U.S. Public Finance College and University Rating Criteria

Sector-Specific

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These criteria replace "U.S. Public Finance College and University Rating Criteria," published November 2021.

Scope

This report details Fitch Ratings' criteria for rating U.S. based, not-for-profit private and public colleges and universities (institutions). The criteria are applicable to both new and existing ratings.

The criteria will be used to assign Issuer Default Ratings (IDRs) and obligation ratings, which convey the relative risk of default. The IDR reflects consideration of issuer-specific quantitative and qualitative factors. There is no standard weighting of factors.

Key Rating Drivers

Fitch does not weight the assessments of individual key rating drivers in coming to an overall rating conclusion. There is no standard formula to link the following inputs into an exact rating; the individual assessments inform but do not dictate the final rating outcome. The relationship between individual and aggregate qualitative and quantitative factors varies between entities in the sector, as well as over time. As a general guideline, drivers that are significantly weaker or stronger than others, and are expected to persist at such levels, attract a greater emphasis in the overall analysis and will be noted in related reports. The key rating drivers are:

Revenue Defensibility: This entails an assessment of an institution's revenue and demand characteristics, including student-driven, other operating, and endowment or foundation revenues. The assessment includes a determination of expected revenue trajectory and control.

Operating Risk: This entails an assessment of an institution's operating cost flexibility, including revenue and expense growth trends, and capital expenditure requirements against expected funding sources over time.

Financial Profile: Metrics are used to evaluate the institution's leverage and liquidity profile in the context of its overall risk profile. Historical metrics serve as the basis for consideration of the resilience of an individual institution's overall financial profile in a stress scenario over a five-year horizon on a forward-looking basis.

Asymmetric Additional Risk Considerations: Other factors such as debt structure, governance, and legal and regulatory framework are considered when assigning a rating. These risk factors are not scaled, and only weaker characteristics affect final ratings.

General Credit Quality Reflected in Issuer Default Rating (IDR)

Fitch expects to assign an IDR to each institution where analytically relevant, which then informs an issue-specific rating for each Fitch-rated security. Assigning IDRs aligns default risk ratings in this sector to those assigned by other groups across Fitch's global rating platform.

An IDR reflects Fitch's assessment of an institution's relative vulnerability to default on its financial obligations. In general, all of an institution's individual securities will be assigned the same rating as the IDR. Ratings on securities with narrower or limited revenue pledges (e.g. housing or parking revenue bonds) may be notched below the parent organization IDR. IDRs and issue ratings in this sector do not incorporate any assessment of recovery prospects.

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Sector Risk Profile

Sector fundamentals support a range of credit quality, with ratings ranging from 'AAA' to 'BBB' in most cases. Some institutions are assigned ratings of 'BB' and below (speculative grade), particularly those with weaker demand characteristics and limited balance sheet resources. Conversely, institutions with extraordinary revenue defensibility and exceptionally robust financial characteristics may achieve ratings as high as 'AAA'.

As a starting point, recognition of the differences in the operating profile of public institutions compared to private not-for-profit institutions highlighted throughout this document supports the need to distinguish between public and private institutions. These differences are incorporated within the scalable attributes as key rating drivers. More broadly, the role of public institutions as quasi-governmental entities acting in support of a state's mission is evident in their relatively diminished vulnerability to default with no reported defaults of record. As such, the range of tolerance for liquidity and leverage for public institutions differs from that of their private not-for-profit counterparts as demonstrated in the two rating positioning tables on page 13.

Related Criteria

U.S. Public Finance College and University Rating Criteria (November 2021)
Public Sector, Revenue-Supported Entities Rating Criteria (September 2021)
U.S. Public Finance Tax-Supported Rating Criteria (May 2021)
U.S. Not-For-Profit Hospitals and Health Systems Rating Criteria (November 2020)
Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria (April 2022)

Related Research

Fitch Ratings 2H21 Outlook: U.S. Public Finance Colleges and Universities (July 2021)
Fiscal 2020 Median Ratios for U.S. Colleges and Universities (Some Retrenchment Ahead of the Pandemic) (July 2021)
U.S. Colleges and Universities - Fitch Analytical Comparative Tool (FACT) - 2021 -- Amended (August 2021)

Key Rating Drivers — U.S. Public Finance Colleges and Universities

	aaa	aa	a	bbb	bb
Revenue Defensibility					
Demand Characteristics	Most competitive demand indicators.	Very competitive demand indicators.	Competitive demand indicators.	Moderate demand indicators.	Uncompetitive demand indicators.
	Exceptionally strong underlying market characteristics.	Very strong market characteristics.	Strong market characteristics.	Solid market characteristics.	Unfavorable market characteristics.
	Privates: National/ International draw. **Publics:** First tier status, national or international draw.	**Privates:** Multi-regional/ international draw. **Publics:** First or second tier status or leading position in market.	**Privates:** Multi-regional draw. **Publics:** Strong position in market; draw from regional or multiple markets.	**Privates:** Regional institution drawing from multiple markets. **Publics:** Solid position in market; draw primarily from in-state base.	**Privates:** Limited market reach, small market area or narrow student base. **Publics:** Weaker position for in-state demand.
Note: See page 6 for demand metrics to support this assessment.					
Revenue Source Characteristics	Increases in student charges in any given year have demonstrably no impact on enrollment.	Increases in student charges not expected to impact enrollment.	Increases in student charges expected to impact enrollment marginally.	Changes in net student price expected to negatively impact enrollment but will provide additional net revenue.	Enrollment is highly sensitive to increases in net student price/tuition.
	Institution has independent ability to set tuition rates.			Limited restrictions (legal, statutory or other) on independent ability to set tuition rates and student fees.	No independent ability to set tuition rates.
	Periodic draws from endowment funds at levels far below expected annual long-term investment returns or revenues before endowment support provide robust debt service coverage.	Periodic draws at levels comfortably below expected annual long-term returns or revenues before endowment support provide ample debt service coverage.	Periodic draws at levels generally below expected annual long-term returns or revenues before endowment support provide sufficient debt service coverage.	Periodic draws approximate expected annual long-term returns and supplement debt service.	Periodic draws at levels significantly above expected long-term returns and necessary to achieve operating balance.
	Other revenue sources, such as state operating appropriations, gifts, separate business lines or other support, expected to	Other revenue sources expected to somewhat insulate against revenue volatility.	Other revenue sources expected to help stabilize, but may not fully counter, revenue volatility.	Other revenue sources expected to be accretive to revenue.	Absence of other revenue resources, such as gifts, separate business lines or extraordinary support.

Key Rating Drivers — U.S. Public Finance Colleges and Universities

	aaa	aa	a	bbb	bb
	significantly insulate against volatility going forward.				Other revenue resources or business lines are dilutive to cash flow.

Note: Asymmetric Risk Consideration, Revenue Defensibility: Volatility indicative of a weaker or eroding demand expectation.
Source: Fitch Ratings.

Key Rating Drivers — U.S. Public Finance Colleges and Universities

	aaa	aa	a	bbb	bb
Operating Risk					
Operating Cost Flexibility	Expectation for exceptionally strong cost management demonstrated by very robust adjusted cash flow margins.	Expectation for very strong cost management demonstrated by strong adjusted cash flow margins.	Expectation for sufficient cost management demonstrated by adequate adjusted cash flow margins.	Expectation for limited cost management demonstrated by thin adjusted cash flow margins.	Expectation for highly limited ability to manage costs demonstrated by insufficient or volatile adjusted cash flow margins.
	Private Adjusted Cash Flow Margin >20% Public Adj Cash Flow Margin >18%	Private Adjusted Cash Flow Margin 15%-20% Public Adj Cash Flow Margin 12%-18%	Private Adjusted Cash Flow Margin 10%-15% Public Adj Cash Flow Margin 6%-12%	Private Adjusted Cash Flow Margin 5%-10% Public Adj Cash Flow Margin 0%-6%	Private Adjusted Cash Flow Margin <5% Public Adj Cash Flow Margin <0%
Capital Expenditure Requirements	Substantial flexibility in timing for major capital costs; limited near-term capex expected.	Flexibility in timing for major capital costs; limited near-term capex expected.	Some flexibility in timing for major capital costs; moderate near-term capex expected.	Material capex in the near term; reasonable but limited flexibility on timing for major capital costs.	Material capex expected in near term with little flexibility on timing for major capital costs.
	Expectations for consistent and remarkably strong fundraising for capital needs or robust capital grants from governmental entities.	Expectations for consistent and very strong fundraising or reliable capital grants from governmental entities.	Expectations for consistent and strong fundraising or reliable capital grants from governmental entities.	Expectations for consistent but limited fundraising.	Expectations for inconsistent and limited fundraising.
	Limited lifecycle investment needs assessed through deferred maintenance levels and average age of plant.	Moderate lifecycle investment needs assessed through deferred maintenance levels and average age of plant.	Elevated lifecycle investment needs assessed through deferred maintenance levels and average age of plant.	High lifecycle investment needs assessed through deferred maintenance levels and average age of plant.	Very high lifecycle investment needs assessed through deferred maintenance levels and average age of plant.
	Average age of plant <10 years	Average age 10-12 years		Average age 12-15 years	Average age >15 years

Note: Asymmetric Risk Consideration, Operating Risk: Structural imbalance between expense/revenue growth rates. See pages 9–10 for metrics to support this assessment.
Source: Fitch Ratings.

