



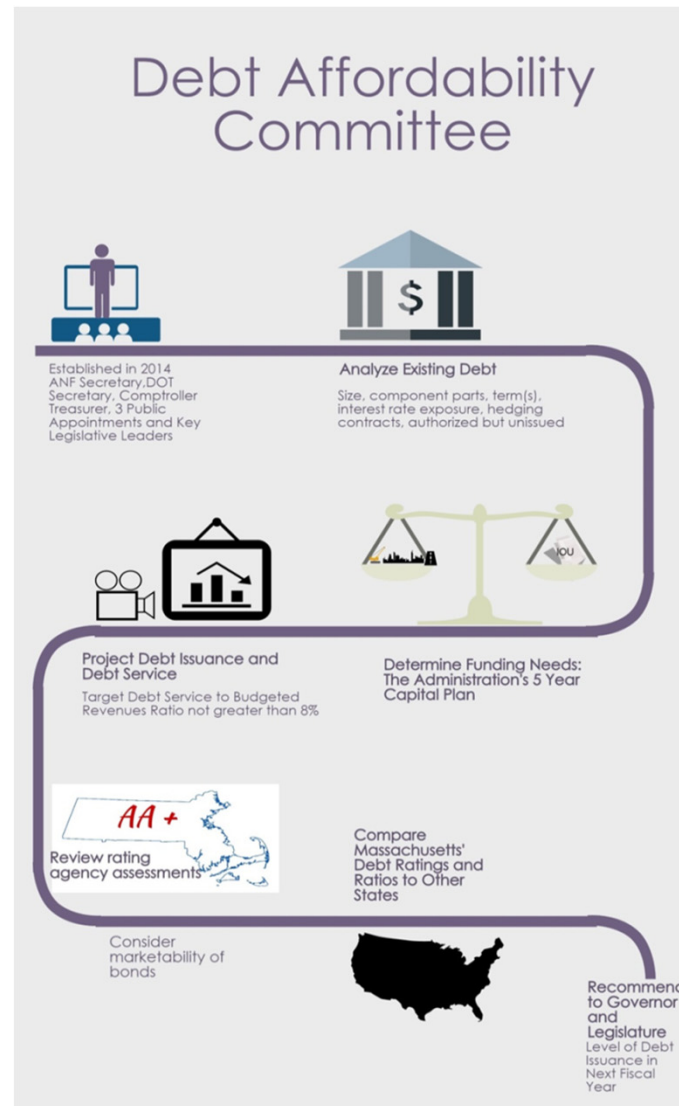
Debt Affordability Committee

**Attachment to
Recommendation**
December 14, 2018



Debt Affordability Committee

Process overview





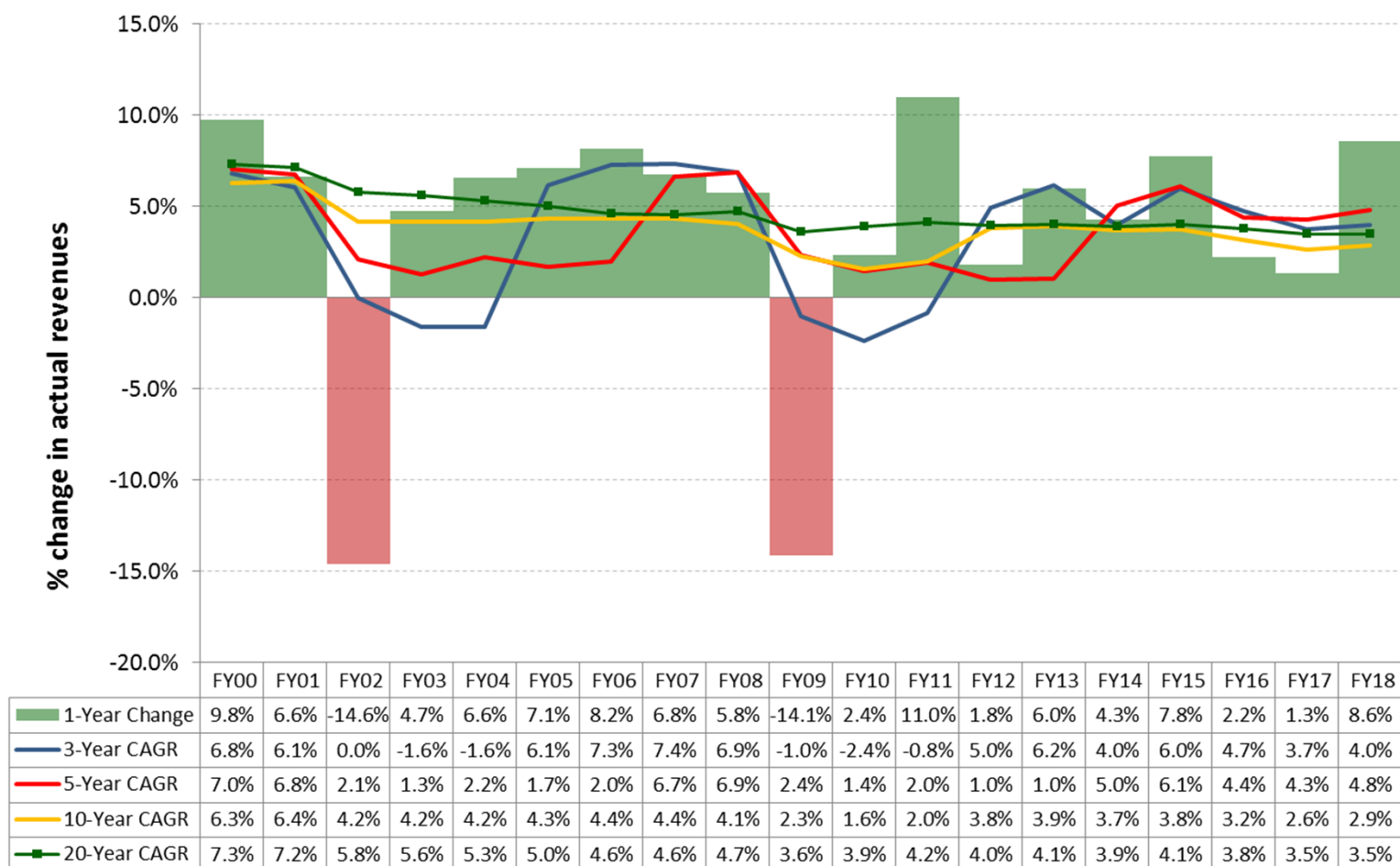
Affordability Analysis

- **Affordability** is assessed by measuring projected **debt service** spending as a **proportion of projected revenue**
- DAC has developed a model to project these factors on an annual basis to a 30-year horizon
- **The key model inputs are**
 - Growth rates for **revenue**, including:
 - Tax revenue
 - Federal reimbursements
 - Departmental revenue and other sources
 - Annual amount and term of **debt issuance** over the 30-year period
 - Beyond fiscal year 2020, the model reflects 2% annual increase in debt issued (roughly in line with inflation)
 - 10 year term for 10% of issuance
20-year term for 60% of issuance
30 year term for 30% of issuance
 - **Interest rate and yield assumptions**
 - DAC incorporated projections of interest rates from Moody's Analytics and IHS Markit, two third-party respected sources
 - Note: contract assistance included in debt service



Revenue fluctuates on a year-to-year basis, but has grown substantially over the mid- and long-term

