Penn
UNIVERSITY of PENNSYLVANIA

Annual Financial Report 2017-2018

SELECTED FINANCIAL AND OTHER STATISTICAL HIGHLIGHTS
Fiscal Years Ended June 30

(dollars in millions)	*Actual* FY14	*Actual* FY15	*Actual* FY16	*Actual* FY17	*Actual* FY18
CONSOLIDATED STATEMENT OF ACTIVITIES					
Total operating revenues	6,611	7,120	8,576	9,194	10,094
Student income (net tuition & fees)	817	845	903	938	999
Sponsored program revenue	881	910	904	967	1,016
Health care services	3,705	4,044	5,320	5,703	6,245
Investment income distributed for operations	377	402	439	541	579
Total operating expenses	6,349	6,723	8,140	8,851	9,561
Change in net assets from operating activities	262	397	436	343	533
Other changes in net assets	1,416	122	585	1,392	1,794
Net change in total net assets	1,678	519	1,021	1,735	2,327
CONSOLIDATED STATEMENT OF FINANCIAL POSITION HIGHLIGHTS					
Investments at fair value	10,800	11,566	12,262	13,977	15,734
Plant facilities, net of accumulated depreciation	4,782	5,154	6,203	6,452	7,319
Notes and bonds payable	1,986	2,190	2,560	2,703	3,574
Total assets	18,003	19,000	21,183	23,083	26,415
Total liabilities	5,031	5,509	6,671	6,835	7,841
Total net assets	12,972	13,491	14,512	16,248	18,574
SPONSORED PROGRAM REVENUE					
Grants, contracts, and similar agreements:					
Federal government sources	668	663	658	668	688
Other government sources	29	23	23	23	23
Other	184	224	223	276	305
Total grants, contracts, and similar agreements	881	910	904	967	1,016
STUDENT ENROLLMENT (FTE)					
Undergraduate	10,721	10,787	10,800	10,884	10,903
Graduate and professional	11,718	11,776	11,867	11,675	11,952
Total fall enrollment	22,439	22,563	22,667	22,559	22,855

Content

UNIVERSITY OF PENNSYLVANIA FINANCIAL OVERVIEW
From the Vice President for Finance and Treasurer

Fiscal Year 2018 was another remarkable year for the University of Pennsylvania with notable achievement across all aspects of *Penn Compact 2020* and exceptional financial results. Among the financial highlights:

A Robust Endowment

- Penn's endowment returned a robust 12.9% in FY18 and total endowment value increased to $13.8 billion from $12.2 billion in FY17 as a result of strong equity market performance and exemplary investment management.

Growth in Research

- Research revenue surpassed $1 billion, with non-federally sponsored research growing to 30% of this total.

Strong Operating Performance

- Consolidated operating revenue topped $10 billion. Strong operating and non-operating performance contributed to the 14% growth in net assets of $2.3 billion, ending the year at $18.6 billion.

Fundraising Milestone

- Penn's $4.1 billion *Power of Penn* campaign was launched and our alumni, parents, and supporters contributed $686 million in new commitments, the highest in Penn history.

Expanding Penn Medicine

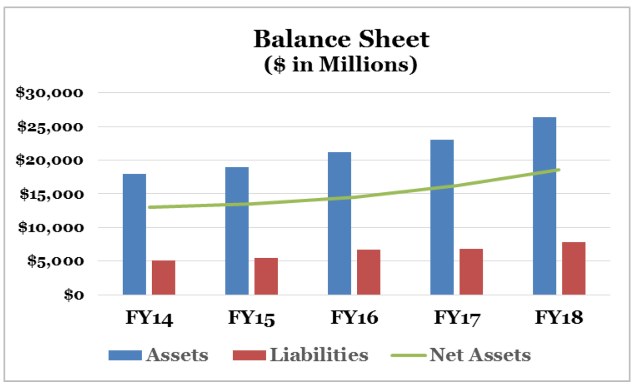
- Princeton HealthCare System joined the University of Pennsylvania Health System (UPHS) on January 1, 2018, further enhancing our reputation as a leading healthcare system.

Overall, Penn's solid operating performance, fundraising, and investment management; coupled with our manageable capital funding and prudent debt management; have contributed to balance sheet strength to enable continued investment in *Penn Compact 2020*.

BALANCE SHEET AND NET ASSETS

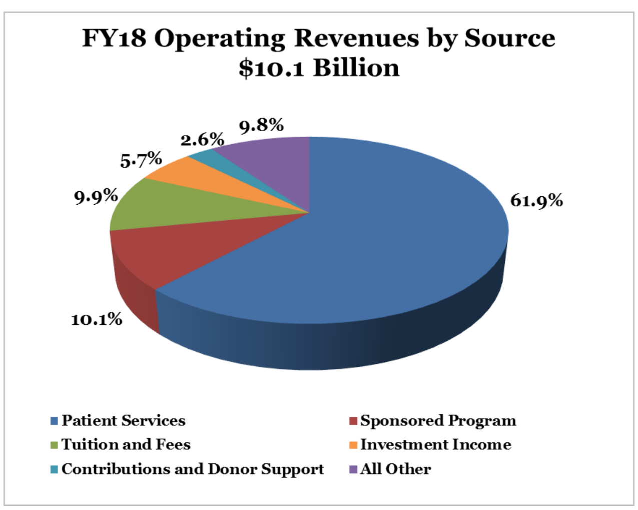
Total assets grew 14.4% over the prior year to $26.4 billion while liabilities increased 14.7% to $7.8 billion. Cash and cash equivalents increased $458.4 million, or 47.1%, to $1.4 billion, primarily driven by strong operating performance and the $370.3 million proceeds from the UPHS debt issuance in December 2017.

Net assets totaled $18.6 billion, an increase of $2.3 billion, or 14.3%, from FY17 primarily due to strong operating and investment performance. Since FY14, consolidated net assets have grown by 43.2%, impacted by favorable investment and operating performance, strong fundraising efforts, and UPHS regional expansion.



OPERATING REVENUE

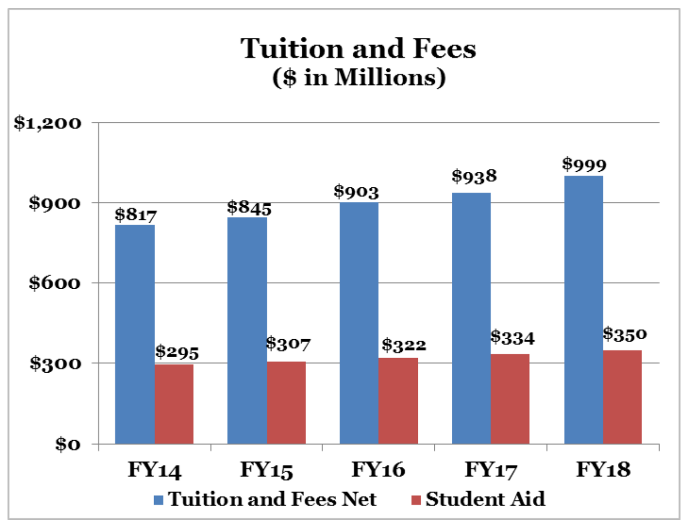
Total operating revenue increased by 9.8%, rising from $9.2 billion in FY17 to $10.1 billion in FY18.



Tuition and Fees

Tuition and student fee revenue increased 6.6% over FY17, from $937.9 million to $999.4 million, representing 9.9% of FY18 total operating revenue. This total is net of $350.2 million in undergraduate and graduate financial aid grants and scholarships, which increased by $16.6 million, or 5.0%, over the prior fiscal year.

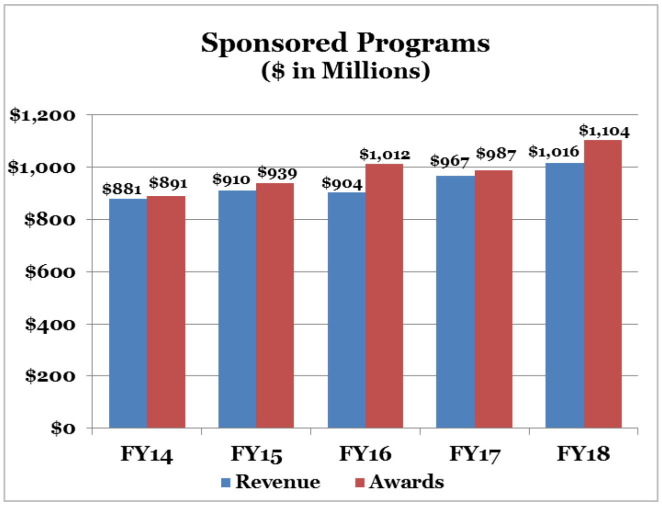
The *Penn Compact 2020*'s mission of inclusion, innovation, and impact continues to be Penn's guiding principle. For more than a decade, access to a world-class Penn education has been expanding further to families of all income levels with Penn's commitment to meet 100% of a student's determined financial need. To promote inclusion and increased access, Penn provides grant-based undergraduate financial aid packages and adheres to a need-blind admission policy, in which admission decisions are not affected by a student's ability to pay.



Sponsored Programs

Sponsored program revenue, comprised of funding from government and private-sponsored grants and contracts, represented 10.1% of total operating revenue and increased 5.1% from the prior fiscal year, from $967.2 million to $1.0 billion in FY18.

As one of the nation's top research universities, the funding provided to Penn is vital in generating advances in the physical and social sciences, medicine, and other leading edge fields. Research dollars have helped Penn Medicine to become a leader in immunotherapy studies as evidenced in the August 2017 FDA approval of a CAR T-cell therapy for treatment of patients up to 25 years old with acute Lymphoblastic Leukemia. This remarkable breakthrough, developed by Dr. Carl June and his team, is tremendously impacting the lives of cancer patients.



Government Awards

In FY18, a total of $741.2 million, or 67.2%, of Sponsored Program awards came from the federal government, the largest source of research funding for Penn. Of the federal funding, $527.9 million, or 71.2%, came from the National Institutes of Health (NIH). The Perelman School of Medicine was among the top three schools nationwide in grants awarded by the NIH. Overall, total awards issued to Penn in FY18 increased by $116.9 million, or 10.6%.

Industry and Foundation Awards

Industry and foundation awards accounted for $273.9 million, or 24.8%, of total sponsored program awards. Industry awards increased 52.2% from $144.6 million in FY17 to $220.1 million in FY18.

Contributions

In FY18, the overwhelming generosity of Penn's loyal supporters allowed for the fulfillment of critical priorities at every School and Center. Contributions, defined as new gifts and pledges, totaled $455.9 million, a $17.0 million, or 3.9%, increase from the FY17 total of $438.9 million. FY18 contributions were comprised of $165.2 million to restricted endowment, $211.5 million to support operations, and $79.1 million towards capital.

During FY18, Penn received 110 gifts of more than $1 million, with 47 of those coming from first-time donors at that level. Contributions to The Penn Fund increased 1.1% from $37.1 million in FY17 to $37.5 million in FY18 and annual giving increased by 5.2% from $78.2 million to $82.2 million. Donors established 82 new undergraduate scholarships.

Investment Income

Operating investment income, primarily endowment paid out in accordance with Penn's spending rule policy, increased by $38.0 million, or 7.0%, from $540.7 million in FY17 to $578.7 million in FY18. The spending rule policy is described in more detail under the Endowment section later in this report.

Other Revenue Sources

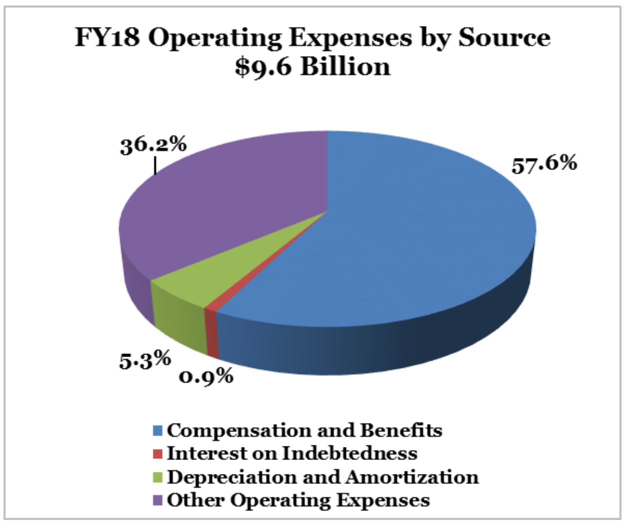
Other income increased 22.0% from $619.2 million in FY17 to $755.4 million in FY18. Sales and services of auxiliary enterprises increased by 0.5% from $120.3 million to $120.8 million in FY18, while independent operations decreased 0.8% to $77.4 million in FY18. Commonwealth appropriations, which predominantly provide support for Penn's School of Veterinary Medicine, were consistent with prior year, totaling $33.6 million.

OPERATING EXPENSE

Total operating expenses increased by 8.0%, rising from $8.9 billion in FY17 to $9.6 billion in FY18. Compensation and benefits, the combination of salary, wages, and employee fringe benefits is the largest expense component, representing 57.6% of total operating expenses. Salaries and wages increased 9.7%, from $4.0 billion in FY17 to $4.3 billion in FY18. Employee benefits increased 6.6% from $1.1 billion in FY17 to $1.2 billion in FY18. These increases are primarily due to general wage increases and staffing increases predominantly in the Perelman School of Medicine to support research.