Key Rating Drivers — U.S. Public Finance Colleges and Universities

Financial Profile	N.A.	aa	a	bbb	bb
Leverage Profile	Refer to the Rating Positioning Tables on page 13.	—	—	—	—
Liquidity Profile: Asymmetric Risk Consideration	Liquidity profile assessments are materially informed by the ratios of available funds to operating expenses and debt service coverage.	—	—	—	—

N.A. – Not applicable.
Source: Fitch Ratings.

Key Rating Drivers

Fitch's three key rating drivers are 1) revenue defensibility, 2) operating risk and 3) financial profile. The three key rating drivers are assessed using the guidance outlined in these criteria, which defines general expectations for a given rating category. Revenue defensibility is the starting point in the rating analysis; however, the relative influence on a rating of qualitative and quantitative factors varies between entities in a sector as well as over time. Subfactors in each

of the key rating drivers highlight the components that are most critical to forming the assessments. All assessments are grounded in institution-specific historical data and qualitative analysis to support a forward-looking view on future performance. Future performance is evaluated on the basis of trends and not at any single point in time.

Subfactors considered within the assessments are also not subject to standard weighting. Rather, subfactors that are materially stronger or weaker than others, or are determined to be of greater significance to the overall assessment, tend to attract greater importance in the overall assessment outcome and are noted as such. For example, the assessments for an institution on market reach and underlying demographic trends within that market may carry greater importance in the overall assessment of revenue defensibility than a review of enrollment growth.

The interplay of business risk profile, financial profile and ratings is presented in the Rating Positioning Tables on page 13. Ratings may be higher or lower than suggested by the table based on an analytical judgment made concerning whether there are factors present that result in a higher or lower risk of a shift in capacity for meeting financial obligations than would be suggested by the rating derived from the table. Higher ratings than suggested could result from such factors as an exceptional market niche with little to no vulnerability to demand risk or price elasticity, access to extraordinary funding mechanisms (including government support) for operating (e.g. pension expense or debt service) or capital outlays, exceptional level of cash flow flexibility against obligations in a forward-looking scenario analysis or an extraordinarily strong total asset base. This final positioning within the rating category is further informed by a review of an institution's relative position among peers. Furthermore, the table is predicated on an institution having no asymmetric risk factors, as discussed below; such factors could result in a lower rating than suggested by the table.

Key metrics considered in the rating analysis are defined in Appendix D.

Revenue Defensibility

Fitch considers demand and revenue source characteristics in its assessment of revenue defensibility for higher education institutions. Analysis of enrollment trends, demand indicators, market reach and demographic characteristics, strength of state appropriation support (for public institutions), relative pricing power, the magnitude and sustainability of endowment draw, and relative strength of other material revenues all support Fitch's assessment.

Broadly, the intrinsic characteristics of public institutions often support higher revenue defensibility characteristics compared to private institutions. These characteristics include long-standing governmental support and relatively less reliance on any one revenue source. In addition, public institutions often have greater potential pricing flexibility as evidenced by the generally meaningful gap between median net tuition and fees, while noting the political context in which these decisions are made.

Public-sector institutions generally benefit from long-standing governmental support, in the form of direct appropriations and indirect funds such as grants, scholarships and loan assistance. Public universities receive direct governmental support for both operating and capital costs, differentiating them from their private counterparts. Although this support can vary as public sponsors manage their own budgets through economic cycles, some level of support is anchored by specific provisions establishing public universities found in state charters and constitutions, and also by federal legislation that established land-grant institutions for the public benefit in each state. Public land-grant institutions continue to benefit from federal and state support for agricultural, mechanical and engineering education and research.

Government support in the form of operating and capital appropriations has enabled public institutions to offer materially lower-cost education services with lesser balance sheet support compared to private institutions. This support can serve to mitigate operating volatility and allow for a wider tolerance for certain operating or financial metrics. Importantly, the stability and magnitude of that support can vary materially across states and institutions and be a differentiating credit factor.

Private institutions generally retain a meaningful level of control over pricing and also benefit from robust philanthropy to support operating and capital needs, but there is extensive variation among institutions within this segment of higher education. Their not-for-profit status under the U.S. tax code enables them to accumulate retained earnings and build up substantial endowments and foundations. These asset bases can generate significant investment revenue and financial cushion against unexpected operating volatility.

Across public and private institutions, the sector has broadly exhibited steady demand characteristics with limited volatility through normal economic cycles. Demand for higher education is generally sensitive to economic activity, broad demographic cycles and meaningful shifts in the broader legislative and economic funding environment. Demand volatility will reflect an institution's market draw and niche; a national draw will generally have less demand volatility than a very local draw. Fitch reviews historical patterns and growth over time, incorporating the current and future demographic and demand environment of the institution's key operating market(s). For public institutions, stable state support could mitigate cyclical enrollment fluctuations.

Demand Characteristics

The strength of an institution's demand is assessed using multiple factors reviewed together, rather than independently of one another. Fitch uses data from the most relevant student cohorts, including first-time freshmen, all undergraduate, all graduate and transfer student groups to support its analysis.

Enrollment Trends in Context: Enrollment trend data are evaluated for every institution. As a starting point of demand analysis, enrollment trend expectations are evaluated using the five-year compound annual growth rate (CAGR) of enrolled full-time equivalent (FTE) students. Fitch utilizes both a historical and forward-looking assessment of enrollment to define demand expectation, and reviews annual trends, particularly where they differ from the CAGR. Fitch typically reviews five years of enrollment data measured by FTEs as a measure of enrollment with part-time students formulaically converted to full-time units of attendance. Fitch also compares FTE count with enrolled headcount or credit hours.

In general, enrollment trends, whether of growth, decline or stability, are evaluated in the context of student selectivity, quality and satisfaction. For example, while enrollment growth trends may be positive, enrollment growth that occurs at the expense of student quality and selectivity may suggest a lower demand assessment. We recognize that strategic realignment or changes in admission processes do not themselves reflect a weaker demand assessment. Furthermore, relatively stable enrollment affected by planned programmatic realignment may support a higher demand assessment than the enrollment trend alone would suggest. Therefore, enrollment trend attributes are not specifically scaled but are considered in the context of revenue source characteristics and an overall demand assessment, as presented below.

Demand Indicators Assessed: Demand indicators are assessed by considering acceptance rates; favorability among applicants as measured by matriculation rates; student satisfaction as measured by freshman to sophomore retention rates; student quality as measured by SAT/ACT scores; and other relevant data (e.g. MCAT or LSAT scores). Fitch will incorporate these scores where relevant and available. As standardized tests evolve and many schools vacate testing requirements, student quality will continue to be additionally informed by other key indicators including acceptance rates, graduation rates, retention rates and other available and relevant data.

These measures are evaluated together rather than each in isolation to form a view of the level of resiliency of demand. Taken together, the metrics provide evidence of demand fundamentals and a comparative context to inform the overall assessment. Differences in range tolerance for specific metrics between public and private institutions reflect the mandate for public institutions to serve a broad, largely in-state, student base with generally less imperative or freedom to establish or tighten selectivity targets.

The final assessment of demand reflects a review of all indicators. Factors may be present that support a higher or lower demand assessment than indicated by the table, such as meaningful enrollment volatility over time, considerably stronger or weaker metrics than the indicated

thresholds applied to subfactors, or the presence of asymmetric considerations. A review of an institution's six-year graduation rate trend, taken in the context of makeup of its student body, also provides useful context in the rollup of the demand assessment.

Acceptance Rates: Acceptance rates are considered but often provide limited insight into an institution's ability to control future enrollment. For certain specialty institutions (such as art, music, law and pharmacy), higher acceptance rates do not necessarily signify a weaker market position, as this type of institution tends to attract a self-selecting population of students. In the case of public colleges and universities, it is not uncommon to see the first tier (flagship) public institutions in a given market with acceptance rates greater than 75% in support of statewide goals to ensure an affordable, accessible education. Similarly, public university systems that include community colleges often have higher acceptance rates, as they may be required to maintain open admissions.