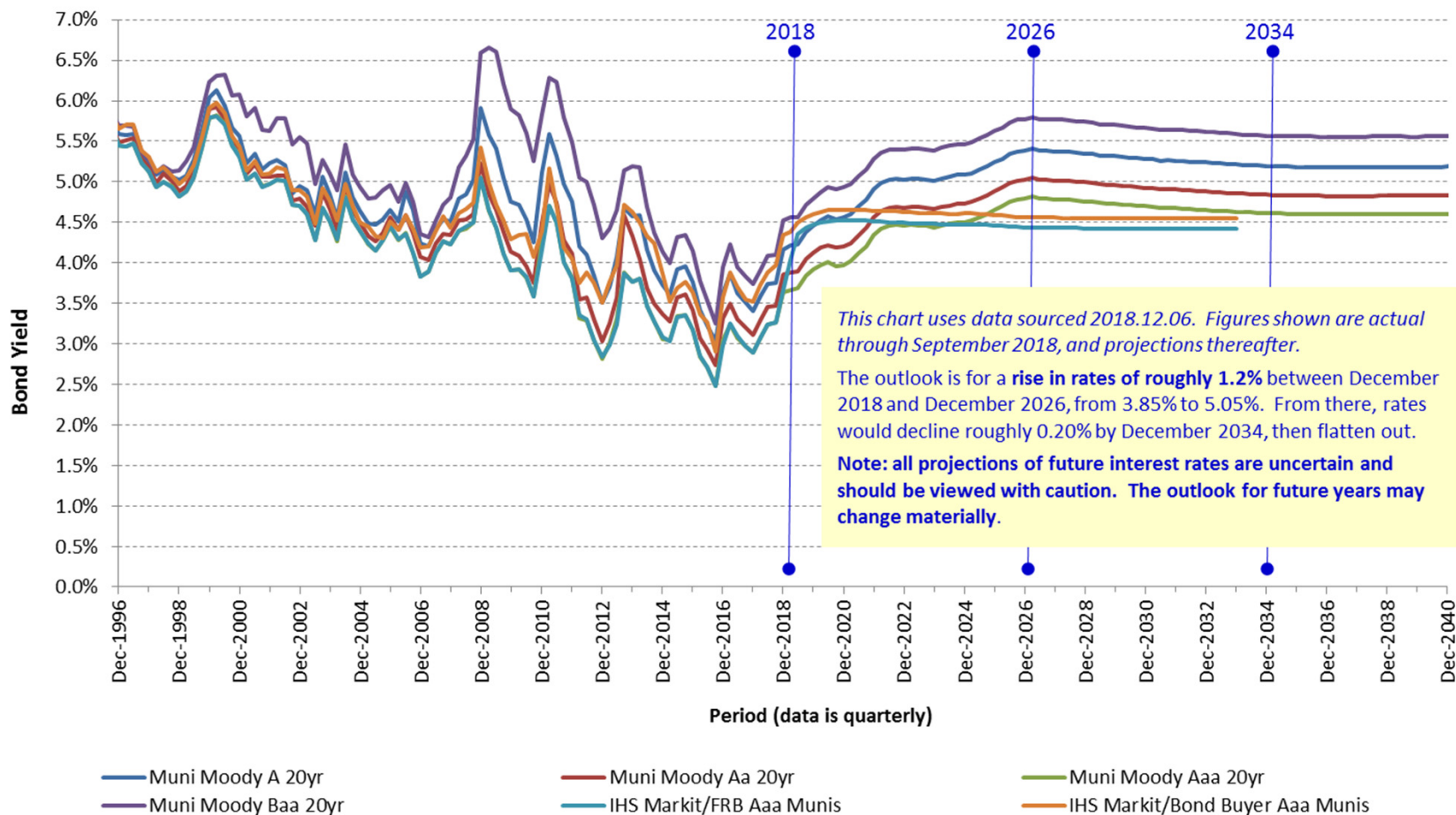
CAGR (compound annual growth rate) is the geometric average annual growth over a given period. It is generally accepted as the most accurate way to compare growth rates over different timelines.



Source: DOR reports on annual revenue. Analysis and graphing for DAC process.



DAC reviewed the outlook for interest rates and yields. The model reflects the potential for rising rates in the years ahead.



Source: DOR provided historical yield data and projected yields from Moody's Analytics & HIS Markit. Analysis by A&F.