Depreciation and amortization of $509.9 million, representing 5.3% of total operating expenses, increased 8.2% over FY17. Interest on indebtedness totaled $90.5 million, accounting for 0.9% of total operating expenses. Interest expense increased 12.5% from FY17 to FY18 primarily due to the $600 million of debt issued by UPHS in December 2017, as well as interest expense associated with approximately $300 million of debt related to the Princeton HealthCare System.

Other operating expenses, predominantly purchases of supplies and services, increased 6.3%, from $3.3 billion in FY17 to $3.5 billion in FY18, and represented 36.2% of total operating expense.



CAPITAL EXPENDITURES

Capital expenditures for the Consolidated University increased from $781.4 million in FY17 to $868.5 million in FY18.

In FY18, capital expenditures for the academic component of the University totaled $252.7 million, down from $308.9 million in FY17.

These capital projects represent Penn's fulfillment of the objectives outlined in *Penn Connects 3.0* (https://www.pennconnects.upenn.edu/penn_connects_3/penn_connects_3.0.php), a land use and urban design campus plan that advances Penn as a premier urban research university. *Penn Connects* promotes sustainability and development initiatives including reinvestment in existing buildings and infrastructure, reduction of energy demand, and creation of pedestrian transportation modes with the least amount of environmental impact.

Academic project highlights include:

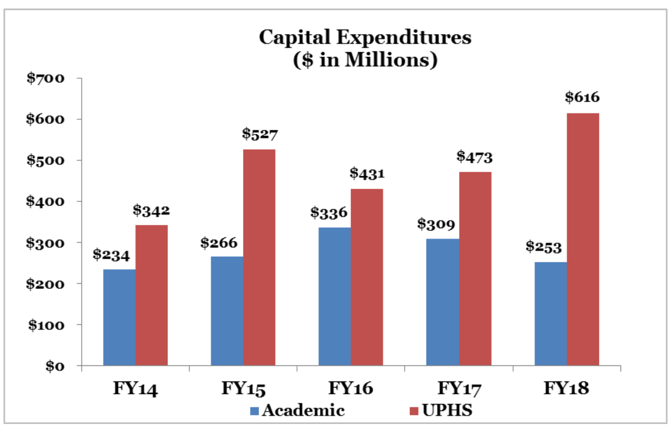
- Hill College House renovation was completed and opened in August 2017. Originally constructed in 1960, Hill consists of five floors of living space accommodating 500 students. The renovation addressed the maintenance and system upgrades needed for a modern College House. Air conditioning was installed, the central kitchen was expanded and modernized and all bedrooms and common space were upgraded.
- The Ronald O. Perelman Center for Political Science and Economics (PCPSE) was completed in Fall 2018. The PCPSE combines a complete rehabilitation of the existing 54,440 square foot building at 133 S. 36th Street with a 56,700 square foot addition to its north. The building program includes a 120-seat auditorium, classrooms, undergraduate meeting rooms, a forum with a seating capacity of 72, as well as offices for faculty of both the Economics and Political Science departments.
- Stemmler Hall of the Perelman School of Medicine is being renovated in a multi-phased approach which will replace all infrastructure systems while completely transforming the building into open and efficient BioSafetyLevel-2 wet-bench research laboratory space with corresponding office and collaborative meeting spaces. Lower levels were completed in July 2017 and upper levels will be completed in October 2018.
- The Evans Building has been home to Penn Dental Medicine for a century. A project to install all new energy efficient HVAC systems in concert with new clinics, academic spaces, and faculty and administrative offices was completed in Fall 2017.
- University Museum Coxe Harrison renovation plans include phased upgrades such as new climate control, structural improvements, lighting upgrades,

acoustic treatment and new seating and flooring and audio/video upgrades. The restoration includes the Coxe Memorial wing, Lower Egypt galleries, the Harrison Rotunda, Japan Gallery, Pepper Hall, and the Main Stair. This project is expected to be completed in July 2019.

As later described in this report, UPHS invested $615.8 million in capital projects, highlighted by their New Patient Pavilion to be completed in 2021.

Penn's Climate Action Plan

Environmental sustainability efforts were highlighted with publication of the first Sustainability Annual Report, which showed a 13% reduction in building emissions since FY14, along with progress on other *Climate Action Plan* goals. Action plans are being developed following recent carbon footprint studies for the
Morris Arboretum, the New Bolton Center, UPHS buildings, and selected buildings from Penn's real estate portfolio. In addition, energy projects supported through century bonds continue with HVAC system and lighting upgrades completed for Stemmler Hall, Leidy Laboratories, the Richards Building, and Van Pelt-Dietrich Library.



DEBT

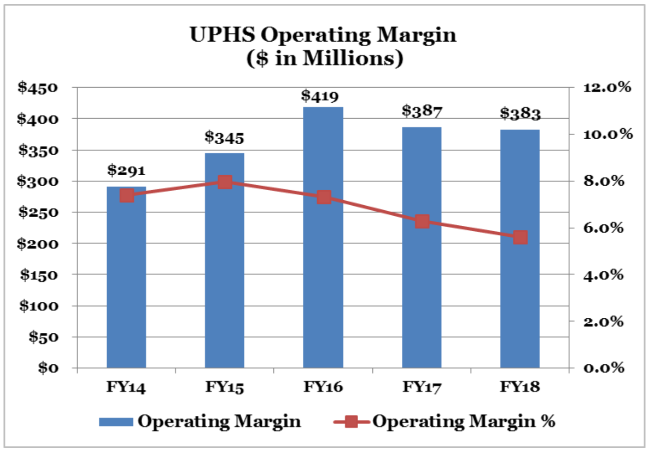
Consolidated debt totaled $3.6 billion in FY18, an increase of $871.2 million, or 32.2%, from FY17. UPHS issued $400 million PHEFA Series A of 2017 Health System revenue bonds and $200 million The Trustees of the University of Pennsylvania Health System taxable bonds in December 2017. The Bonds primarily funded strategic projects including the construction of a new 500-bed patient pavilion at HUP and the Center for Healthcare Technology, the administrative center for Penn Medicine located adjacent to HUP. In addition, in conjunction with the membership substitution with Princeton HealthCare System (PHCS), approximately $300 million PHCS debt was consolidated into UPHS. As these important initiatives are fulfilled, the preservation of working capital is prioritized and debt and liquidity levels are continuously monitored.

On June 12, 2018, S&P Global Ratings raised its long-term rating for UPHS to AA from AA-, noting the UPHS strong operational record, excellent clinical reputation, and integral role within the University. Penn's credit rating from Standard and Poor's and Moody's Investors Services is AA+/Aa1 for the University and AA/Aa3 for UPHS.

UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM

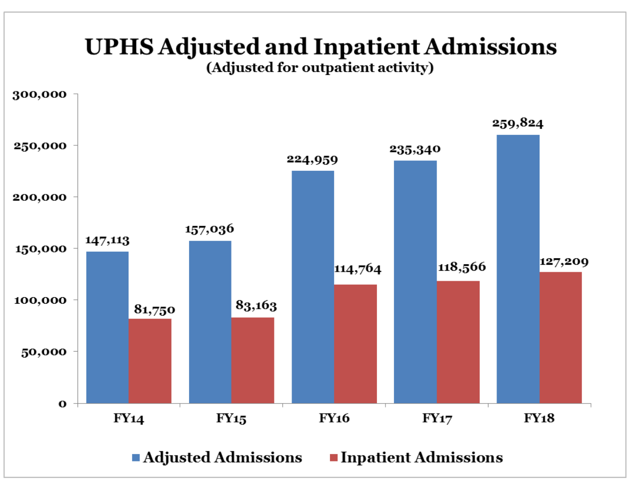
UPHS includes six major hospitals – the Hospital of the University of Pennsylvania, Penn Presbyterian Medical Center, Pennsylvania Hospital, Chester County Hospital, Lancaster General Hospital, and the University Medical Center of Princeton. Princeton HealthCare System joined UPHS on January 1, 2018. UPHS is recognized internationally as a leading healthcare system with the faculty-based Clinical Practices of the University of Pennsylvania, home care and hospice services, and physician practices and facilities in communities throughout the Delaware Valley. The University's Perelman School of Medicine joins with the UPHS as a part of Penn Medicine, a world-renowned academic medical center with hospitals ranked among the highest in the nation by U.S. News and World Report.

UPHS marked its 18th consecutive year of positive operating performance with a FY18 UPHS operating margin of 5.6%, or $382.7 million.



Total FY18 UPHS operating revenues were $6.8 billion, reflecting a 10.5% increase over the prior year. Patient services revenue, the largest revenue component at 61.9% share of total Consolidated University operating revenue, increased by 9.5% from $5.7 billion in FY17 to $6.2 billion in FY18. Due to the membership substitution with Princeton HealthCare System effective January, 2018, the FY18 Statement of Activities reflects 6 months of Princeton HealthCare System activity.

Total adjusted admissions, defined as admissions adjusted for outpatient activity, were higher than the prior year by 10.4% (2.7% higher than prior year excluding Princeton). Patient acuity, as measured by case mix index (CMI), was consistent with the prior year. Activity growth in target outpatient programs such as chemotherapy, proton therapy, and outpatient surgery contributed to the revenue growth.



UPHS operating expenses for FY18 were $6.4 billion, an increase of 11.3% over the prior year.

Increase in unrestricted net assets for UPHS, including non-operating revenue and realized/unrealized gain on investments, totaled $1.0 billion for FY18, greater than the prior year by $430.8 million. The increase was attributable to the $398.5 million contribution recognized related to the FY18 Princeton membership substitution and higher investment returns.

FY18 Days Cash on Hand of 260 days improved 18 days from the prior year primarily due to the issuance of debt that also increased Debt-to-Capitalization to 31.6% from 26.7% in FY17.

UPHS capital expenditures for FY18 were $615.8 million, an increase of $143.3 million over the prior year. The increase in expenditures was primarily attributable to strategic projects including the New Patient Pavilion at HUP as well as patient towers at Chester County and Lancaster and a new administrative building.

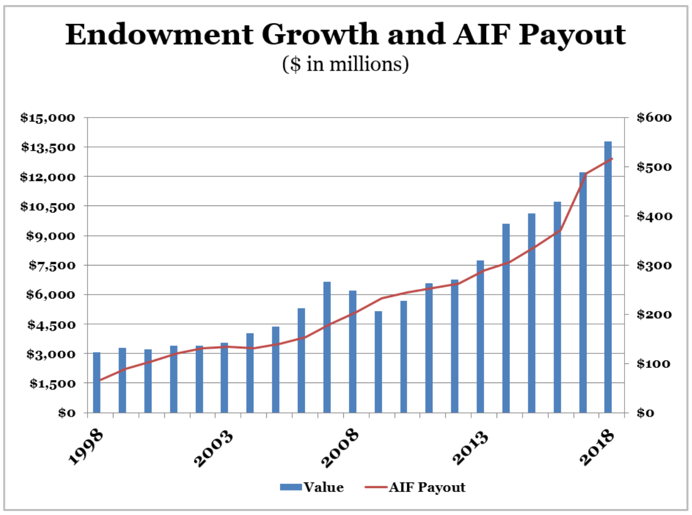
The New Patient Pavilion, opening in 2021, will support Penn's world-renowned researchers, clinicians, and faculty, and will include 500 private patient rooms, 50 operating and procedure rooms, and an Emergency Department.

ENDOWMENT

The University of Pennsylvania's endowment totaled $13.8 billion ($10.4 billion for the academic component and $3.4 billion supporting UPHS) as of June 30, 2018, an increase of $1.6 billion over the past year. Penn's endowment is comprised of over 7,000 individual endowment funds benefiting the University's schools, centers, and UPHS.

The vast majority of Penn's endowment is invested in the Associated Investments Fund (AIF), a pooled investment vehicle in which the many individual endowments and trusts hold shares or units. An Investment Board appointed by the Trustees of the University oversees the investment of the AIF. The University's Office of Investments is responsible for the day-to-day management of the AIF and implements the policies approved by the Investment Board.

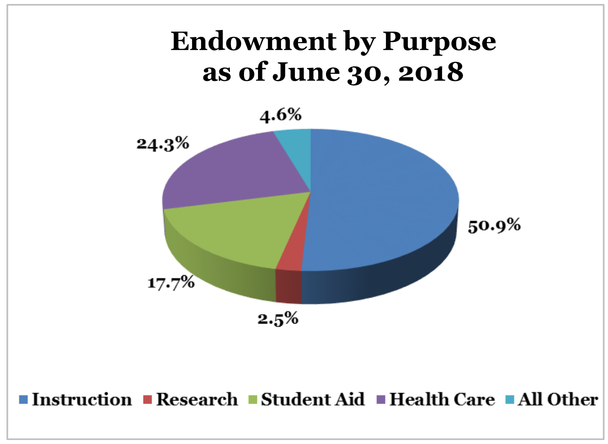
The purpose of Penn's endowment is to provide stable and perpetual support for the mission and programs of the University. Achieving this objective requires an investment and spending program that supports intergenerational equity. The AIF must provide substantial and stable spending today, but it also must preserve purchasing power in order to provide comparable resources to future generations. Penn seeks to resolve the tension between these competing needs by investing in a diversified, equity oriented portfolio and by adhering to a disciplined spending rule that smooths the impact of changes in AIF value on the operating budget.



