MARYLAND’S REVENUE VOLATILITY PROGRAM
SEPTEMBER 2019

Office of the Comptroller
State of Maryland

Andrew Schaufele: Director, Bureau of Revenue Estimates
Disclaimer

• I represent myself today
• Not the Comptroller, not the Board of Revenue Estimates
April Surprise
State Estimating Program

• Board of Revenue Estimates (BRE) Responsibility
  • Comptroller Peter Franchot
  • Treasurer Nancy Kopp
  • Budget Secretary David Brinkley
  • Andrew Schaufele, Executive Secretary

• Revenue Monitoring Committee
  • 16 to 20 fiscal minded individuals from BRE related agencies and Legislative Services
  • Chaired by BRE Executive Secretary

• One Estimate For The State!!! All working from same base
State Budget Program

- Governor must use BRE’s estimate for the introduction of the budget (some amendments with cause enabled)
  - Supported by:
    - September Estimate for building budget plan
    - December Estimate as final before budget introduction

- General Assembly passes budget
  - Supported by:
    - March Estimate for final shot at it

- Required to have 5% in the Rainy Day Fund
- We never used the Rainy Day Fund during the Great Recession
Impetus – April Surprises

- Actually handled the fiscal cliff and the up-and-down from tax years 2012 and 2013 quite well
- Botched tax years 2014 and 2015 (fiscal years 2015 and 2016)

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Source</th>
<th>Estimated</th>
<th>Actual</th>
<th>Dollar Var</th>
<th>Pct Var</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>Final</td>
<td>3.3%</td>
<td>16.0%</td>
<td>+$107M</td>
<td>13.8%</td>
</tr>
<tr>
<td>2015</td>
<td>Refunds</td>
<td>2.8%</td>
<td>-0.4%</td>
<td>+$38M</td>
<td>-2.8%</td>
</tr>
<tr>
<td>2015</td>
<td>Total GF</td>
<td>4.0%</td>
<td>5.4%</td>
<td>+$214M</td>
<td>1.4%</td>
</tr>
<tr>
<td>2016</td>
<td>Final</td>
<td>3.2%</td>
<td>-2.7%</td>
<td>-$52M</td>
<td>-5.8%</td>
</tr>
<tr>
<td>2016</td>
<td>Refunds</td>
<td>2.6%</td>
<td>8.4%</td>
<td>-$75M</td>
<td>-5.6%</td>
</tr>
<tr>
<td>2016</td>
<td>Total GF</td>
<td>3.3%</td>
<td>1.7%</td>
<td>-$250M</td>
<td>-1.5%</td>
</tr>
</tbody>
</table>

Notes: (1) Dollars in Millions; (2) GF is total; (3) Final & Refund are Jan to June
The Reaction

- I’m hauled in front of Legislative Spending Affordability Committee to explain/be-intimidated
  - Leads to the “Why don’t you just forecast 98% of revenues”
  - To which I reply “Why don’t you just spend 98% of revenues”
  - Gained valuable experience, but not going anywhere fast on the policy front

- Create a workgroup
  - Composed of key fiscal bureaucrats
  - Principle staff is Legislative Services (DLS)
    - Supported by BRE
  - We knew it was largely related to capital gains, but wanted to empirically prove and gain insight for policy considerations
## Deep Learning on Volatility Cause