Matriculation Rates: The matriculation rate (student yield) is defined as the number of enrolling students divided by the total number of accepted students and indicates an institution's relative position among its competitors. Stronger matriculation rates may indicate first-choice status among applicants. As available, data for peer institutions, cross-admits with peer institutions or cross-acceptances among peer institutions may further inform Fitch's assessment of this factor. We use this analysis to inform our opinion about an institution's competitive position and resiliency against demand volatility.

Retention Rates: Student retention between freshmen to sophomore year is indicative of relative student satisfaction across institutions and over time. Strong retention indicates higher student satisfaction. A weak or declining rate may be caused by a number of factors, including under-prepared students, pricing sensitivity or student dissatisfaction. We use this assessment to form a view on the relative strength of student satisfaction and student quality, and it may inform a broader trend in enrollment.

Metrics to Support Demand Assessment

(%)

Demand Indicator	aaa	aa	a	bbb	bb
Acceptance Rates (Private)	<10	10–20	20–40	40–70	>70
Acceptance Rates (Public)	<35	35–45	45–60	60–80	>80
Matriculation Rates	>50	40–50	30–40	20–30	<20
Retention Rates (Private)	>95	90–95	85–90	75–85	<75
Retention Rates (Public)	>95	90–95	80–90	70–80	<70

Source: Fitch Ratings.

Market Characteristics Assessment: Market characteristics include an assessment of the underlying demographic trends and geographic scope of the market from which an institution draws its student base. Fitch generally uses incoming first-time freshman class data to assess market draw where appropriate but may use an alternate base in cases where an incoming class is not representative of the whole. Specifically, the assessment looks at the market from which its student base is predominantly drawn (local, state, region, national or international). The evaluation of the overall market reach of an institution is an indicator of its competitive positioning. Broader reach and less reliance on any one market are generally indicators of strength as the likelihood of demand volatility diminishes with a larger market base. Conversely, a narrow market base — driven either by limited competitive reach or by a narrow programmatic offering — may be indicative of a weaker assessment if it exposes an institution to higher demand volatility. A review of available population and demographic trends of an institution's general market informs this assessment, providing useful context for a forward-looking view of demand.

The divergence in market draw characteristics for public versus private institutions is anchored in the mission-driven role of supporting the education of in-state students. Furthermore, the roles of the largest public institutions in the defined market (termed flagships, or co-flagships in some cases) indicate a leading competitive position. These flagship public institutions may be

supported under the state constitution or charter, often are the land-grant institutions, and maintain the most comprehensive programmatic offerings and research platforms. These typically have the largest in-state (or in-market) student demand, and are the largest beneficiaries of state support and funding. In many states, there are two tiers of public university, with larger institutions being more selective and, thus, less exposed to shifts in demographics and consequent enrollment pressure than second-tier peers.

Qualitatively, a clearly articulated enrollment management and recruitment strategy will aid in Fitch's analysis of demand trends and expectations. Major strategic shifts in recruitment or market positioning versus competition are reviewed with management.

Revenue Source Characteristics

Fitch's assessment of an institution's revenue source characteristics includes an analysis of its key sources of operating revenue, including tuition, governmental appropriations, research and grants, endowment and foundation draws and other material sources of revenue (e.g. gifts, intellectual property and healthcare). The level of revenue control and price sensitivity, their sustainability and trends over time are all key points of the analysis.

Legal Capacity: Private institutions are generally subject only to market forces when determining price. Public universities may have legislatively or public board-imposed constraints on pricing flexibility or program offerings. The ability of an institution to increase student-generated revenues is largely linked to its ability to raise tuition and fees and/or increase enrollment. For public universities, limits on price-setting ability could be a constraining factor, particularly if tuition revenue growth does not keep pace with expense growth, or if the institution is unable to generate sufficient nontuition revenue. Fitch considers the level and consistency of direct and indirect support from the state government as an offset to tuition control imposed by the state.

Price Sensitivity

Expectation for Pricing Power[a]	Strong Growth	Growth	Stable	Declining
Overall Demand Assessment	**>4%**	**2%–4%**	**0%–2%**	**<0%**
aaa	aaa	aa	aa	a
aa	aa	aa	aa	a
a	aa	a	a	bbb
bbb	a	a	bbb	bb
bb	bbb	bbb	bb	bb

[a]Metric to Support Assessment = Five-Year CAGR of "Net Tuition & Fees/Enrolled FTE".
Source: Fitch Ratings.

Practical Capacity-Elasticity: Fitch measures price sensitivity *(see table above)* in the context of the overall demand characteristic assessment, as the latter will act as a constraint (or support) on pricing ability. The metric to inform our expectation for pricing power is the net tuition and fees per enrolled FTE on a historical rolling five-year basis. A steady to positive metric value indicates that demand matches or outpaces any increase in tuition. This is indicative of a less price-sensitive student base and is considered a stronger revenue defensibility characteristic.

The overall demand assessment will serve to inform this subfactor to highlight defensive or reactionary pricing activity in the face of declining enrollment or otherwise unfavorable competitive landscape. As the table indicates, stronger demand coupled with greater pricing flexibility results in a higher assessment of pricing power. The table also indicates that stability in either (or both) enrollment and tuition may still support as favorable an assessment as demonstrable pricing growth against stable or increasing enrollment.

Other Revenue Sources Considered: Institutions typically utilize investment earnings from endowment or foundation funds to strategically support operations. Fitch evaluates the relative rate of draws against earnings in an effort to determine sustainability over time. Since 2001, average draw rates for the sector have remained at or below 5% (of market value), which institutions generally link by policy to their expected long-term investment return rate. Drawings at levels far below expectations for long-term returns are considered stronger.

Drawings that potentially diminish the corpus of the fund are considered a weaker attribute, particularly absent demonstrable fundraising ability that would replenish those funds.

Fitch establishes a forward-looking expectation for sustainable draw rates on a case-by-case basis, informed by an institution's policy and asset allocation as reflected in the U.S. Higher Education scenario analysis *(see page 18 for more information)*. Existing policy and historical draw levels inform Fitch's forward-looking expectation. A stronger assessment reflects either sufficient pre-draw earnings or sustainable draw levels. Nonroutine extraordinary draws may not negatively affect the assessment, if deemed strategic or nonrecurring, and do not materially deplete the asset base.

Institutions, primarily public universities, may receive dedicated state or other governmental funds for operations, capital or debt, which, despite some cyclical variability, is viewed in general as a baseline stabilizing factor. These revenues are evaluated for magnitude, reliability and trajectory and considered in the forward-looking scenario. If this revenue source is affected by an institution's headcount or credit hours, then it is unlikely that a weaker demand profile would support a stronger assessment of this subfactor in a forward-looking assessment.

Other revenue sources that can serve to stabilize revenue include royalty or patent revenues, or other research-related revenue, Fitch does not consider grant revenue as a source of meaningful cash flow given that funding is tied to expenses. However, substantial grant funding identifies an institution as a leader in research and, as such, should exhibit greater student demand, faculty and programmatic strength. It can also provide some insulation against revenue volatility from other sources (e.g. state funding or investment income) and will be considered in the assessment of revenue defensibility.

The presence of other material revenue sources may act as a stabilizing revenue force for institutions with broader research, medical or other business lines. Fitch will review that revenue stream in the context of its accretive or dilutive impact to overall university performance and not solely as a source of revenue diversity. As an example, where healthcare revenues represent a majority of overall university operating revenues, Fitch may utilize the "U.S. Not-for-Profit Hospitals and Health Systems Rating Criteria" to support its assessment of this subfactor.

Asymmetric Rating Factor Considerations — Revenue Defensibility

- Volatile tuition discounting practices, which result in flat or declining net tuition revenue, may indicate weak or pressured demand.
- Enrollment volatility may negatively affect the assessment, particularly if not driven by strategic initiatives and expected to persist.

Operating Risk

Operating risk reflects our assessment of the risk that an institution will face operating or capital costs that are unfunded, unplanned or unsustainable and the impact of those risks. This may result in a reduction in financial flexibility to a level that affects the ability to generate sufficient cash flow to support required operating and debt service outlays. Fitch considers risks related to general operating and capital costs to inform its overall assessment of operating risk and evaluates both their likelihood and magnitude of impact.