The University's endowment spending policy balances the objectives of maximizing budgetary support to endowed programs and maintaining purchasing power of the endowment into perpetuity. The actual payout in any given year is determined by a formula designed to smooth the impact of short-term changes in the endowment's value on spending distributions. The spending rule target payout for fiscal 2018 was based on the sum of: (i) 70% of the prior fiscal year distribution adjusted by an inflation factor; and (ii) 30% of the lagged fiscal year-end fair value of the AIF, multiplied by Penn's 5.0% target spending rate.

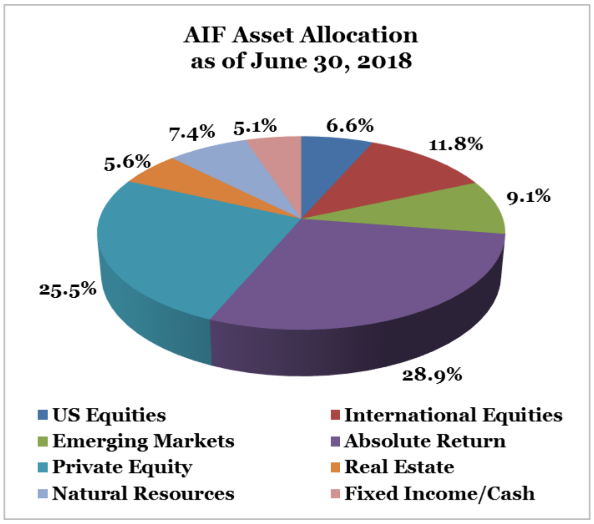
Payouts from the endowment provided $516.0 million in budgetary support to the University during the fiscal year. Spending support from the AIF for University operations has grown steadily over the past decade, increasing even through the financial crisis. For the year ended June 30, 2018, spending distributions from the AIF supported approximately 13% of the University's academic operating budget, up from less than 9% a decade ago.

The endowment supports a wide range of purposes across the institution, with the significant majority of funds dedicated to instructional use and student financial aid.



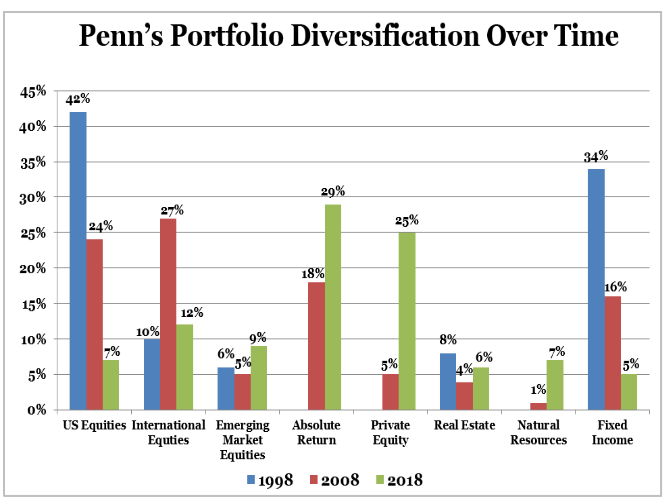
AIF INVESTMENT PROGRAM

Penn builds its investment program around several simple tenets. First, in order to achieve the high returns necessary to preserve purchasing power after spending, the AIF is invested with a strong equity orientation. With the exception of fixed income, Penn expects that all asset classes in which it invests can earn equity-like returns over long periods of time. Second, Penn builds a portfolio that is diversified across different fundamental drivers of return. The University focuses on areas with the greatest inefficiencies across asset classes, strategies, and geographies. Finally, Penn capitalizes upon the perpetual nature of the University to invest with a long time horizon, creating a significant advantage relative to the many market participants who must focus on near-term certainty instead of long-term attractiveness when evaluating investments.



Penn has established a Strategic Asset Allocation (SAA), with investment class target ranges which represent reasonable allocation ranges for the portfolio in a normal environment. Portfolios within these ranges reflect the broad equity orientation and diversification that Penn seeks. The SAA guidelines consist of ranges rather than point targets to reflect the impossibility of knowing the future investment opportunity set facing the University. As the portfolio evolves towards the SAA ranges, Penn uses an Interim Policy Portfolio (IPP) to guide asset allocation over shorter periods.

Penn revisits its asset allocation ranges and targets periodically to ensure that they appropriately reflect both the University's long-term investment needs and the opportunity set facing Penn. The most recent review occurred in June 2018.



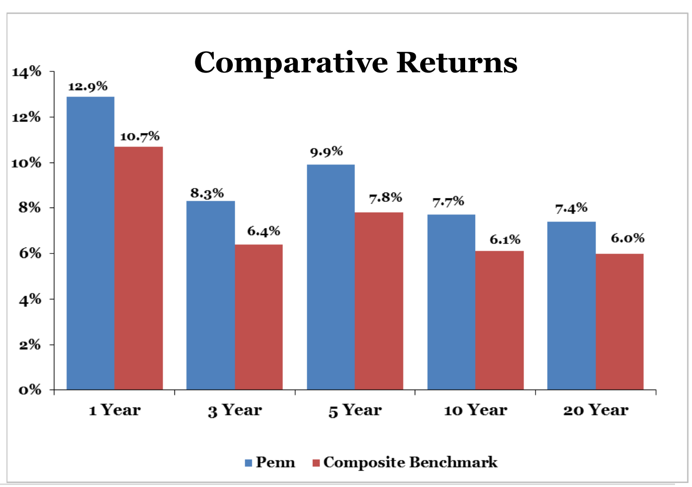
The evolution of Penn's asset allocation towards a stronger equity orientation, greater diversification and more inefficient markets has been steady over time. The AIF portfolio includes investments in illiquid funds, some of which require Penn to make capital commitments that will be drawn down and invested over a period of time. As of June 30, 2018, the AIF had $3.2 billion in outstanding commitments to various limited partnerships. The AIF maintains a conservative liquidity profile that can accommodate these commitments in both normal environments and periods of market stress or dislocation.

AIF PERFORMANCE

The AIF returned 12.9% in fiscal 2018, increasing by $1.4 billion to a total value of $12.3 billion after spending, gifts, and other transfers. The broad endowment ended the year at $13.8 billion, an increase of $1.6 billion.

Global equity markets produced solidly positive returns in fiscal 2018. Penn's equity-oriented asset classes benefited from this backdrop. Outperformance relative to Penn's composite benchmark (a blend of asset class benchmarks) was driven by notable relative performance in the international equity, emerging markets, and private equity portfolios.

Over longer periods, Penn's performance has consistently outpaced the composite benchmark. Importantly, Penn's long term performance has enabled the AIF to exceed its goal of maintaining purchasing power after spending distributions.



Future Outlook

Looking ahead to Fiscal Year 2019, Penn will build upon the many achievements of FY18 as we support *The Penn Compact 2020's* principles of Inclusion, Innovation, and Impact. With the guidance of our distinguished Board of Trustees, overwhelming generosity of our donors, and the commitment of our talented students, esteemed faculty, and dedicated staff, we are well-positioned for continued success in FY19.

MaryFrances McCourt
Vice President for Finance and Treasurer

"An investment in knowledge pays the best interest."

-Benjamin Franklin

Report of Independent Auditors

To the Trustees of the University of Pennsylvania:

We have audited the accompanying consolidated financial statements of the University of Pennsylvania (the "University"), which comprise the consolidated statements of financial position as of June 30, 2018 and 2017, and the related consolidated statements of activities and of cash flows for the years then ended.

Management's Responsibility for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on the consolidated financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on our judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the University's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the University's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the University of Pennsylvania as of June 30, 2018 and 2017, and its changes in net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

PricewaterhouseCoopers LLP

September 27, 2018

PricewaterhouseCoopers LLP, Two Commerce Square, Suite 1800, 2001 Market Street, Philadelphia, PA 19013-7042
T: (267) 330 - 3000, F: (267) 330 - 3300, www.pwc.com/us

University of Pennsylvania
(in thousands)

	June 30, 2018	June 30, 2017
Assets		
Cash and cash equivalents	$ 1,431,172	$ 972,818
Accounts receivable, net	451,936	388,212
Patient receivables, net	758,472	696,591
Contributions receivable, net	280,634	241,352
Loans receivable, net	79,360	91,037
Other assets	360,640	263,850
Investments, at fair value	15,733,881	13,976,628
Property, plant and equipment, net	7,318,619	6,452,306
Total assets	$ 26,414,714	$ 23,082,794
Liabilities		
Accounts payable	$ 289,096	$ 242,260
Accrued expenses and other liabilities	2,290,303	1,993,775
Deferred income	206,436	215,613
Deposits, advances and agency funds	170,728	150,336
Federal student loan advances	68,686	82,009
Accrued retirement benefits	1,241,307	1,448,418
Debt obligations	3,574,192	2,702,950
Total liabilities	7,840,748	6,835,361
Net assets		
Unrestricted	11,152,992	9,466,538
Temporarily restricted	3,554,235	3,108,053
Permanently restricted	3,866,739	3,672,842
	18,573,966	16,247,433
Total liabilities and net assets	$ 26,414,714	$ 23,082,794

The accompanying notes are an integral part of these consolidated financial statements.

Consolidated Statements of Activities

University of Pennsylvania
for the years ended June 30, 2018 and 2017
(in thousands)

	2018	2017
Unrestricted		
Revenue and other support:		
Tuition and fees, net	$ 999,376	$ 937,868
Commonwealth appropriations	33,606	33,606
Sponsored programs	1,016,153	967,189
Contributions and donor support	267,450	194,539
Investment income	578,700	540,679
Net patient service revenue	6,245,081	5,702,819
Sales and services of auxiliary enterprises	120,816	120,265
Other income	755,364	619,183
Independent operations	77,385	78,040
	10,093,931	9,194,188
Expenses:		
Compensation and benefits	5,496,929	5,040,448
Depreciation and amortization	509,921	471,093
Interest on indebtedness	90,476	80,421
Other operating expenses	3,463,693	3,258,969
	9,561,019	8,850,931
Increase in net assets from operations	**532,912**	**343,257**
Nonoperating revenue, net gains, reclassifications and other:		
Return on investments, net of amounts classified as operating revenue	507,321	465,613
Pension, OPEB and other, net	201,838	175,366
Contributions and donor support for capital related activities	444,383	34,833
Total nonoperating revenue, net gains, reclassifications and other	1,153,542	675,812
Increase in unrestricted net assets	1,686,454	1,019,069
Temporarily Restricted		
Contributions	219,858	159,146
Return on investments, net	737,066	735,228
Net assets released from restrictions	(510,742)	(416,050)
Increase in temporarily restricted net assets	446,182	478,324
Permanently Restricted		
Contributions	177,413	203,286
Return on investments, net	16,484	34,165
Increase in permanently restricted net assets	193,897	237,451
Increase in net assets from nonoperating and restricted revenue, net gains, reclassifications and other	**1,793,621**	**1,391,587**
Increase in total net assets	**2,326,533**	**1,734,844**
Net assets, beginning of year	16,247,433	14,512,589
Net assets, end of year	$ 18,573,966	$ 16,247,433

The accompanying notes are an integral part of these consolidated financial statements.

University of Pennsylvania
for the years ended June 30, 2018 and 2017
(in thousands)

	2018	2017
Cash flows from operating activities:		
Increase in net assets	$ 2,326,533	$ 1,734,844
Adjustment to reconcile increase in net assets to net cash provided by operating activities:		
Depreciation and amortization	495,430	471,387
Provision for bad debts	172,670	201,231
Gain on investments, net	(1,383,213)	(1,358,190)
Loss on disposal of plant, property and equipment	680	87,153
Donated equipment	(2,057)	(937)
Proceeds from split-interest agreements designated for operations	82,844	22,515
Receipt of contributed securities	(53,070)	(113,317)
Proceeds from contributed securities	18,456	29,436
Receipt of contributions designated for the acquisition of long-lived assets and long-term investment	(612,028)	(177,858)
Pension, OPEB and other, net	(201,838)	(175,366)
Changes in operating assets and liabilities:		
Patient, accounts and loans receivable	(243,465)	(308,636)
Contributions receivable	(38,520)	914
Other assets	(36,867)	6,905
Accounts payable, accrued expenses and accrued retirement benefits	124,264	5,793
Deposits, advances and agency funds	20,034	(12,789)
Deferred income	(9,177)	5,282
Net cash provided by operating activities	660,676	418,367
Cash flows from investing activities:		
Purchase of investments	(12,390,888)	(7,879,448)
Proceeds from sale of investments	12,487,507	7,682,436
Purchase of property, plant and equipment	(868,479)	(781,421)
Cash acquired in Princeton HealthCare System (PHCS) membership substitution	46,440	-
Net cash used by investing activities	(725,420)	(978,433)
Cash flows from financing activities:		
Proceeds from contributions received designated for the acquisition of long-lived assets and long-term investment	192,153	179,000
Proceeds from contributed securities received designated for the acquisition of long-lived assets and long-term investment	34,208	83,278
Federal student loan advances	(13,323)	1,213
Repayment of long-term debt	(60,245)	(58,509)
Proceeds from issuances of long-term debt	370,305	200,300
Net cash provided by financing activities	523,098	405,282
Net increase (decrease) in cash and cash equivalents	458,354	(154,784)
Cash and cash equivalents, beginning of year	972,818	1,127,602
Cash and cash equivalents, end of year	$ 1,431,172	$ 972,818
Supplemental disclosure of cash flow information:		
Cash paid for interest, net of amounts capitalized	$ 90,727	$ 79,944
Contributed securities received	53,070	113,317
(Decrease) increase in accrued plant, property and equipment	(63)	32,301
Assets acquired in PHCS membership substitution	843,745	-
Liabilities assumed in PHCS membership substitution	426,836	-
Contribution received in PHCS membership substitution	416,909	-

The accompanying notes are an integral part of these consolidated financial statements.

