Debt Affordability Committee

FY2019 2nd meeting

October 11, 2017

Debt Affordability Committee (DAC) Meeting #2: Objectives and Agenda

- **Present Debt Affordability Projections (10, 20, 30 year projections)**
  - Debt Service to Revenue
  - Debt Load
  - Stress-test model
  - Statutory Debt Limit
- **Review affordability ratios**
  - Comparisons with other states
  - Projected Ratios
- **Discuss long term assumptions**
  - Pension
  - OPEB
  - MassHealth
  - Revenue

Base Assumptions

- The model makes assumptions regarding interest rates, issuance, revenue growth, and drivers of non-discretionary spending
- All assumptions can be changed to “stress-test” the affordability of different levels of issuance under different economic and spending scenarios
- The two following charts show the assumptions used in developing the capital budget

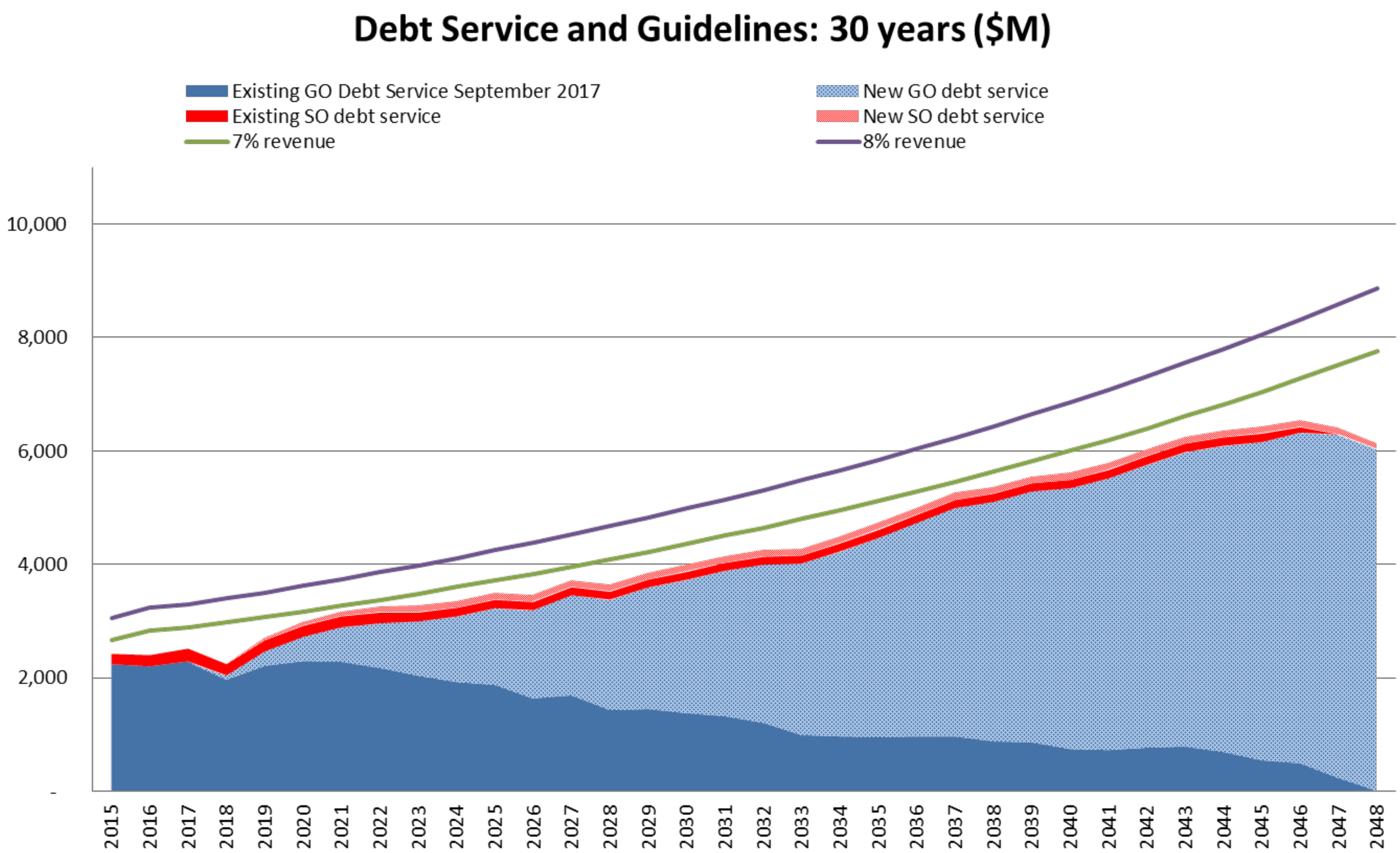
Assumptions: Issuance

Measure	Base Assumption	Rationale	"Stress Test" Assumptions
10 year interest rate	3.0% +10 bps /year for 15 years	Conservative, slightly higher than today's rates	+15 bps/year
20 year interest rate	3.8% +10 bps/year for 15 years	Conservative, slightly higher than today's rates	+15 bps/year
30 year interest rate	4.4% + 10 bps/year for 15 years	Conservative, slightly higher than today's rates. Does not assume constant low rates	+15 bps/year
Debt Service	Level debt service +Contract Assistance	Abstracts past serial issuance, proceeds vs. par, doesn't push off estimated impact	Same
Bond cap issuance	$2.260 B/year through 2022, 3% thereafter	Current capital plan	Bond cap +$125 M/year FY19-23, 3% thereafter
ABP issuance	$150 M over 3 years	Remainder of authorization for CTF bonds, including $100 M FY18	Same
Special Obligation Issuance	$1.75 B over FY18-23	Remainder of REP in current capital plan. $729 M (including premium) already issued	Same
Self-Supporting Issuance	$70 M/year, falling to $50 M after FY20	Based on recent spending levels	Same

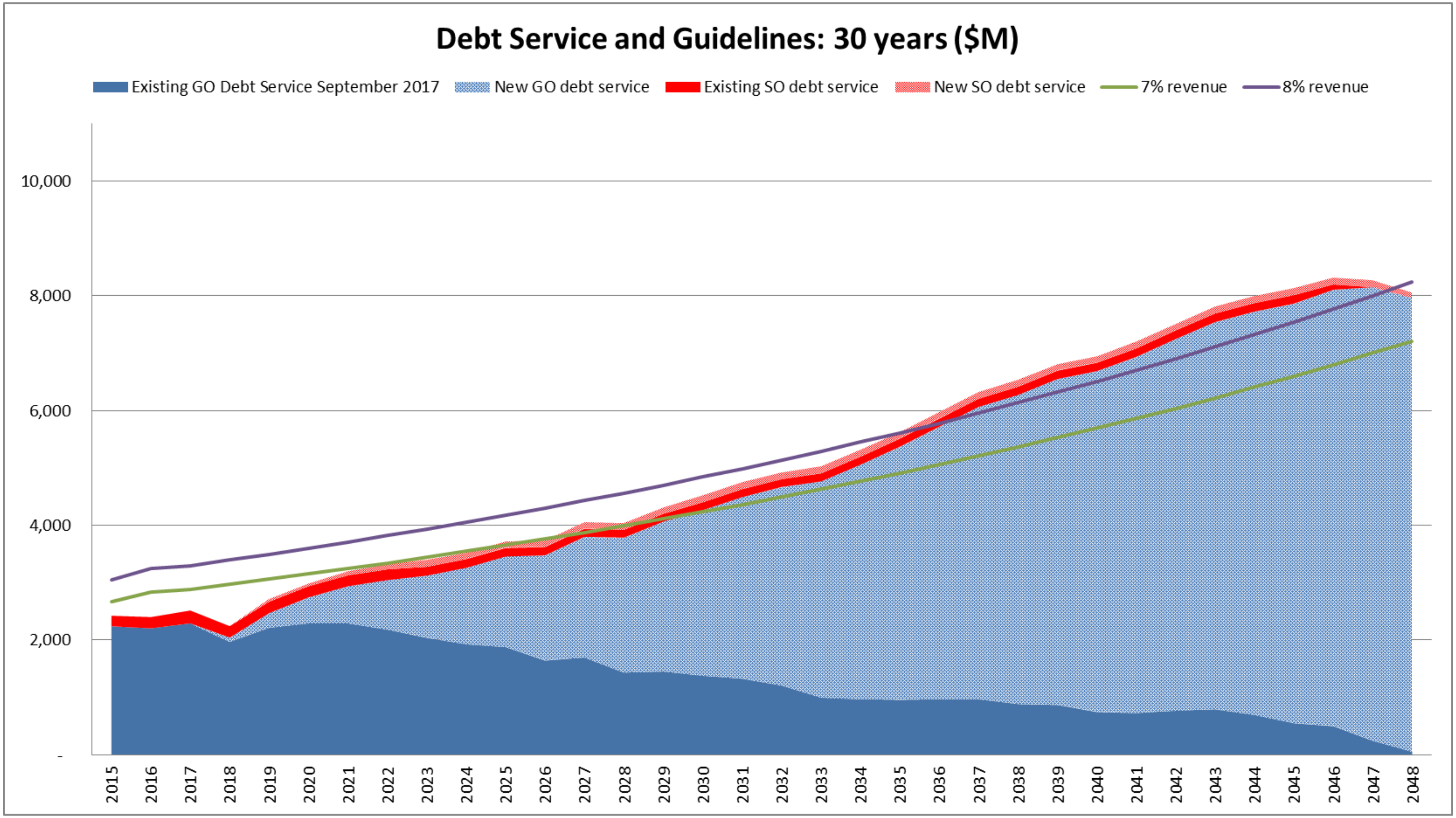
Assumptions: Budget

Measure	Assumption	Rationale	Stress Test
Revenue Growth	3.25% increase a year	FY07-FY17 CAGR of 3.7% (Tax CAGR FY07-FY17 of 2.7%)	3.0% increase/year
Pension	8.95% annual increase in transfer from FY18 until final amortization FY36; normal cost thereafter	New funding schedule based on most recent valuation implemented in FY18	9.5%/year increase required in next funding schedule (FY21+)
MassHealth	5% growth through FY20, 4% thereafter	9% net growth, 6.5% gross growth since FY10, but slowed to 1.7% net/4.9% gross since FY15	5% growth indefinitely
Local Aid & Chapter 70	3.25%	Tied to revenue growth	Tied to revenue growth
Existing Debt Service	Paid down at current schedule	Best working assumption, though refinancing will likely smooth repayment (August 25, 2017 DBC run)	same

