

MOODY'S
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Higher Education and Healthcare Update

September 2018

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Expertise

A comprehensive view of the global markets through our ratings and research.



Credibility

Over 100 years of experience delivering forward-looking, independent, stable and transparent opinions.



Engagement

Meaningful interactions across multiple channels between our analysts and market participants.



Agenda

1. Overview of portfolios and rating activity
2. Methodologies
3. Outlooks

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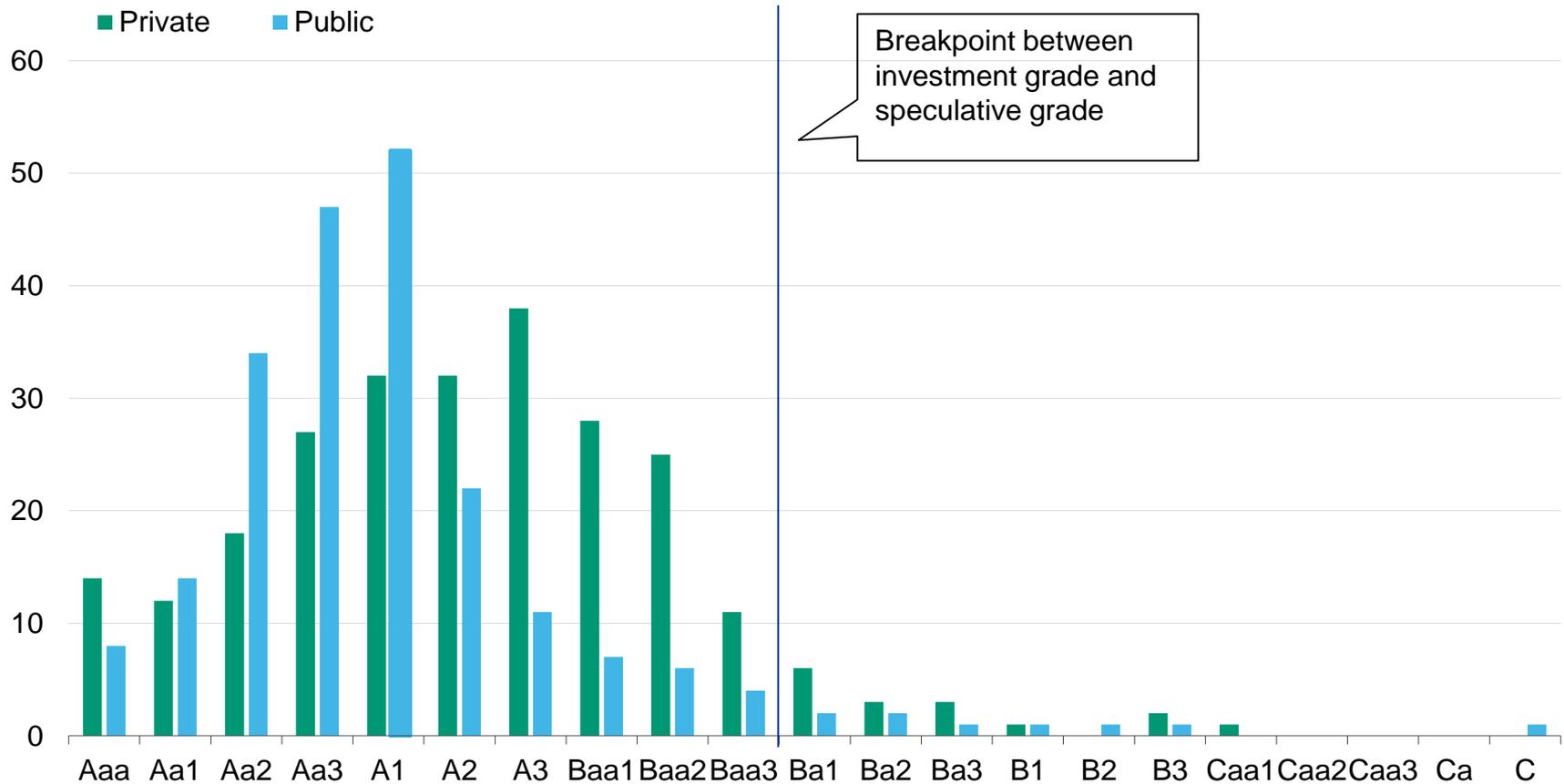
Overview of portfolios
and rating activity

Global higher education & not-for-profits coverage

- » Coordinated credit analysis brings together both sector and region specific expertise: over 30 dedicated analysts

<h2>USA</h2> <ul style="list-style-type: none">» Around 500 universities» >200 community colleges» Nearly 100 not-for-profits» Almost 35 private K-12 schools 	<h2>Canada</h2> <ul style="list-style-type: none">» 13 public universities» Ratings from Aa1-A3 	<h2>UK</h2> <ul style="list-style-type: none">» 9 public universities» Ratings from Aaa-Aa3» One philanthropic organization 	<h2>Australia</h2> <ul style="list-style-type: none">» 5 public universities» Ratings from Aa1-Aa3 
<h2>Peru</h2> <ul style="list-style-type: none">» 1 private university» Rated Ba2 	<h2>Singapore</h2> <ul style="list-style-type: none">» 2 public universities» Both rated Aaa 	<h2>Mexico</h2> <ul style="list-style-type: none">» 1 public university» Rated Baa3 	

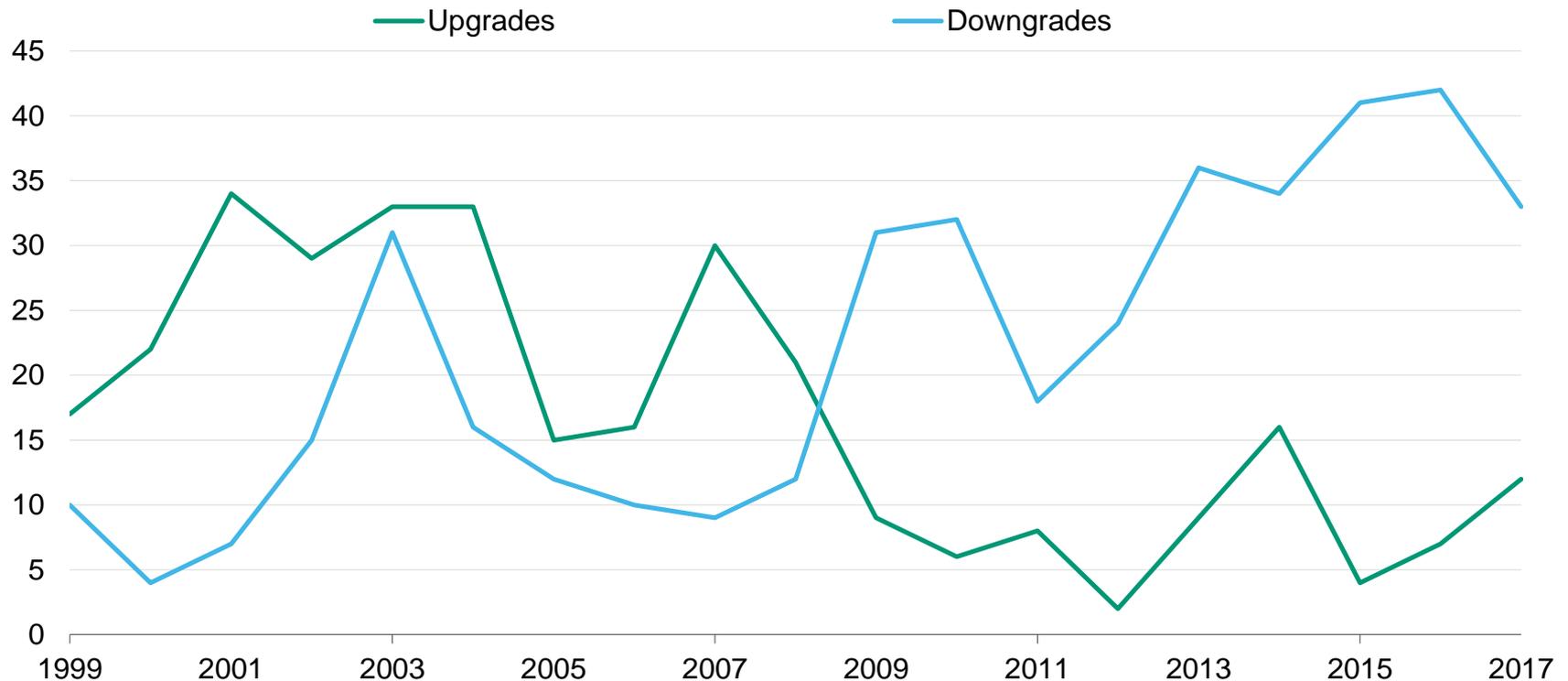
US higher education portfolio rating distribution



Source: Moody's Investors Service, as of August 2018

Beginning in 2008, rating downgrades began to outpace upgrades

Rating upgrades and downgrades for four-year public and not-for-profit private universities by calendar year