Operating Cost Flexibility

Fitch reviews an institution's key operating expenses, their volatility over time and the timing of outlays to cover them. Key expenditures for the sector include faculty, staff and student salaries and benefits, depreciation of property plant and equipment, fundraising and interest on debt. For most colleges and universities, costs associated with salaries and related benefits compose the largest expense.

A key input into the analysis of operating cost flexibility is the institution's operating performance both historically and on a forward-looking basis. The key metric used to evaluate operating performance is the cash flow margin — adjusted. This margin excludes noncash expenses but includes institutions' proportionate pension service costs.

Fitch also considers the prior and expected five-year trend of operating expenditures versus operating revenues over the same period. A persistent structural imbalance will inform forward-looking expectations for operating performance and may result in a lower subfactor assessment. A stable or slightly positive rate is considered neutral to the overall assessment. Fitch may also be neutral toward an institution's planned imbalance for strategic purposes, if temporary in nature.

Metrics to Inform Operating Cost Flexibility

(%)

Indicator	aaa	aa	a	bbb	bb
Privates — Cash Flow Margin-Adjusted	>20	15–20	10–15	5–10	<5
Publics — Cash Flow Margin-Adjusted	>18	12–18	6–12	0–6	<0

Note: Definition for Cash Flow Margin - Adjusted: Adjusted change in unrestricted net assets from operations + depreciation + amortization + interest expense + noncash OPEB expense + other noncash expenses + pension expense - proportionate pension service cost.
Source: Fitch Ratings.

An institution's ability to recover its costs via dedicated operating or capital appropriations also supports the assessment of expense flexibility. Fitch expects private institutions to operate with higher margins relative to their public peers as the excess is important to generate cash and build balance sheet assets over time. Public universities typically rely more on grant, appropriation and gift support rather than balance sheet accumulation. As in the revenue defensibility assessment, Fitch evaluates both the magnitude and trajectory of this related support over time.

Fitch evaluates an institution's ability to control its labor costs against fluctuations in demand for services, reviewing workforce composition, the presence and key terms of collective bargaining agreements, relevant state laws and any other institution-specific workforce dynamics. Workforce costs are the largest component of operating expense and, thus, integral to overall performance. A workforce evaluation highlights an institution's relative ability to control labor costs, based on factors such as management's independent control of headcount, compensation and work rules, existence/terms of contractual agreements with labor, and laws covering collective bargaining and the ability to strike. Demand dynamics may support temporary imbalances in costs against revenues (e.g. program ramp-up, expansion), but over time, the ability to sustain sufficient cash flow is key to the assessment.

The relative ability to control labor costs over time may be constrained in some cases, particularly at institutions with a high level of tenured faculty, or those exposed to state laws, collective bargaining agreements and labor relations that affect their ability to adjust staffing against demand. Reduced flexibility will be a negative factor in the operating risk assessment.

Asymmetric Rating Factor Considerations — Operating Cost Flexibility

Evidence of a structural imbalance, as demonstrated by expense growth that consistently outpaces revenue growth.

Capital Expenditure Requirements

The need for continual capital investment to support enrollment and, in some cases, robust clinical and/or research enterprises is a key factor in considering operating flexibility. Higher education institutions are expected to sufficiently fund campus renewal and replacement needs over time, and with an increasingly competitive landscape, those needs are not expected to abate over the longer term.

Fitch requests details on deferred maintenance, major capital projects both approved and planned, expected sources of funding, and total expected outlays to assess the level of flexibility, timing and impact of these capital expenditures on the institution. Fitch analyzes the expected timing and impact of future cash outflows for capital investment by evaluating key funding sources including debt, philanthropy and appropriations.

Metric to Support Capital Expenditure Requirements

Indicator	aaa	aa	a	bbb	bb
	Stronger	Stronger	Stronger	Midrange	Weaker
Average Age of Plant	<10 years	10–12 years	10–12 years	12–15 years	>15 years

Note: Definition – Accumulated depreciation/depreciation expense.
Source: Fitch Ratings.

Fitch evaluates expected capital needs through an analysis of historical spending relative to annual depreciation in an average age of plant calculation. This metric is useful both to establish a reasonable historical trend and as a point of comparison against peer institutions. The assessment of expected capital needs is made in the context of stated plans and funding sources. In the absence of stated plans, Fitch will focus on historical data and comparative peer assessment to support its analysis of capital needs.

Fitch also evaluates the strength of an institution's fundraising capabilities in support of its capital needs. Consistent and strong fundraising results for both annual and major capital needs suggest a stronger assessment. Inconsistent, ad-hoc or minimal fundraising may suggest a weaker assessment. Fundraising levels will be evaluated in the context of expected capital needs, both annually and over time in the form of longer term campaigns. Additionally, the presence of consistent governmental support for capital suggests a stronger assessment. Expectation for a reliable source of external capital funding reduces the need for internal funding and the risk of material impacts on the overall credit profile.

Financial Profile

The third key rating driver is an institution's overall financial profile. Having evaluated its revenue defensibility and operating risk profile, Fitch considers the institution's financial flexibility through a forward-looking stress scenario intended to assess its relative capacity to repay debt and meet other obligations. This analysis connects the institution's overall risk profile with its leverage and liquidity profile. The financial profile assessment is considered through-the-cycle, rather than at a single point in time.

Fitch's philosophy is that ratings should not change due to normal cyclical variations. Business cycle or market downturns are inevitable, and variations in financial performance in many cases can be observed. Fitch believes that ratings should account for this. On the other hand, broad shifts different from the ebb and flow of a normal macro cycle may also occur. Scenario and sensitivity analysis helps make the distinction between the two and helps communicate both rating sensitivities and what is already anticipated in the current rating.

Fitch considers forward-looking scenarios to support its financial profile assessment *(see Appendix A, U.S. Higher Education Scenario Analysis and the Portfolio Analysis Model)*. These scenarios include a base case and a stress case, as well as, in certain cases, additional sensitivities as described more fully below. Fitch's expectations are shaped by the revenue defensibility and operating risk key rating driver assessments. Peer analysis is also used wherever appropriate and if ratings for relevant peers with similar operating and revenue defensibility profiles are available.

The assumptions applied in the tool to consider the returns on investment portfolios of higher education institutions can also be used for investment portfolios of certain other not-for-profit enterprises that fall outside the scope of these criteria.

Establishing Fitch's Base Case Scenario: The base case scenario reflects Fitch's evaluation of an institution's recent performance based on a review of its audited financial statements covering a period of at least three years (typically five years to six years). Fitch considers as an indicator of future financial performance the recent track record of the institution, and its market niche. Both historical and management's budgeted or forecast, where available, financial results are considered in establishing the base case.

The Fitch base case is typically established by adjusting the institution's budgeted or projected revenues, expected costs and planned capital expenditures in a manner consistent with Fitch criteria and expectations, including Fitch's macroeconomic assumptions.

If future performance is expected to track differently than historical results due to a significant capital expansion, a new acquisition or development of new or existing services, Fitch may make adjustments in a manner consistent with Fitch criteria and expectations (including Fitch's macroeconomic assumptions). Forecasts that rely on aggressive demand growth, sharp tuition increases (or discount rate changes) or expense reductions may be viewed with analytical conservatism. Adjustments are focused on measuring financial and operational flexibility in the economic environment expected for the relevant forecast period.

Base Case Informs the Stress Case: Fitch's stress case scenario analysis, which informs the financial profile assessment, illustrates shifts in key operating, leverage and liquidity metrics contrasted to the base case to determine if these are consistent with a stable rating through that stress. Fitch considers potential performance under plausible stress scenarios including a change in market value of an investment portfolio over the course of an economic or market cycle. This illustrates how stress cycles affect individual institutions differently. Institution-specific stress assumptions may be used where deemed inherently more or less vulnerable to revenue or expense volatility.

The analysis of the cash flow scenario used in the rating process is a key quantitative and qualitative determinant of the rating and is typically a central point of discussion in rating committees.

Leverage: The stress case scenario highlights expected financial leverage of the institution, incorporating both through-the-cycle elements and a forward-looking view. The measure of financial leverage considers the generation of cash flow as it relates to available funds. The relative balance sheet strength and resources available to absorb changes in revenue or operating fluctuations, as well as to make strategic and capital investments, are a key element distinguishing credit risk within the sector.

Available Funds to Adjusted Debt: Fitch uses an adjusted debt metric to calculate leverage, which incorporates both direct and indirect obligations (such as pension obligations or operating leases), against an institution's available funds. Higher values imply greater financial flexibility in meeting and managing debt obligations.