1. Significant Accounting Policies

Organization

The University of Pennsylvania (University), located in Philadelphia, Pennsylvania, is an independent, nonsectarian, not-for-profit institution of higher learning founded in 1740. The University Academic Component (Academic Component) provides educational services, primarily for students at the undergraduate, graduate, professional and postdoctoral levels and performs research, training and other services under grants, contracts and similar agreements with sponsoring organizations, primarily departments and agencies of the United States Government. The University also operates an integrated health care delivery system, the University of Pennsylvania Health System (UPHS). The University is a tax-exempt organization under Section 501(c) (3) of the Internal Revenue Code.

Basis of Presentation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP) and include the accounts of the University and its subsidiaries over which the University has a controlling financial interest or exercises control. All material transactions between the University and its subsidiaries are eliminated in consolidation. Investments in subsidiaries over which the University has the ability to exercise significant influence are reported using the equity method of accounting. Other investments in subsidiaries are reported using the cost method of accounting.

The net assets of the University are classified and reported as follows:

Unrestricted - Net assets that are not subject to donor-imposed restrictions.

Temporarily restricted - Net assets that are subject to legal or donor-imposed restrictions that will be met by actions of the University and/or the passage of time. These net assets include gifts donated for specific purposes and appreciation on permanent endowment, which is restricted by Pennsylvania law on the amounts that may be expended in a given year.

Permanently restricted – The original value of donor restricted net assets, the use of which is limited to investment and can only be appropriated for expenditure by the University in accordance with the Pennsylvania Uniform Principal and Income Act (Pennsylvania Act).

Expenses are reported as a decrease in unrestricted net assets. Gains and losses on investments are reported as increases or decreases in unrestricted net assets unless their use is restricted by explicit donor stipulation or by law. Donor-restricted resources intended for the acquisition or construction of long-lived assets are initially reported as temporarily restricted net assets and released from restrictions from temporarily restricted net assets to unrestricted net assets when the asset is placed in service or in accordance with donor-specified terms.

Expirations of temporary restrictions on contributions and investment income, reported as Net assets released from restrictions, and the corresponding amounts are included in the Consolidated Statements of Activities as follows (in thousands):

Temporarily Restricted Net Assets	**2018**	**2017**
Net assets released from restrictions	$ (510,742)	$ (416,050)
Unrestricted Net Assets	**2018**	**2017**
Contributions and donor support	$ 190,445	$ 118,077
Investment income	274,407	263,140
Contributions and donor support for capital related activities	45,890	34,833
Net assets released from restrictions	$ 510,742	$ 416,050

Gains or losses associated with investment activities are included in Return on investments, net. Gains or losses associated with property, plant and equipment disposals are included in Other operating expenses. Gains or losses associated with all other activities, such as debt retirements and pension and postretirement plan actuarial valuation adjustments, are reported in Pension, Other post-retirement employee benefits (OPEB) and other, net.

Fair Value

The University values certain financial and non-financial assets and liabilities by applying the FASB pronouncement on Fair Value Measurements. The pronouncement defines fair value and establishes a framework for measuring fair value that includes a hierarchy that categorizes and prioritizes the sources used to measure and disclose fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). The hierarchy is broken down into three levels based on inputs that market participants would use in valuing the asset or liability and are developed based on market data obtained from sources independent of the University as follows:

Level 1: Unadjusted quoted market prices in active markets for identical assets or liabilities.

Level 2: Unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active, or inputs other than quoted prices that are observable.

Level 3: Unobservable inputs for the asset or liability.

Inputs broadly refer to the assumptions that market participants use to make valuation decisions, including assumptions about risk. Inputs may include price information, volatility statistics, specific and broad credit data, liquidity statistics and other factors. The University is required by the pronouncement to maximize the use of observable inputs (Levels 1 and 2) and minimize the use of unobservable inputs (Level 3). The University considers observable data to be that market data which is readily available, regularly distributed or updated, reliable and verifiable, not proprietary and provided by independent sources that are actively involved in the relevant market. The categorization of a financial instrument within the hierarchy is based upon the pricing transparency of the instrument and does not necessarily correspond to the University's perceived risk of that instrument.

Assets and liabilities are disclosed in the Consolidated Notes to Financial Statements within the hierarchy based on the lowest (or least observable) input that is significant to the measurement. The University's assessment of the significance of an input requires judgment, which may affect the valuation and categorization within the fair value hierarchy. The fair value of assets and liabilities using Level 3 inputs are generally determined by using pricing models or discounted cash flow methods, which all require significant management judgment or estimation.

As a practical expedient, the University is permitted to estimate the fair value of an investment in an investment company at the measurement date using the reported net asset value (NAV). Adjustment is required if the University expects to sell the investment at a value other than NAV or if the NAV is not calculated in accordance with U.S. GAAP. The University holds investments in its portfolio which are generally valued based on the most current NAV. This amount represents fair value of these investments at June 30, 2018 and 2017. Investments reported at NAV, as a practical expedient, are not included within levels 1, 2, or 3 in the fair value hierarchy.

The University performs additional procedures, including due diligence reviews, on its investments in investment companies and other procedures with respect to the capital account or NAV provided to ensure conformity with US GAAP. The University has assessed factors including, but not limited to, managers' compliance with the *Fair Value Measurement* standard, price transparency and valuation procedures in place.

Cash and Cash Equivalents

Cash equivalents include short-term, highly liquid investments and are carried at cost which approximates fair value. Unrestricted short-term investments available for current operations with maturities of three months or less when purchased are classified as cash equivalents.

Investments, at Fair Value

The majority of the University's investments are held in the Associated Investments Fund (AIF). The AIF is invested in accordance with the investment policies set out by an Investment Board which has been appointed by the Trustees of the University of Pennsylvania (the Trustees). The Office of Investments is responsible for the day-to-day management of the AIF including identifying, selecting and monitoring a variety of external investment managers to implement the strategic asset allocation set forth by the Investment Board. The AIF may include marketable and not readily marketable securities that it intends to hold for an indefinite period of time. The University also holds other investments which are not invested in the AIF due to various restrictions. The majority of these investments are in highly liquid short-term and equity type investments. Changes in the fair value of investments are reported in Return on investments, net in the Consolidated Statements of Activities. The following is a summary of the investments held in the AIF by asset allocation as well as investment risk:

Short-Term

Short-term investments include cash equivalents and fixed income investments with maturities of less than one year. Short-term investments are valued using observable market data and are categorized as Level 1 based on quoted market prices in active markets. The majority of these short-term investments are held in a US Treasury money market account.

Equity

Equity investments consist of direct holdings of public securities in managed accounts as well as exchange traded funds and private funds. The securities held in managed accounts, along with exchange traded funds, are generally valued based on quoted market prices in active markets obtained from exchange or dealer markets for identical assets, and are accordingly categorized as Level 1. Private funds are valued at NAV.

Debt

Debt investments consist of direct holdings of securities in managed accounts and private funds. Securities such as US Treasuries, held in managed accounts, are valued based on quoted market prices in active markets and are categorized as Level 1. Securities such as corporate bonds, high yield bonds and bank loans, also held in managed accounts, are valued based on quoted market prices or dealer or broker quotations and are categorized as Level 2 or in the cases where inputs are unobservable as Level 3. Private funds are valued at NAV.

Absolute Return

Absolute return investments are made up of allocations to private funds. The fund managers of these private funds invest in a variety of securities, based on the strategy of the fund, which may or may not be quoted in an active market. Illiquid securities, if any, are generally designated as a side pocket by hedge fund managers and may be valued based on an appraised value, discounted cash flow, industry comparables or some other method. Private funds are valued at NAV.

Real Estate

Investments in real estate are primarily in the form of private funds. The fund managers of these private funds primarily invest in investments for which there is no readily determinable market value. The fund manager may value the underlying investments based on an appraised value, discounted cash flow, industry comparables or some other method. Private funds are valued at NAV.

Private Equity

Investments in private equity are in the form of close-ended private funds. The fund managers primarily invest in investments for which there is no readily determinable market value. The fund manager may value the underlying private investments based on an appraised value, discounted cash flow, industry comparables or some other method. These private fund investments are valued at NAV.

Natural Resources

Investments in natural resources are made up of private funds and securities in managed accounts. The fund managers of these private funds primarily invest in investments for which there is no readily determinable market value. The fund manager may value the underlying investments based on an appraised value, discounted cash flow, industry comparables or some other method. Private funds are valued at NAV. The securities held in the managed accounts are generally valued based on quoted market prices in active markets obtained from exchange or dealer markets for identical assets, and are accordingly categorized as Level 1.

Derivatives

The University, in the normal course of business, utilizes derivative financial instruments in connection with its investment activity. Derivatives utilized by the University include futures, options, swaps and forward currency contracts and are reflected at fair value following the definition of Level 1 and 2 assets and liabilities as previously described. Investments in derivative contracts are subject to foreign exchange and equity price risks that can result in a loss of all or part of an investment. In addition, the University is also subject to additional counterparty risk should its counterparties fail to meet the terms of their contracts.

Investment Risks

The University's investing activities expose it to a variety of risks including market, credit and liquidity risks. The University attempts to identify, measure and monitor risk through various mechanisms including risk management strategies and credit policies.

Market risk is the potential for changes in the fair value of the University's investment portfolio. Commonly used categories of market risk include currency risk (exposure to exchange rate differences between functional currency relative to other foreign currencies), interest rate risk (changes to prevailing interest rates or changes in expectations of futures rates) and price risk (changes in market value other than those related to currency or interest rate risk, including the use of NAV provided).

Credit risk is the risk that one party to a financial investment will cause a financial loss for the other party by failing to discharge an obligation (counterparty risk).

Liquidity risk is the risk that the University will not be able to meet its obligations associated with financial liabilities.

Endowment

The University's endowment consists of 6,364 donor-restricted permanent or term endowment funds and 895 unrestricted endowment funds established by management for a variety of purposes. The University reports all endowment investments at fair value. The majority of the endowment funds of the University have been pooled in the University's AIF. The endowment funds not pooled in the AIF are primarily invested in equities and bonds.

The Commonwealth of Pennsylvania has not adopted the Uniform Management of Institutional Funds Act (UMIFA) or the Uniform Prudent Management of Institutional Funds Act (UPMIFA). Rather, the Pennsylvania Act governs the investment, use and management of the University's endowment funds.

The Pennsylvania Act does not require the preservation of the fair value of a donor's original gift as of the gift date of a donor-restricted endowment fund, absent explicit donor stipulations to the contrary. However, based on its interpretation of the Pennsylvania Act and relevant accounting literature, the University classifies as permanently restricted net assets for reporting purposes: (i) the original value of gifts donated to the permanent endowment; (ii) the original value of subsequent gifts to the permanent endowment; and (iii) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund. The remaining portion of the donor-restricted endowment fund that is not classified in permanently restricted net assets is classified as temporarily restricted net assets until those amounts are appropriated for expenditure by the University. The Pennsylvania Act allows a nonprofit to elect to appropriate for expenditure between 2% and 7% of the endowment fair value, determined at least annually and averaged over a period of three or more preceding years.

In accordance with the Pennsylvania Act, the University has elected to adopt and follow an investment policy seeking a total return for the investments held by the AIF, whether the return is derived from appreciation of capital or earnings and distributions with respect to capital or both. The endowment spending policy which the Board of Trustees has elected to govern the expenditure of funds invested in the AIF is designed to manage annual spending levels and is independent of the cash yield and appreciation of investments for the year. For Fiscal Year 2018, the spending rule target payout was based on the sum of: (i) 70% of the prior fiscal year distribution adjusted by an inflation factor; and (ii) 30% of the prior fiscal year-end fair value of the AIF, lagged one year, multiplied by 5.0% for all funds. The payout or allocation to operations exceeded actual income, net of expenses, by $516,034,000 in 2018 and by $485,860,000 in 2017.

Property, Plant and Equipment

Property, plant and equipment (PPE) is reported net of related depreciation. Donated PPE is reported based on estimated fair value at the date of acquisition. Capital leases are categorized as buildings or equipment and are reflected at the lower of the net present value of the minimum lease payments or the fair value of the leased asset at the inception of the lease. All other PPE is reported at cost. Depreciation is computed on the straight-line method over the estimated useful lives of the assets or the shorter of the lease term or estimated useful life of the asset for capital lease assets. Contributions of library materials, as well as rare books and other collectibles, are not recorded for financial statement presentation, while purchases are recorded as Other operating expenses on the Consolidated Statement of Activities in the period acquired.

Split-Interest Agreements

The University's split-interest agreements with donors consist of irrevocable charitable remainder trusts, charitable gift annuities, pooled income funds, perpetual trusts and charitable lead trusts. Assets are invested and payments are made to donors and/or other beneficiaries in accordance with the respective agreements.

