Planning and Budgeting updates as of September 2019. In the March update, OSPB and CLC discontinued the retail trade series.
Integrity of Model Forecasts

- Forecasts are updated semi-annually to reflect the most current economic situation.

- Forecasts may be too high or too low, reflecting uncertainty in the economy.

- Forecasts are generated from theoretically sound economic relations, modeled with state-of-the-art methods of modern econometric time series analysis.

- BRD forecasts do not incorporate “add factors” or other subjective adjustments of model forecasts.

- BRD is independent from RTD with no political or financial stake in the forecast numbers.