Fitch incorporates a broad definition of available funds including those available funds sourced within foundations and endowments established in support of broad university operations. Special-purpose foundations as a rule are not incorporated; however, this is determined on a case-by-case basis in an effort to best reflect the total asset base present in support of the operating entity. The goal is to present a comprehensive view of the full resources available to support the mission and operating mandate of the institution, providing a more consistent match of long-term assets against long-term liabilities.

Rationale for Pension Treatment in Leverage Metrics

Issuers with defined-benefit (DB) pensions carry a financial obligation that is long term in nature, and uncertain in timing and amounts to be paid. Fitch views unfunded pension liabilities, which broadly represent the accrued liabilities in excess of the invested assets available to meet the obligation, as a debt-equivalent obligation that may be included in the calculation of Fitch's core leverage metrics and its assessment of an issuer's financial profile. Fitch's determination of each issuer's exposure to and level of pension obligations is dependent upon a number of variables, including accounting standards, applicable regulations and funding practices. The methodologies and parameters used in Fitch's analysis are outlined in Appendix C: Pension Treatment in Leverage Metrics.

Other Post-Employment Benefits: In most cases, Fitch does not consider the credit impact of other post-employment benefits (OPEB) in assessing the long-term liabilities of public higher education institutions. For most governmental entities providing OPEB, the level of benefits has proven much easier to change than pensions, and legal protections appear limited in most cases. In cases where OPEB is exceptionally large and not subject to modification, Fitch may incorporate OPEB as an asymmetric risk factor. Consistent with other expense items, Fitch adjusts cash flow to exclude the noncash component of OPEB expense.

Treatment of Operating Leases and PPP's in Leverage Assessment

Fitch views operating leases as a debt-equivalent form of funding and adjusts its core leverage ratios to include the debt-like features of operating leases. Where operating lease payments are a substitute for long-term on-balance-sheet funding, Fitch capitalizes annual operating lease expense using a 5.0x multiple to create a debt-equivalent figure. This figure represents the estimated funding level for a hypothetical purchase of the leased asset and is included in Fitch's core leverage metrics. This enables a broad comparison between rated entities that incur debt to finance an operational asset and those that have leased it.

A multiple of 5.0x reflects assets with economic lives of 15 years, consistent with the mix of office space and other equipment typically leased by higher education institutions, in a 6% interest rate environment. Higher or lower multiples may be used to reflect the nature of the leased assets, with higher multiples for institutions with operating leases for assets with longer economic lives, such as entire buildings, and lower multiples for institutions leasing assets with shorter economic lives. Use of multiples different from 5.0x will be noted in Fitch's research on the institution.

New accounting standards will establish principles reporting the assets and liabilities that arise from certain leases. For entities that adopted these standards, Fitch will include the reported liabilities in its calculation of long-term debt and make further adjustments to income statement metrics for operating lease payments, if appropriate. Where these accounting standards have not been adopted, operating leases that function more like capital leases or debt will be capitalized in the manner described above.

An institution may use a public private partnership (P3 or PPP) transaction to address a capital need such as housing or parking. PPP and similar project debt transactions vary in the level of financial obligation undertaken by the institution, and Fitch reviews the framework agreements governing the financing to assess the level of liability incurred by the institution, if any. Where the institution does not bear material operating cost or demand risks associated with the undertaking, the liability will not be included when assessing the institution's financial profile.

If under the framework agreement the institution is the primary source of revenues for the PPP or if the framework agreement obligates the institution to make a payment of project-related debt in the event that the framework agreement terminates either for convenience of the institution or default on the project default, Fitch will add this liability to the institution's leverage. The outstanding project company debt amount is a simple, transparent measure of this liability. As described in "Public-Sector Counterparty Obligations in PPP Transactions Rating Criteria." there may be circumstances where the institution's obligations are more tailored and limited under the framework agreement, for example, providing milestone payments in a PPP or a contingent payment stream to support revenues. In such cases, the probability of payment being required and the significance of that payment in determining the project rating will provide the context for treatment of the liability in the institution's IDR analysis.

Liquidity

Fitch considers liquidity to be asymmetric in its influence on the rating; a weak liquidity profile relative to operations may constrain the overall assessment of the institution's financial profile. The key metrics used by Fitch to measure liquidity are debt service coverage (x) and available funds/operating expenses (%).

The liquidity profile assessment evaluates the liquid resources available to an institution that support its capacity to cover expected or unexpected operating or capital costs, using available funds as the key metric. The first resource available to most institutions is the cash flow margin above operating costs that acts as a cushion to changing circumstances. A second source is unrestricted available funds, and a third is committed liquidity lines from investment-grade-rated financial institutions.

With a largely biannual revenue cycle for most institutions, revenue cycle and collection metrics are typically not materially relevant for the sector. However, for institutions with material operations in service lines with ongoing cash collection needs, Fitch reviews its revenue cycle and collection practices and efficiency to evaluate any expected material bearing on the overall liquidity assessment.

Debt Service Coverage: Debt Service Coverage (DSC) measures the cushion between current annual debt service (ADS) and cash flow available after payment of all operational and non-operational costs in any given period (cash flow margin). DSC indicates the level of cash flow cushion available without reducing the cash reserve balance. Fitch calculates debt service coverage as cash flow divided by the annual amount debt service due (principal and interest) in the current year.

Coverage against maximum annual debt service (MADS) is also taken into account in the analysis, which reflects the amount of equal-ranking and senior debt service due (principal and interest) in any given future current year. Where a borrower has balloon indebtedness or bullet maturities, Fitch may request and review a smoothing to better conform to the treatment under the indenture or loan agreement.

Covenant requirements that measure the amount of pledged revenue (not net income) against annual debt service requirements are not used in Fitch's liquidity analysis.

Available Funds to Operating Expenses: Available funds to operating expenses measures the level of available funds an institution has on hand to cover its operating expenditures. This metric is a useful indicator of its ability to cover ongoing operating expenditures absent any incoming liquidity as a measure of financial flexibility during a period of revenue stress.

Where available, this analysis may also consider alternate sources of liquidity, such as lines of credit, to further inform this assessment, particularly in cases where the institution falls below the available funds to adjusted debt threshold *(as indicated in the rating positioning tables)* absent those sources. It is noted that draws on lines of credit are also incorporated in the total adjusted debt measure, to better reflect the obligation against the asset.

Rating Guidance: Analytical Judgement

The stress case scenario analysis is used to assess the impact of stress on key liquidity and leverage metrics. Together, these create a financial profile on a forward-looking and through-the-cycle basis that is aligned to the assessment of key rating drivers to obtain the suggested rating level. The rating positioning tables below provides guidance to the analytical outcome, aligning the assessment of the institution's overall risk profile (through revenue defensibility and operating risk assessments) with its leverage and liquidity profile.

The rating positioning table is the starting point in assessing the final rating. For example, ratings may be higher or lower than suggested by the table based on an analytical judgment made concerning whether there are factors present that suggest a higher or lower risk of a shift in capacity for meeting financial obligations than would be suggested by the rating derived from the table. Higher ratings than suggested could result from such factors as an exceptional market niche with little to no vulnerability to demand risk or price elasticity, access to extraordinary funding mechanisms, including government support, for operating (e.g. pension expense or debt service) or capital outlays, an exceptional level of cash flow flexibility against obligations in a forward-looking scenario or an extraordinarily strong total asset base. Conversely, lower ratings could result from such factors as an exceptionally narrow market niche with elevated vulnerability to demand volatility, extraordinarily weak level of cash flow flexibility against obligations in a forward-looking scenario or extremely limited asset base.

Rating Positioning Tables

Publics — Available Funds/Adjusted Debt (%)						Privates — Available Funds/Adjusted Debt (%)					
Revenue	Operating	AA	A	BBB	BIG	Revenue	Operating	AA	A	BBB	BIG
aaa/aa	aaa/aa	>30	<30	—	—	aaa/aa	aaa/aa	>90	<90	—	—
aa/a	a	>40	20–40	<20	—	aa/a	a	>120	60–120	<60	—
a	aa/a	>40	20–40	<20	—	a	aa/a	>120	60–120	<60	—
aa/a	bbb	>50	30–50	10–30	<10	aa/a	bbb	>160	90–160	30–90	<30
bbb	aa/a	>50	30–50	10–30	<10	bbb	aa/a	>160	100–160	30–100	<30
bbb	bbb	>80	50–80	30–50	<30	bbb	bbb	>180	120–180	50–120	<50
bbb	bb	>100	60–100	40–60	<40	bbb	bb	>200	140–200	60–140	<60

Rating Positioning Tables

Publics — Available Funds/Adjusted Debt (%)						Privates — Available Funds/Adjusted Debt (%)					
Revenue	Operating	AA	A	BBB	BIG	Revenue	Operating	AA	A	BBB	BIG
bb	bbb	>100	60–100	40–60	<40	bb	bbb	>200	160–200	80–160	<80
bb	bb	—	>100	80–100	<80	bb	bb	—	>200	100–200	<100

Source: Fitch Ratings.