The University recognizes assets contributed to charitable remainder trusts, charitable gift annuities and pooled income funds, where it serves as trustee, at fair value, recognizes a liability to the beneficiaries based on the present value of the estimated future payments to beneficiaries to be made over the estimated remaining life of those beneficiaries using current market rates at the date of the contribution, and recognizes the difference as contribution revenue. Subsequently, the trust assets, invested in equity and debt securities, are measured at fair value at quoted market prices, and are categorized as Level 1, with the changes reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. Liabilities to beneficiaries are revalued based on current market rates, and are categorized as Level 2, with the changes reported as an adjustment to Accrued expense and other liabilities on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities.

Charitable remainder trust assets, where the University does not serve as trustee, are initially valued using the current fair value of the underlying assets, using observable market inputs based on its beneficial interest in the trust, discounted to a single present value using current market rates at the date of the contribution. The initially contributed assets are categorized as Level 3, and reported as Investments, at fair value on the Consolidated Statements of Financial Position and Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable input used in the fair value measurement of the charitable remainder trust assets is the discount rate. Significant fluctuation in the discount rates utilized in this calculation could result in a material change in fair value.

Perpetual trust assets are initially valued at the current fair value of the underlying assets using observable market inputs based on its beneficial interest in the trust. The initially contributed assets are categorized as Level 3 and are reported as Investments, at fair value on the Consolidated Statements of Financial Position and as Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable inputs used in the fair value measurement of the perpetual trust assets are the underlying securities held by the trust. Significant fluctuation in the market value of these underlying securities could result in a material change in fair value.

The University reports charitable lead trust assets by discounting future cash flows using current market rates at the measurement date, matched to the payment period of the agreement. The initially contributed assets are categorized as Level 3, and reported as Investments, at fair value on the Consolidated Statements of Financial Position and as Contribution revenue on the Consolidated Statements of Activities. Subsequent valuation follows this same approach with changes in fair value reported as an adjustment to Investments, at fair value on the Consolidated Statements of Financial Position and Return on investments, net on the Consolidated Statements of Activities. The primary unobservable input used in the fair value measurement of the charitable lead trust assets is the discount rate. Significant fluctuation in the discount rates utilized in this calculation could result in a material change in fair value.

Income Taxes

The University is a tax exempt organization under Section 501(c)(3) of the Internal Revenue Code. Most of its activities and income are related to its exempt purposes and are exempt from federal and state income taxes. None of its activities and income is subject to Pennsylvania income tax. Unrelated activities and income are subject to federal "Unrelated Business Income Tax."

The University regularly evaluates its tax position and does not believe it has any uncertain tax positions that require disclosure or adjustment to the consolidated financial statements.

Tuition and Fees

The University practices need-blind admissions for citizens and permanent residents of the United States, Canada and Mexico, meaning that qualified undergraduate applicants are admitted without regard to financial circumstances. This admissions policy is paired with a grant-based financial aid program, which meets the full demonstrated financial need of all undergraduate students with grants and work-study funding. Students and their families may still choose to borrow if they wish to help meet any expected family contribution. Tuition and fees have been reduced by certain grants and scholarships in the amount of $350,151,000 in 2018 and $333,582,000 in 2017.

Sponsored Programs

The University receives grant and contract revenue from governmental and private sources. In 2018 and 2017, grant and contract revenue earned from governmental sources totaled $730,368,000 and $713,113,000, respectively. The University generally recognizes revenue associated with the direct and the applicable indirect costs of sponsored programs as the related costs are incurred. The University negotiates its federal indirect rate with its cognizant federal agency. Indirect costs recovered on federally-sponsored programs are generally based on predetermined reimbursement rates which are stated as a percentage and distributed based on the modified total direct costs incurred. Indirect costs recovered on all other grants and contracts are based on rates negotiated with the respective sponsors. Funds received for sponsored research activity are subject to audit. Based upon information currently available, management believes that any liability resulting from such audits will not materially affect the financial position or operations of the University.

Contributions

Unrestricted Contributions and donor support includes net assets released as a result of corresponding expenditures which met donor imposed restrictions. Contributions, including unconditional promises to donate cash and other assets, are recognized as revenue in the period received and are reported as increases in the appropriate net asset category based on donor restrictions. Contributions designated for the acquisition of long-lived assets and long-term investment are reported in Nonoperating revenue, net gains, reclassifications and other.

The University reports unconditional pledges at fair value by discounting future cash flows using current market rates at the measurement date, ranging from 2.87% to 3.90%, matched to the payment period of the agreement, and accordingly categorizes these assets as Level 3. The primary unobservable input used in the fair value measurement of the University's Contributions receivable is the discount rate. Significant fluctuation in the discount rates utilized in this calculation could result in a material change.

Net Patient Service Revenue

Net patient service revenue is derived from UPHS patient services and is accounted for at established rates on the accrual basis in the period the service is provided. Patient service revenue is net of charity care and community services. Certain revenue received from third-party payors is subject to audit and retroactive adjustment. Any changes in estimates under these contracts are recorded in operations currently.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

Recent Authoritative Pronouncements

Periodically, the Financial Accounting Standards Board (FASB) issues updates to the Accounting Standards Codification (ASC) which impacts the University's financial reporting and related disclosures. The paragraphs which follow summarize a number of relevant updates. Unless otherwise noted, the University is currently evaluating the impact that these updates will have on the consolidated financial statements.

In May 2014, the FASB issued a standard on Revenue from Contracts with Customers. This standard implements a single framework for recognition of all revenue earned from customers. This framework ensures that entities appropriately reflect the consideration to which they expect to be entitled in exchange for goods and services by allocating transaction price to identified performance obligations and recognizing revenue as performance obligations are satisfied. Qualitative and quantitative disclosures are required to enable users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. The standard is effective for fiscal year 2019.

In June 2018, the FASB issued a standard on Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made. The new guidance explains how entities will determine whether to account for a transfer of assets as an exchange transaction (under other guidance) or a contribution. The FASB also clarified that a contribution is conditional if the agreement includes both a barrier (as defined) and a right of return or release. The standard is effective for fiscal year 2019.

In August 2016, the FASB issued a standard on the Presentation of Financial Statements of Not-for-Profit Entities. The new guidance requires that not-for-profit entities no longer distinguish between resources with temporary and permanent restrictions on the face of their financial statements, effectively presenting two classes of net assets instead of three. The guidance also changes how not-for-profit entities report certain expenses and provide information about their available resources and liquidity. The standard is effective for fiscal year 2019.

In February 2016, the FASB issued a standard on Leases. This standard requires lessees to recognize assets and liabilities for the rights and obligations created by leases with terms in excess of 12 months. The recognition, measurement, and presentation of expenses and cash flows arising from a lease will primarily depend on its classification as a finance or operating lease. The accounting by lessors remains largely unchanged. The standard is effective for fiscal year 2020.

In November 2016, the FASB issued a standard on Restricted Cash. This standard requires that the Consolidated Statement of Cash Flows explain the change during the period in the total of cash, cash equivalents and restricted cash. Additionally, a disclosure describing the nature of the restrictions and a reconciliation of total cash, cash equivalents and restricted cash to the amounts of Cash and cash equivalents presented on the Consolidated Statement of Financial Position is required. The standard is effective for fiscal year 2020.

In March 2017, the FASB issued a standard on Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. This standard requires the bifurcation of net benefit cost, as follows: service cost continues to be reported in Compensation and benefits, while the remaining components of net benefit cost are reported in Pension, OPEB and other, net. The University early adopted this standard for fiscal year 2018. The adoption of the standard resulted in an increase to Net assets from operations of $11,256,000 for the year ended June 30, 2018, with a retrospective increase to Net assets from operations of $45,798,000 for the year ended June 30, 2017.

2. University of Pennsylvania Health System - Summarized Financial and Related Information

The Trustees formed Penn Medicine, the governance structure which oversees the activities of UPHS and the University of Pennsylvania Perelman School of Medicine (PSOM). The governing body operates, oversees and coordinates the academic, research and clinical missions of Penn Medicine.

UPHS is comprised of the following operating entities: Clinical Practices of the University of Pennsylvania; Clinical Care Associates; Hospital of the University of Pennsylvania; Penn Presbyterian Medical Center; Pennsylvania Hospital of the University of Pennsylvania Health System; Chester County Hospital and Health System; Lancaster General Health (LGH); Wissahickon Hospice of the University of Pennsylvania Health System; Franklin Casualty Insurance Company, a wholly owned Risk Retention Group; and, Quaker Insurance Company Ltd., a wholly owned offshore captive insurance company, (collectively referred to as RRG/Captive). In January 2018, through a membership substitution, Princeton HealthCare System (PHCS) became a part of UPHS.

Throughout the year, certain transactions (primarily billings for allocations of common costs, physicians' salaries and benefits, certain purchased services and support for PSOM) are conducted between UPHS and the University. Nonoperating, net, as shown below, includes transfers from UPHS to the University of $198,394,000 and $180,632,000 in 2018 and 2017, respectively, to further the research and educational activities of PSOM and $4,874,000 and $0 in 2018 and 2017, respectively, for other activities. In addition, UPHS recognized operating expenses of $19,844,000 and $19,351,000 in 2018 and 2017, respectively, to support academic operating activities in the clinical departments of PSOM.

The effect of all these transactions is included in the following summarized financial information of UPHS as of and for the years ended June 30, 2018 and 2017 (in thousands):

	2018	2017
Net patient service revenue	$ 6,417,674	$ 5,903,582
Provision for bad debt	(164,763)	(193,651)
Net patient service revenue less bad debts	6,252,911	5,709,931
Other revenue	529,240	428,721
Total expenses	(6,399,423)	(5,751,787)
Excess of revenue over expenses from operations	382,728	386,865
Nonoperating, net	728,454	275,059
Increase in net assets	$ 1,111,182	$ 661,924
Total current assets	$ 1,992,168	$ 1,481,230
Assets whose use is limited:		
Held by trustees	274,300	116,085
RRG/ Captive	207,403	195,982
Donor restricted and other	648,104	581,629
Designated	2,584,262	2,303,595
Property and equipment, net	4,103,777	3,309,820
Investments and other assets	1,204,215	962,164
Total assets	$ 11,014,229	$ 8,950,505
Total current liabilities	$ 1,110,380	$ 876,636
Long-term debt, net of current portion	2,274,859	1,451,816
Other liabilities	1,833,978	1,938,223
Total liabilities	$ 5,219,217	$ 4,266,675
Net assets		
Unrestricted	$ 5,137,511	$ 4,093,287
Temporarily restricted	456,528	406,073
Permanently restricted	200,973	184,470
Total net assets	$ 5,795,012	$ 4,683,830
Total liabilities and net assets	$ 11,014,229	$ 8,950,505

Net Patient Service Revenue

Net Patient Service Revenue (NPSR), net of contractual allowances and discounts, is as follows for the years ended June 30, 2018 and 2017 (in thousands):

	2018	2017
Third Party Payors	$ 6,359,410	$ 5,798,498
Self-Pay	58,264	105,084
Total All Payors	$ 6,417,674	$ 5,903,582

NPSR for the years ended June 30, 2018 and 2017 is derived from the following payers:

	2018	2017
Medicare (including Managed Medicare)	31%	30%
Medicaid (including Managed Medicaid)	11%	12%
Managed Care	37%	32%
Independence Blue Cross (IBC)	17%	20%
Commercial	3%	4%
Self Pay	1%	2%
	100%	100%

UPHS has agreements with the following third-party payers that provide for payments at amounts that differ from its established rates:

Inpatient acute care services and outpatient services rendered to Medicare program beneficiaries are paid at prospectively determined rates. These rates vary according to a patient classification system that is based on clinical, diagnostic, and other factors. Inpatient psychiatric services and medical education costs related to Medicare beneficiaries are paid based on a cost reimbursement methodology. UPHS is reimbursed for cost reimbursable items at a tentative rate with final settlement determined after submission of annual cost reports by each hospital and audits thereof by the Medicare fiscal intermediary.

Inpatient and outpatient services rendered to Medicaid program beneficiaries are paid at prospectively determined rates. Additional amounts are allocated to each hospital for training residents and serving a disproportionate indigent population.

Laws and regulations governing the Medicare and Medicaid programs are extremely complex and subject to interpretation. As a result, there is at least a reasonable possibility that recorded estimates will change by a material amount in the near term.

During 2017, UPHS and IBC reached agreement on terms of a five-year agreement. Payments made for inpatient services provided to IBC traditional and managed care subscribers are effected on a per case rate basis for most services. Payment for outpatient services is principally based upon negotiated fee schedules. Hospital and physician rates also provide for annual inflationary increases. In addition, incentives are paid for high performance with regard to clinical outcomes and patient quality. The agreement continues unless terminated by the parties.

During 2015, UPHS and Aetna reached agreement on terms of a five-year agreement. The terms of the agreement provide payments for inpatient hospital services on a per case rate basis. Payments for outpatient services continue to be predominantly based upon negotiated fee schedules.

UPHS also has reimbursement agreements with certain commercial insurance carriers, health maintenance organizations and preferred provider organizations. The basis for reimbursement under these agreements includes prospectively determined rates per discharge, discounts from established charges and prospectively determined per diem rates.