<table>
<thead>
<tr>
<th>Percentile</th>
<th># Tax Payers</th>
<th>Net Maryland Tax ($)</th>
<th>Average Federal Gross Income ($)</th>
<th>Share State Net Tax (%)</th>
<th>Cum Share State Net Tax (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 0.01%</td>
<td>269</td>
<td>252,606</td>
<td>19,270</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>&gt;0.01% &amp; &lt;=0.1%</td>
<td>2,422</td>
<td>356,414</td>
<td>2,981</td>
<td>5.2</td>
<td>8.8</td>
</tr>
<tr>
<td>&gt;0.1% &amp; &lt;=1.0%</td>
<td>24,225</td>
<td>859,189</td>
<td>755</td>
<td>12.4</td>
<td>21.2</td>
</tr>
<tr>
<td>&gt;1.0% &amp; &lt;=5.0%</td>
<td>107,668</td>
<td>1,300,847</td>
<td>283</td>
<td>18.8</td>
<td>40.0</td>
</tr>
<tr>
<td>&gt;5.0% &amp; &lt;=10.0%</td>
<td>134,584</td>
<td>941,602</td>
<td>179</td>
<td>13.6</td>
<td>53.7</td>
</tr>
<tr>
<td>&gt;10.0% &amp; &lt;=25.0%</td>
<td>403,752</td>
<td>1,666,099</td>
<td>116</td>
<td>24.1</td>
<td>77.7</td>
</tr>
<tr>
<td>&gt;25.0% &amp; &lt;=50.0%</td>
<td>672,920</td>
<td>1,328,280</td>
<td>64</td>
<td>19.2</td>
<td>97.0</td>
</tr>
<tr>
<td>&gt;50.0% &amp; &lt;=75.0%</td>
<td>672,920</td>
<td>374,667</td>
<td>30</td>
<td>5.4</td>
<td>102.4</td>
</tr>
<tr>
<td>&gt;75.0% &amp; &lt;=100.0%</td>
<td>672,920</td>
<td>-163,973</td>
<td>13</td>
<td>-2.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>2,691,680</td>
<td>6,915,731</td>
<td>76</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Notes: (1) Dollars in Thousands; (2) Ordered by State Net Tax; (3) Tax Year 2014
Deep Learning on Volatility Cause

Certain Income Classes' Share of Net Resident MD Tax Year-Over-Year Growth

- 2001: -5.2%
- 2002: 2.8%
- 2003: 5.6%
- 2004: 11.3%
- 2005: 5.8%
- 2006: 7.7%
- 2007: 7.1%
- 2008: 5.6%
- 2009: 3.9%
- 2010: 6.1%
- 2011: 3.4%
- 2012: 10.0%
- 2013: -0.8%
- 2014: 5.7%
- 2015: 3.3%
Deep Learning on Volatility Cause