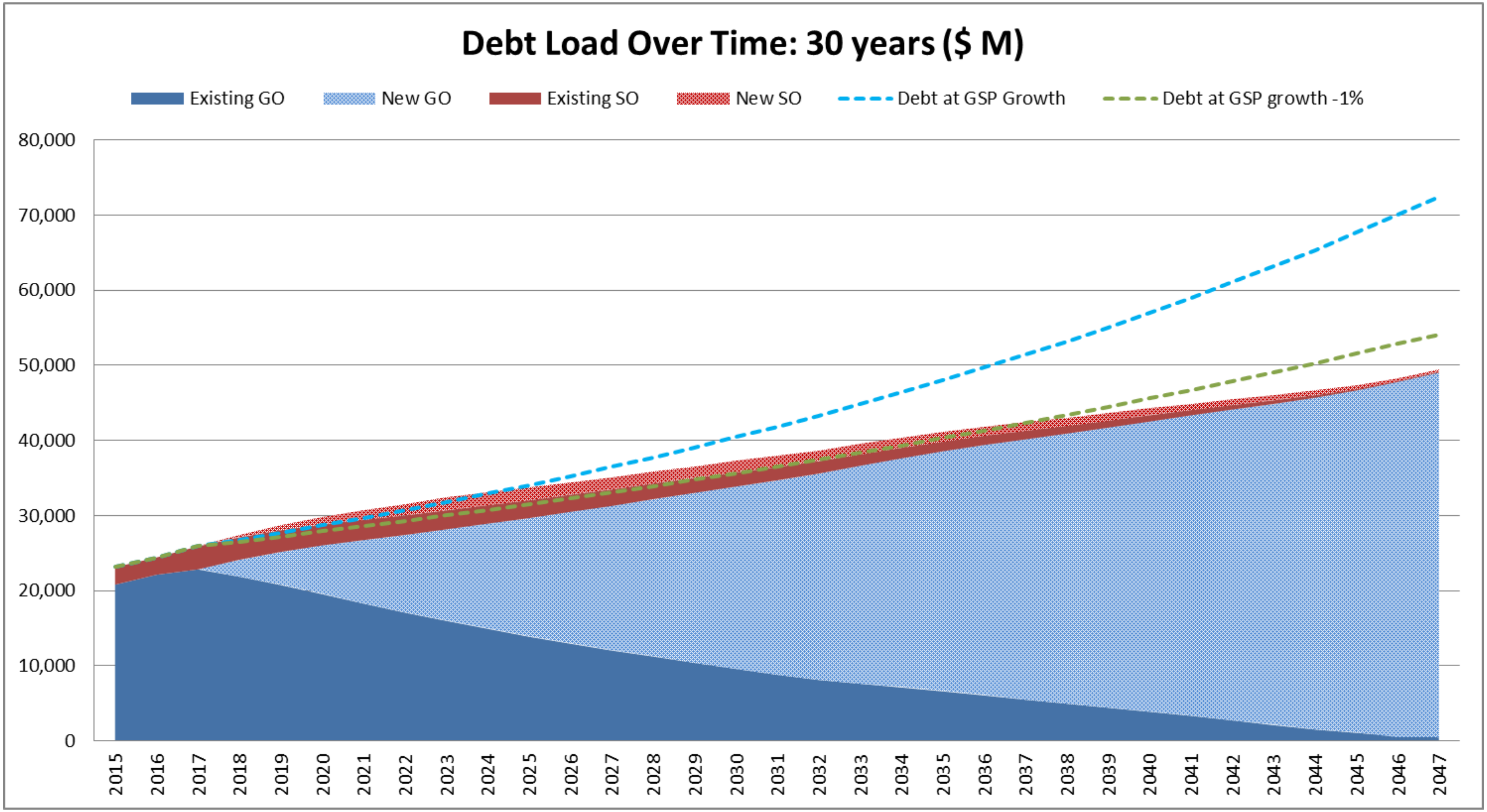
Base Assumption: 30 year debt service



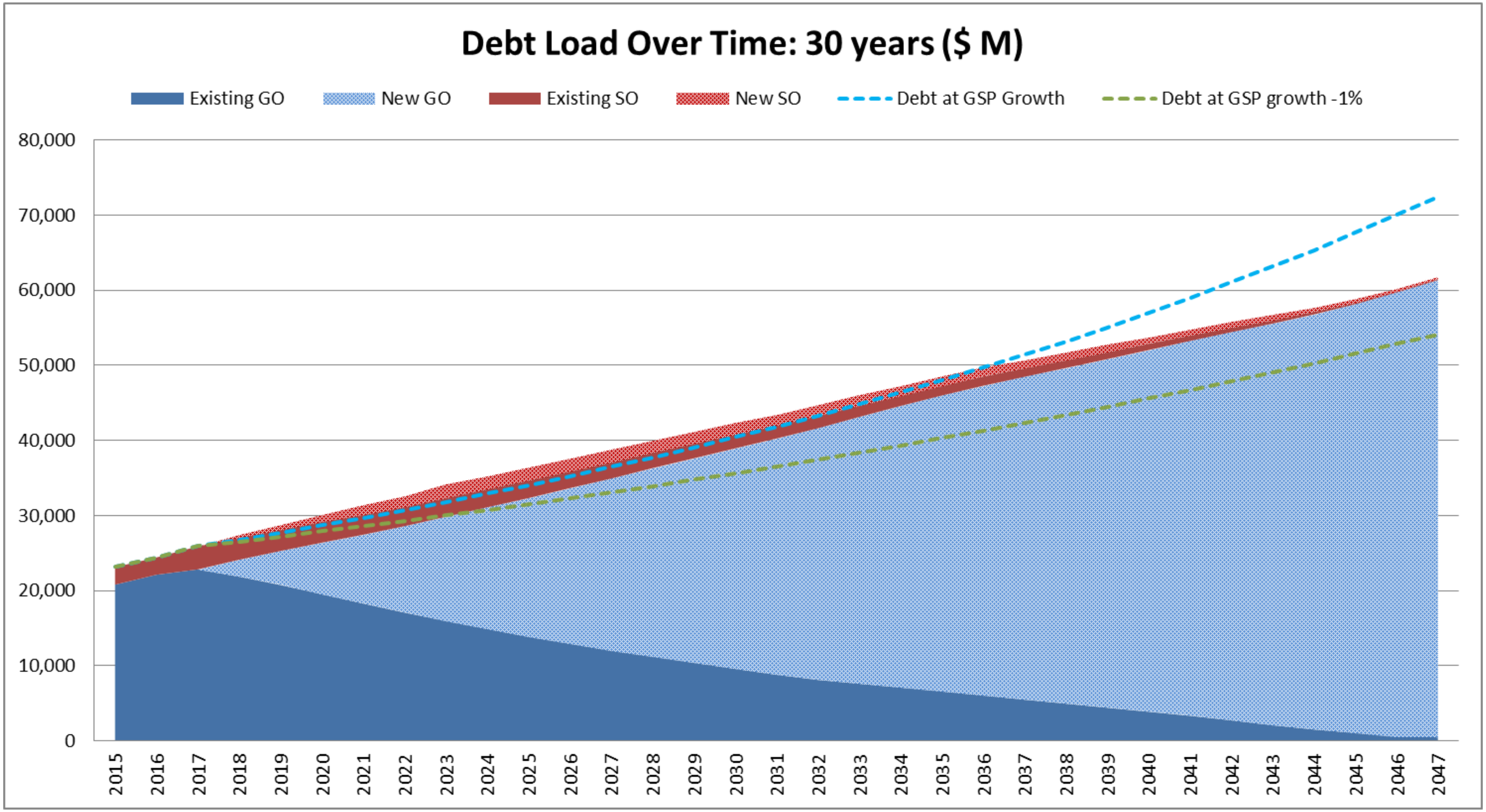
Stress Test: 30 year debt service



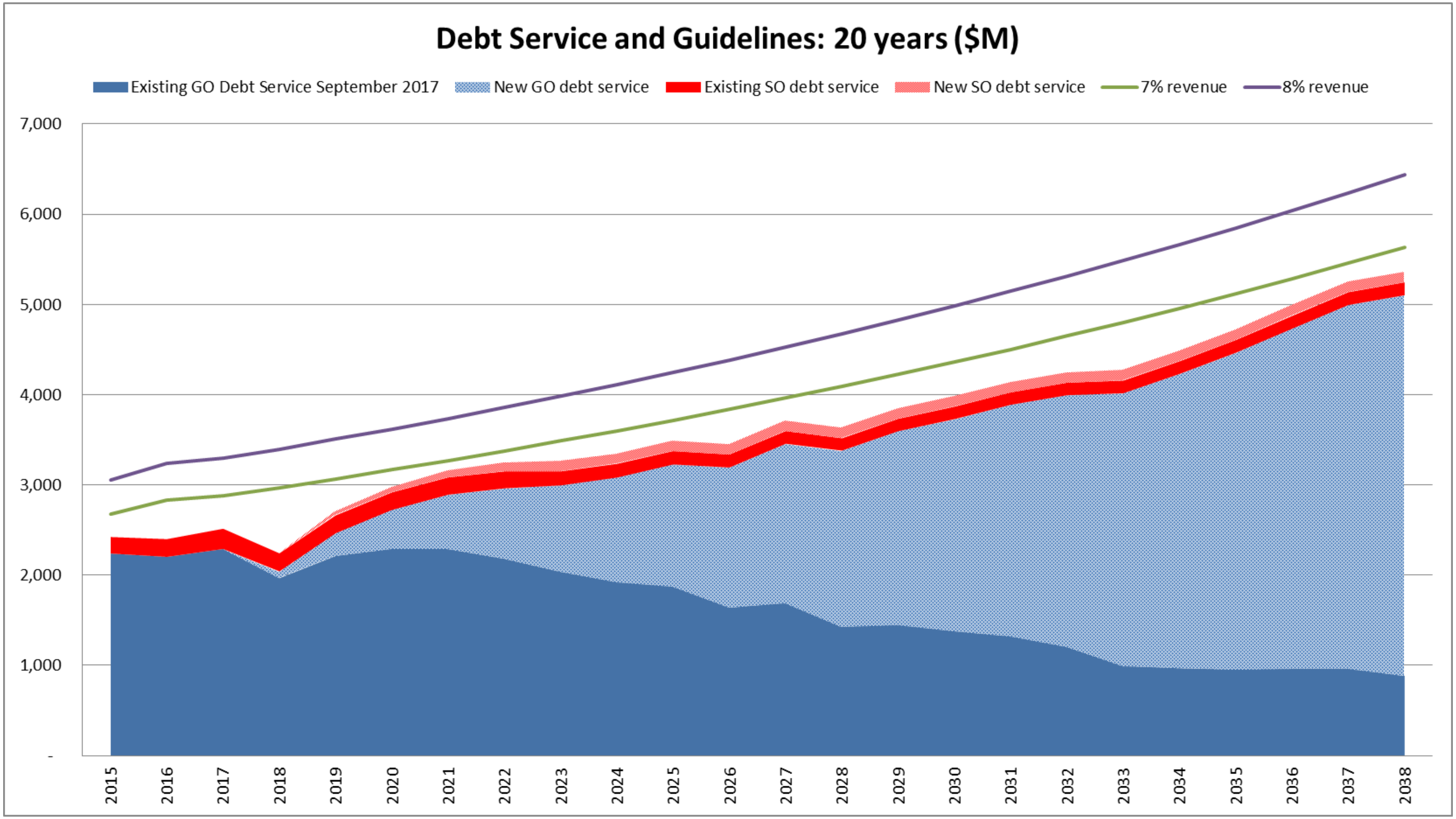
Base Assumptions: 30 Year Debt Load



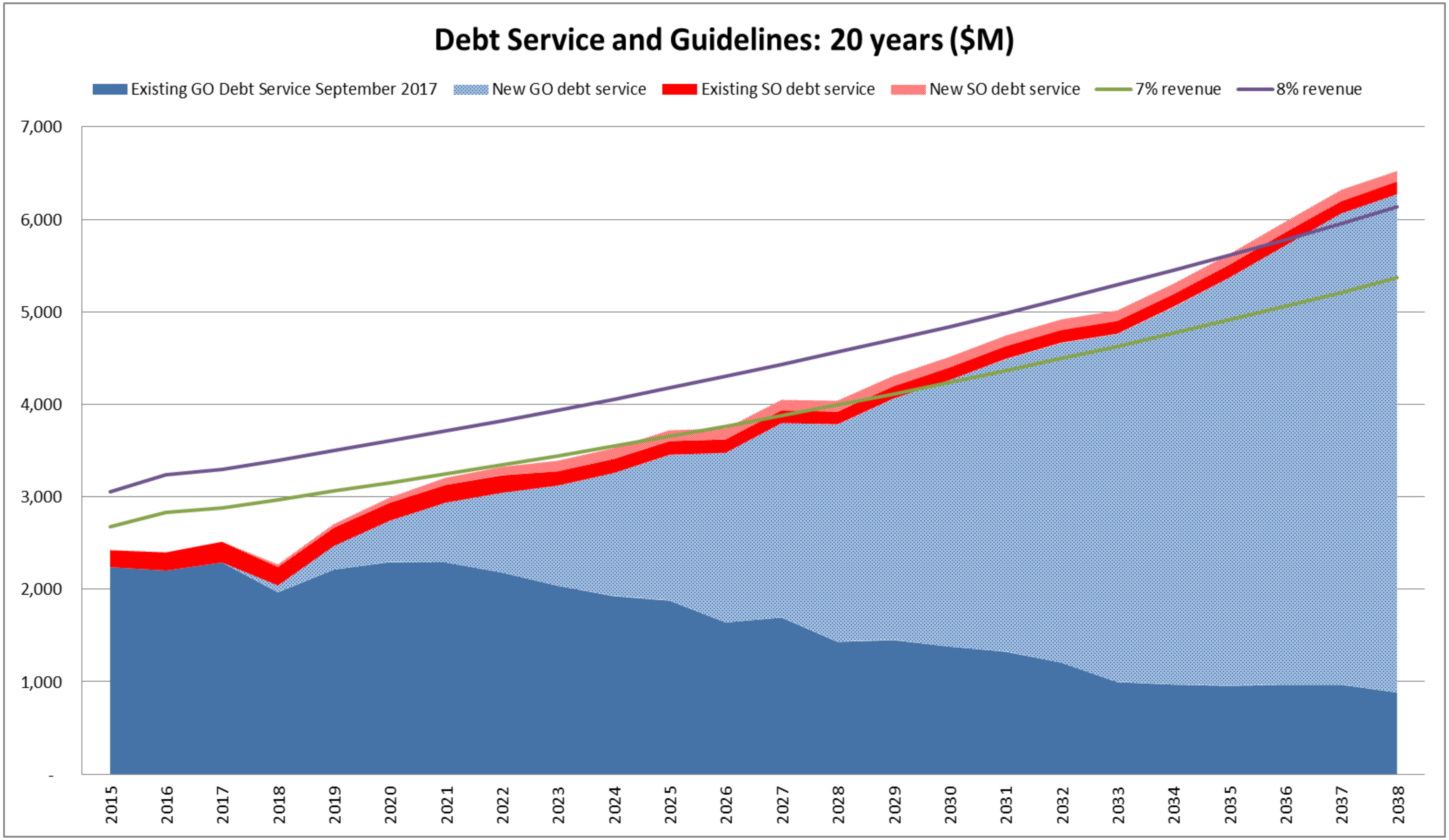
Stress Test: 30 Year Debt Load



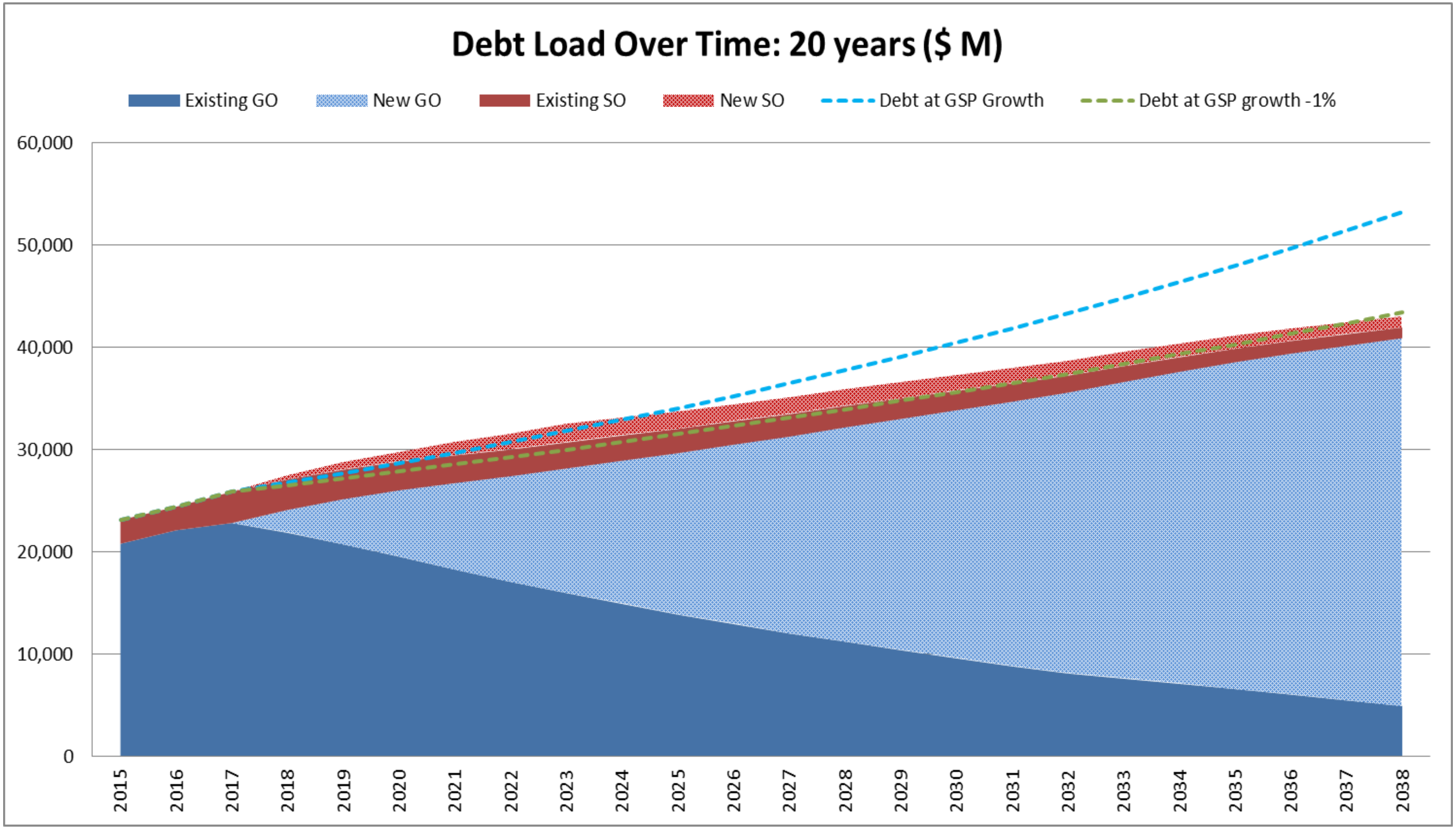
Base Assumptions: 20 year debt service



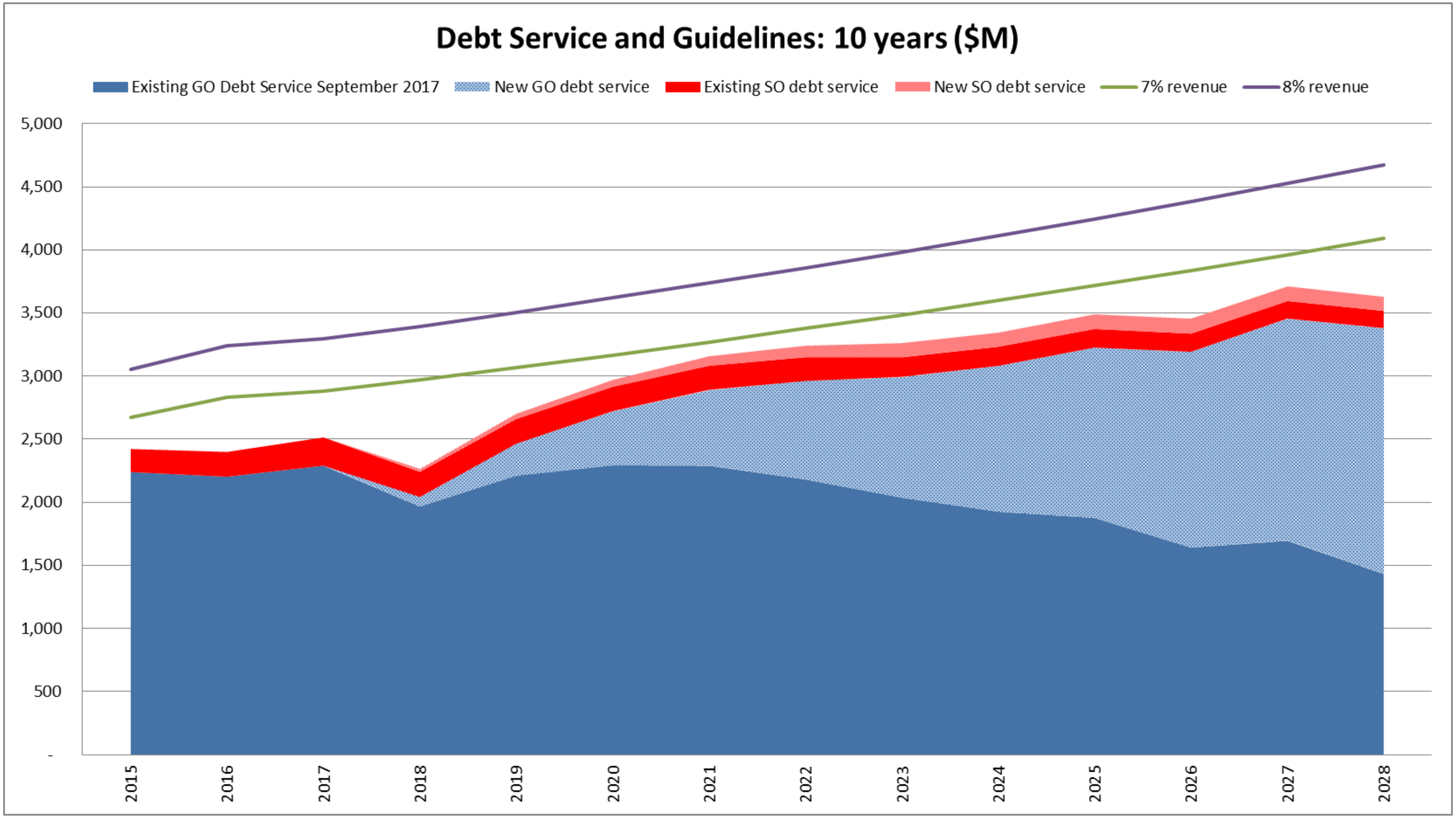
Stress Test: 20 year debt service



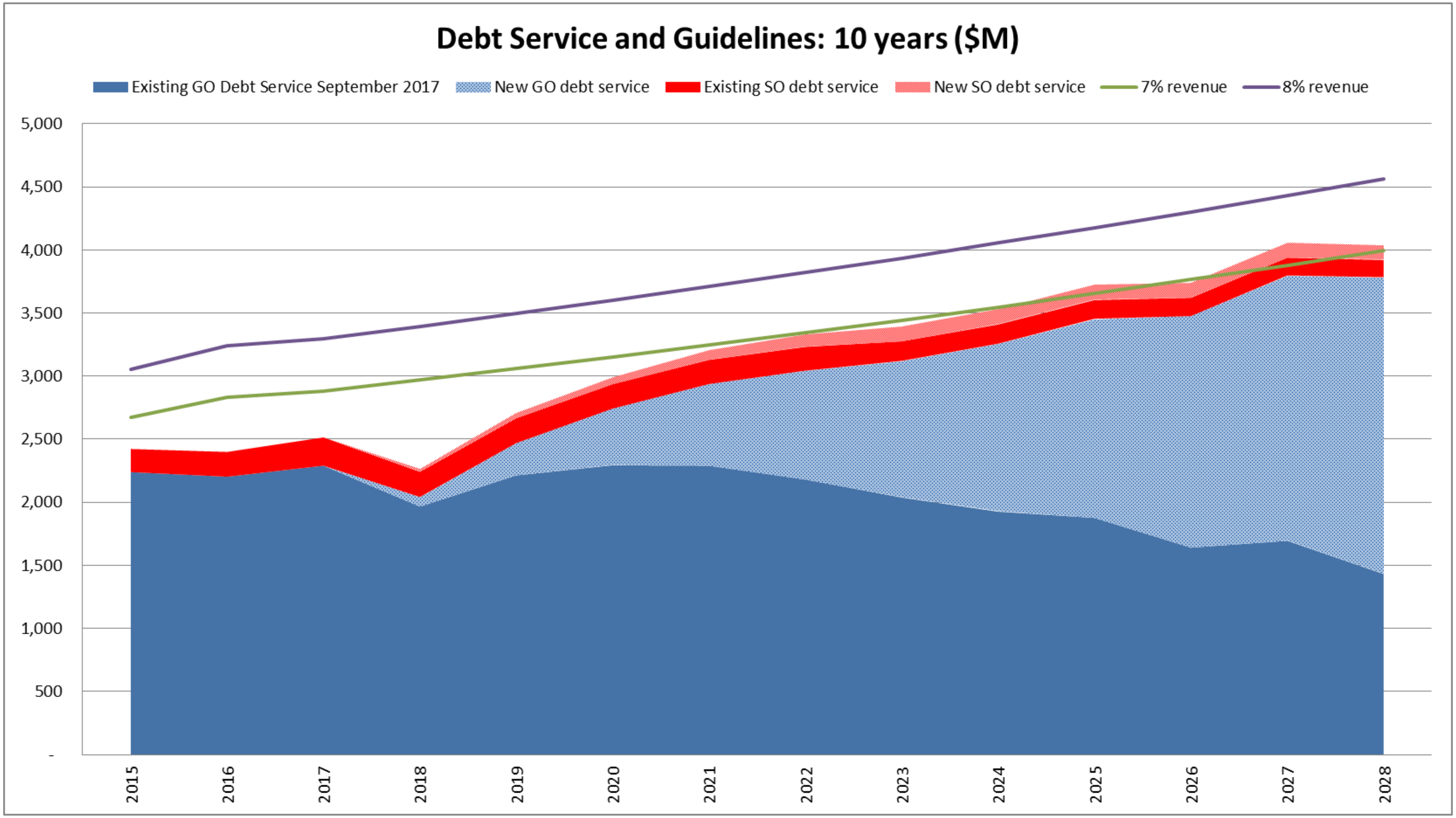