Charity Care

UPHS provides services to patients who meet certain criteria under its charity care policy without charge or at amounts less than UPHS' established rates. Because UPHS does not pursue collections, such amounts have been excluded from NPSR. UPHS estimates the costs of providing charity care services based on data derived from a combination of UPHS' cost accounting system and the ratio of costs to charges. Of the Total expenses reported above by UPHS, an estimated $19,189,000 and $16,134,000 were incurred as a result of providing services to charity patients for the years ended June 30, 2018 and 2017, respectively.

Provision for Bad Debt

The provision for bad debt is based on management's assessment of expected net collections considering economic conditions, historical experience, trends in health care coverage and other collection indicators. Included in this assessment are patients who do not have health insurance or do not meet the criteria to qualify for UPHS' charity care policy. UPHS pursues collection of these amounts, however certain amounts are deemed to be uncollectible. Periodically throughout the year, management assesses the adequacy of the allowances for uncollectible accounts based upon historical write-off experience by payor category, including not covered by insurance, and history of cash collections. The results of this review are then used to make any modifications to the provision for bad debt to establish an appropriate allowance for uncollectible accounts. No significant modifications were made for fiscal years 2018 or 2017. After satisfaction of amounts due from insurance and reasonable efforts to collect from patients have been exhausted, UPHS follows established guidelines for placing certain past-due patient balances with collection agencies, subject to terms of certain restrictions on collection efforts as determined by UPHS. Account receivables are written off after collection efforts have been followed in accordance with UPHS' policy. UPHS' allowances for uncollectible accounts totaled $271,700,000 and $225,244,000 at June 30, 2018 and 2017, respectively.

Medical Professional Liability Claims

The University is insured for medical professional liability claims through the combination of the Medical Care Availability and Reduction of Error Fund (Mcare), various commercial insurance companies and risk retention programs.

Mcare levies health care provider surcharges, as a percentage of the Pennsylvania Joint Underwriters Association rates for basic coverage, to pay claims and pay administrative expenses of Mcare participants. These surcharges are recognized as expenses in the period incurred. Mcare operates on a pay-as-you-go basis and no provision has been made for any future Mcare assessments in the accompanying financial statements, as the University's portion of the unfunded Mcare liability cannot be estimated.

Anticipated insurance recoveries and estimated liabilities for medical malpractice claims or similar contingent liabilities are presented separately on the Consolidated Statement of Financial Position in Accounts receivable, net of allowances and Accrued expenses and other liabilities, respectively. The University accrues for estimated risks arising from both asserted and unasserted medical professional liability claims. The estimate of the gross liability and corresponding receivable for unasserted claims arising from unreported incidents is based on analysis of historical claims data by an independent actuary, which is recorded utilizing a 2.25% to 3.50% discount rate as of June 30, 2018 and 2017. The gross liability recorded under this program is $734,383,000 and $714,363,000 at June 30, 2018 and 2017, respectively, with a corresponding receivable of $106,673,000 and $100,167,000 at June 30, 2018 and 2017, respectively.

PHCS Membership Substitution

Effective January 1, 2018, the University and PHCS entered into an affiliation agreement whereby the University became the sole corporate member of PHCS. PHCS is a comprehensive healthcare provider located in central New Jersey that principally includes the Medical Center of Princeton, a general acute care hospital facility in Plainsboro, New Jersey, with 319 inpatient beds (plus 24 newborn bassinets), and Princeton House Behavioral Health, which includes a 110 bed inpatient facility in Princeton, New Jersey, and four additional outpatient locations. PHCS includes approximately 1,200 physicians on staff and employs approximately 3,200 people.

No consideration was exchanged for the net assets contributed and acquisition costs are expensed as incurred. UPHS recorded non-operating contribution income of $398,493,000 in fiscal year 2018 reflecting the fair value of the contributed unrestricted net assets of PHCS on January 1, 2018. Additionally, Restricted contribution income of $8,254,000 and $10,162,000 were recorded in temporarily restricted and permanently restricted net assets, respectively as of January 1, 2018.

Total fair value of assets, liabilities and net assets contributed by PHCS and its subsidiaries at January 1, 2018 were as follows (in thousands):

		January 1, 2018
Cash and cash equivalents	$	46,440
Patients accounts receivable, net		43,895
Prepaid expenses and other current assets		17,533
Investments and assets limited as to use		213,460
Property, plant and equipment, net		491,877
Other assets		30,540
Total assets acquired	$	843,745
Accounts payable and accrued expense	$	75,954
Accrued compensation and related benefits		32,962
Estimated third-party settlements		7,099
Long-term debt		293,861
Other liabilities		16,960
Total liabilities assumed	$	426,836
Unrestricted	$	398,493
Temporarily restricted		8,254
Permanently restricted		10,162
Total net assets	$	416,909
Total liabilities and net assets	$	843,745

A summary of the pro-forma combined financial results of UPHS and PHCS for the years ended June 30, 2018 and June 30, 2017, as if the affiliation had occurred on July 1, 2016 is as follows (unaudited and in thousands):

		2018		2017
Total operating revenue	$	7,020,438	$	6,610,678
Total operating expense		6,636,843		6,224,240
Operating gain	$	383,595	$	386,438
Nonoperating activity, net		275,329		237,958
Increase in unrestricted net assets	$	658,924	$	624,396

3. Accounts Receivable

Accounts receivable are reported at their net realizable value.; The major components of receivables, net of allowances for doubtful accounts of $20,363,000 and $17,980,000 at June 30, 2018 and 2017, respectively, are as follows (in thousands):

		2018		2017
Sponsored research	$	140,790	$	137,675
Malpractice		106,673		100,167
Student		25,298		13,193
Trade		96,181		53,272
Investment income		5,884		4,032
Other		77,110		79,873
Total Accounts receivable	$	451,936	$	388,212

4. Loans Receivable

Loans receivable, and related allowances for doubtful accounts, consist of the following at June 30, 2018 and 2017 (in thousands):

2018	Receivable	Allowance	Net
Student Loans:			
Federally-sponsored	$ 57,562		$ 57,562
Other	14,160	$ 3,300	10,860
Total Student loans	$ 71,722	$ 3,300	$ 68,422
Other	11,168	230	10,938
Total	$ 82,890	$ 3,530	$ 79,360

2017	Receivable	Allowance	Net
Student Loans:			
Federally-sponsored	$ 67,221		$ 67,221
Other	15,847	$ 2,936	12,911
Total Student loans	$ 83,068	$ 2,936	$ 80,132
Other	11,136	231	10,905
Total	$ 94,204	$ 3,167	$ 91,037

Loans receivable primarily consists of student loans. Student loans include federally-sponsored student loans and donor-restricted student loans with mandated interest rates and repayment terms. The federally-sponsored student loans represent amounts due from current and former students under various Federal Government funded loan programs offered to graduate and undergraduate students. Loans disbursed under these programs are able to be assigned to the Federal Government upon default by the borrower; therefore, no related allowance is considered necessary. Funding received under these programs is ultimately refundable to the Federal Government in the event the University no longer participates and accordingly is reported as a liability in Federal student loan advances in the Consolidated Statements of Financial Position. Determination of the fair value of student loans receivable is not practicable.

Loans receivable are reported at their net realizable value. The University regularly assesses the adequacy of the allowances for credit losses of its loans by performing ongoing evaluations, including such factors as aging, differing economic risks associated with each loan category, financial condition of specific borrowers, economic environment in which the borrowers operate, level of delinquent loans, value of collateral and existence of guarantees or indemnifications.

5. Contributions Receivable

A summary of contributions receivable at June 30, 2018 and 2017, is as follows (in thousands):

	2018	2017
Unconditional promises expected to be collected in:		
Less than one year	$ 134,133	$ 108,885
One year to five years	169,363	144,626
Over five years	29,896	36,588
	333,392	290,099
Less: Discount	(20,912)	(17,187)
Less: Allowances for doubtful amounts	(31,846)	(31,560)
Total Contributions receivable, net	$ 280,634	$ 241,352

At June 30, 2018 and 2017, the University has outstanding unrecorded conditional promises to give, including non-legally binding bequests, of $312,013,000 and $303,926,000, respectively. When they become unconditional promises to give or are received in cash, they will be recorded and generally will be restricted for operations, endowment and capital projects as stipulated by the donors.

6. Investments, at Fair Value

A summary of investments, including the AIF, measured at fair value in accordance with the *Fair Value Measurements* standard, as of June 30, 2018 and June 30, 2017 is as follows (in thousands):

Assets	Level 1	Level 2	Level 3	Investments at NAV	2018
Short-term	$ 996,590				$ 996,590
Equity:					
US equities	808,186			$ 998,766	1,806,952
International equities	353,369			1,027,747	1,381,116
Emerging market equities	163,933			960,603	1,124,536
Total Equity	1,325,488			2,987,116	4,312,604
Debt:					
US treasuries	1,668,642	$ 42,348			1,710,990
Corporate bonds	1,533	156,245		99,581	257,359
High yield				106	106
Total Debt	1,670,175	198,593		99,687	1,968,455
Split-interest agreements	77,817		$ 320,976		398,793
Absolute return				3,176,304	3,176,304
Real estate		59		687,727	687,786
Private equity			8,473	3,182,297	3,190,770
Natural resources	262,132			727,529	989,661
Derivative instruments		10,386			10,386
Other			2,532		2,532
Total assets	$ 4,332,202	$ 209,038	$ 331,981	$ 10,860,660	$ 15,733,881

Assets	Level 1	Level 2	Level 3	Investments at NAV	2017
Short-term	$ 983,371				$ 983,371
Equity:					
US equities	772,121	$ 31		$ 952,865	1,725,017
International equities	462,289			1,052,689	1,514,978
Emerging market equities	128,217			971,792	1,100,009
Total Equity	1,362,627	31		2,977,346	4,340,004
Debt:					
US treasuries	1,292,532	44,756			1,337,288
Corporate bonds	1,615	159,760		105,049	266,424
High yield				142	142
Total Debt	1,294,147	204,516		105,191	1,603,854
Split-interest agreements	74,469		$ 396,029		470,498
Absolute return				2,912,273	2,912,273
Real estate		60		696,563	696,623
Private equity			10,814	2,197,350	2,208,164
Natural resources	237,864	4,036		514,778	756,678
Derivative instruments	2,399	251			2,650
Other			2,513		2,513
Total assets	$ 3,954,877	$ 208,894	$ 409,356	$ 9,403,501	$ 13,976,628

Included in Short-term investments is $158,105,000 and $19,440,000 of amounts held by trustees under indenture and escrow agreements at June 30, 2018 and 2017, respectively.

At June 30, 2018 and 2017, Short-term investments include $70,708,000 and $59,705,000, respectively, of outstanding receivables from trading activities. At June 30, 2018 and 2017, Short-term investments include $50,961,000 and $44,196,000, respectively, of outstanding payables from trading activities.

As of June 30, 2018 and 2017 there were no transfers between Level 1 and 2.

Liabilities related to equity short positions of $289,977,000 and $197,681,000 at June 30, 2018 and 2017, respectively, are reported in Accrued expenses and other liabilities on the Consolidated Statements of Financial Position. These liabilities are valued using observable market data and are categorized as Level 1 based on quoted market prices in active markets.

The University has made investments in various long-lived partnerships and, in other cases, has entered into contractual agreements that may limit its ability to initiate redemptions due to notice periods, lock-ups and gates. The University has also made commitments to various limited partnerships. The University expects these funds to be called over the next 5 years. The total amount of unfunded commitments is $3,214,634,000 which represents 25.9% of the AIF value as of June 30, 2018.

Details on the fair value, remaining estimated life, outstanding commitments, current redemption terms and restrictions by strategy and type of investment are provided below (in thousands):

Strategy	Fair Value June 30, 2018	Fair Value June 30, 2017	Outstanding Commitments	Redemption Terms	Redemption Restrictions
Short-term	$ 996,590	$ 983,371		Daily	None
Equity					
Managed accounts	952,964	870,645		Daily, monthly, and semi-annually with varying notice periods	None
Mutual funds	378,636	364,519		Daily	None
Private funds (1)	2,981,004	3,104,840	$ 140,950	Weekly to annually with varying notice periods	Lock-up provisions ranging from 0 to 5 years; side pocket investments
Total Equity	4,312,604	4,340,004	140,950		
Debt					
Managed accounts	1,868,768	1,498,663		Daily	None
Private funds (1)	99,687	105,191		Daily to annually with varying notice periods	None; side pocket investments
Total Debt	1,968,455	1,603,854			
Absolute return	3,176,304	2,912,273	508,552	Range from monthly to annually and 16 close-ended funds not available for redemption	Lock-up provisions ranging from 0 to 5 years with earlier redemptions subject to redemption fee; 16 close-ended funds not available for redemption, and side pocket investments
Real estate	687,786	696,623	683,426	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Private equity	3,190,770	2,208,164	1,732,395	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Natural resources					
Managed accounts	222,670	202,763		Daily	None
Private funds (1)	766,991	553,915	149,311	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Total Natural Resources	989,661	756,678	149,311		
Totals	$ 15,322,170	$ 13,500,967	$ 3,214,634		

(1) Private funds consist of close-ended and open-ended funds generally in the form of limited partnerships. Close-ended funds have varying remaining fund terms between 1 to 15 years.

Included in Level 1 split-interest agreement investments above are readily marketable assets invested by the University separately from the AIF where the University serves as trustee with an aggregate fair value of $77,817,000 and $74,469,000 at June 30, 2018 and 2017, respectively. Included in these amounts are assets related to the University Academic Component charitable gift annuities totaling $41,147,000 and $40,328,000 at June 30, 2018 and 2017, respectively. Level 3 split-interest agreement investments are managed and invested outside of the University by external trustees.