Economic environment and review of bond ratings and commentary

DAC assessed information on the state's economic performance

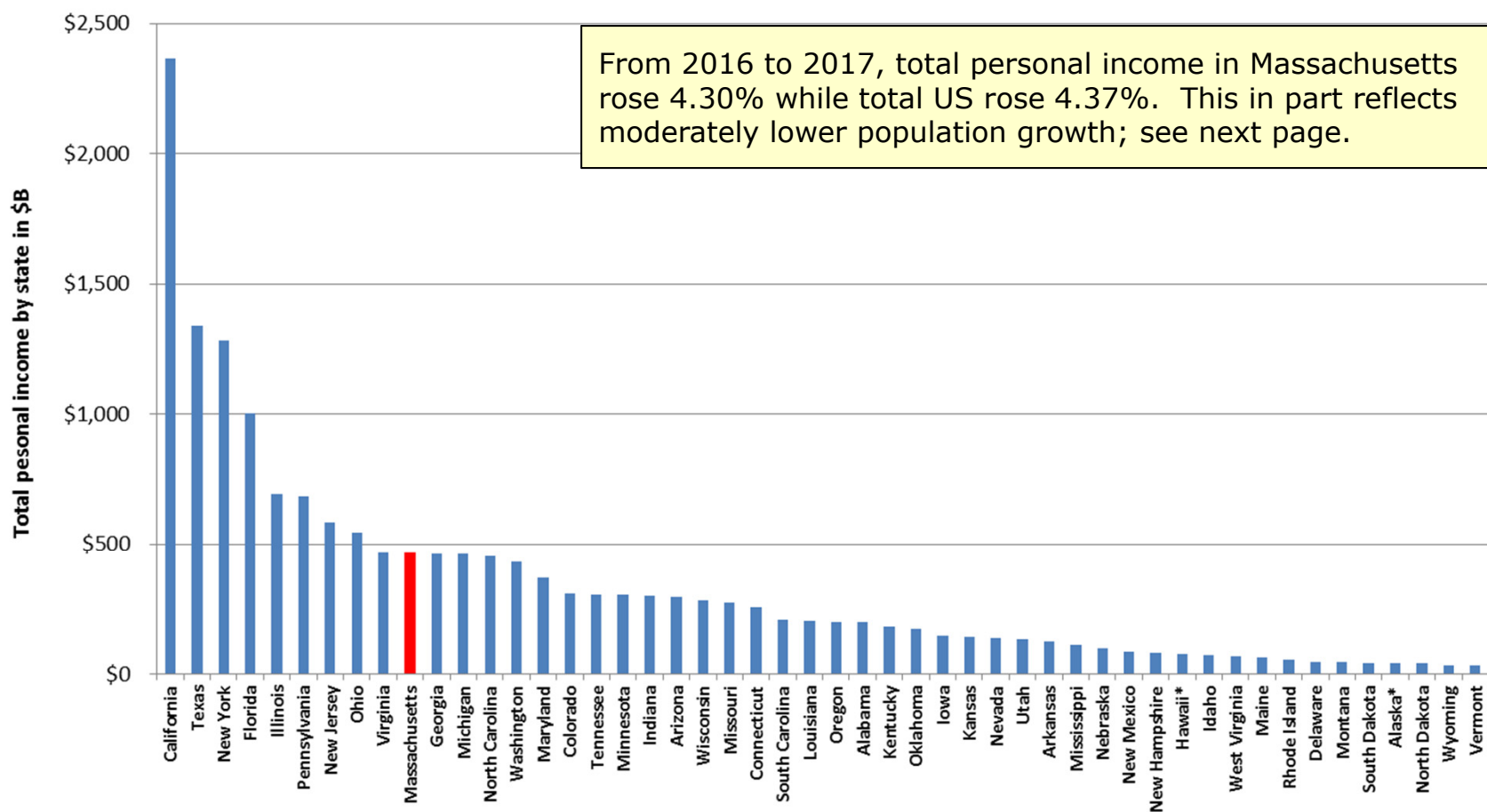
- Massachusetts continues to rank among the top states in economic output and personal income, in particular on a "per resident" basis
- Viewed relative to other states, the Commonwealth's relative standing and performance has generally improved over the year since the last DAC process
- *See the following three slides (pp. 7-9) for selected statistics*

DAC reviewed the ratings and commentary on Massachusetts from leading bond rating agencies

- Rating agencies continue to recognize the Commonwealth both for economic strength and for responsible fiscal policy
- Agencies cite the overall level of debt and liabilities at the state level, relative to other states. *Note that this concern is mitigated by the fact that Massachusetts has relatively less borrowing at the local level than most other states, which improves the relative standing in overall "per resident" indebtedness.*
- *See the slides 10-12 for summaries from the ratings agencies*