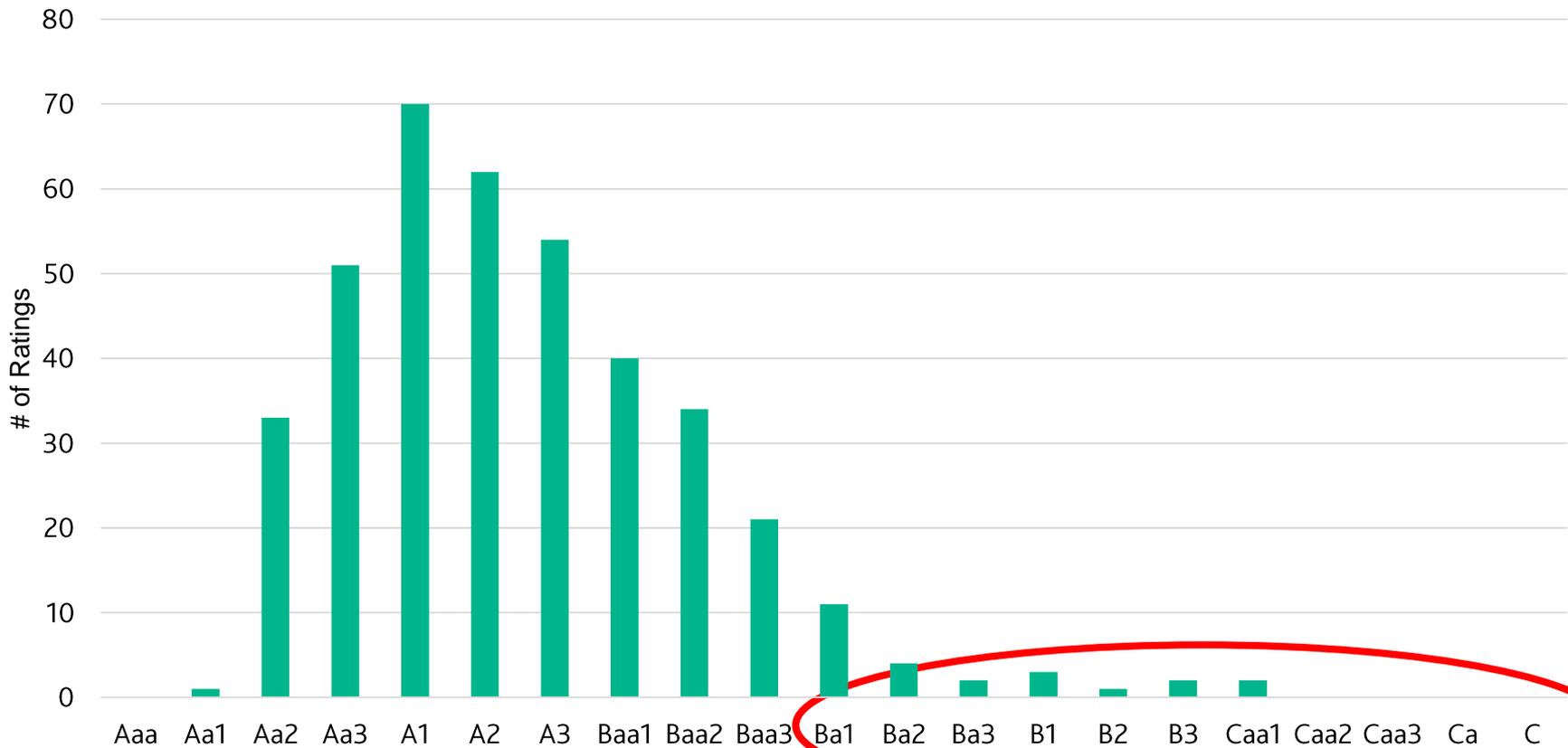
Source: Moody's Investors Service

Moody's not-for-profit healthcare portfolio

- » We rate ~380 not-for-profit hospitals and health systems (~1,900 total hospitals)
 - Over ~\$190 billion of total rated debt outstanding
 - Stand-alone hospitals (as small as 800 admissions)
 - Multi-state systems (with more than 780,000 admissions)

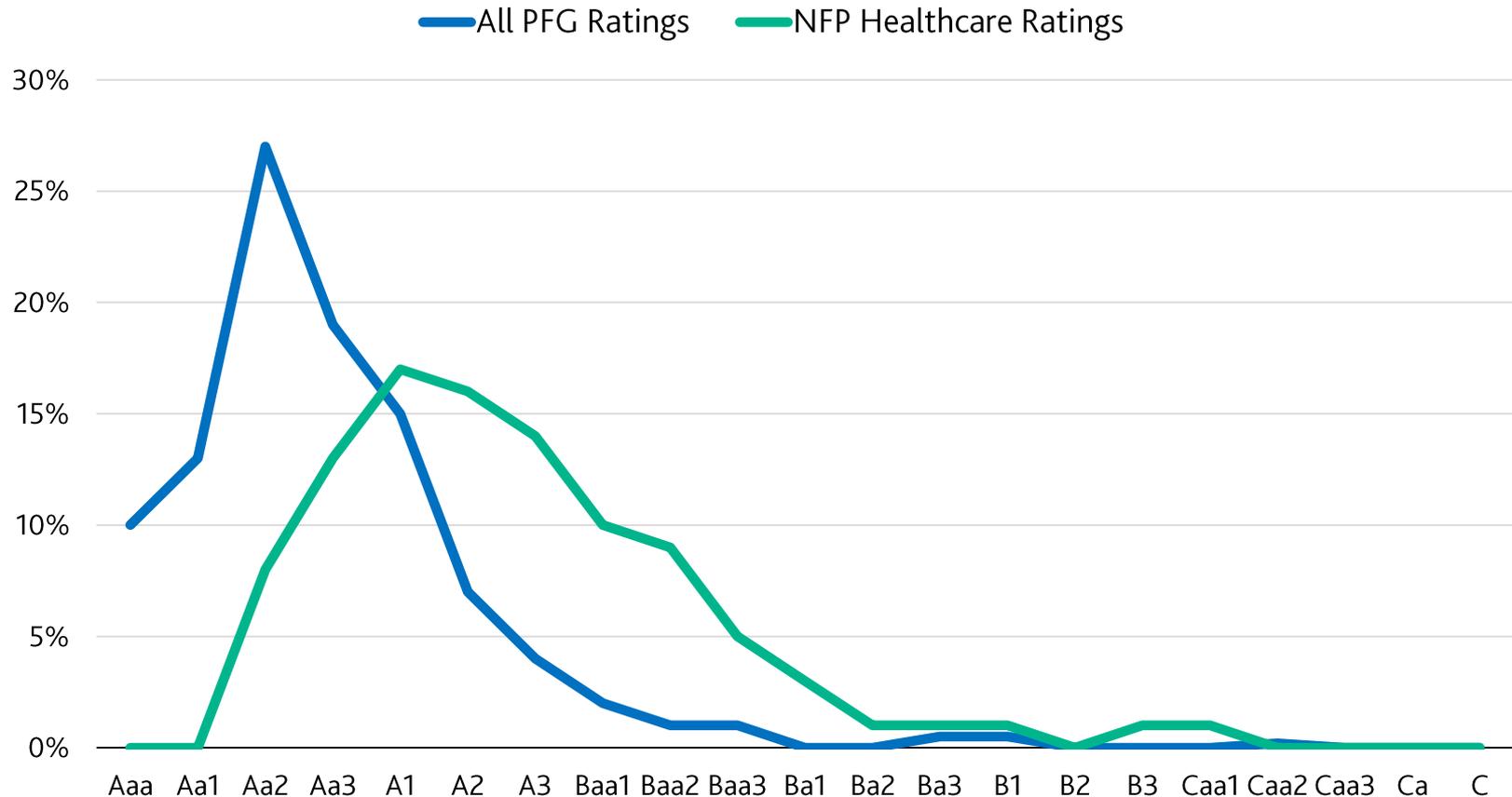
- » Not-for-profit healthcare median rating is A2

Majority of US not-for-profit healthcare ratings remain investment grade...