The final positioning within the rating category will be further informed by a review of an institution's relative position among peers. Furthermore, the rating positioning table is predicated on an institution having no asymmetric risk factors following an assessment of such factors, as discussed below.

'AAA' has not been incorporated in the positioning table as institutions of higher education generally remain subject to revenue defensibility risk as a function of demand volatility which is not offset by a monopolistic market position. However, an 'AAA' analytical outcome is possible where both the revenue defensibility and operating risk assessments are very strong (aaa/aa), and where an institution's leverage profile and asset base/liquidity are exceptionally strong.

Asymmetric Additional Risk Considerations

The final rating assigned also considers certain asymmetric risk factors that may affect the rating conclusion. These risk factors work asymmetrically, where only below-standard features are factored in to the final rating levels, while more credit-positive features are expected to be the rule.

When multiple asymmetric risk features exist, the IDR may be lower than the analytical outcome suggested by the table above, possibly by multiple notches, based on the severity of the risks. For example, an institution with an 'a' revenue defensibility assessment and operating risk assessments and net leverage consistent with a suggested analytical outcome of 'A' might only achieve an IDR of 'BBB+' or lower if debt structure were assessed to be weak, reflecting a material exposure to refinance risk or swap risk, or if debt structure and leadership and governance practices were assessed as weak. The final IDR will reflect a qualitative assessment of the extent and impact of the asymmetric risk factors, as outlined below. The asymmetric considerations are discussed fully in Fitch's master criteria "Public-Sector, Revenue-Supported Entities Rating Criteria."

Debt Structure and Contingent Liability Exposures

Many U.S. colleges and universities build up substantial liquidity positions in the form of endowments and foundations over time. The sector's large cash balances relative to debt accommodate the use of longer amortizing debt structures (typically 30 years). While certain larger, higher rated institutions utilize bullet structures, market access to roll these maturities or the ability to pre-fund them with accumulating reserves over time may offset that risk.

The use of variable-rate demand bonds (both hedged and unhedged) and renewable bank financing are also common, though the par value of these financing vehicles is usually well below the level of available funds, thereby eliminating refinancing risk. Thus, the debt structure attribute for many colleges and universities is likely to be neutral. However, there may be institutions whose debt structure has features that add risk, such as non-amortizing bullet maturities or mandatory put bonds. These are considered when reaching a rating conclusion.

Additionally, while most variable-rate demand bonds are supported by letters of credit or dedicated liquidity facilities provided by financial institutions, some highly rated institutions may act as their own liquidity providers, allowing them to avoid bank liquidity fees, more restrictive performance covenants and bank renewal and downgrade risk. In such instances, Fitch's analysis considers the stability and availability of funds sufficient to meet bond purchase requirements, as well as the policies and procedures that would be followed should a failed remarketing occur (see "Short-Term Ratings Criteria," dated March 2020). Moreover, Fitch evaluates the potential change in leverage that could result from utilization of cash resources in the financial profile assessment.

A weak debt structure may constrain the overall assessment of the institution's rating. Absent unrestricted cash resources to retire substantially all debt, Fitch considers the following debt characteristics and terms consistent with a weaker assessment.

- Material exposure to refinance risk (use of bullet maturities; debt not fully amortized at maturity), which distorts near-term financial metrics and increases the uncertainty for both market access and the cost of debt at a future date.
- Highly sculpted and substantial use of deferred amortization instruments that materially distort near-term financial metrics.
- Material exposure to unhedged floating-rate interest. Fitch considers whether the unhedged portion of exposure, if any, would have a material impact to an institution's financial profile under stressed interest rate assumptions.
- Material exposure to contingent liabilities, including swap and derivative contracts that include collateral posting requirements and termination events that require a payment of the current marked-to-market value of the swap contract.

For more information on Fitch's global approach to analyzing debt structures, see its master criteria report, "Public Sector, Revenue-Supported Entities Rating Criteria").

Leadership and Governance

The quality of governance and leadership is an important consideration when assessing the potential performance of an institution over the life of the debt. Fitch considers this attribute on a stand-alone basis to be asymmetric because the presence of strong leadership and governance is reflected in expectations for how an institution will manage throughout the economic cycle. In contrast, weak governance and leadership may cause the rating to be lower, all else being equal.

The effectiveness of governance and leadership is an important factor in assessing an institution's creditworthiness, as management's decisions and initiatives — subject to the oversight and strategic direction of the governing body (such as a board of regents) — can ultimately determine an entity's long-term financial viability. Fitch generally focuses its commentary on leadership and governance practices where their effectiveness influences the rating decision.

Weaker characteristics of leadership and governance constrain the rating, when analyzing the ability to execute on organization initiatives and plans as well as the capacity to manage through a business cycle. Weaker characteristics include:

- lack of experience;
- significant political pressure or instability that can impair its financial profile;
- repeated failure to adopt budgets on a timely basis due to an absence of consensus in the governing body or resistance of key stakeholders;
- failure to maintain open communications between the institution and any relevant governing body, which may be revealed in unexpected operating changes;
- limited or lack of policies and procedures; and
- official allegations of substantial corruption or breach of financial reporting law or regulation.

Legal and Regulatory Framework

Forming an opinion of the quality of the legal or contractual framework upon which many assumptions rest is a prerequisite to the credit analysis. For instance, the framework may be purely contractual or rely on statute or codified law, a particular statutory instrument, or the powers of a constitutional or statutory authority. Fitch forms a view on the clarity of the legislation and/or regulation, the scope of regulatory discretion and any effect this may have on an institution's performance or dispute resolution. The financing documentation (and if appropriate, any legislation it may depend on) or detailed summary documents (such as offering

materials) are reviewed for key commercial elements and contract clarity, especially regarding allocation or transfer of risk.

Weaker characteristics of a legal and regulatory framework include:

- contractual, regulatory or statutory framework dependent on untested or temporary legislation or regulation;
- weak or no legal opinions; contracts not available for inspection; and
- less effective participation in regulatory process with negative regulatory outcomes.

Information Quality

The quality of information received by Fitch, both quantitative and qualitative, can be a constraining factor for ratings. Information quality may constrain the rating category to a maximum level or in extreme cases preclude the assignment of a rating. Information quality for the initial rating and for surveillance purposes is considered when a rating is first assigned. Fitch must be confident that adequate ongoing data will be available to monitor and maintain a rating once assigned. Information quality encompasses such factors as timeliness and frequency, reliability, level of detail and scope.

The information provided to Fitch may contain reports, forecasts or opinions provided to the institution or their agents by various experts. These include legal advisors, financial advisors, third-party engineers, market or environmental consultants, insurance advisors and others. Where these reports contain matters of fact, Fitch will consider the source and reliability. Where the information is a forecast or opinion, Fitch expects these to be based on well-reasoned analysis supported by the facts.

Data Sources

Fitch's rating analysis and the key rating assumptions for the criteria are informed by Fitch's analysis of information that is provided by institutions, financial advisors, underwriters and/or publicly available sources including, but not limited to, audited and interim financial statements; historical enrollment and other demand data; tuition and fee information; asset allocation and investment return data; endowment spend policy and program information.

Rating Assumption Sensitivity

Revenue Defensibility: Ratings are sensitive to changes in enrollment and demand indicators, price elasticity and endowment performance that impact the final assessment.

Operating Risk: Ratings are sensitive to persistent changes in operating cash flow, reflecting shifts in operating and capital expenditure flexibility, growth rates or timing.

Financial Profile: Ratings are sensitive to changes in leverage profile driven by shifts in direct and indirect obligations,or extraordinary market volatility in excess of an expected stress scenario, which results in a different rating positioning in the analytical guidance table.

Variations from Criteria

Fitch's criteria are designed to be used in conjunction with experienced analytical judgment exercised through a committee process. The combination of transparent criteria, analytical judgment applied on a transaction-by-transaction or issuer-by-issuer basis, and full disclosure via rating commentary strengthens Fitch's rating process while assisting market participants in understanding the analysis behind our ratings.

A rating committee may adjust the application of these criteria to reflect the risks of a specific transaction or entity. Such adjustments are called variations. All variations will be disclosed in the respective rating action commentaries, including their impact on the rating where appropriate.