Base Assumptions: 20 year debt load



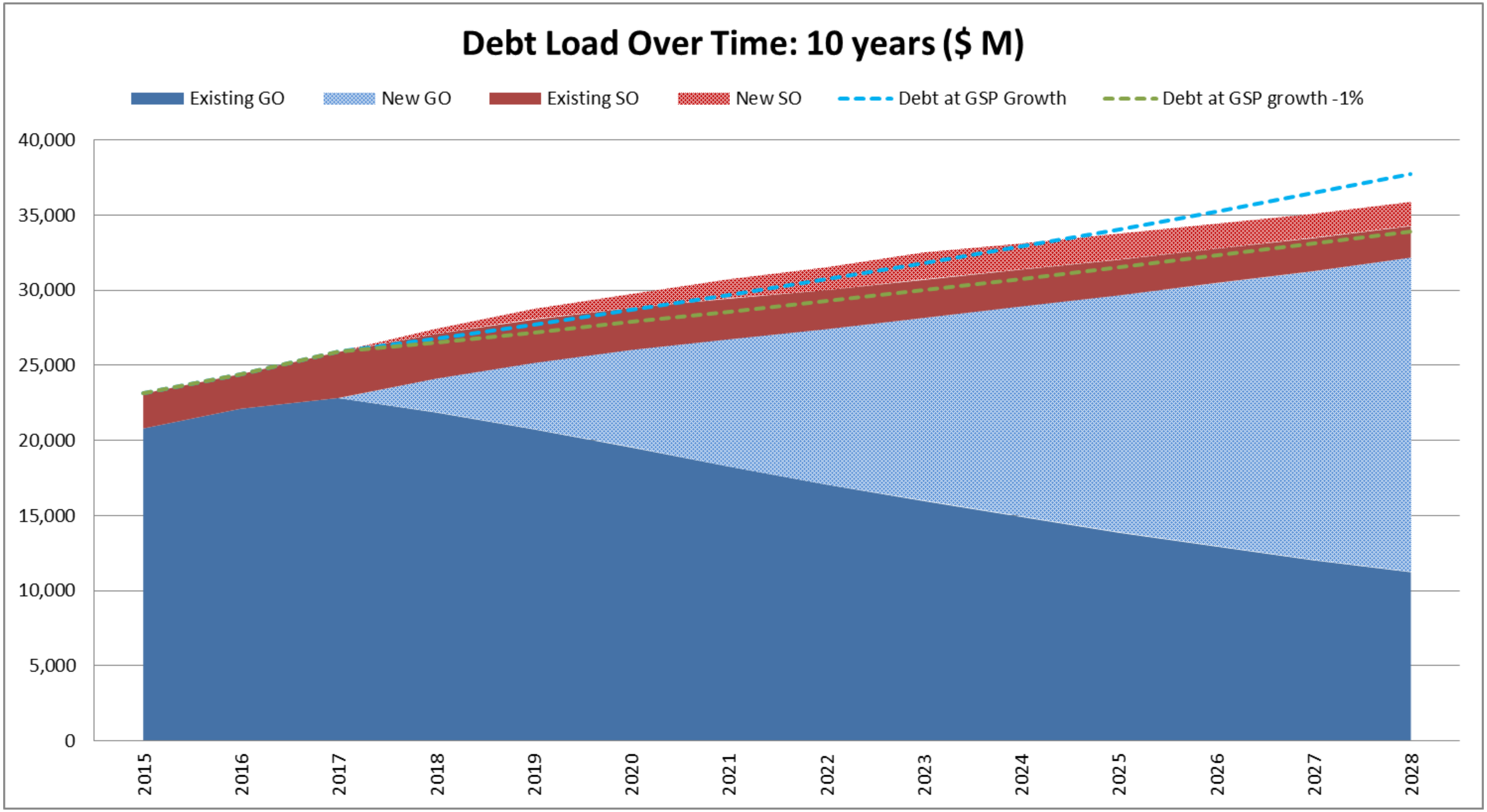
Base Assumptions: 10 year Debt Service



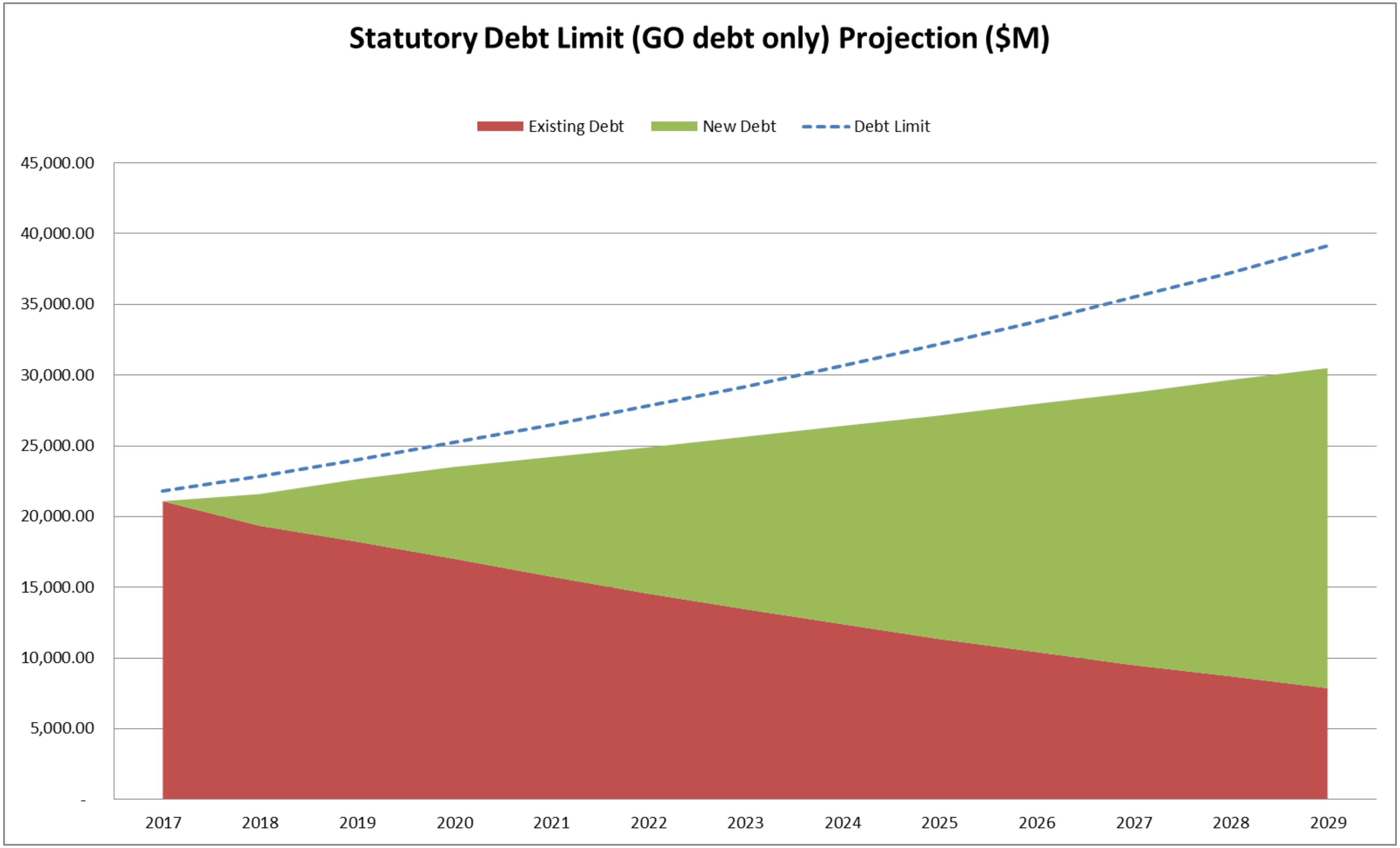
Stress Test: 10 year Debt Service



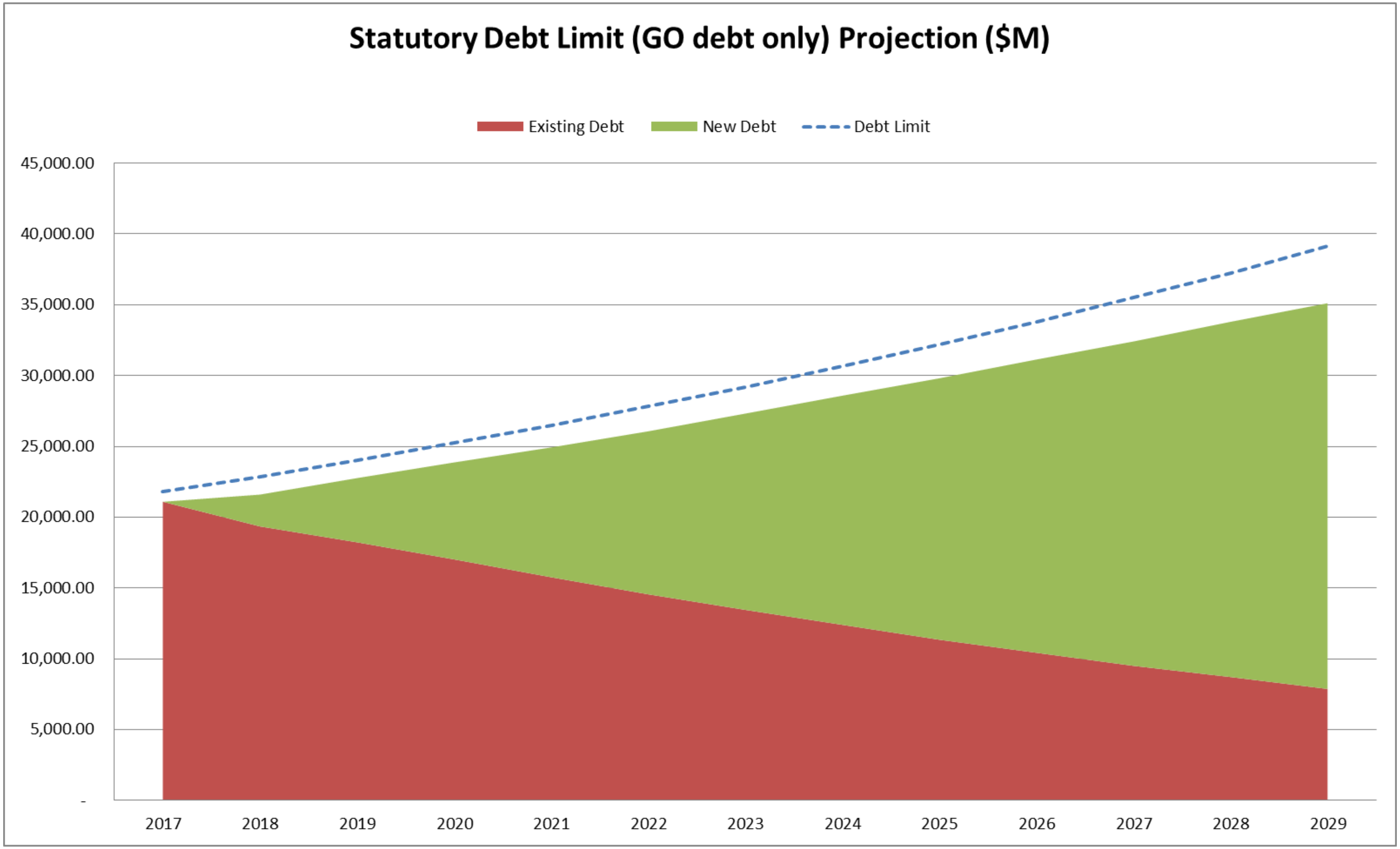
Base Assumptions: 10 year debt load



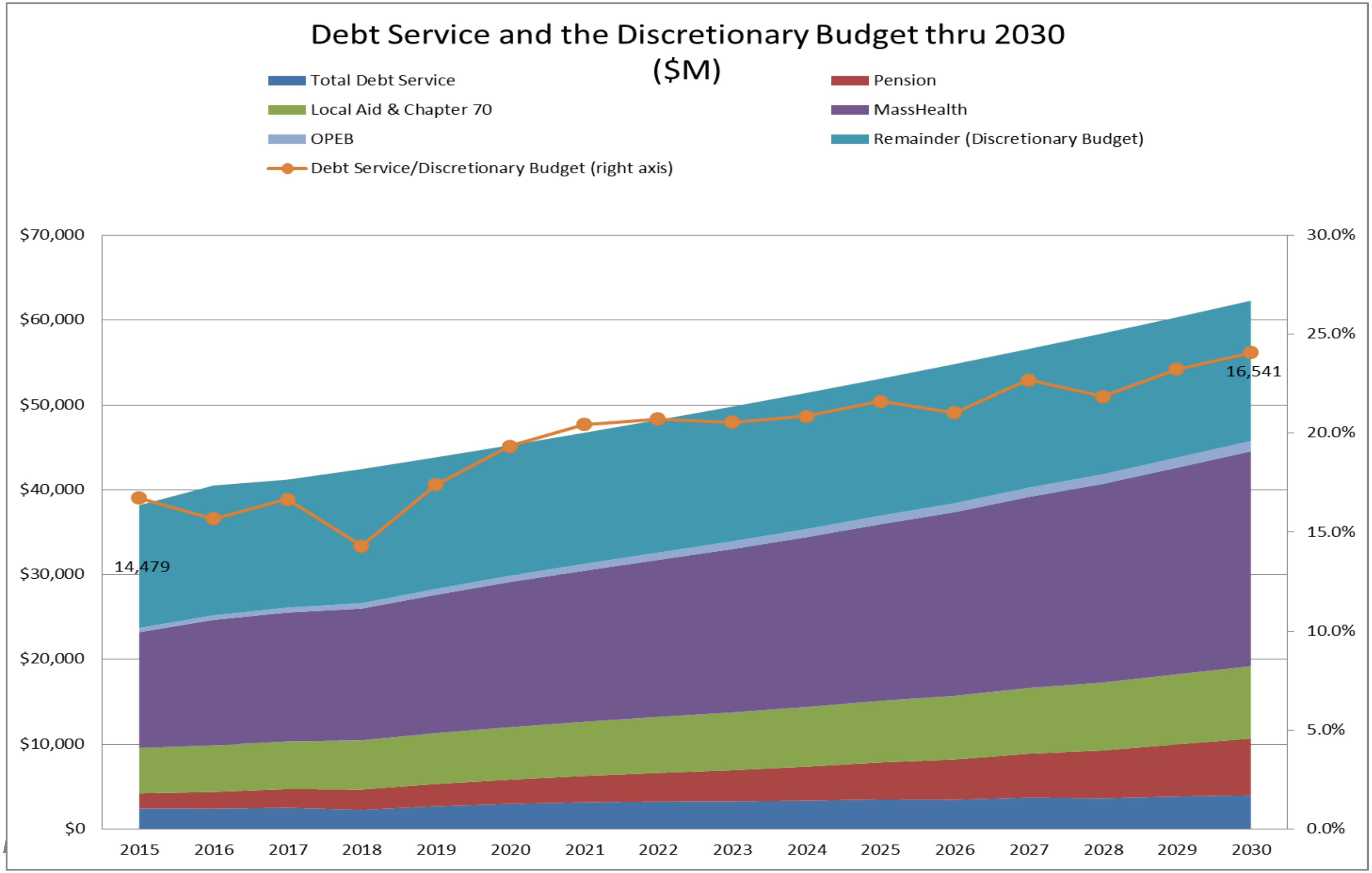
Statutory Debt Limit: Base Issuance



Statutory Debt Limit: Stress Test



Discretionary Budget: Base Assumptions



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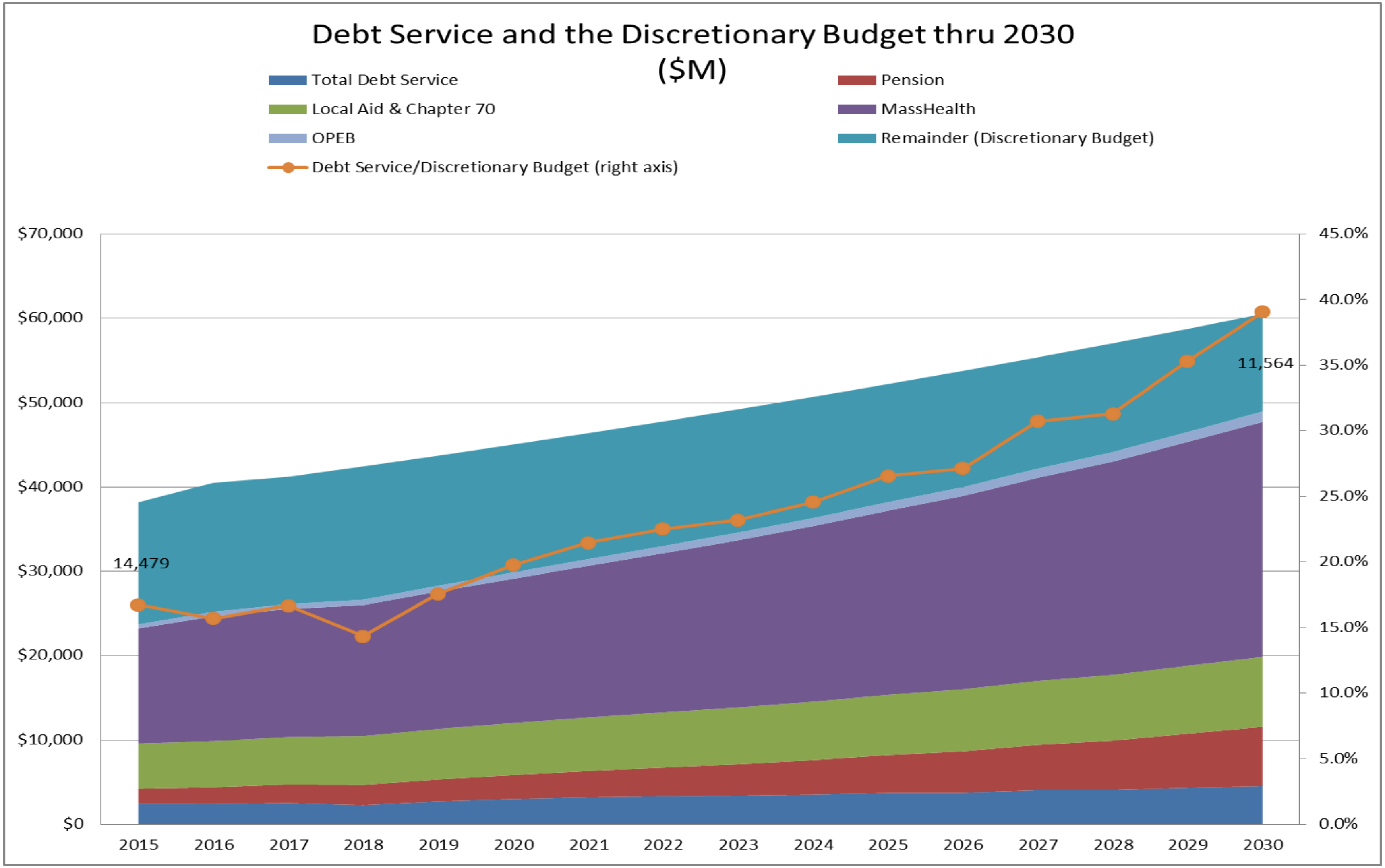