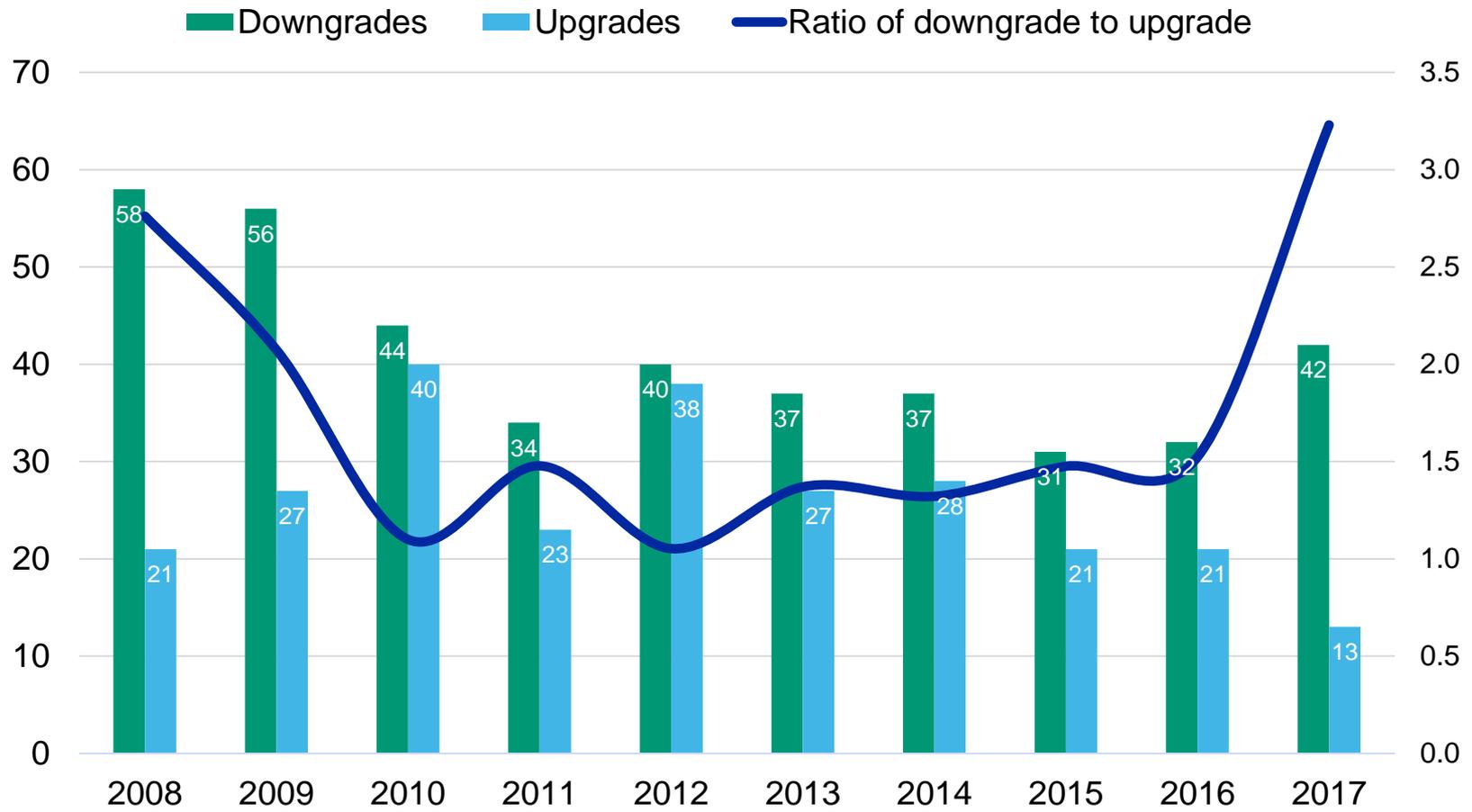
Source: Moody's Investors Service

...but reflect enterprise risk and volatile business model



Source: Moody's Investors Service

Elevated rating activity in 2017

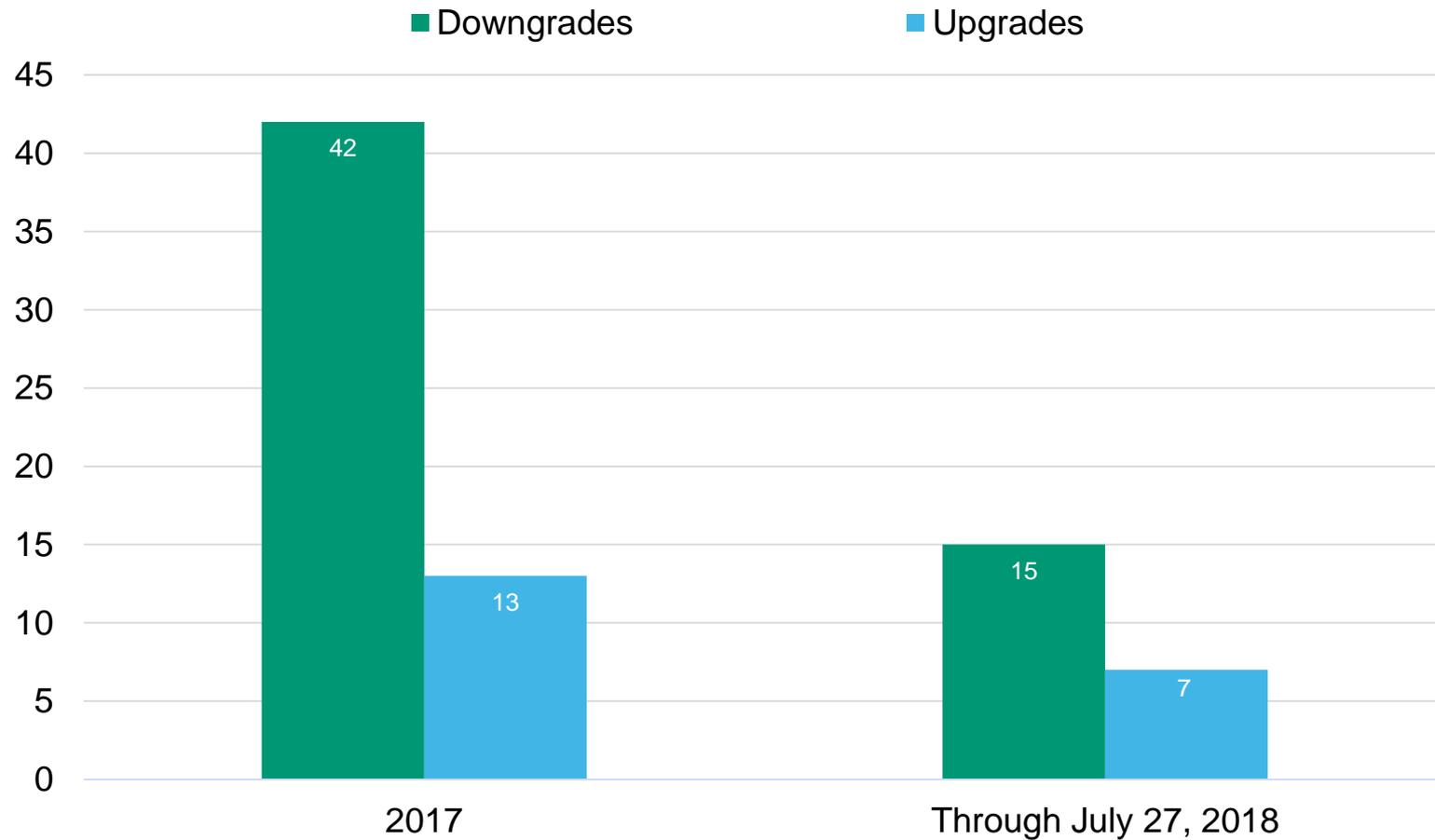


Source: Moody's Investors Service

More downgrades, fewer upgrades

- » **Downgrades** primarily on smaller systems (under \$1 billion in revenue) and Rust Belt hospitals
 - Labor shortage a key driver to expense pressures
- » **Upgrades** highlighted some bright spots:
 - Expense management and good volume growth, rising liquidity
- » **What about M&A? A mixed impact on credit**
 - Acquisitions involve purchase price, particularly with for-profit purchases
 - Mergers often involve no exchange of cash
 - Immediate change in the legal package securing the outstanding bonds lead to multi-notch upgrades
 - › *Example: Bethesda upgraded to A1 from Baa2 following merger with Baptist Health*

Rating downgrades tempering in 2018



Source: Moody's Investors Service

2

Rating
methodologies

Global higher education methodology

- » Rating methodologies provide transparency about how we assign ratings
- » Scorecard serves as an analytical tool, but is not an exhaustive list of possible credit factors
- » Ratings incorporate our forward-looking assessment of credit quality

Global higher education scorecard overview

Market Profile (30%)

Scope of Operations (15%)

Reputation and Pricing Power (5%)

Strategic Positioning (10%)

Operating Performance (25%)

Operating Results (10%)

Revenue Diversity (15%)

Wealth & Liquidity (25%)

Total Wealth (10%)

Operating Reserve (10%)

Liquidity (5%)

Leverage (20%)

Financial Leverage (10%)

Debt Affordability (10%)

Examples of excellent strategic positioning

» Planning

- Well-integrated financial, treasury, and debt management, ensuring solid liquidity to meet the university's operating, debt and investment needs.
- Board and management have developed credit positive operational management practices, including long-range financial planning, tight budgetary controls with program level transparency, and integrated capital budgeting.

» Resources

- XYZ university's strong academic reputation, diversified programs, and urban location will continue to translate into excellent strategic positioning and healthy student demand despite a highly competitive environment.
- The rating favorably incorporates the college's steady student demand as a liberal arts college with an increasingly national brand, contributing to excellent strategic positioning. The college has generated consistently strong operating cash flow and has sizeable financial reserves and very good liquidity. Leverage is comparatively low and manageable.

Examples of fair strategic positioning

» Planning

- The college is highly opportunistic and has limited long-range strategic, financial and capital planning. Many of the standard policies adopted by peer institutions, such as an investment policy, do not exist at this college.

» Capital Investment

- A rising age of plant and limited capital spending that hasn't exceeded depreciation in five out of the last six years could lead to needed capital investment and an increase in the university's leverage profile.
- Limited ability to sustain strategic facilities and programmatic investments given weak operating performance and very thin liquidity.