Invested in the AIF with an aggregate fair value of $167,480,000 and $155,291,000 at June 30, 2018 and 2017, respectively, is a perpetual trust managed by an external trustee who has delegated investment decisions to the University. The University invests the assets of this trust in accordance with its endowment policy.

Included in split-interest agreements are amounts held to meet legally mandated annuity reserves of $28,326,000 and $28,532,000 as of June 30, 2018 and 2017, respectively, as required by the laws of the following states where certain individual donors reside: California, New Jersey and New York.

A summary of Level 3 assets included in split-interest agreements, where the University is not trustee, measured at fair value, as of June 30, 2018 and 2017 is as follows (in thousands):

	2018	2017
Charitable remainder trusts	$ 17,239	$ 15,991
Charitable lead trusts	5,621	92,590
Perpetual trusts	298,116	287,448
Total	$ 320,976	$ 396,029

Changes to the reported amounts of split-interest agreements measured at fair value using unobservable (Level 3) inputs as of June 30, 2018 and 2017 are as follows (in thousands):

	Charitable Remainder Trusts	Charitable Lead Trusts	Perpetual Trusts	Total
June 30, 2017	$ 15,991	$ 92,590	$ 287,448	$ 396,029
Net realized gains			2,346	2,346
Net unrealized gains/(losses)	670	(4,110)	8,322	4,882
Acquisitions	622			622
Liquidations	(44)	(82,859)		(82,903)
June 30, 2018	$ 17,239	$ 5,621	$ 298,116	$ 320,976

	Charitable Remainder Trusts	Charitable Lead Trusts	Perpetual Trusts	Total
June 30, 2016	$ 11,113	$ 113,449	$ 275,483	$ 400,045
Net realized gains			516	516
Net unrealized gains	252	338	16,191	16,781
Acquisitions	4,626	1,340	2,229	8,195
Liquidations		(22,537)	(6,971)	(29,508)
June 30, 2017	$ 15,991	$ 92,590	$ 287,448	$ 396,029

The following tables set forth the fair value, related gains (losses) and notional amounts of the University's derivative instruments by contract type as of June 30, 2018 and 2017 (in thousands):

2018

	Notional Amount	Gross Derivative Assets	Gross Derivative Liabilities	Derivative Losses
Foreign currency contracts	$ 126,869	$ 302	$ 6,276	$ (29,513)
Futures contracts	(426,582)	10,084		(56,526)
Options contracts	(11)		153	
Total	$ (299,724)	$ 10,386	$ 6,429	$ (86,039)

2017				
	Notional Amount	Gross Derivative Assets	Gross Derivative Liabilities	Derivative Losses
Foreign currency contracts	$ 299,533	$ 251	$ 7,976	$ (5,459)
Futures contracts	(348,650)	2,399		(62,062)
Total	$ (49,117)	$ 2,650	$ 7,976	$ (67,521)

The notional amount is representative of the volume and activity of the respective derivative type during the years ended June 30, 2018 and 2017.

Gross derivatives assets and liabilities are shown in Investments, at fair value and Accrued expenses and other liabilities on the Consolidated Statements of Financial Position, respectively. Derivative gains (losses) are shown in Return on investments, net on the Consolidated Statements of Activities, in the appropriate net asset classification.

A summary of the University's total investment return, net of external and direct internal investment expenses, for the years ended June 30, 2018 and 2017 is presented below (in thousands):

	2018	2017
AIF investment income	$ 100,290	$ 80,745
AIF realized and unrealized gains	1,349,913	1,294,544
Return on AIF	1,450,203	1,375,289
Other investment gains	114,961	137,256
Total Return on investments, net	$ 1,565,164	$ 1,512,545

7. Endowment

The composition and changes to the amount of the University's endowment at June 30, 2018 are as follows (in thousands):

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds		$ 3,099,924	$ 3,849,147	$ 6,949,071
Quasi-endowment funds	$ 6,828,370			6,828,370
June 30, 2018	$ 6,828,370	$ 3,099,924	$ 3,849,147	$ 13,777,441

	Quasi	Donor Restricted		
	Unrestricted	Temporarily	Permanently	Total
Net assets, June 30, 2017	$ 5,931,351	$ 2,641,506	$ 3,640,350	$ 12,213,207
Investment return:				
Investment income, net of expenses	48,729	57,911	109	106,749
Gains, realized and unrealized	719,502	674,044	12,677	1,406,223
Total investment return	768,231	731,955	12,786	1,512,972
New gifts	13,786	398	167,495	181,679
Allocation of endowment assets for expenditure	(516,034)			(516,034)
Other investment allocation	(5,871)			(5,871)
Transfers to create board designated funds	198,535			198,535
Other transfers	(3,354)	(3,504)	18,369	11,511
PHCS membership substitution	163,024	8,271	10,147	181,442
Released from restriction	278,702	(278,702)		
Net assets, June 30, 2018	$ 6,828,370	$ 3,099,924	$ 3,849,147	$ 13,777,441

The composition and changes to the amount of the University's endowment as of June 30, 2017 are as follows (in thousands):

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Donor-restricted endowment funds		$ 2,641,506	$ 3,640,350	$ 6,281,856
Quasi-endowment funds	$ 5,931,351			5,931,351
June 30, 2017	$ 5,931,351	$ 2,641,506	$ 3,640,350	$ 12,213,207

	Quasi Unrestricted	Donor Restricted Temporarily	Donor Restricted Permanently	Total
Net assets, June 30, 2016	$ 5,161,319	$ 2,143,305	$ 3,410,740	$ 10,715,364
Investment return:				
Investment income, net of expenses	39,871	47,824	149	87,844
Gains, realized and unrealized	707,411	684,311	16,702	1,408,424
Total investment return	747,282	732,135	16,851	1,496,268
New gifts	11,623	29,980	201,970	243,573
Allocation of endowment assets for expenditure	(485,860)			(485,860)
Other investment allocation	(6,559)			(6,559)
Transfers to create board designated funds	245,471			245,471
Other transfers	(8,141)	2,302	10,789	4,950
Released from restriction	266,216	(266,216)		
Net assets, June 30, 2017	$ 5,931,351	$ 2,641,506	$ 3,640,350	$ 12,213,207

The fair value of certain permanently restricted endowment funds is less than the original donated value by $0 and $81,000 as of June 30, 2018 and 2017, respectively, and is reflected as a reduction of Temporarily restricted assets.

8. Property, Plant and Equipment, net

The components of PPE at June 30, 2018 and 2017 are as follows (in thousands):

	Estimated Useful Life in years	2018	2017
Land and land improvements	N/A to 20	$ 431,440	$ 366,960
Buildings and fixed equipment	5 to 50	9,357,800	8,426,732
Moveable equipment and other	4 to 20	1,935,319	1,942,076
Construction-in-progress		929,115	590,926
		12,653,674	11,326,694
Less: Accumulated depreciation		(5,335,055)	(4,874,388)
Property, plant and equipment, net		$ 7,318,619	$ 6,452,306

The University recorded $507,890,000 and $470,716,000 of depreciation expense for the years ended June 30, 2018 and 2017, respectively.

The University capitalized $19,027,000 and $11,272,000 of interest costs for the years ended June 30, 2018 and 2017, respectively.

The University has conditional asset retirement obligations of $20,364,000 and $23,332,000 as of June 30, 2018 and 2017, respectively, which primarily relate to asbestos contained in buildings and underground steam distribution piping and are included within Accrued expenses and other liabilities in the Consolidated Statements of Financial Position.

9. Split-Interest Agreements

Changes in the value of assets, liabilities and net assets pursuant to split-interest agreements as of June 30, 2018 and 2017 are as follows (in thousands):

2018	Assets	Liabilities	Net Assets
June 30, 2017	$ 470,498	$ (47,511)	$ 422,987
New contributions	3,682	(3,770)	(88)
Investment income	2,255	(1,388)	867
Realized and unrealized gain, net	10,920		10,920
Payments and settlements	(88,562)	6,972	(81,590)
Actuarial adjustment		(1,268)	(1,268)
Net change	(71,705)	546	(71,159)
June 30, 2018	$ 398,793	$ (46,965)	$ 351,828

2017	Assets	Liabilities	Net Assets
June 30, 2016	$ 471,768	$ (47,424)	$ 424,344
New contributions	9,647	(2,403)	7,244
Investment income	1,556	(1,470)	86
Realized and unrealized gain, net	22,672		22,672
Payments and settlements	(35,145)	7,081	(28,064)
Actuarial adjustment		(3,295)	(3,295)
Net change	(1,270)	(87)	(1,357)
June 30, 2017	$ 470,498	$ (47,511)	$ 422,987

10. Contingencies, Guarantees and Commitments

The University offers various loan programs for students and families to pay tuition, fees and other costs. Certain loans issued by private lending institutions are guaranteed by the University totaling $37,613,000 and $49,410,000 at June 30, 2018 and 2017, respectively. Upon default by the borrower, the University is required to pay all or a portion of the outstanding loan balance. The University recognizes a liability for the greater of the fair value of the guarantee or defaults in the portfolio of guaranteed loans. The recognized liability is $3,299,000 and $3,666,000 at June 30, 2018 and 2017, respectively and reflects the fair value of the guarantee on these outstanding loan balances.

Various lawsuits, claims and other contingent liabilities arise in the ordinary course of the University's education and health care activities. Based upon information currently available, management believes that any liability resulting therefrom will not materially affect the financial position or operations of the University.

The University is currently involved in various projects that have resulted in capital and property acquisition commitments from the University. As of June 30, 2018, approximately $419,016,000 has been committed by the University.

11. Pension and Other Postretirement Benefit Costs

Retirement benefits are principally provided to employees through contributory defined contribution plans. The Academic Component's policy with respect to its contribution is to provide up to 9% of eligible employees' salaries, while the UPHS contribution can be up to 6.5%. The University's contributions to these plans amounted to $194,597,000 and $176,023,000 as of June 30, 2018 and 2017, respectively.

The University also has non-contributory defined benefit pension plans. Benefits under the plans generally are based on the employee's years of service and compensation during the years preceding retirement. Contributions to the plans are made in amounts necessary to at least satisfy the minimum required contributions as specified in the Internal Revenue Service Code and related regulations. The Academic Component's plan was frozen to new full-time entrants effective July 1, 2000 and part-time entrants effective July 1, 2018. UPHS' primary plan was frozen to new entrants effective July 1, 2010; the benefit accruals for all participants of the LGH and PHCS plans were frozen effective June 30, 2013 and December 31, 2011, respectively.

During the year ended June 30, 2018, certain terminated vested participants in the UPHS and LGH defined benefits plans were fully paid out their pension benefits as part of a one-time vested termination cashout offering (VTCO). The PBO and ABO as of June 30, 2018 reflect the pay-out of benefits for these participants. The total lump sum payments from the VTCO were $156,928,000.

Additionally, the University provides certain healthcare and life insurance benefits (OPEB) for retired employees. Only a limited number of employees may become eligible for such benefits if they reach retirement age while working for the University. These and similar benefits for active and certain retired employees are provided through insurance contracts.

The University uses a measurement date of June 30 for its defined benefit pension and OPEB plans.

Change in Plan Assets/ Obligation and Funded Status

The funded status of the plans is measured as the difference between the plan assets at fair value and the projected benefit obligation (PBO) for Pension Benefits or accumulated postretirement benefit obligation (APBO) for Other Postretirement Benefits. The resulting net liability is recorded in Accrued retirement benefits on the Statements of Financial Position. The following shows changes in the benefit obligation, plan assets and funded status (in thousands):

2018	Pension Benefits	Other Postretirement Benefits	Total
Change in Plan Assets			
Fair value of plan assets, beginning of year	$ 2,371,317	$ 444,723	$ 2,816,040
University contributions	109,568	35,614	145,182
Plan participants' contributions	158	7,873	8,031
Actual return on plan assets	216,840	51,673	268,513
Acquisition	139,791		139,791
Benefits paid	(246,876)	(34,543)	(281,419)
Fair value of plan assets, end of year	$ 2,590,798	$ 505,340	$ 3,096,138

Change in Benefit Obligation						
Benefit obligation, beginning of year (PBO/APBO)	$	3,262,668	$	913,685	$	4,176,353
Service cost		70,041		30,240		100,281
Interest cost		137,472		36,044		173,516
Plan participants' contributions		158		7,873		8,031
Acquisition		167,552				167,552
Net actuarial (gain)/loss		(71,366)		(36,932)		(108,298)
Benefits paid		(246,876)		(34,543)		(281,419)
Benefit obligation, end of year (PBO/APBO)	$	3,319,649	$	916,367	$	4,236,016
Funded status, end of year	**$**	**728,851**	**$**	**411,027**	**$**	**1,139,878**
Other retirement programs						101,429
Accrued retirement benefits					$	1,241,307

2017		**Pension Benefits**		**Other Postretirement Benefits**		**Total**
Change in Plan Assets						
Fair value of plan assets, beginning of year	$	2,082,315	$	379,925	$	2,462,240
University contributions		128,454		34,699		163,153
Plan participants' contributions		160		7,293		7,453
Actual return on plan assets		239,431		52,154		291,585
Benefits paid		(79,043)		(29,348)		(108,391)
Fair value of plan assets, end of year	$	2,371,317	$	444,723	$	2,816,040
Change in Benefit Obligation						
Benefit obligation, beginning of year (PBO/APBO)	$	3,165,114	$	920,401	$	4,085,515
Service cost		75,092		32,454		107,546
Interest cost		130,172		35,796		165,968
Plan participants' contributions		160		7,293		7,453
Plan amendments				(1,749)		(1,749)
Transfers				(3,285)		(3,285)
Net actuarial (gain)/loss		(28,827)		(47,877)		(76,704)
Benefits paid		(79,043)		(29,348)		(108,391)
Benefit obligation, end of year (PBO/APBO)	$	3,262,668	$	913,685	$	4,176,353
Funded status, end of year	**$**	**891,351**	**$**	**468,962**	**$**	**1,360,313**
Other retirement programs						88,105
Accrued retirement benefits					$	1,448,418

The Accumulated Benefit Obligation for the Pension Benefits was $2,975,984,000 and $2,925,489,000 at June 30, 2018 and 2017, respectively.