Discretionary Budget: Stress Test

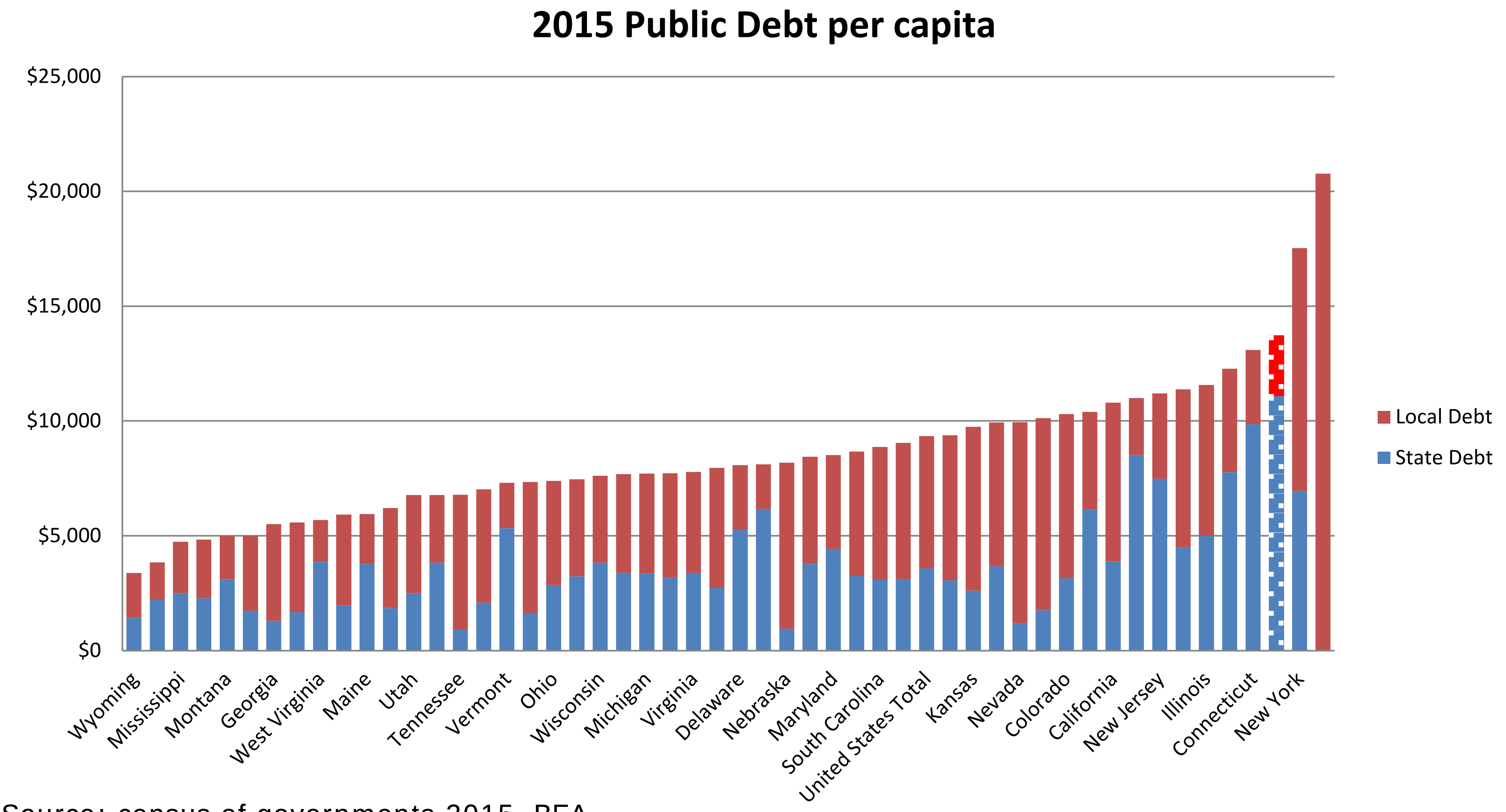


COMPS: Other States

	Debt to Personal Income	Debt Service to Personal Income	Debt Per Capita	Debt as % of GSP	Debt Service as % of GSP	Debt Service as % of Expenditures	Debt Service as % of Revenues
Connecticut	9.39%	1.05%	$6,505.20	10.08%	1.12%	9.05%	9.66%
Maine	2.02%	0.32%	$888.94	2.28%	0.36%	2.49%	2.51%
Maryland	3.65%	0.40%	$2,121.66	3.83%	0.42%	3.85%	4.13%
Massachusetts	9.31%	0.66%	$5,983.17	9.13%	0.65%	5.23%	5.45%
Minnesota	2.84%	0.36%	$1,480.38	2.76%	0.35%	2.86%	2.83%
New Hampshire	1.60%	0.20%	$896.98	1.73%	0.22%	2.59%	2.68%
New York	5.15%	0.49%	$3,070.08	4.75%	0.45%	3.85%	3.85%
North Carolina	1.56%	0.21%	$658.52	1.49%	0.20%	2.03%	1.98%
Ohio	2.44%	0.39%	$1,086.72	2.28%	0.36%	3.41%	3.51%
Rhode Island	4.23%	0.38%	$2,130.71	4.47%	0.40%	2.79%	2.96%
Vermont	2.14%	0.23%	$1,067.79	2.43%	0.27%	1.31%	1.32%
Virginia	2.81%	0.16%	$1,486.07	2.87%	0.16%	1.91%	2.01%

Data provided by respective FY2016 CAFR's, the Bureau of Economic Analysis and Moody's Investor Service