A variation can be approved by a ratings committee where the risk, feature or other factor relevant to the assignment of a rating and the methodology applied to it are both included within the scope of the criteria, but where the analysis described in the criteria requires modification to address factors specific to the particular transaction or entity.

Limitations

Ratings, including Rating Watches and Outlooks, assigned by Fitch are subject to the limitations specified in Fitch's Ratings Definitions and are available at www.fitchratings.com/rating-definitions.

Disclosure

Fitch expects to disclose, as part of its rating action commentaries or new issue reports, use of a lease multiple different from 5.0x and key assumptions in the base case and rating case scenarios.

In addition, Fitch will disclose any variation to criteria *(as mentioned in the Variations from Criteria on page 16 and above)*. In many cases, Fitch uses the assumptions that it derived in its initial analysis in its surveillance review. In order to focus Fitch's rating action commentaries on the most important changes to the rating, Fitch will not disclose these assumptions in subsequent rating action commentaries unless there is any change to the assumption.

Appendix A: Portfolio Analysis Model (PAM) and U.S. Higher Education Scenario Analysis

Portfolio Analysis Model

Investment returns are inherently cyclical in nature and often tied to the broader economic backdrop. The purpose of the Portfolio Analysis Model (PAM) is to provide broad order of magnitude guidance of how an issuer's reserves or liquidity position (i.e. cash and investment portfolio) might be affected in relation to the general macroeconomic/cyclical scenario specified. PAM is used to generate a moderate, uniformly derived, but issuer-specific, portfolio stress as a means of evaluating an entity's relative financial resiliency through an economic/market cycle. PAM was developed to provide a plausible change in market value estimate of an investment portfolio over the course of an economic or market cycle. It is Fitch's view that such changes within reasonably anticipated ranges should be accounted for in the rating.

PAM is not a forecasting tool but, rather, provides a plausible outcome for through-the-cycle (TTC) analysis by generating a portfolio return estimate that is empirically based, objective and intuitive. Using each issuer's own specific asset allocation mix, we simulate how issuer portfolios might respond to the same negative market scenario.

Stressed and baseline PAM outputs are used as values in the rating and base case scenarios, respectively *(see Benchmark Assumptions table below)*. The primary effect of a negative change in the investment portfolio value will be to decrease various liquidity metrics and increase various leverage metrics, key elements of the rating process.

For a full detailing of the methodology and assumptions used by PAM, please reference the "Public Sector, Revenue-Supported Entities Rating Criteria."

U.S. Higher Education Scenario Analysis

The financial profile assessment incorporates a forward-looking base and stress case on an institution's performance by pairing institution-specific portfolio return estimates with an institution-specific cash flow scenario. The stresses imposed in Fitch's stress case scenario — portfolio returns, entrance fees and/or profitability — allow comparisons between the relative performances of other institutions facing a similar set of stresses.

The scenario analysis should not be interpreted as a forecast of actual performance under stress; it is only intended to illustrate performance under given certain stresses and a set of assumptions for a specific issuer. Management is likely to respond to the declines in portfolio value and profitability in the stress case with available resources or expenditure flexibility. The availability of such flexibility will be factored in considered during the interpretation of scenario results.

Methodology and Assumptions

The benchmark assumptions used in Fitch's base case and stress case scenarios are listed in the table below. These benchmark assumptions serve as starting points for the scenario analysis. Analytical judgement, Fitch's expectations for performance of the institution, and external information are used to adjust the assumptions in the table below to create final assumptions for the scenarios. Such information may include projections provided by the institution; organizational strategy and outlook; and debt issuance or capital investment plans. For example, one common adjustment to the base case is to include a specific debt amortization schedule versus the benchmark assumption for a 30-year level amortization schedule. In another example, in the stress case, Fitch may opt to apply a revenue stress for institutions who exhibit a history of volatile revenues or enrollment. The macro stress used also may be subject to adjustment, depending on prevailing conditions.

Benchmark Assumptions[a]

	Base Case Scenario	Stress Case Scenario
PAM GDP Growth	Between 1.5% and 2.5% in all years.	Between -1.0% and -2.0% in year one, 0.0% to 1.0% in year two, +1.5% to 2.5% in years three to five
PAM Max Return Limitation	None	Discretion to impose up to a -5% decline maximum return limitation for years one and two of scenario
Endowment Draw Rate	Three-year (12-quarter) average of historical draw rate.	Equal to the base case.
Revenue Growth	Historical five-year CAGR of institution's total revenues.	Equal to the base case.
Expense Growth	Historical five-year CAGR of institution's total expenses.	Equal to the base case.
Debt Amortization	Total outstanding debt amortized over 30 years.	Equal to the base case.
Capital Expenditures	Five-year historical average.	Equal to the base case.
Interest Expense	Grown at the implied interest rate, defined as interest expense in the most recent historical year divided by debt in the most recent historical year.	Equal to the base case.

[a]Subject to analytical judgement.
Source: Fitch Ratings.

Appendix B: Pension Treatment in Leverage Metrics

Institutions with defined benefit (DB) pensions have a financial obligation that is long term in nature and uncertain in timing and amounts to be paid. Ongoing employer and employee contributions, which accumulate invested assets in a trust fund and generate investment returns, are the primary sources for funding benefits and offsetting the pension liability that an institution has incurred. Through a series of actuarial calculations that can vary, the present value of the accrued pension obligation accrued to date can be compared to the invested assets available to meet the obligation. An excess of that liability over the invested assets value represents the unfunded portion of the pension obligation that has accrued (generally reported as the net pension liability [NPL] or "funded status" by the institution). In some cases, an institution will be a participant in a multi-employer plan, and the employer's share of that calculated liability will be considered in the analysis.

Debt Equivalent Obligation: Fitch views the unfunded balance of accrued DB pension liability as a debt-equivalent obligation. The size of the reported liability and the annual payments necessary to amortize it can be subject to a range of institutional decisions regarding benefit levels and actuarial assumptions, economic trends and regulatory considerations. Changes in these factors may affect the size of the unfunded liability over time. However, the most important drivers of unfunded liability tend to be the level of actual returns on the investment portfolio supporting the pension when compared to a target return and the adequacy of the employer contribution actually made. Fitch reviews the reported unfunded liability over time versus point in time. Material volatility in a plan's asset values due to market movement is less relevant to Fitch's assessment of pension-related risk than is the plan's longer-term prospects for funding improvement over time.

GASB or FASB: Institutions in the sector include both public-sector enterprises that follow GASB accounting rules and not-for-profit enterprises that follow FASB accounting rules; additionally, the pensions of most not-for-profit enterprises are subject to federal regulation. There are differences in the calculation and reporting of the unfunded pension liability between GASB and FASB. Public-sector (GASB) DB pension plans are unique in using their long-term investment return assumption as the liability discount rate. In contrast, private (FASB) plans use a low, variable, regulated discount rate tied to market rates, with some relief post-2009, distinct from the investment return assumption in calculating their liability. As such, there is a fundamental difference in reported unfunded pension liability between ERISA-regulated FASB plans and public-sector GASB plans that Fitch believes must be reflected in the analysis to support comparability. The calculation of the related pension liability, if any, to be added to an institution's adjusted debt varies as described below. Notwithstanding this difference, the calculations and adjustments made by Fitch are intended to create equivalency to the leverage assessment regardless of the accounting methodology applied.

Private Institutions Using FASB: Fitch's starting point for the pension analysis is the projected benefit obligation (PBO) as reported by the issuer. For purposes of assessing leverage within the scenario analysis, Fitch recalculates the funded status assuming 80% of the PBO. Any resulting adjusted pension deficit is added to debt equivalent obligations in Fitch's forward-looking assessment of financial flexibility. This adjustment to the PBO is intended to serve only as a proxy for capturing the impact of regulations on how pensions are likely to be funded, rather than a precise recalculation of actual liabilities.

The regulatory environment encourages the issuer to manage to an 80% funded ratio utilizing generally conservative investment return assumptions. Funding to 80% based on a lower discount rate generally corresponds to nearly fully funded levels using a normalized 6% long-term return assumption. To the extent that the regulatory environment shifts, Fitch will modify its approach to take into account the expected impact of these changes on a forward-looking basis. In addition, Fitch may incorporate pension contributions and other pension-related cash outflows in the stress case scenario to fully capture near-term liquidity risks from DB pension plans.

Some institutions are religiously affiliated entities that are not subject to federal regulation but typically manage and report their DB pensions in a manner consistent with regulated plans. Fitch's analysis of these pensions is identical to its analysis for regulated pensions.