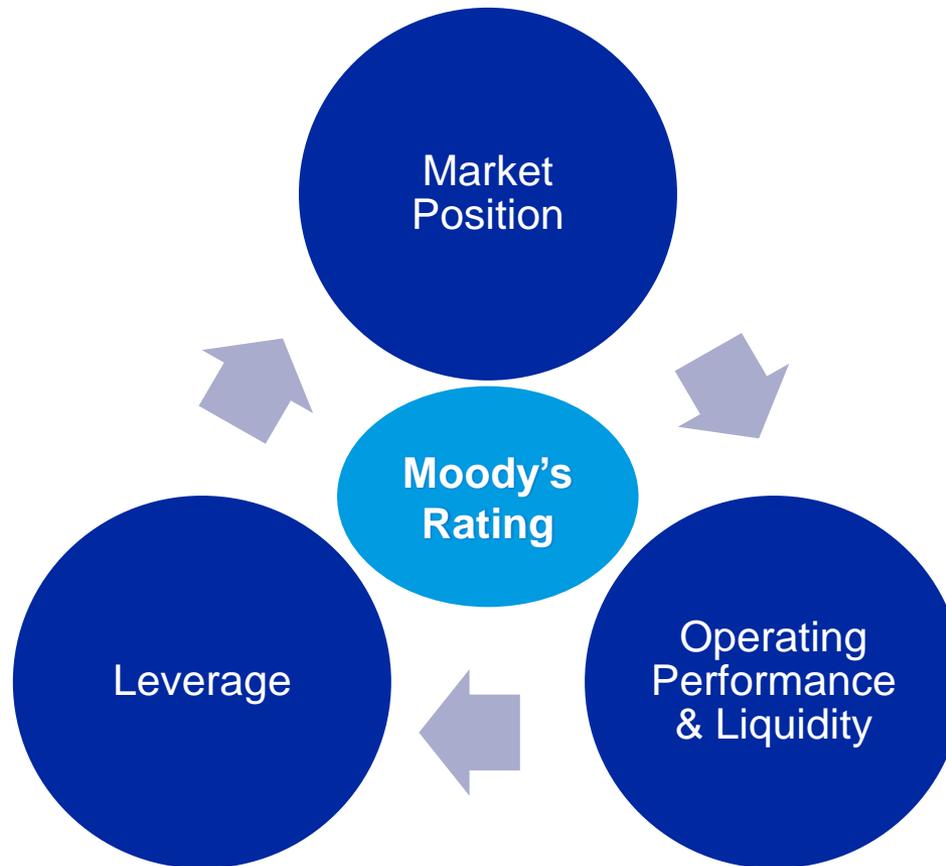
» Resources

- Highly competitive market, with a regional draw from areas with stagnant or declining high school graduates, causing the university to invest more in financial aid to draw students.
- Matriculation of admitted students remains low at about 15% compounded by a weak retention rate of 82% in fall 2015.

Methodology includes other credit considerations

- » Multi-year trends
- » Governance and management
- » Debt structure considerations
- » Liquidity quality
- » Government relationship
- » Pension and other post-employment obligations
- » Healthcare operations

Healthcare: three factors support the rating methodology



Factor 1: market position (45%)

A health system with a strong market position has a greater ability to attract patients, physicians and more favorable payment terms

- » **Scope of operations**: size indicates market leverage, stability, and revenue diversity
 - Operating revenue (\$)
- » **Market demand**: ability to grow revenue organically indicates patient demand and provides cushion from healthcare inflation
 - Three-year operating revenue CAGR (%)
- » **Market landscape**: qualitative factor used to assess regulatory environment, service area quality, and degree of competition

Factor 2: operating performance & Liquidity (35%)

Strong operations and liquidity enable health systems to repay debt and make strategic investments from core cash flow

- » **Operating results**: ability to manage expenses and grow revenues to generate cash flow to sustain business model
 - Operating cash flow margin (%)
- » **Payor concentration**: reliance on government payors
 - Gross revenue of combined Medicare and Medicaid (%)
- » **Financial reserves**: unrestricted cash to cover daily expenses
 - Cash on hand (days)
- » **Financial management and reinvestment**: qualitative factor to assess thoughtfulness of business strategies and long-range operating and capital plans

Factor 3: leverage (20%)

Examination of liquidity and cash flow relative to debt burden is critical to understanding a health system's ability to repay debt while funding capital

- » **Financial leverage**: financial reserves relative to debt indicates balance sheet flexibility
 - Unrestricted cash and investments to total debt (%)
- » **Debt affordability**: degree to which a health system is able to generate cash flow to service debt and fund reinvestment
 - Total debt to cash flow (%)

Not-for-profit healthcare scorecard

	Sub-factor Weight	Aaa	Aa	A	Baa	Ba	B	Caa	Ca & below
Factor 1: Market Profile (45%)									
Scope of Operations	25%	≥ 10,000,000	< 10,000,000	< 1,500,000 ≥ 500,000	< 500,000 ≥ 250,000	< 250,000 ≥ 150,000	< 150,000 ≥ 80,000	< 80,000 ≥ 40,000	< 40,000
Operating Revenue (\$000)			≥ 1,500,000						
Market Demand	10%	≥ 14	< 14 ≥ 8	< 8 ≥ 3.5	< 3.5 ≥ 2	< 2 ≥ 0	< 0 ≥ -1.5	< -1.5 ≥ -3	< -3
Three-year Operating Revenue CAGR (%)									
Market Landscape	10%	Exceptional	Excellent	Very Good	Good	Fair	Poor	Very Poor	Extremely Poor
Factor 2: Operating Performance and Liquidity (35%)									
Operating Results	10%	≥ 18	< 18 ≥ 12	< 12 ≥ 8	< 8 ≥ 5	< 5 ≥ 2	< 2 ≥ -1	< -1 ≥ -3	< -3
Operating Cash Flow Margin (%)									
Payor Concentration	10%	≤ 35	> 35 ≤ 47	> 47 ≤ 59	> 59 ≤ 67	> 67 ≤ 76	> 76 ≤ 83	> 83 ≤ 93	> 93
Gross Revenue from Combined Medicare and Medicaid (%)									
Financial Reserves	10%	≥ 400	< 400 ≥ 250	< 250 ≥ 150	< 150 ≥ 80	< 80 ≥ 55	< 55 ≥ 40	< 40 ≥ 20	< 20
Cash on Hand (days)									
Financial Management and Reinvestment	5%	Exceptional	Excellent	Very Good	Good	Fair	Poor	Very Poor	Extremely Poor
Factor 3: Leverage (20%)									
Financial Leverage	10%	≥ 300	< 300 ≥ 180	< 180 ≥ 100	< 100 ≥ 65	< 65 ≥ 30	< 30 ≥ 9	< 9 ≥ 6	< 6
Unrestricted Cash & Investments to Total Debt (%)									
Debt Affordability	10%	≤ 1	> 1 ≤ 2.5	> 2.5 ≤ 4	> 4 ≤ 5.5	> 5.5 ≤ 7.5	> 7.5 ≤ 9	> 9 ≤ 10.5	> 10.5
Total Debt to Cash Flow (x)									

Source: Moody's Investors Service

3

Outlooks

Higher ed: six themes shaping global credit



Growth



Financial Stability



Political and Geopolitical Risk



Technology and Innovation



Climate Change and Sustainability



Demographics

Cyclical Trends

Risks & Shocks

Secular Trends

Growth

» Solid momentum in global economic growth will underpin continued demand for higher education, but not necessarily translate into steady governmental support or pricing power.

Financial Stability

» Exposure to financial markets is increasing as universities become more reliant on external financing and philanthropic support.

Political & Geopolitical Risk

» Rapidly evolving political landscapes will provide challenges and opportunities for universities across the globe.

Six themes shaping global credit in 2018



Technology and Innovation

» Technological advances provide opportunities to reach new student populations, offer alternative methods of teaching and gain operational efficiencies.