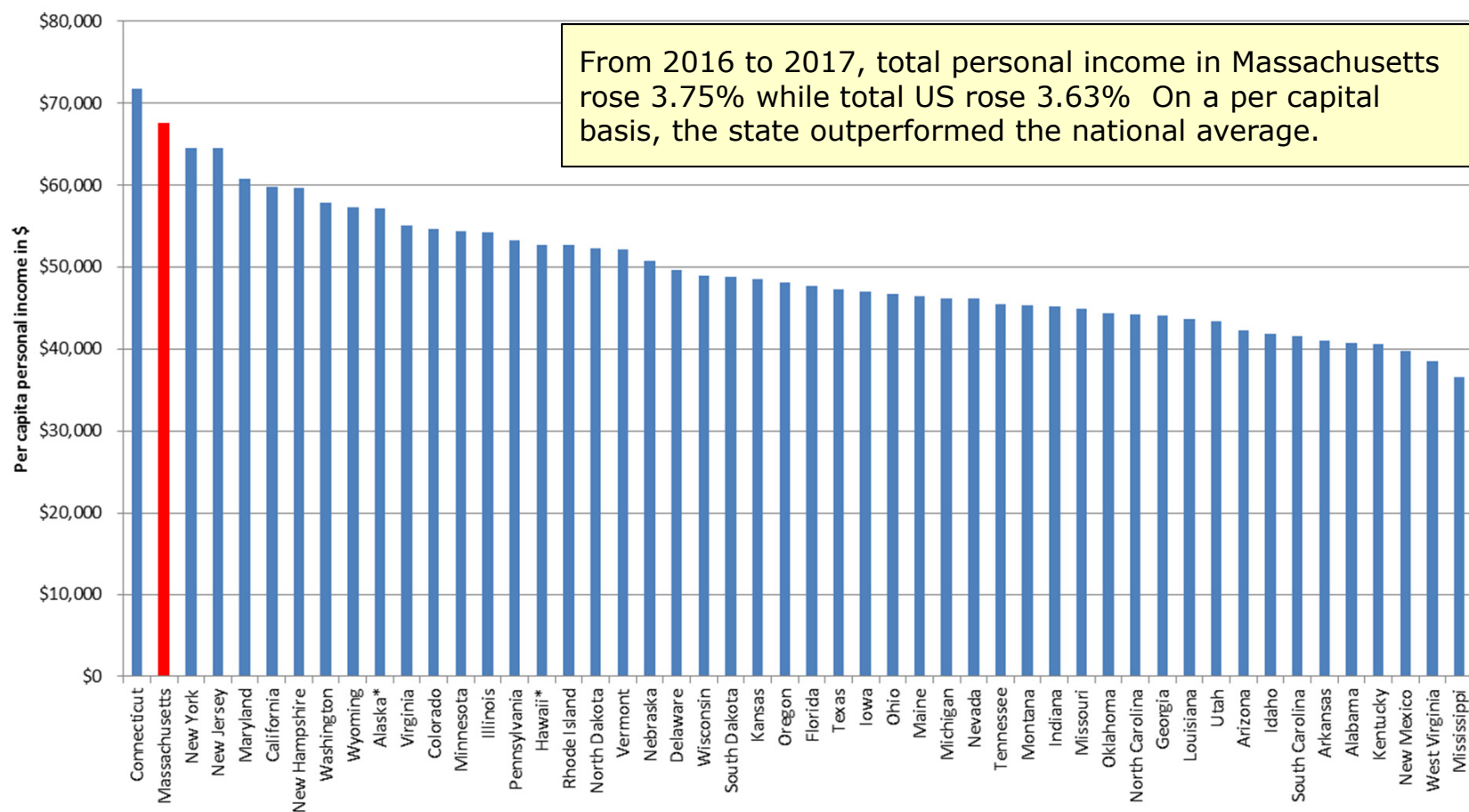
Personal Income 2017



Source: BEA data, A&F charting



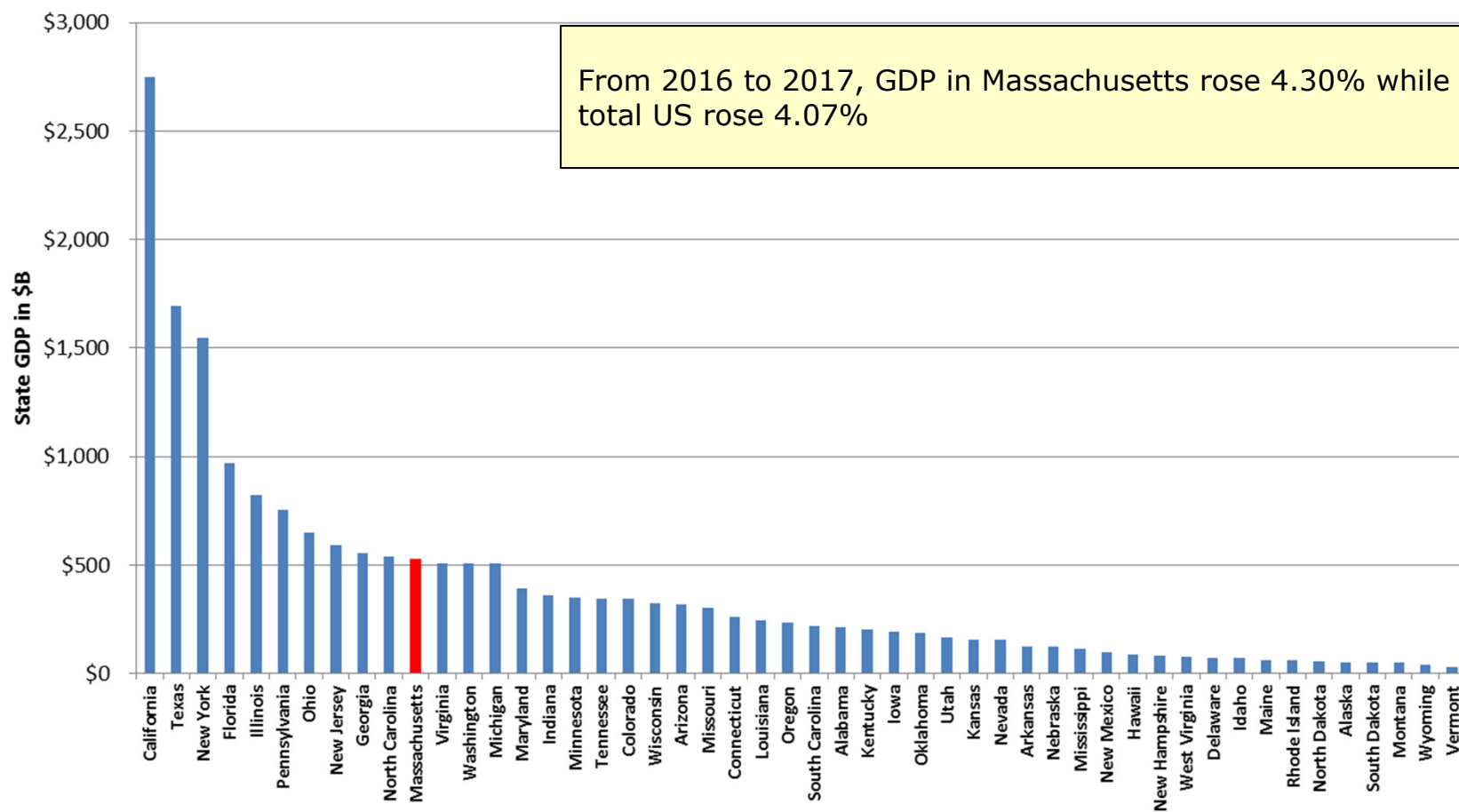
Per Capita Personal Income 2017



Source: BEA data, A&F charting



Gross Domestic Product 2017



Source: BEA data, A&F charting



Rating View – Moody's

Moody's maintains a current rating of Aa1 (stable) and provides the following commentary (August 2018):

- **Credit Strengths**

- Long term economic growth, with stronger job, wage and income gains relative to the nation as a whole
- Strong financial management practices, particularly willingness to close budget gaps quickly through spending cuts, revenue increases and use of reserves
- Adequate reserves and commitment to maintain at a healthy level

Credit Challenges

- Combined debt and pension liabilities, relative to GDP, are sixth highest in the nation
- Aging demographic profile; overall population growth that lags the nation



Rating View – S&P

S&P maintains a current rating of AA (stable) and provides the following commentary (August 2018):

- **Credit Strengths**

- Deep and diverse economy, which continues to outperform the nation on several economic indicators
- High income levels, with per capita income at 131% of the nation in 2017
- Timely monitoring of revenues and expenditures and swift action when needed to make adjustments
- Strong financial, debt, and budget management policies, including annualized formal debt affordability statements, and multi-year capital investment planning

- **Credit Challenges**

- High debt, pension, and other postemployment benefit (OPEB) liabilities



Rating View – Fitch

Fitch maintains a current rating of AA+ (stable) and provides the following commentary (August 2018):

- **Credit Strengths**

- Considerable economic resources, strong budget controls and a record of careful financial management
- The Commonwealth has a broad and diverse economy. Employment growth is solid, education levels are high, and population growth has approximated that of the U.S. this decade

- **Credit Challenges**

- Economic performance has been highly sensitive to national trends
- The Commonwealth carries a long-term liability burden that is well above average for a U.S. state but remains a moderate burden on resources



Recommendation

On the basis of its research, modeling, and deliberative process, the Debt Affordability has made the following recommendation:

- That **\$2.43 billion of general obligation debt** may prudently be issued by the Commonwealth for fiscal year 2020
- This amount represents an increase of **3.8% or \$90 million** in the bond cap over fiscal year 2019