State vs. Local debt

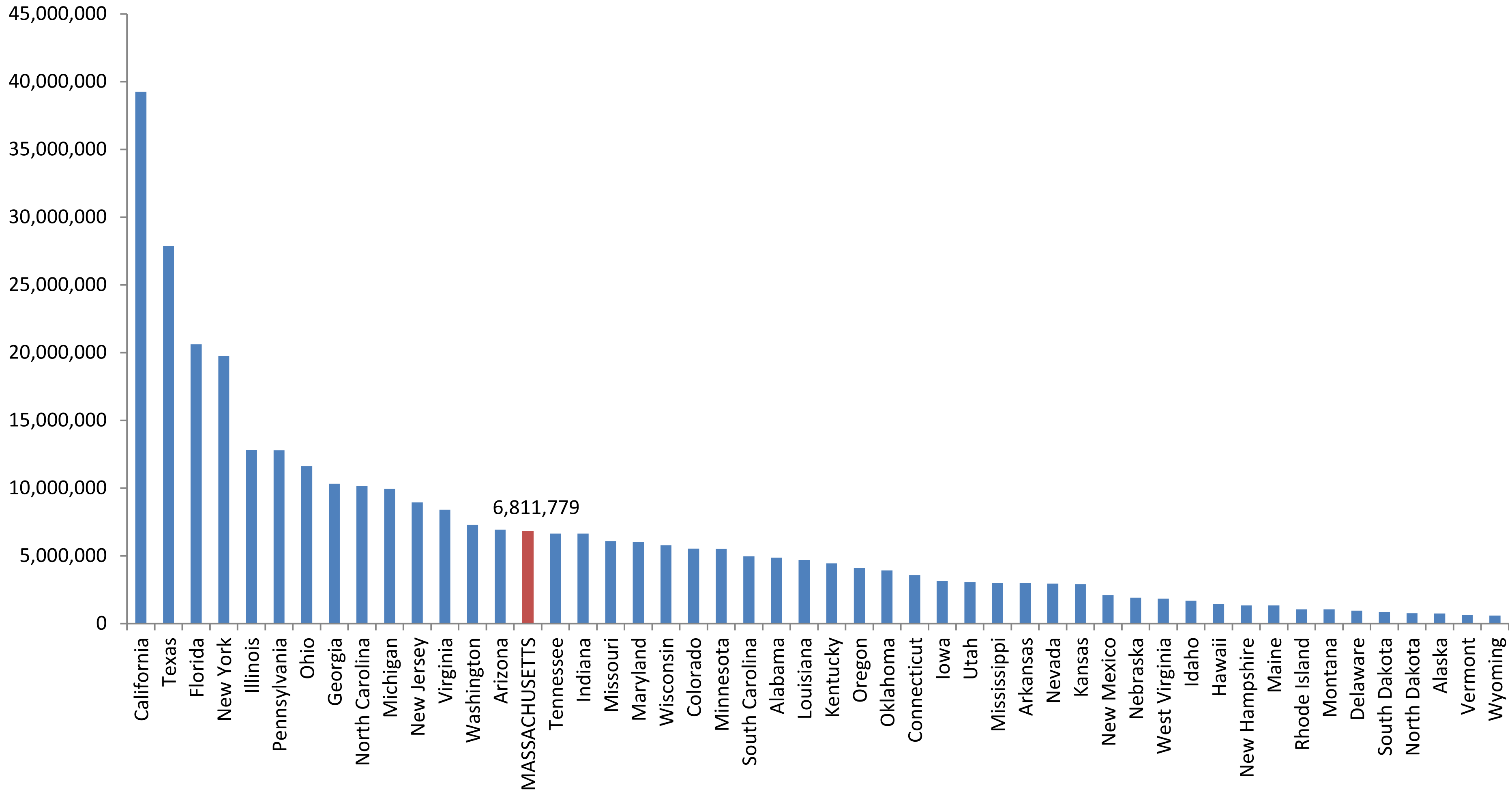


Source: census of governments 2015, BEA

Economic Capacity

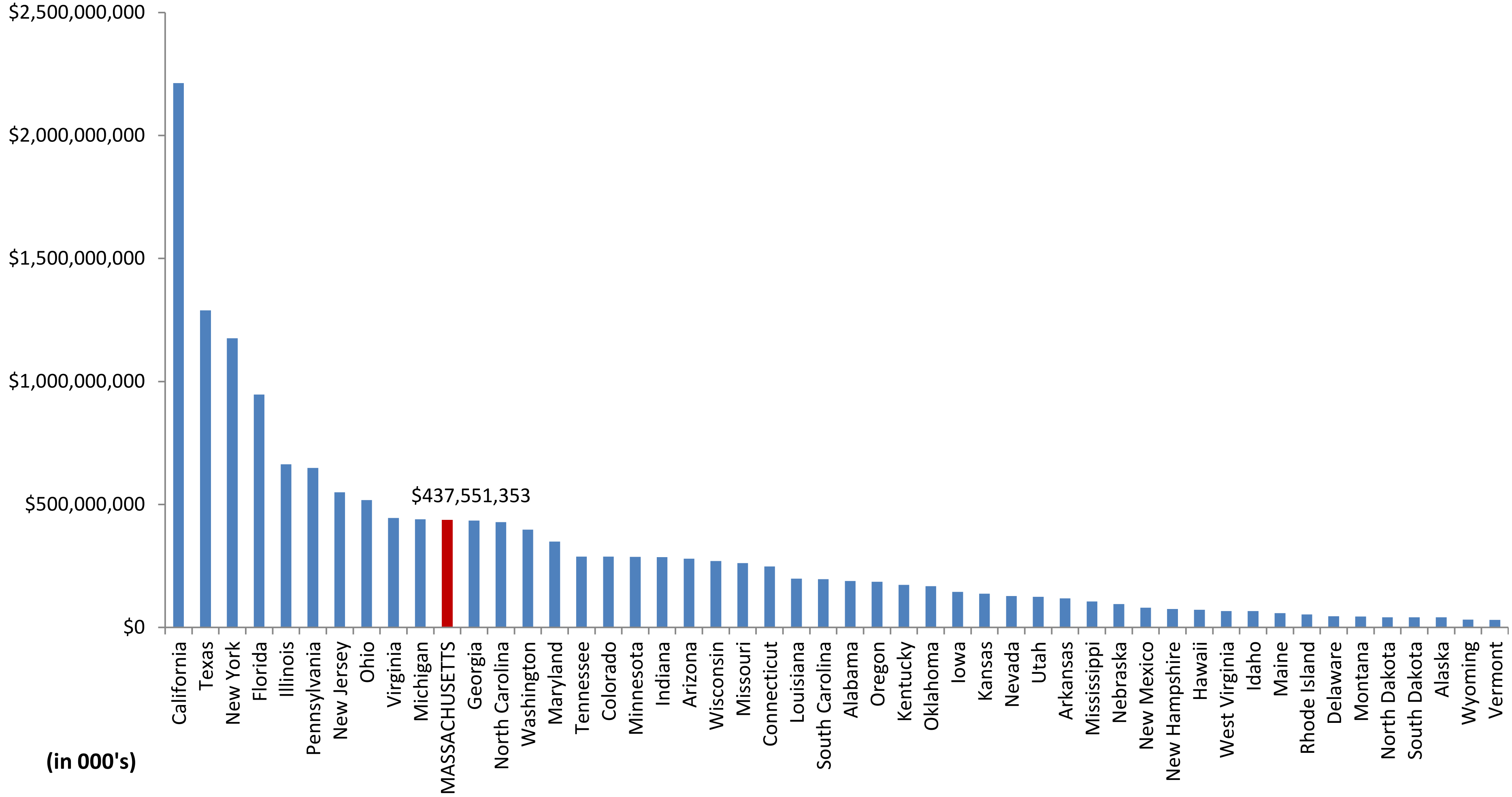
- Population
- Personal Income
- Gross State Product
- Debt Per Capita

2016 Population



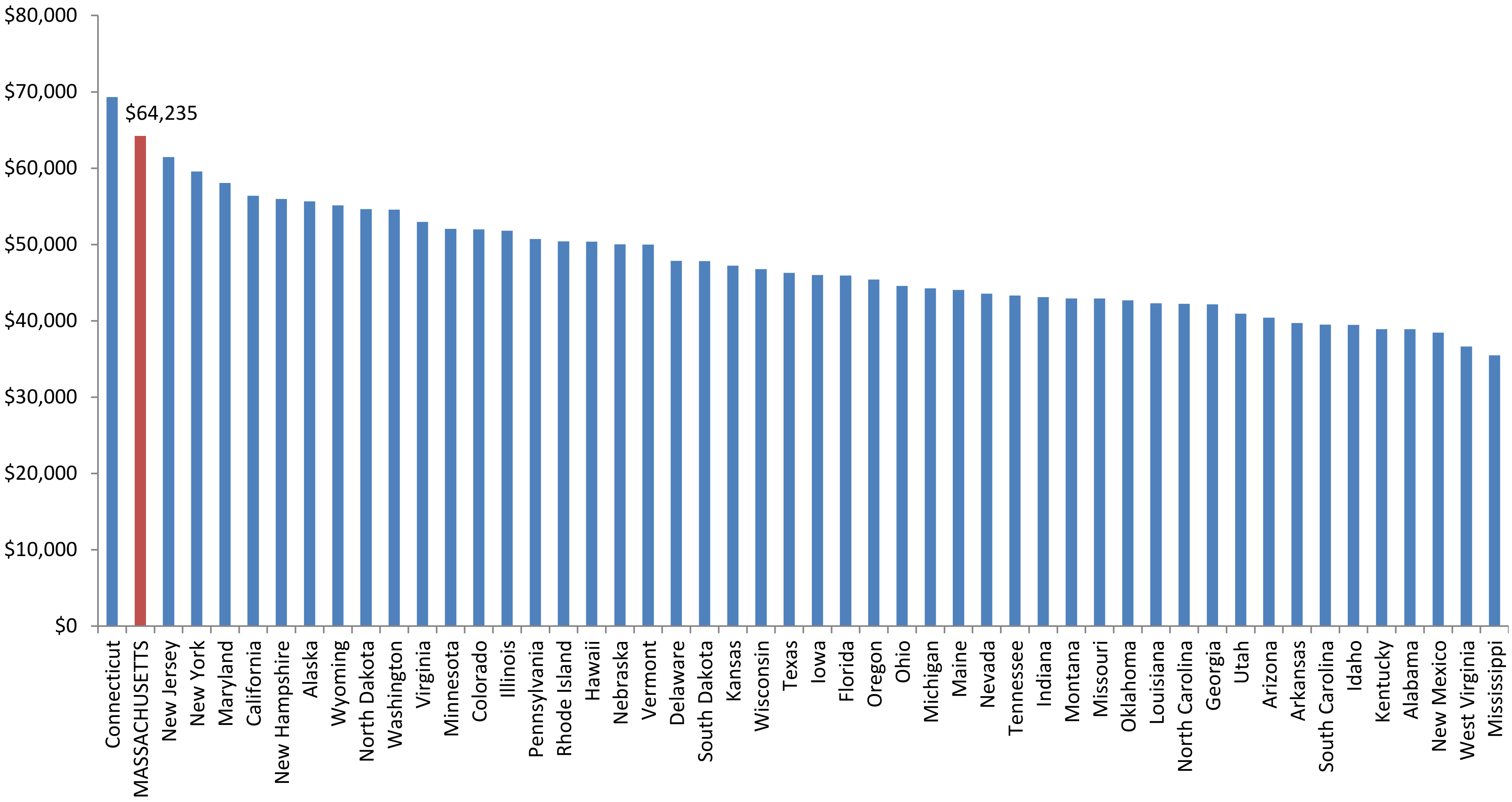
Data Provided by the US Bureau of Economic Analysis

2016 Personal Income (in 000's)



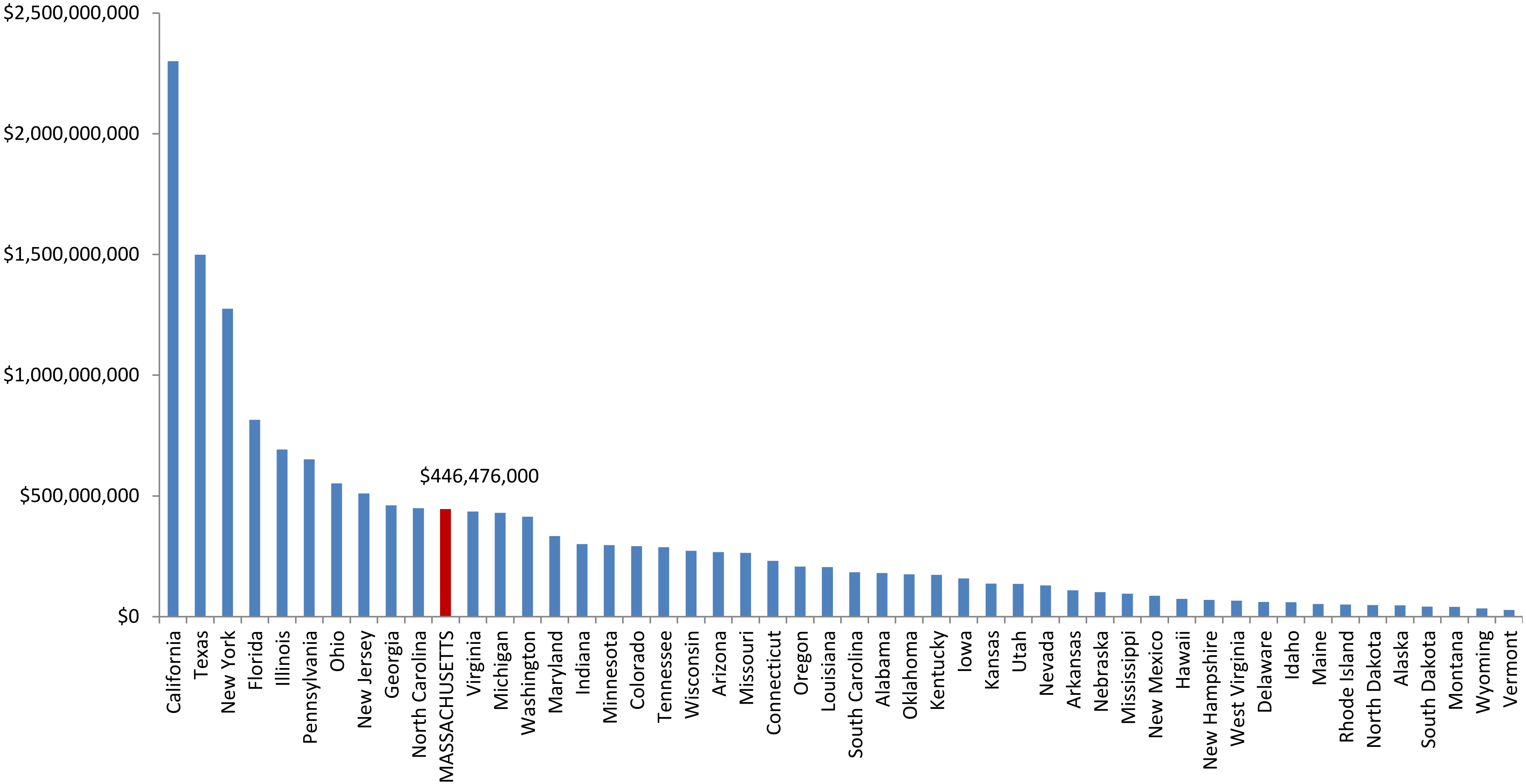
Data Provided by the US Bureau of Economic Analysis

2016 Personal Income Per Capita



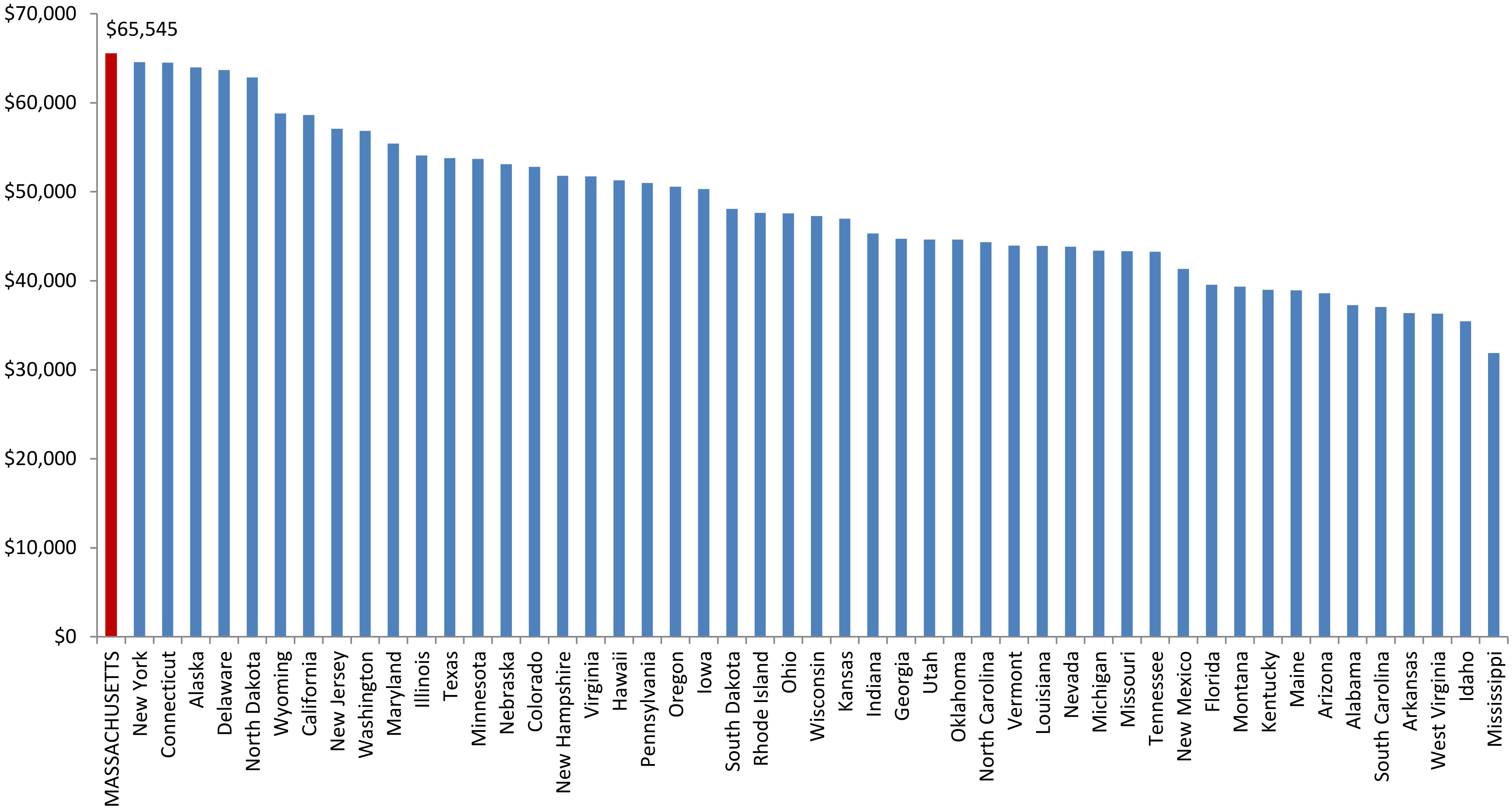
Data Provided by the US Bureau of Economic Analysis