Climate Change and Sustainability

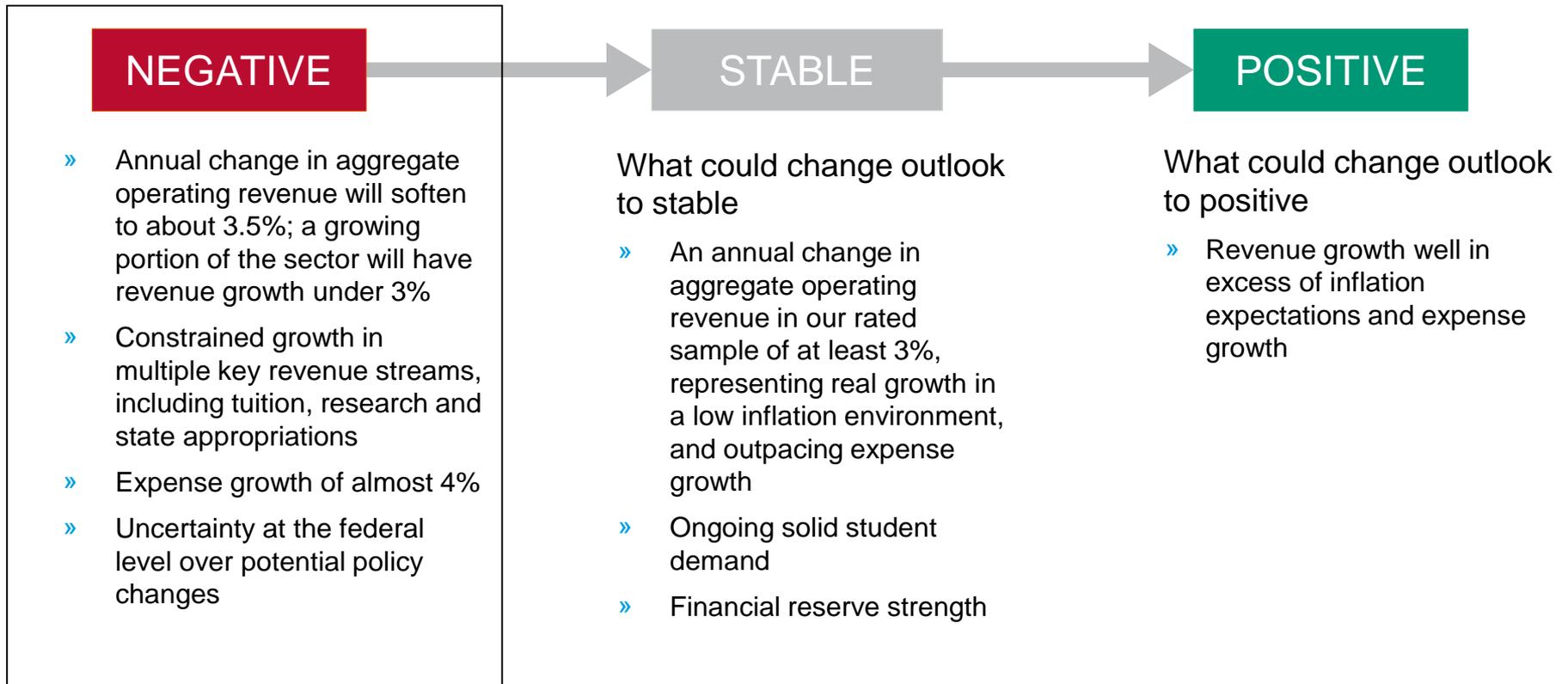
» Universities will continue to be subject to risks of climate change, and their ability to prepare for and respond to these risks will play a growing role in their credit profiles.

Demographics

» Increasing rates of participation in higher education will support the sector's overall credit. Further, with increasing numbers of women receiving higher education degrees, we expect a continued expansion in overall student populations.

Higher education

2018 outlook changed to negative as revenue growth moderates

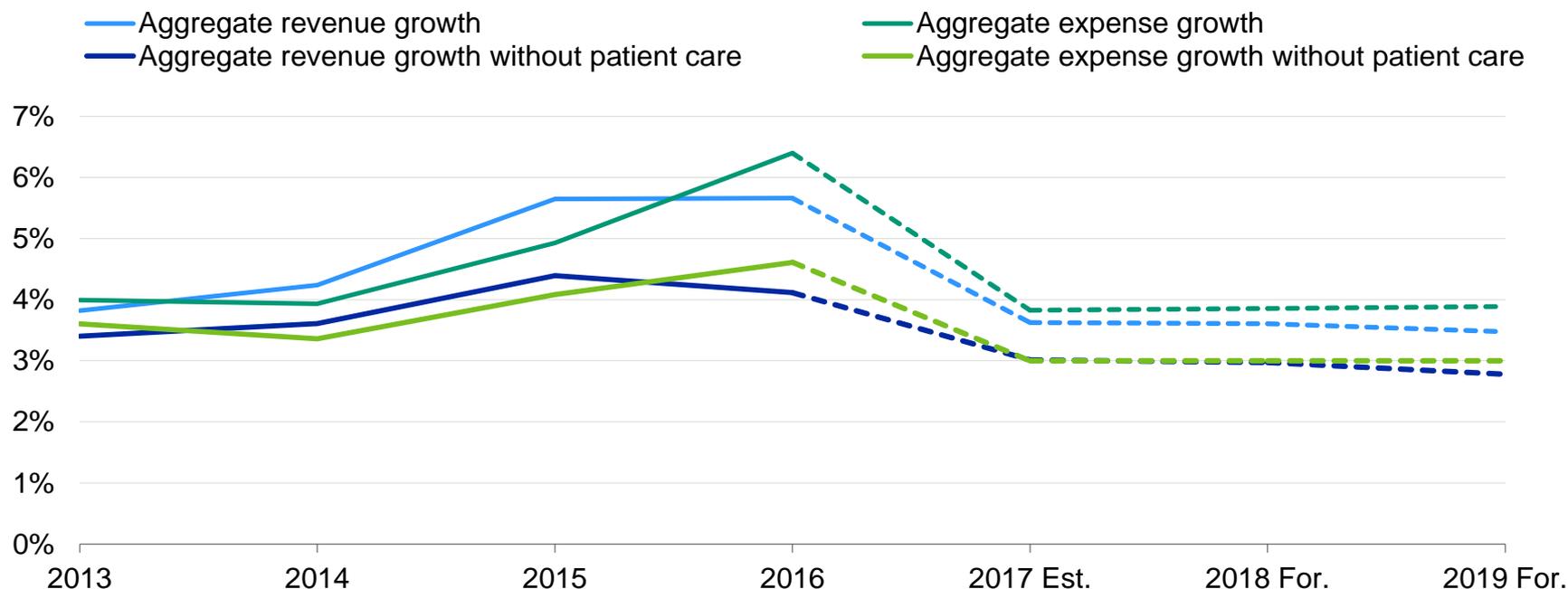


Note: A negative sector outlook indicates our view that fundamental credit conditions will worsen. A positive outlook indicates that we expect fundamental credit conditions to improve. A stable sector outlook indicates that conditions are not expected to change significantly. Since sector outlooks represent our forward looking view on conditions that factor into ratings, a negative (positive) outlook indicates that negative (positive) rating actions are more likely on average.

Source: Moody's Investors Service

Aggregate revenue growth below 3% excluding patient care revenues

- » Aggregate operating revenue growth will soften and will not keep pace with expense growth
- » Excluding patient care revenue, revenue growth is projected to decline to below 3% for the outlook period.



“Est” indicates our estimated data based on preliminary information. “For” indicates our forecasted data.

Source: Moody's Investors Service

Expected growth rates vary by revenue streams

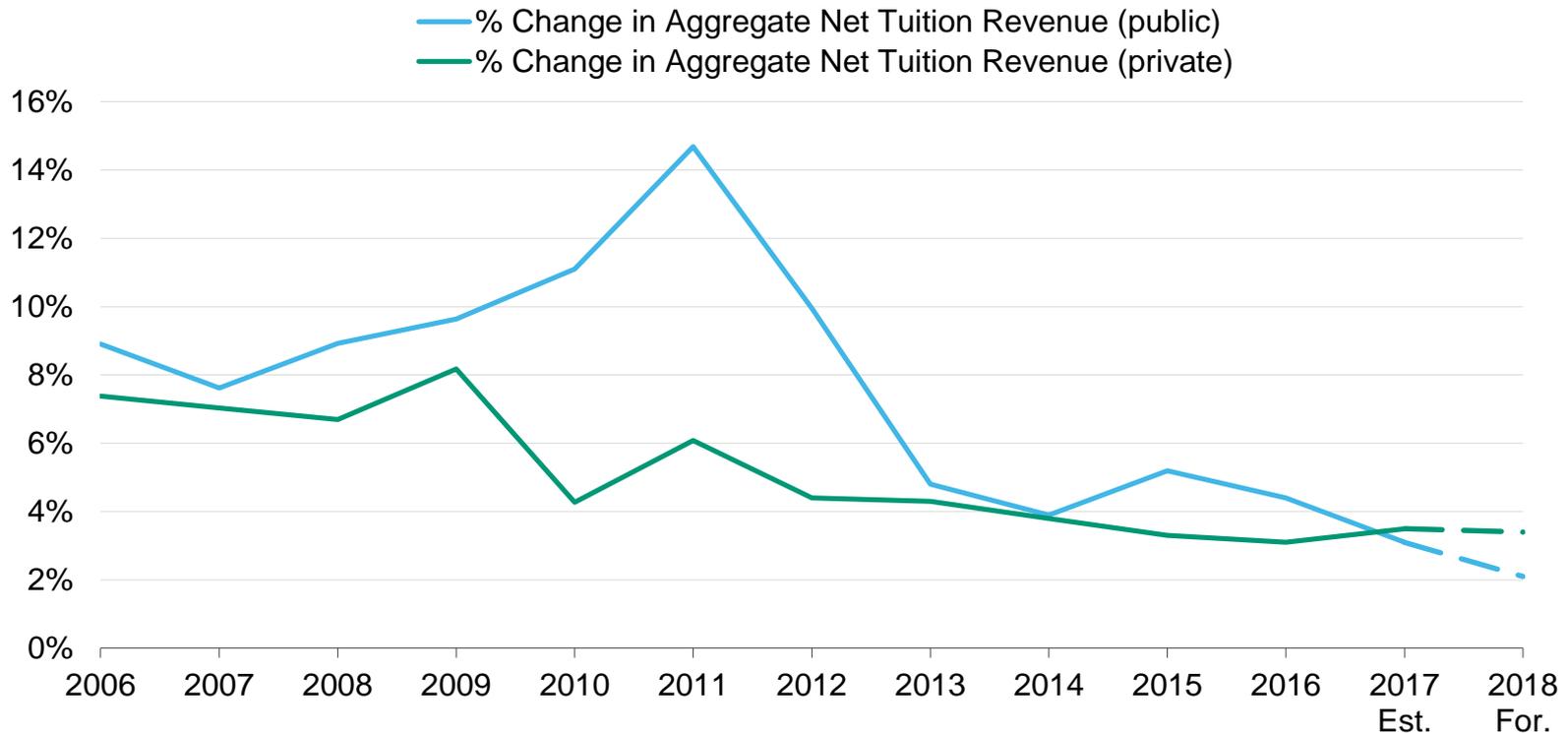
- » Tuition revenue growth will remain subdued, as will research funding and state appropriations.
- » Patient care revenue growth will moderate after very strong growth in fiscal 2015-17.
- » Public universities will experience greater pressure than their private counterparts.