Dollar Difference -- Year-over-Year

- All Residents
- 0.1%
- 0.1% to 1%
- 1% to 5%
- 5% to 10%

Year: 2001 to 2015
**Deep Learning on Volatility Cause**

**Year-Over-Year Growth in Average Amounts For Various Tax Share Groups**

*Top 5 Sources for Top 0.1%*

<table>
<thead>
<tr>
<th></th>
<th>Average AGI</th>
<th>Average Sched E (29% of Total AGI)</th>
<th>Average Wages (29% of Total AGI)</th>
<th>Average CapGains (26% of Total AGI)</th>
<th>Ordinary Dividends (5% of Total AGI)</th>
<th>Taxable Interest (4% of Total AGI)</th>
<th>Average Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All</td>
<td>With</td>
<td>All</td>
<td>All</td>
<td>With</td>
<td>All</td>
<td>All</td>
</tr>
<tr>
<td>TY 13</td>
<td>-21.4%</td>
<td>-4.9%</td>
<td>-6.9%</td>
<td>-12.8%</td>
<td>-38.8%</td>
<td>-26.9%</td>
<td>2.0%</td>
</tr>
<tr>
<td>TY 12</td>
<td>20.7%</td>
<td>11.2%</td>
<td>13.0%</td>
<td>10.8%</td>
<td>23.1%</td>
<td>96.3%</td>
<td>1.5%</td>
</tr>
<tr>
<td>TY 11</td>
<td>9.0%</td>
<td>-4.6%</td>
<td>-2.0%</td>
<td>4.5%</td>
<td>40.5%</td>
<td>-2.7%</td>
<td>-9.7%</td>
</tr>
<tr>
<td>TY 10</td>
<td>11.1%</td>
<td>7.6%</td>
<td>4.8%</td>
<td>19.1%</td>
<td>8.0%</td>
<td>28.3%</td>
<td>-8.2%</td>
</tr>
<tr>
<td>TY 09</td>
<td>-11.6%</td>
<td>31.0%</td>
<td>37.6%</td>
<td>-11.4%</td>
<td>-31.9%</td>
<td>16.4%</td>
<td>-1.4%</td>
</tr>
<tr>
<td>TY 08</td>
<td>-33.9%</td>
<td>-6.1%</td>
<td>-11.5%</td>
<td>-16.4%</td>
<td>-55.2%</td>
<td>-58.5%</td>
<td>-60.3%</td>
</tr>
<tr>
<td>TY 07</td>
<td>9.5%</td>
<td>-25.2%</td>
<td>-25.6%</td>
<td>-7.0%</td>
<td>25.9%</td>
<td>23.5%</td>
<td>37.3%</td>
</tr>
<tr>
<td>TY 06</td>
<td>14.3%</td>
<td>19.9%</td>
<td>22.2%</td>
<td>14.3%</td>
<td>25.0%</td>
<td>20.2%</td>
<td>20.6%</td>
</tr>
<tr>
<td>TY 05</td>
<td>6.8%</td>
<td>12.0%</td>
<td>13.2%</td>
<td>-12.4%</td>
<td>24.0%</td>
<td>-26.5%</td>
<td>-33.2%</td>
</tr>
<tr>
<td>TY 04</td>
<td>39.1%</td>
<td>4.6%</td>
<td>1.0%</td>
<td>36.0%</td>
<td>84.5%</td>
<td>137.3%</td>
<td>126.0%</td>
</tr>
<tr>
<td>TY 03</td>
<td>17.9%</td>
<td>12.7%</td>
<td>18.2%</td>
<td>4.8%</td>
<td>28.8%</td>
<td>28.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>TY 02</td>
<td>-16.1%</td>
<td>1.2%</td>
<td>4.1%</td>
<td>-5.0%</td>
<td>-39.2%</td>
<td>-27.2%</td>
<td>-23.4%</td>
</tr>
<tr>
<td>TY 01</td>
<td>-23.5%</td>
<td>-9.4%</td>
<td>-1.3%</td>
<td>-29.2%</td>
<td>-40.4%</td>
<td>-19.5%</td>
<td>-3.9%</td>
</tr>
<tr>
<td>Average</td>
<td>1.7%</td>
<td>3.9%</td>
<td>5.1%</td>
<td>-0.4%</td>
<td>4.2%</td>
<td>4.15%</td>
<td>4.1%</td>
</tr>
<tr>
<td>Median</td>
<td>9.0%</td>
<td>4.6%</td>
<td>4.1%</td>
<td>-5.0%</td>
<td>23.1%</td>
<td>16.4%</td>
<td>-1.4%</td>
</tr>
<tr>
<td>StDev</td>
<td>20.3%</td>
<td>13.8%</td>
<td>15.5%</td>
<td>16.8%</td>
<td>39.8%</td>
<td>51.3%</td>
<td>42.0%</td>
</tr>
</tbody>
</table>

<=0.1%
Conclusion

• **We cannot accurately estimate the top 1%**
  - They account for ~20% of the income tax and, therefore, ~10% of total general fund

• There are no variables or models that we have found that help us estimate this group
  - We are close when we are close to the forecast for capital gains, but…… (model has a 35% SE)
Policy Response

• Evaluated other States’ approaches
  • Some limit to budget to percentage of revenues (e.g., 97%)
  • Some limit by historic growth rates
  • Some target capital gains specifically

• Made a 2 prong recommendation:
  1. Limit share of non-wage income to a 10 year historic average – reduce estimate by the amount that exceeds that average, with a cap of 2% of total revenues
  2. Specify what happens to revenue when below or exceeding the estimate – attempt to treat that income as not ongoing and dedicate to one-time purposes
Implementation

• Relationship of trust with Legislature and bipartisan/multi-agency work product was passed with ease
  • Held special meetings to review and discuss with Leadership as well as key Committees
• In 2017 Session - Legislation passed with unanimous votes from both Chambers (included some minor amendments)
  • Slated to take effect in FY20 (outside budget window for that session)

• But...... reality kicks in
Implementation

- 2018 Session – the BRFA reduces the “cap of the cap” from 2% to a phase in:
  - 0.5% in FY20
  - 1% in FY21
  - 2% in FY22