2016 Gross State Product (in 000's)



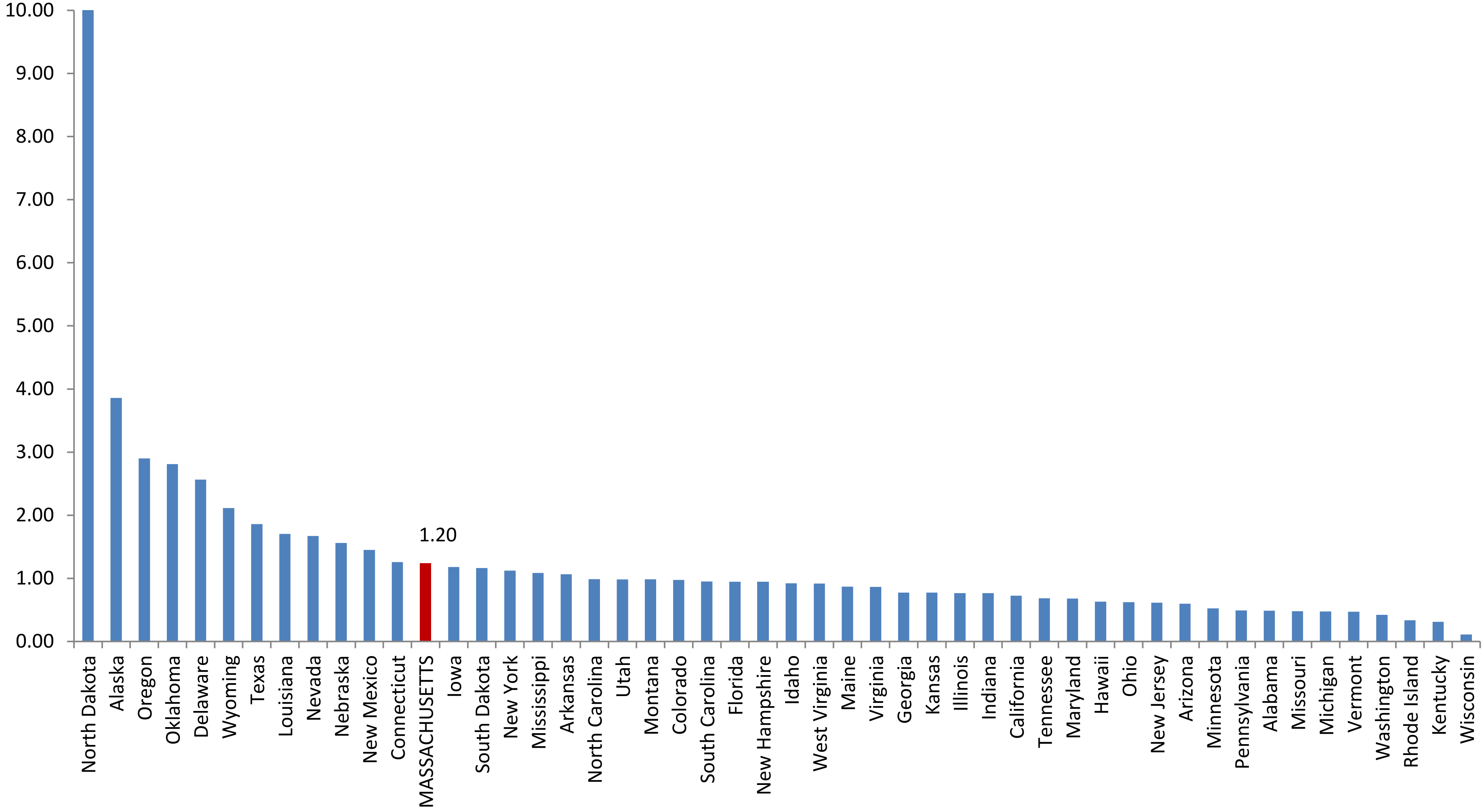
Data Provided by the US Bureau of Economic Analysis

2016 Gross State Product Per Capita



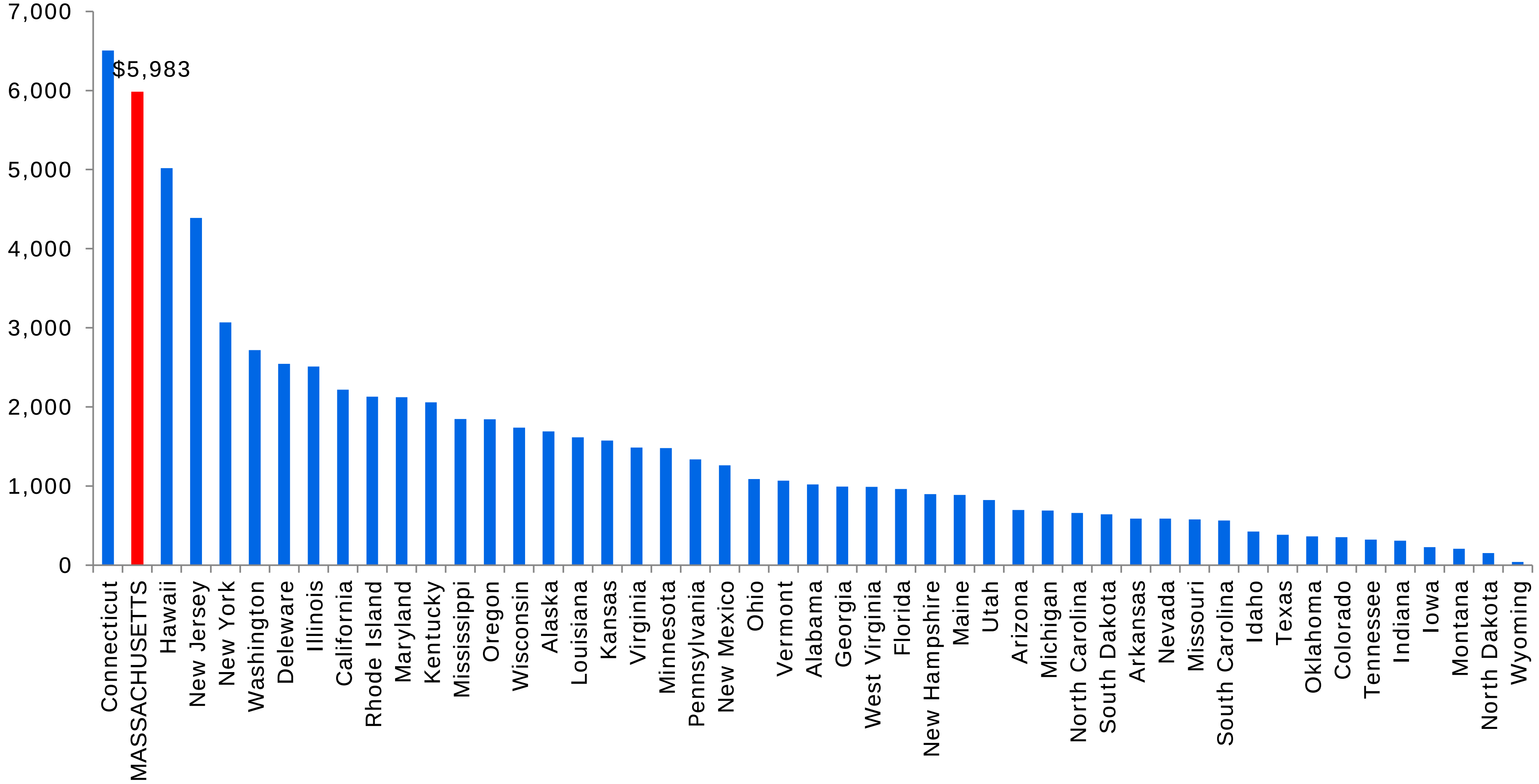
Data Provided by the US Bureau of Economic Analysis

2011-2016
Gross State Product Volatility



Data Provided by the US Bureau of Economic Analysis

2016 Net Tax Supported Debt Per Capita



Data Provided by the US Bureau of Economic Analysis and Moody's Investor Service

Rating View – Moody's

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

Credit Strengths

Strong financial management practices and a willingness to promptly identify and manage budgetary challenges

Adequate budget reserves

An economic base characterized by high levels of wealth and education

Credit Challenges

High debt ratios and large adjusted net pension liabilities

Spending pressure related to health care and other social service costs as well as maintenance of a statewide transportation system

Budgetary burden of growing pension liabilities

Rating View – S&P

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

Credit Strengths

Deep and diverse economy to include high wealth and income levels

Timely monitoring of budgetary situation and a history of swift action to correct any difficulties

Strong financial, debt, and budget management policies to include annual debt affordability analysis and multi-year capital planning

Credit Challenges

Modest Budget Stabilization Fund balance

High debt levels and relatively high and growing unfunded pension and OPEB liabilities

Rating View – Fitch

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

Credit Strengths

Strong economic resources to include a broad and diverse economy, solid employment growth, and high education levels

Strong budgetary controls

Record of careful financial management

Credit Challenges

Long-term liability burden that is well above the average for a US state but that remains a "moderate burden on resources"

Rating is sensitive to Massachusetts' consistent commitment to strong financial management practices (including budgetary flexibility)

Comps projections

	Base				Stress			
	2018	2028	2038	2048	2018	2028	2038	2048
Debt Service to budgeted revenues	5.3%	6.2%	6.7%	5.6%	5.3%	7.1%	8.5%	7.8%
Discretionary Budget as % of Revenues	37.3%	28.4%	32.7%	32.2%	37.3%	22.6%	20.0%	10.9%
Debt Per Capita	3,979	4,895	5,524	6,144	3,979	5,459	6,647	7,683
Debt/GSP	5.0%	4.7%	4.0%	3.3%	5.0%	5.2%	4.8%	4.2%

Long Term Projections: Pensions

- The Commonwealth is responsible for the pensions of over ~320,000 active members, retirees, and beneficiaries from the State Employee, Mass Teachers, and Boston Teachers retirement systems.

Valuation Results ($M)				
	1/1/2013	1/1/2015	1/1/2016	1/1/2017
Total Normal Cost	$1,372	$1,559	$1,715	$1,802
Employee Contributions	$1,058	$1,158	$1,212	$1,250
Net Normal Cost after admin & transfers	$314	$431	$582	$642
Actuarial Liability	$71,866	$81,535	$87,401	$91,574
Assets (Actuarial Value)	$43,517	$48,105	$49,535	$51,952
Unfunded Actuarial Liability (UAL)	$28,348	$33,429	$37,866	$39,622
Funded Ratio	60.5%	59.0%	56.7%	56.7%

Pensions: Current Funding Schedule

- Based on results of 1/2016 valuation, adopted January 2017
  - Appropriation to increase 8.94% a year from FY18 through final amortization payment in FY36.
    - This represented an increase over the FY15-17 funding schedule, with 10% increases FY15-17 but 7% thereafter.
  - Current schedule calls for $2.394 B in FY18, increasing to $11.175 B FY36
    - This represents an increase from 5.6% to 14.8% of operating budget with “central” revenue assumptions
- 2017 funding schedule is built into current debt affordability model
- Next funding schedule based on 1/2019 valuation to be adopted in January 2020

Pensions: New Valuations and Funding Schedule

- From 1/2016 - 1/2017, Unfunded Actual Liability was expected to increase by approx. $1.29 B, before changes to assumptions and actual gains/losses, due to structure of funding schedule

- The 1/2017 valuation increased the UAL by $1.76 B from 1/2016. The 4.8% increase in liability was matched by a 4.9% increase in actuarial value of assets.
  - Changes due to Assumptions
    - Updates to the generational mortality assumptions based on recent experience increased the actuarial liability by $1.57B
    - The investment return assumption was maintained at 7.5%, but valuation report noted a recent study of investment returns showed an expected 30-year return of 7.8% ; given volatility, lowering the assumption to the 7.25-7.40% range may be recommended in future
    - Massachusetts is now near or below the median of the 125 largest public pension plans in the U.S. with 7.5% assumption
  - Actuarial Experience
    - The plan experienced an actual actuarial gain compared to expected of $1.12 B, somewhat offsetting the impact of the update to mortality assumptions.
    - $595 M of that impact was due a smaller than expected increase to plan liability, and $522 M due to a higher actuarial value of assets