Source of Revenue	FY 2018 and 2019 Forecast Growth Assumptions (%)	% of Aggregate Private University Revenue	Median Private University Revenue (%)	% of Aggregate Public University Revenue	Median Public University Revenue (%)
Net tuition and auxiliaries	2-3.5	35	74	33	50
State appropriations	2-2.5	0	0	19	24
Patient care	5-7	27	0	19	0
Grants and contracts	1-2	14	2	16	10
Endowment income	2-5	13	9	4	2
Gifts for operations	6-6.5	3	6	3	2
Other revenue	6-6.5	8	3	6	4
Total		100		100	

Median data is the median for each revenue stream and will not add up to 100%. Median data may be 0 in some cases, meaning that the median data point indicated no revenue from that particular revenue source. Aggregate data is driven by the largest universities in the portfolio, whereas median data adjusts for the diversity across the sector.

Source: Moody's Investors Service

Total net tuition revenue will grow slowly over outlook period



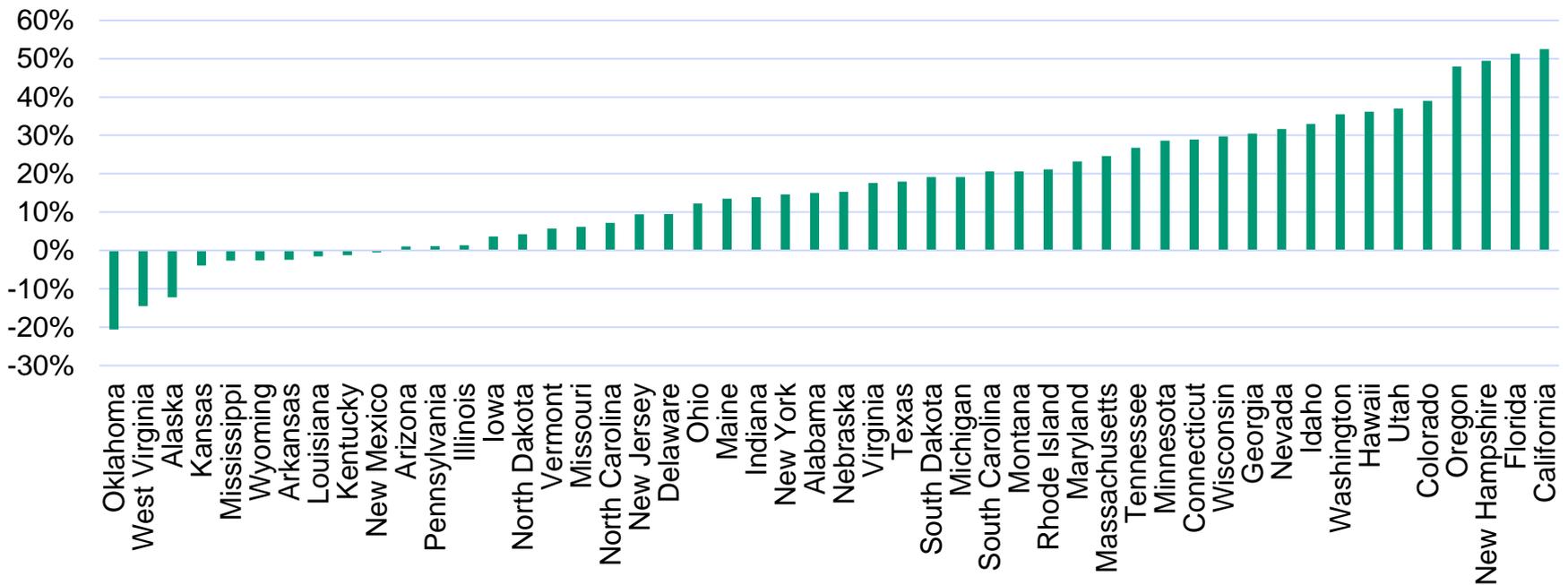
“Est.” indicates our estimated data based on preliminary information. “For.” indicates our forecasted data.

Source: Moody's Investors Service

Changes in state funding vary widely across states

5-Year % Change in State Support, FY13-FY18

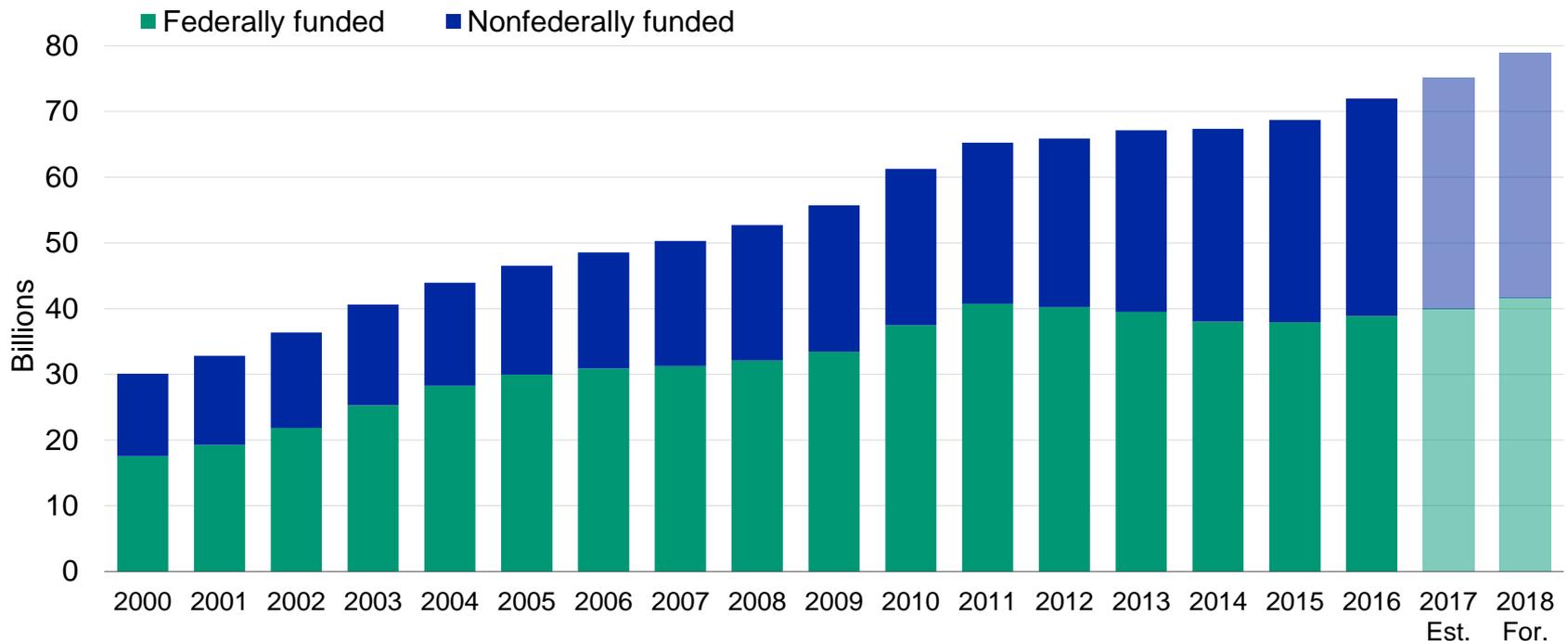
- » Seven large states (CA, TX, NY, FL, NC, GA and IL) accounted for half of FY 2018 state support for higher education. Their total increase for FY 2018 was 2.4%, compared to 0.9% for remaining states.