- 2019 Session – the BRFA reduces the “cap of the cap” from 0.5% in FY20 to 0.225%

- 2020 Session – We shall see, but probably another reduction or even elimination
## What it looks like – The Cap

### Preliminary Maryland General Fund Revenues - Sep 2019

**Fiscal Years 2019 - 2025**

($ in thousands)

<table>
<thead>
<tr>
<th></th>
<th>FY 19 Actual</th>
<th>FY 20</th>
<th>FY 21</th>
<th>FY 22</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INCOME TAXES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual</td>
<td>10,272,352</td>
<td>10,546,882</td>
<td>10,882,090</td>
<td>11,266,876</td>
</tr>
<tr>
<td>Corporation</td>
<td>1,033,109</td>
<td>992,036</td>
<td>1,093,637</td>
<td>1,193,492</td>
</tr>
<tr>
<td>Total</td>
<td>11,305,461</td>
<td>11,538,917</td>
<td>11,975,726</td>
<td>12,460,368</td>
</tr>
<tr>
<td><strong>SALES AND USE TAXES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4,812,090</td>
<td>4,956,167</td>
<td>5,049,943</td>
<td>5,159,702</td>
</tr>
<tr>
<td><strong>STATE LOTTERY RECEIPTS</strong></td>
<td>552,375</td>
<td>567,145</td>
<td>579,197</td>
<td>592,890</td>
</tr>
<tr>
<td><strong>OTHER REVENUES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1,729,113</td>
<td>1,675,358</td>
<td>1,645,914</td>
<td>1,656,936</td>
</tr>
<tr>
<td><strong>TOTAL CURRENT REVENUES</strong></td>
<td>18,399,039</td>
<td>18,737,587</td>
<td>19,250,780</td>
<td>19,590,484</td>
</tr>
<tr>
<td>Excellence in Education Fund</td>
<td>(200,000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility Cap</td>
<td>(42,160)</td>
<td>(192,508)</td>
<td></td>
<td>(279,412)</td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>18,199,039</td>
<td>18,695,427</td>
<td>19,058,272</td>
<td>19,590,484</td>
</tr>
</tbody>
</table>
What it looks like – Directing the $$$

Revenue Volatility Distributions: Flow of Non-Withholding Amount that Exceeds Cap

Are GF Revenues Less Than March Est?

- Yes (Y)
  - Close the GF Revenue Gap.
  - Is there remaining excess NonWH?

- No (N)
  - Is RSA balance less than 6% of estimated GF Revenues?
    - Yes (Y)
      - Distribute to RSA lesser of:
        1) The remaining excess NonWH
        2) Amount required for RSA to equal 6% of est. GF Revenues
      - Is there remaining excess NonWH?
    - No (N)
      - Is RSA balance less than 10% of estimated GF Revenues?
        - Yes (Y)
          - Distribute:
            1) 50% of remaining excess NonWH to RSA, or until RSA equals 10%
            2) Remainder to Fiscal Responsibility Fund
        - No (N)
          - Distribute excess NonWH to Fiscal Responsibility Fund

FRF provides pay-as-you-go capital funds for:
1) Public school construction and capital improvement projects
2) Capital projects at public community colleges
3) Capital projects at four-year public institutions of higher education
Lessons Learned

- Driving from respected bureaucrats was key
- Communicating with Legislators early
- Stress tested the cap’s cap and the 10 year average history
  - Didn’t expect the 10 year average to encompass a full expansion!
- The rating agencies loved the policy, but foresaw the difficulty that the Legislature would have actually implementing
  - So did we, but I think that it still exists is a positive
- If we can let this program phase in in-full during the next expansion, we can:
  - Prevent new ongoing spending from being based on unsustainable revenue; and
  - Direct unsustainable revenue to bolster the State during downturns as well as our education capital
Thank You

- The Volatility Workgroup Document
- The Original Legislation

Andrew Schaufele
Comptroller of Maryland
Director, Bureau of Revenue Estimates
410.260.7450
aschaufele@comp.state.md.us
andrewschaufele@gmail.com