Long Term Projections: Other Post Employment Benefits (OPEB)

- The Commonwealth provides health care benefits to vested retirees. There were almost 74,000 retiree/survivors and about 72,000 active members as of January 2017.
- The most recent (draft) actuarial evaluation as of January 1, 2017 estimated the Commonwealth's unfunded OPEB liability at $19.4B (using a discount rate of 3.63%), an increase of approximately $3.1 billion from January 1, 2016, when the discount rate used was 4.5%.
- OPEB is substantially funded on a pay-as-you-go basis; the value of plan assets as of January 1, 2016 was $817M vs. a $20.3B total liability. A new Governmental Accounting Standards Board standard (GASB 74) requires the Commonwealth to use a "blended" discount rate based on a weighted average of the AA municipal bond rate as of June 30 (3.58%) and the Commonwealth's expected long-term rate of return on plan assets (currently 7.5%).
- The Commonwealth will see increased OPEB costs as the retiree population and medical costs increase. Payouts are expected to rise from $521M in FY17 to $947M in FY26.
- The Commonwealth currently has two funding sources for the OPEB trust:
  - Tobacco Settlement: Statute required 50% of proceeds in FY17 ($127M) and 60% of proceeds in FY18 ($151M), increasing to 100% of proceeds by 2022 (about $250M), but FY17 and FY18 budgets modified the requirement and deposited only 10% of proceeds ($25M).
  - 5% of capital gains taxes over $1B: $23M in FY13 and $2 M in FY14, $0 in FY15, FY16, and FY17 due to suspension or modification of requirement. Not budgeted in succeeding years due to changes to the requirement in the annual operating budgets and the uncertainty of forecasting capital gains.
  - In FY17, the Commonwealth contributed 33% of the Annual Required Contribution (ARC) using 3.63% discount rate
- Unlike the pension system, there is no funding schedule to amortize the unfunded liability.

Long Term Projections: MassHealth

- MassHealth's long term fiscal impact is driven by enrollment growth, change in per-person medical costs, and federal reimbursement levels

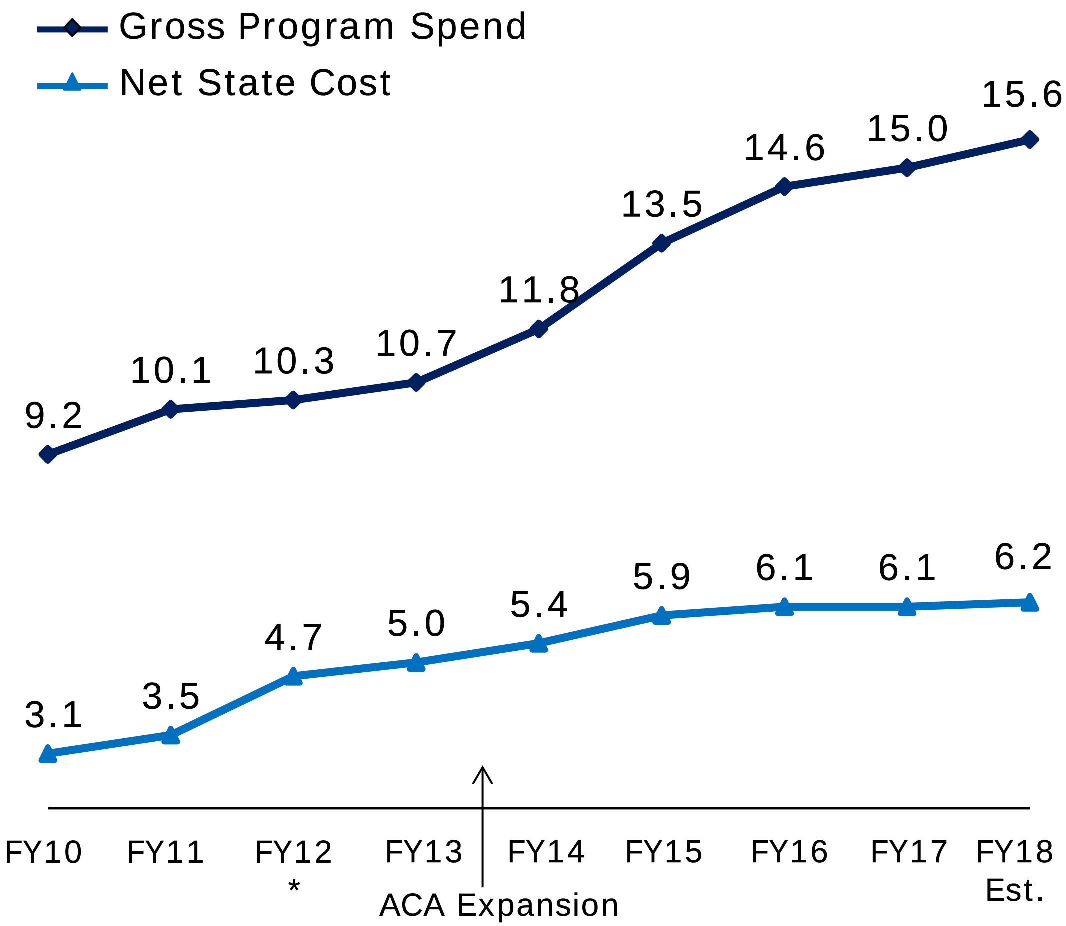
- MassHealth is currently 37% of the budget on a gross basis, and has been growing faster than revenue; 9.0%/year on a net basis between FY10 and FY18

- Since the ACA implementation in FY13, gross program spending (excluding admin and supplemental payments) increased by 7.9%/year; net program spending increased by only 4.5%/year as the Commonwealth received higher reimbursement rates on many of the new enrollees

- Growth since FY16 has been significantly reduced due to various management initiatives related to program integrity and caseload cleanup, as well as one-time revenue solves (e.g. DSRIP trust fund transfer in FY17 and employer contribution revenue in FY18)

MassHealth Historical Spending and Revenue

MassHealth Program Spending
$ billions



CAGR

FY10-13	FY13-15	FY16	FY17	FY18 Est.
5.1%	12.5%	8.5%	2.7%	**3.8%**
16.9%	9.2%	3.1%	0.0%	**1.5%**

Flat net growth due to management initiatives, including:
- $30M in increased Rx rebates
- $73.5M one-time DSRIP revenue
- $25M in higher CHIP payments
- Significant caseload cleanup

**Commonwealth lost >$1B in federal revenue with sunset of enhanced revenues under the American Recovery and Reinvestment Act (ARRA)*
Note: Excludes ELD Choices spending for all years, MATF and DSTI supplemental payments, and DSRIP Trust (DSRIP Payments, hospital assessment revenue, hospital assessment payments)

MassHealth Long-term Planning

- MassHealth's baseline program spending growth is primarily driven by exogenous factors
  - Enrollment – historical (pre-ACA) membership growth of 3-4% per year
  - Higher utilization (long-term services and supports)
    - Mandatory expansion of covered services – e.g., Personal Care Attendant (PCA) overtime and sick time, adult dental benefits
    - High-cost specialty drugs – e.g., Sovaldi/Harvoni for Hep C treament
    - Court settlement requirements – e.g., Hutchinson
  - Non-discretionary price growth
    - Capitation rates are required to be actuarially sound
    - Medicare premium increases

- EOHHS redesign of payment and total cost of care contracting (ACOs) will help address longer term sustainability (FY19 and beyond)

Long-Term Projections: Revenue

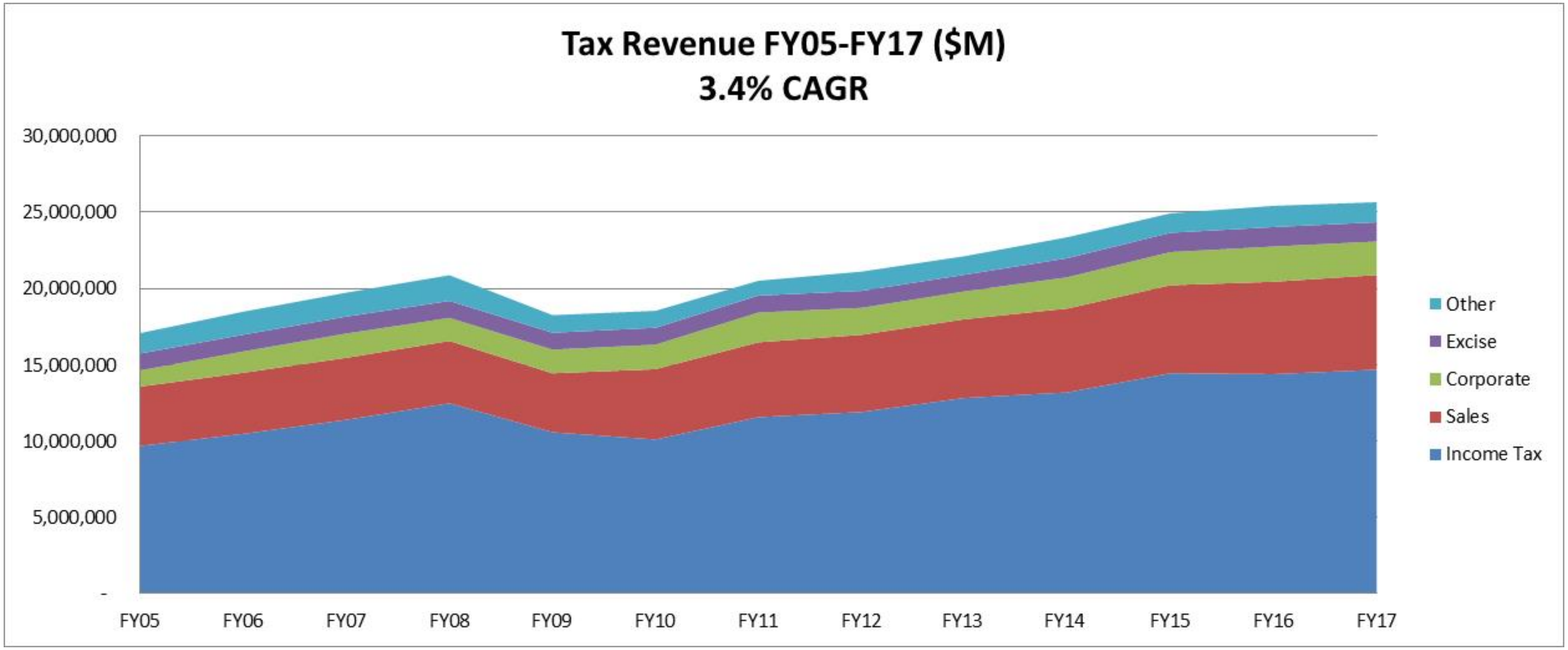
FY18 Consensus Revenue Estimate

- The FY18 consensus revenue forecast projected $27.07 B of tax revenue, 3.9% over FY17 projections at the time;
- Following below-target revenue performance in FY17, the GAA incorporated a revised estimate of $26.504 B, a 3.5% increase over FY17 final collections of $25.604 B (excl. large settlements exceeding $10M each). FY17 receipts only surpassed FY16 collections by 1.3%.

FY19 Consensus revenue estimate:

- Commonwealth does not have an official revenue estimate beyond FY18
- The Consensus Revenue Hearing for FY19 will be held in December 2017
- W&M Chairs and A&F Secretary will **hear testimonies from area economists and DOR in December 2016;**
    - They will decide on a **FY19 estimate (Consensus)** in January 2018.
  - Since 1980 tax revenues have grown at a 5.3% annual rate (incl. large settlements exceeding $10M each)
  - Over the last 12 years, that rate has slowed to 3.4%, though that data includes a steep recession and continued step downs in the income tax rate from 5.3% to 5.1%, partially offset by an increase in the sales tax rate from 5.0% to 6.25% in 2010

Historical Trend



Revenue & Economic Forecasts; Risks:

Economic Forecasts:

- DOR subscribes to economic forecast data for MA and U.S. from vendors *IHS Markit* and Moody's Analytics:
- *Bas*

Growth Rate Projections of Selected Economic Variables (*)

	FY2018		Average in the next 5 Fys		Average in the next 10 Fys	
	MA	US	MA	US	MA	US
Real Gross Domestic Product	2.6%	2.5%	2.1%	2.2%	2.1%	2.1%
Wage & Salary	4.0%	4.4%	4.7%	4.7%	4.2%	4.3%
Employment	1.3%	1.4%	0.7%	0.9%	0.6%	0.7%
S&P500	N.A.	10.5%	N.A.	3.9%	N.A.	4.7%
Retail Sales	4.2%	3.4%	4.1%	4.1%	4.1%	3.5%
Corporate Profits	N.A.	5.9%	N.A.	5.1%	N.A.	5.2%
Unemployment Rate	4.1%	4.2%	4.1%	4.3%	4.5%	4.7%
Interest Rate(Bank Prime Rate)	N.A.	4.4%	N.A.	6.0%	N.A.	6.3%
Consumer Price Index	1.7%	1.7%	2.6%	2.5%	2.6%	2.4%

(*) Averages of Forecasts made by Moody's Analytics and IHS Markit.
For 5 year average, IHS' projections cover only FY19-FY22 due to unavailable data beyond FY22.
For 10 year averages, only Moody's projections are used
N.A. Not available