Source: Grapevine; Moody's Investor Service

Research funding moderately improving

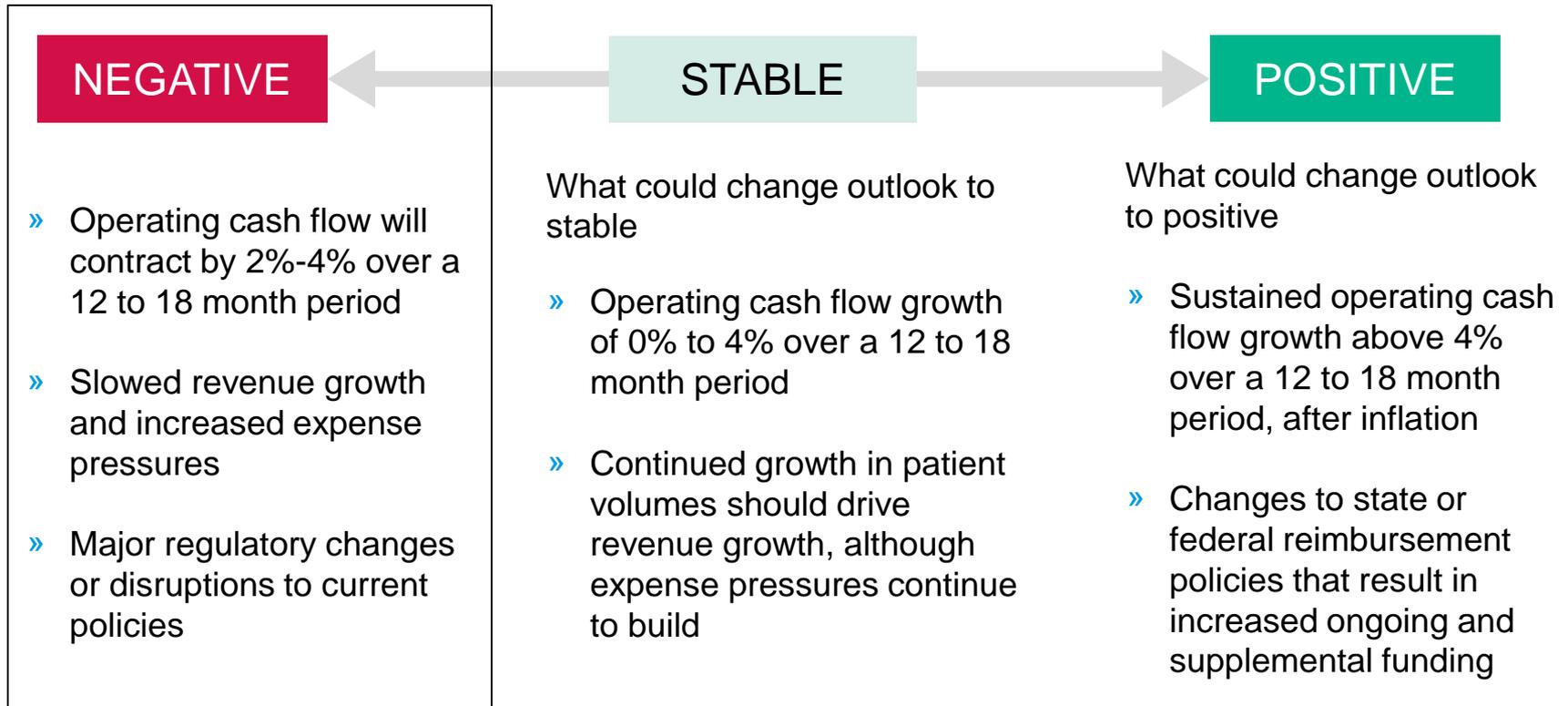
- » Research funding will likely continue to shift toward comprehensive universities, which offer more opportunity for collaboration across disciplines.



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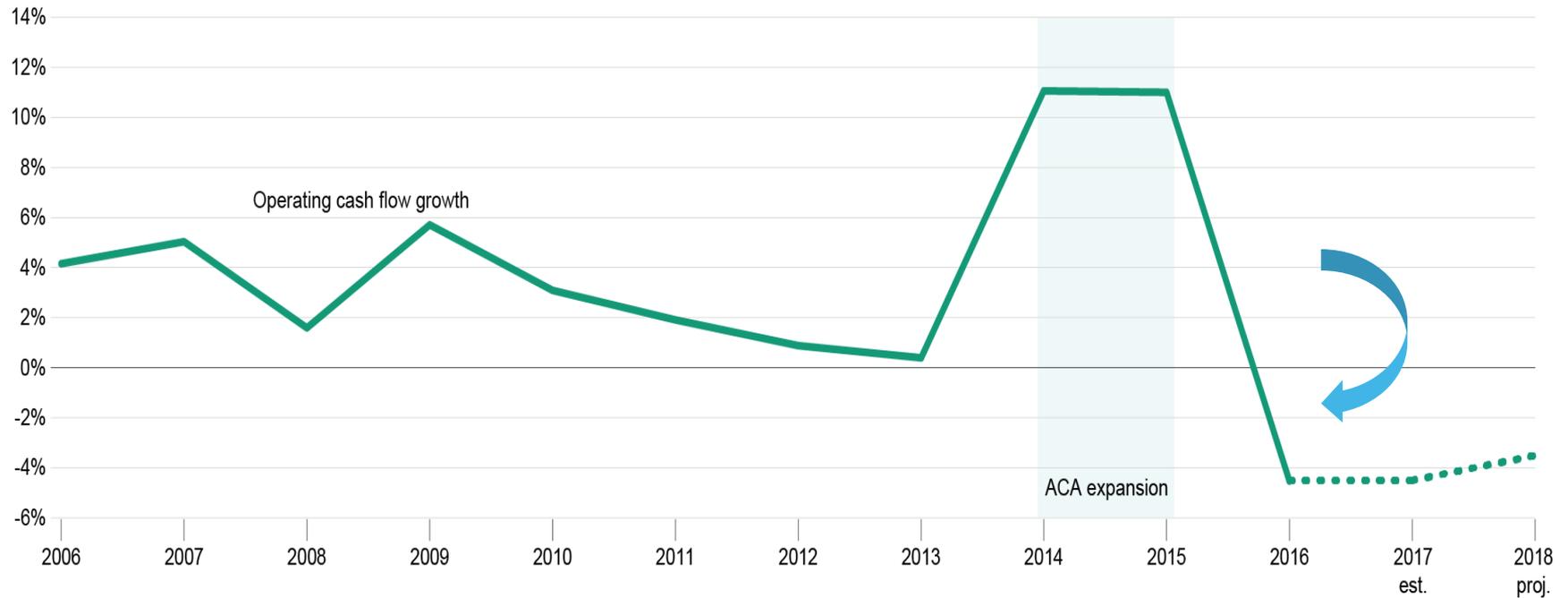
Sources: Moody's Investors Service, National Science Foundation, National Center for Science and Engineering Statistics, Higher Education Research and Development Survey

Not-for-profit healthcare outlook revised to negative in 2017



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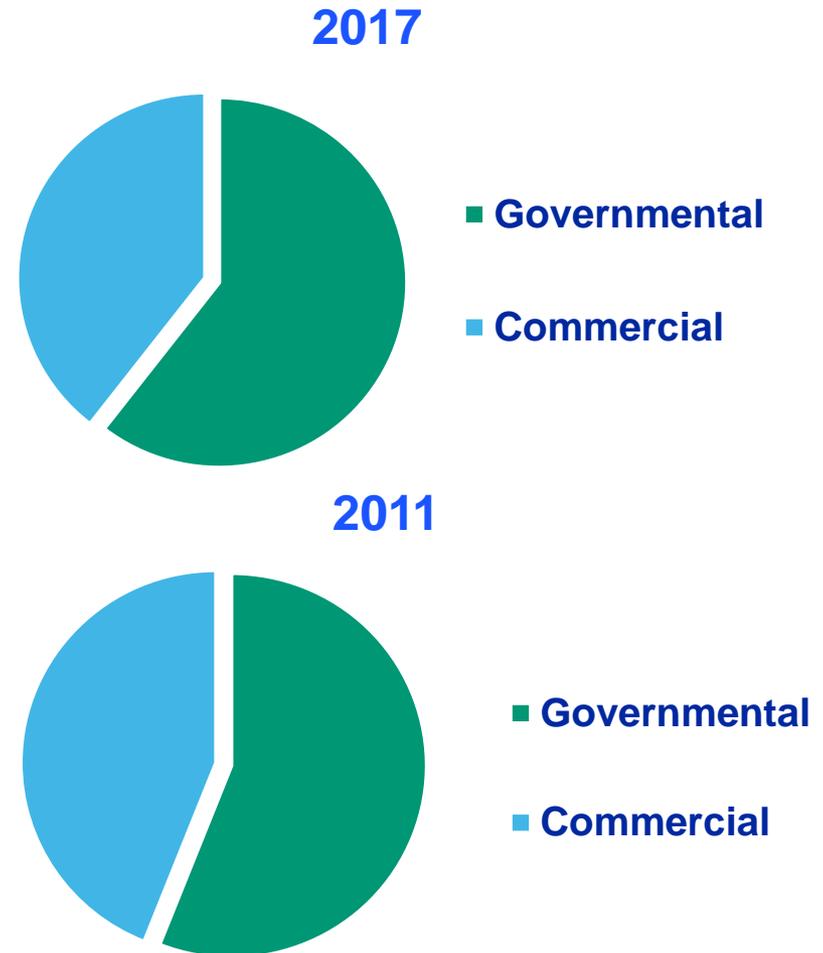
Forecasted contraction in performance underscores negative outlook



Source: Moody's Investors Service

Hospital revenues show growth of governmental payors

- » Medicare: Federal budget pressure; DSH cuts; 340B changes
- » Medicaid: Growing pension liabilities mean cuts in Medicaid
- » Exchanges: Uncertainty with discontinuation of federal mandate
- » Commercial: Much tougher negotiations; benefit restrictions
- » Uncompensated care: Bad debt rising as high deductible plans and co-pays continue to permeate many employer benefit packages



Source: Moody's Investors Service

Expense pressures escalate

- » Labor: nursing shortage as nurses retire; new graduates seek flexible arrangements; locum tenens
- » Supplies and drugs: drug price increases, shortages, new cancer drugs
- » Retirement benefits: rising PBGC premiums as liabilities increase
- » Information technology: escalating costs to install, maintain and upgrade systems

What could change the outlook?