Public Institutions Using GASB: Public sector DB pensions represent a source of uncertainty given the absence of uniform regulations that compels progress on prefunding, the irrevocable nature of vested benefits and the variability of reported liabilities. These factors in combination have led to the accretion of long-term liabilities and a rising demand for contributions.

Fitch applies the same approach to pension liability of a public sector enterprise as it does when considering pension obligations of state and local governments. For public enterprises the primary credit risk of DB pensions is in the accumulation of long-term liabilities. There is no uniform regulation of funding practices and the liability can accrete under multiple circumstances, including due to underperformance of assets, failure to achieve actuarial and economic assumptions, and inadequate annual contributions. Bankruptcy is possible but rare, and liquidation is improbable due to legal constraints. Fitch's baseline assumption is that vested benefits are irrevocable, and that benefits can be changed only for new hires.

The starting point for this analysis is the pension data as disclosed by the institution. To convey more effectively the magnitude of risks associated with public DB plans, and to improve comparability across plans, Fitch adjusts the reported NPL upward to reflect a 6% discount rate, if the NPL is based on a higher discount rate; this approach is identical to the adjustment to NPLs outlined in Fitch's "U.S. Public Finance Tax-Supported Rating Criteria." The resulting adjusted NPL is combined with debt obligations in Fitch's assessment of financial flexibility. In some cases an enterprise without audited financial statements separate from its primary government may not report detailed pension liability data, as for example when the primary government participates in several pension plans. In such cases, Fitch will adjust the institution's reported NPL for purposes of its analysis based on the primary government's main or general employee plan.

Allocating Multi-Employer Liabilities Under GASB 68: Although some public sector enterprises may directly sponsor and manage a DB pension plan, many provide pension benefits as part of a larger cost-sharing multiemployer system, or within a single-employer system that provides benefits to a primary government and its separate enterprises. As such, the ability of public higher education institutions to influence pensions is often limited, as decisions on benefits, assumptions and contributions are made by a legislature, local government or pension board. In these cases, multi-employer plan assets are not legally separated by employer. A single actuarial valuation is performed and the resulting NPL, expense, and deferred inflows and outflows for all participating entities are allocated proportionally, based on the pension's contribution practices. Each participating employer's audit contains only its proportionate share.

GASB 68's allocation method informs Fitch's approach to assessing liabilities in a cost-sharing plan or a single employer plan allocated to one or more enterprises. GASB 68's default assumption is that the liability is assigned where the obligation is required to be funded, generally by the participating employers. The standard considers pensions to be deferred compensation for which the direct employer is ultimately obligated. Fitch follows GASB 68 reporting for the liability allocation because the methodology is consistent with our expectations for how systems function, including how they resolve funding challenges.

The fact that most cost-sharing multi-employer plans are state-sponsored does not in and of itself mean that the unfunded liabilities of the plans are responsibilities of the state or of the pension system itself. In some cases the state has explicit legal and fiscal responsibility for plan funding, and Fitch allocates a share of the liability to the state accordingly, rather than to other participating employers. However, it is much more common for a state to take responsibility only for liabilities associated with its direct employees. Even in cases where they have historically provided support for related governments in the plans, states generally retain the option to pull back on this support. Fitch does not shift the reported liability away from the institution based upon this support where GASB 68 assigns it to an institution. However, as noted below, where there is a longstanding history of direct support and through funding provided to a class of employers from the state, Fitch does account for this in its analysis.

Treatment of State Support of Public Pension Obligation in the Leverage Assessment: Fitch relies on the pension liability data as reported by the institution when assessing its liability burdens. Some public institutions report special funding situations, under which states assume some or all of a NPL, typically for personnel in statewide teacher systems, and Fitch's analysis

reflects such support. In rare instances that fall short of a special funding situation, but where consistent, explicit state subsidy of pensions is provided, Fitch may modify its assessment of leverage to reflect the presence of state appropriations supporting all or part of an institution's pension liability.

Indicators of explicit state support might include a state making employer contributions on behalf of the public universities for the DB plans available to employees, but under a funding mechanism which does not meet the requirements for special funding under GASB's approach. Such mechanisms may include annual appropriation, statute, or specific authorizing legislation.

Appendix C: Key Definitions

Key Definitions

Term	Definition	Significance
Issuer Default Rating (IDR)	An expression of overall operating risk and relative vulnerability to default.	Provides an opinion on the relative ability of an entity to meet financial commitments, expressed as an ordinal measure of credit risk.
Base Case	The expected forward-looking case in the current macroeconomic environment.	Provides the analytical starting point in the forward-looking analysis, and also informs the stress case.
Stress Case	Forward-looking performance under a common set of assumptions.	Illustrates how cycles affect individual institutions differently, and informs the level of rating stability and credit resiliency.
Asymmetric Risk	Risk factors that work on a one-sided basis, where only below-standard features are factored into the final rating levels and more credit-positive features are expected to be the rule with neutral impacts on the rating.	Identifies those factors that may affect the final rating. The presence of asymmetric risks supports a conclusion that the rating suggested by the rating position table will have a higher risk of transition (and thus a lower rating) than institutions similarly rated but not exposed to such risks.
Financial Metrics		
Total Long-Term Debt	Total bonds payable + notes payable + capital leases + commercial paper outstanding + other long-term debt obligations	Provides an evaluation of total debt liabilities.
Adjusted Debt	Total long-term debt + unfunded pension liability + an operating lease expense multiple	Provides an inclusive evaluation of total long-term liabilities.
Available Funds	Cash + investments -permanently restricted net assets (including those of closely related foundations and endowments)	Provides an absolute measure of total balance sheet resources. Excludes bond proceeds.
Available Funds to Total Long-Term Debt	Available funds/total long-term debt	Indicates the level of unrestricted balance sheet resources available against long-term debt liabilities.
Available Funds to Adjusted Debt	Available funds/total adjusted debt	Indicates the level of unrestricted balance sheet resources available against all long-term liabilities.
Available Funds to Operating Expenses	Available funds/unrestricted operating expenses	Measures the financial cushion of an institution versus its expense base.
Adjusted Operating Margin (%)	(Total adjusted operating revenue - total operating expense)/total adjusted operating revenue	Provides an operating performance measure inclusive of the endowment income available in operations.
Cash Flow - Adjusted	Adjusted change in unrestricted net assets from operations + depreciation + amortization + interest expense + non-cash OPEB expense + other non-cash expenses + pension expense - proportionate pension service cost	Indicates the level of operating efficiency, using the level of an institution's operating surplus (or deficit) available to cover all of its annual outlays.
Cash Flow	Adjusted change in unrestricted net assets from operations + depreciation + amortization + interest expense + pension expense - pension contribution + non-cash OPEB expense + other non-cash expenses	Indicates the absolute level of resources available to service debt obligations after the payment of cash-based operating expenses. Adjusted for non-recurring/extraordinary items.
Current Debt Service	Current year cash paid for interest expense + current principal paid on long-term debt	Indicates an institution's annual debt service requirements.
Debt Service Coverage	Cash flow/current debt service	Indicates the net income available to meet annual debt service requirements.
Maximum Annual Debt Service	The amount of equal-ranking and senior debt service due (principal + interest) in any given future current year	Indicates an institution's largest likely future debt service requirement. May be smoothed for balloon or bullet maturities.
Debt Burden	Current debt service/total adjusted operating revenue	Indicates the relative burden of debt servicing costs for an institution.
Average Age of Plant	Accumulated depreciation/depreciation expense	Provides an indication of the condition of the physical operating plant, and the level of needed reinvestment.
Capital Expenditures as % of Depreciation	Net acquisitions of property plant and equipment/depreciation expense	Indicates the level of investment in physical plant over time, which informs the need for future investment.
Operating Metrics		
Adjusted Total Operating Revenue	Operating revenues + state operating appropriations + noncapital gifts/grants + investment income +	Provides a uniform measure of annual operating revenue available to fund operating needs.

Key Definitions

Term	Definition	Significance
	endowment draw/payout for operations - capital gifts/grants/appropriations - realized/unrealized gains/losses from investments	
Total Operating Expense	Operating expenditures + interest expense	Provides a uniform measure of annual operating expenditures. May be adjusted for extraordinary and nonrecurring items.
Acceptance Rate (%)	Accepted students/student applications	Provides an indication of institutional ability to control future enrollment. Lower acceptance rates among non-specialty institutions indicate more selectivity in choosing the entering class.
Matriculation Rate (%)	Enrolled students/accepted students	Provides an indication of greater desirability among students. Institutions with the highest matriculation rates are likely the first choice among their applicants.
Retention Rate (%)	Returning sophomore students/freshman enrolled	Provides an indicator of relative student satisfaction.

Source: Fitch Ratings.

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