To Positive:

- » Projection of sustained strong operating cash flow growth
- » Expectation of materially lower expense growth
- » Robust economic expansion
- » Significant growth in balance sheet reserves

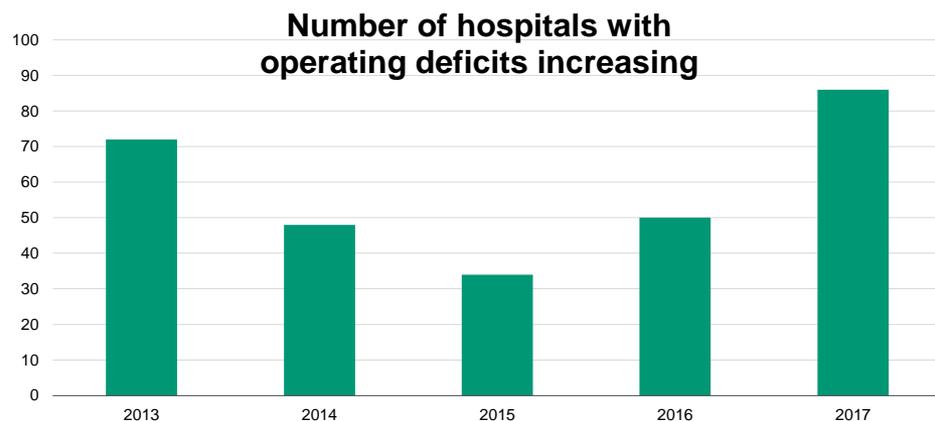
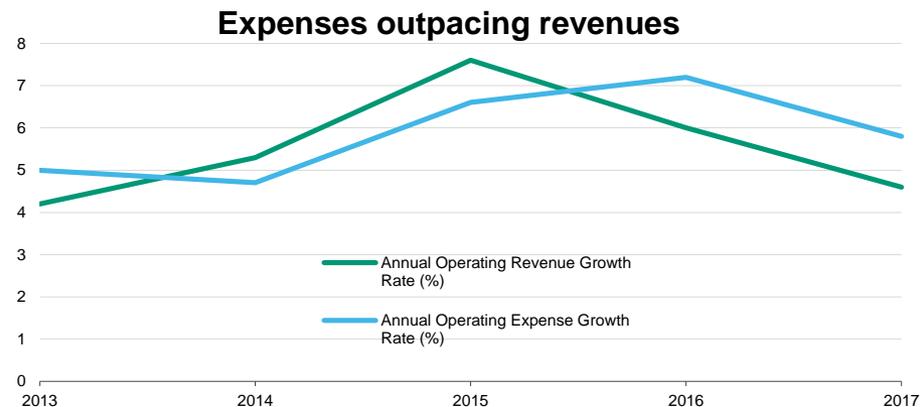
To Stable:

- » Projection of resumption of operating cash flow growth
- » Stabilization of expense growth
- » Revenue growth outpacing expenses

Expenses outpace revenue growth, leading to margin decline

	Key Ratios	
	2016	Prelim 2017
Operating Revenue	\$789m	\$878m
Operating Cash Flow Margin	9.3%	8.1%
Operating Margin	2.7%	1.8%
Days Cash on Hand	204	208
Medicare Mix	45.1%	46.3%
Cash to Debt	157%	166%
Cash to Adjusted Debt*	115%	126%
Debt to Revenue	35%	34%
Debt to Cash Flow (x)	2.8	3.0

*Adjusted debt includes pension liabilities and operating lease debt-equivalent using a 4x multiplier



Source: Moody's Investors Service

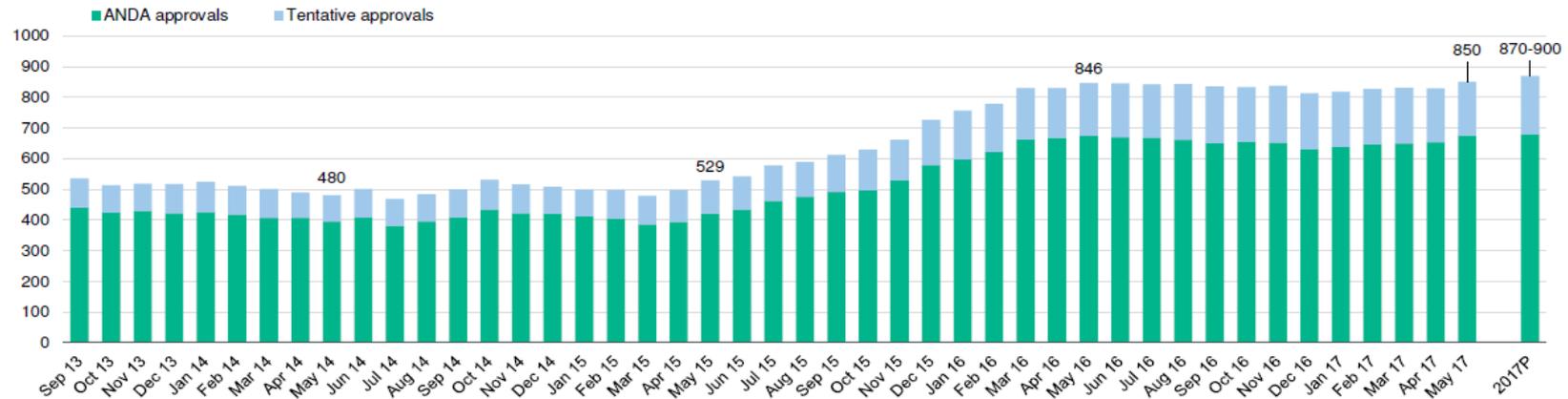
Disruptors to not-for-profit healthcare

- » Commercial insurers pursuing aggressive strategies
 - Purchasing providers (Optum, CVS/Aetna, Humana/Kindred)
 - Narrow networks; reductions in rates
 - Benefit design: limiting coverage (non-emergent ER visits)
- » Non-traditional disruptors could be positive
 - Amazon selling medical products
 - Intermountain Healthcare, SSM, Trinity Health and others entering generic drug manufacturing
- » Ongoing M&A
 - Seeking scale, diversification and cost efficiencies, *but is scale always good?*

Changes to 340B drug program

- » Drug costs continue to rise but the pace will moderate
 - Increased public scrutiny
 - Generic competition will reduce generic pricing
- » Changes to 340B will have varying credit implications
 - Unlikely to impact individual credit quality – but an added operating headwind
 - Mainly credit neutral for cancer and children’s hospitals

Pace of FDA generic drug approvals is accelerating
 Number of Abbreviated New Drug Applications approved per month



Includes all generic drug approvals, including pharmacy, inpatient, outpatient
 Source: FDA

Challenges facing rural America

- » Poor labor market prospects
 - Sales, income and property taxes negatively affected
 - Rural areas without oil-, gas- or tourism industries affected the most
 - Rural-urban gap in total employment significantly diverged after Great Recession and continues to widen

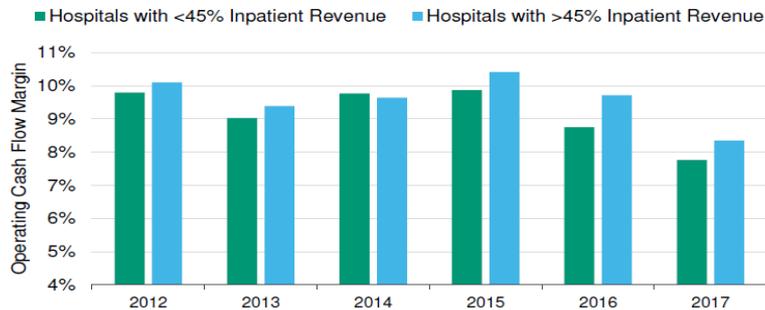
- » Population loss and aging workforce
 - Driven by urban migration and falling birth rates
 - Rate of business formation has weakened

- » Growing costs due to increased need for public services
 - Public health services have grown with aging population

What will healthcare of the future look like?

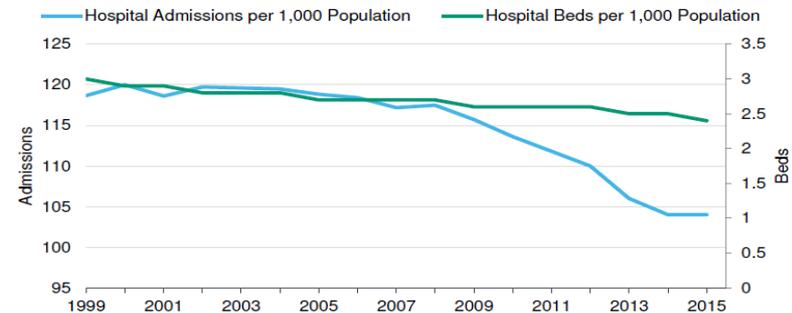
- » Finding the right balance of inpatient and outpatient will be integral

Inpatient admissions will continue to drive higher margins ...



Source: Moody's Investors Service

... but fewer beds will be needed as hospitals adapt to providing care in the appropriate place



Source: Kaiser Family Foundation

- » Ongoing investments in IT, EMR and digitalization; cybersecurity in prime focus
- » Labor and output productivity measures
- » Commitment of board to multi-year strategies, even those without short-term gain
- » Integrated capital, financial and strategic
- » Willingness and flexibility to change strategy, culture
- » Physician buy-in

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