Net Periodic Benefit Cost

The components of net periodic benefit cost for pension benefits and other postretirement benefits are as follows (in thousands):

2018	Pension Benefits	Other Postretirement Benefits	Total
Net Periodic Cost			
Service cost	$ 70,041	$ 30,240	$ 100,281
Interest cost	137,472	36,044	173,516
Expected return on plan assets	(176,009)	(32,726)	(208,735)
Amortization of:			
Net prior service cost		(323)	(323)
Net losses	40,827	5,971	46,798
Net periodic benefit cost	$ 72,331	$ 39,206	$ 111,537

2017			
Net Periodic Cost			
Service cost	$ 75,092	$ 32,454	$ 107,546
Interest cost	130,172	35,796	165,968
Expected return on plan assets	(156,124)	(28,674)	(184,798)
Amortization of:			
Net prior service cost		(121)	(121)
Net losses	53,220	11,529	64,749
Net periodic benefit cost	$ 102,360	$ 50,984	$ 153,344

Unrestricted Net Assets

The University recorded the following year-end valuation adjustments to its Pension and Other Postretirement Benefit Plans in Pension, OPEB and Other, net in the Consolidated Statements of Activities (in thousands):

2018	Pension Benefits	Other Postretirement Benefits	Total
Unrestricted Net Assets			
Net actuarial loss	$ 585,806	$ 115,078	$ 700,884
Net prior service cost/(credit)		(3,146)	(3,146)
Total	$ 585,806	$ 111,932	$ 697,738
Adjustment to unrestricted net assets (gain)/loss	$ (153,023)	$ (61,924)	$ (214,947)

2017			
Unrestricted Net Assets			
Net actuarial loss	$ 738,829	$ 177,325	$ 916,154
Net prior service cost/(credit)		(3,469)	(3,469)
Total	$ 738,829	$ 173,856	$ 912,685
Adjustment to unrestricted net assets (gain)/loss	$ (165,352)	$ (84,517)	$ (249,869)

The estimated amount that will be amortized from Unrestricted Net Assets into net periodic benefit cost in 2019 is as follows (in thousands):

	Pension Benefits	Other Postretirement Benefits
Amortization of prior service credit		$ (387)
Amortization of net losses	$ 30,984	2,461

Actuarial Assumptions

The expected long-term rate of return on plan assets is management's best estimate of the average investment return expected to be received on the assets invested in the plan over the benefit period. The expected long-term rate of return on plan assets has been established by considering historical and future expected returns of the asset classes invested in by the pension trust, and the allocation strategy currently in place among those classes.

	Pension Benefits		Other Postretirement Benefits	
Weighted-Average Assumptions Used to Determine Benefit Obligations at Year End	**2018**	**2017**	**2018**	**2017**
Discount rate	4.28%	4.19%	4.29%	4.00%
Salary increase	3.03%	2.91%	N/A	N/A
Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost				
Discount rate	4.24%	4.23%	4.00%	3.95%
Expected long-term return on plan assets	7.46%	7.52%	7.50%	7.50%
Salary increase	3.99%	3.82%	N/A	N/A
Assumed Health Care Cost Trend Rates				
Initial trend rate	N/A	N/A	6.54%	6.54%
Ultimate trend rate	N/A	N/A	4.71%	4.70%
Fiscal year end that ultimate trend rate is reached	N/A	N/A	2037	2037

Assumed health care cost trend rates have a significant effect on the amounts reported for the Other postretirement benefits. A one-percentage-point change in assumed health care trend rates would have the following effects on Other postretirement benefits (in thousands):

	1-Percentage Point Increase	1-Percentage Point Decrease
2018		
Effect on total of service and interest cost	$ 14,876	$ (11,261)
Effect on APBO	166,322	(130,445)

Expected Contributions

The University expects to contribute $86,865,000 and $34,187,000 for pension benefits and other postretirement benefits, respectively, during the fiscal year ending June 30, 2019.

Expected Benefits Payments (in thousands):

Expected benefit payments for the year ending:	Pension Benefits	Other Postretirement Benefits before Medicare Part D Subsidy	Impact of Medicare Part D Subsidy
June 30, 2019	$ 115,183	$ 27,709	$ 162
June 30, 2020	119,320	29,825	169
June 30, 2021	126,793	32,068	174
June 30, 2022	134,903	34,241	180
June 30, 2023	142,867	36,175	184
June 30, 2024 to June 30, 2028	847,669	212,314	973

Plan Assets and Allocations

The principal investment objectives for the pension and other postretirement benefits plans are to ensure the availability of funds to pay pension benefits as they become due under a broad range of future economic scenarios, to maximize long-term investment returns with an acceptable level of risk based on the pension obligations, and to invest the pension trust in a diversified manner.

The University's Office of Investments is responsible for the day-to-day management of the majority of the investments of the pension and other postretirement benefits. The investments are made in accordance with policies set out by the Investment Board which has been appointed by the Trustees. The pension and other postretirement benefit investments are similar in nature to those investments discussed in Notes 1 and 6 – Investments, at Fair Value. However, the actual allocations to specific investments within each asset class may vary due to certain restrictions imposed by investment managers and ERISA regulations.

A summary of plan assets, measured at fair value, as of June 30, 2018 and 2017, is as follows (in thousands):

Pension Benefits:

Assets	Level 1	Level 2	Level 3	Investments at NAV	2018
Short-term	$ 63,769				$ 63,769
Equity:					
US equities	307,663	$ 328		$ 150,046	458,037
International equities	142,875			250,654	393,529
Emerging market equities	6,395			141,825	148,220
Debt:					
US treasuries	288,406	8,400			296,806
Corporate bonds	36,829	79,764		154,097	270,690
Absolute return	13,335			520,465	533,800
Real estate				45,198	45,198
Private equity	3,868			179,116	182,984
Natural resources	105,564	1,210		91,116	197,890
Derivative instruments:					
Forward currency contracts		65			65
Total assets	$ 968,704	$ 89,767	$ -	$ 1,532,517	$ 2,590,988

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2018
Derivative instruments		$ 190			$ 190
Total liabilities	$ -	$ 190	$ -	$ -	$ 190

Assets	Level 1	Level 2	Level 3	Investments at NAV	2017
Short-term	$ 121,646				$ 121,646
Equity:					
US equities	284,518			$ 178,754	463,272
International equities	125,750			239,604	365,354
Emerging market equities	45,327			132,157	177,484
Debt:					
US treasuries	241,530	$ 8,577			250,107
Corporate bonds		67,783		154,745	222,528
Absolute return				457,776	457,776
Real estate				43,298	43,298
Private equity				97,601	97,601
Natural resources	92,926	1,353		77,935	172,214
Derivative instruments:					
Forward currency contracts		68			68
Total assets	$ 911,697	$ 77,781	$ -	$ 1,381,870	$ 2,371,348

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2017
Derivative instruments		$ 31			$ 31
Total liabilities	$ -	$ 31	$ -	$ -	$ 31

Other Postretirement Benefits:

Assets	Level 1	Level 2	Level 3	Investments at NAV	2018
Short-term	$ 26,269				$ 26,269
Equity:					
US equities	6,123			$ 57,429	63,552
International equities	6,878			83,354	90,232
Emerging market equities	3,240			40,349	43,589
Debt:					
US treasuries	25,351				25,351
Corporate bonds		$ 282		10,165	10,447
Absolute return				154,140	154,140
Real estate				14,337	14,337
Private equity				34,457	34,457
Natural resources	34,928	526		7,535	42,989
Derivative instruments:					
Forward currency contracts		34			34
Total	$ 102,789	$ 842	$ -	$ 401,766	$ 505,397

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2018
Derivative instruments		$ 57			$ 57
Total	$ -	$ 57	$ -	$ -	$ 57

Assets	Level 1	Level 2	Level 3	Investments at NAV	2017
Short-term	$ 36,651				$ 36,651
Equity:					
US equities	15,751			$ 57,364	73,115
International equities	7,189			76,747	83,936
Emerging market equities	13,647			32,985	46,632
Debt:					
US treasuries	18,977				18,977
Corporate bonds		$ 372		10,071	10,443
Absolute return				114,904	114,904
Real estate				8,732	8,732
Private equity				16,853	16,853
Natural resources	29,617	587		4,263	34,467
Derivative instruments:					
Forward currency contracts		24			24
Total	$ 121,832	$ 983	$ -	$ 321,919	$ 444,734

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2017
Derivative instruments		$ 11			$ 11
Total	$ -	$ 11	$ -	$ -	$ 11

As of June 30, 2018, the University has unfunded commitments to limited partnerships totaling $369,938,000, which are expected to be called over the next 5 years.

Transfers between leveled assets are based on the actual date of the event which caused the transfer. As of June 30, 2018 and 2017 there were no transfers between Level 1 and 2.

2018	Pension Benefits		Other Postretirement Benefits	
Allocation of Plan Assets	Target	Actual	Target	Actual
Short-term	0.0%	2.5%	0.0%	5.2%
Equity:				
US equities	16.6%	17.7%	13.0%	12.6%
International equities	14.9%	15.2%	19.0%	17.9%
Emerging markets equities	6.8%	5.7%	10.0%	8.6%
Debt:				
US treasuries	22.9%	11.5%	10.0%	5.0%
Corporate bonds	1.4%	10.4%	0.0%	2.1%
Absolute return	21.2%	20.6%	29.0%	30.5%
Real estate	2.1%	1.7%	3.0%	2.8%
Private equity	5.8%	7.1%	5.0%	6.8%
Natural resources	8.3%	7.6%	11.0%	8.5%
Total	100.0%	100.0%	100.0%	100.0%

12. Debt Obligations

Debt obligations at June 30, 2018 and 2017 are as follows (in thousands):

	Final Maturity	Effective Interest Rate at June 30, 2018	2018	2017
Academic Component:				
Fixed rate debt obligations:				
The Trustees of the University of Pennsylvania				
Series 2012 Taxable Bonds	09/2112	4.67%	$ 300,000	$ 300,000
Pennsylvania Higher Educational Facilities Authority (PHEFA)				
Series A of 2017 revenue bonds	08/2046	2.26% - 3.72%	178,395	178,395
Series A of 2016 revenue bonds	08/2041	0.78% - 2.93%	168,565	169,635
Series A of 2015 revenue bonds	10/2045	0.95% - 2.99%	196,110	200,985
Series B of 2015 revenue bonds	10/2038	0.95% - 3.38%	162,395	163,795
Series C of 2015 revenue bonds	10/2035	3.68%	8,020	8,020
Series A of 2011 revenue bonds	09/2021	2.92% - 3.68%	11,125	11,125
Series of 2010 revenue bonds	09/2033	3.99% - 4.15%	16,935	16,935
Series B of 2009 revenue bonds	09/2020	3.51% - 3.99%	6,545	8,570
Series C of 2009 revenue bonds	09/2019	3.51% - 3.70%	7,970	11,635
Other loans	05/2031	1.00% - 4.91%	12,663	914
Variable rate debt obligations:				
PHEFA Series of 1990 revenue bonds	12/2020	1.73%	6,500	6,500
Washington County Authority Series of 2004	07/2034	1.00%	53,400	53,400
Total Academic Component outstanding bonds payable			1,128,623	1,129,909
Unamortized issuance costs, premiums and discounts, net			73,032	78,304
Total Academic Component debt obligations			$ 1,201,655	$ 1,208,213
UPHS:				
Fixed rate debt obligations:				
Lancaster County Hospital Authority (LCHA)				
Series A of 2016 revenue bonds	08/2042	0.84% - 3.25%	$ 164,540	$ 168,585
Series B of 2016 revenue bonds	08/2046	1.43% - 3.22%	128,050	128,050
PHEFA				
Series A of 2017 revenue bonds	08/2047	2.60% - 3.68%	400,000	
Series C of 2016 revenue bonds	08/2041	0.62% - 3.08%	129,015	129,290
Series A of 2015 revenue bonds	08/2045	1.10% - 4.00%	300,445	324,855
Series A of 2012 revenue bonds	08/2042	1.66% - 4.08%	136,950	136,950
Series A of 2009 revenue bonds	08/2021	4.20% - 4.91%	33,005	43,110
Series B of 2008 revenue bonds	08/2037	5.65% - 6.00%	52,000	52,000
New Jersey Health Care Facilities Financing Authority (NJHCFFA)				
Princeton Healthcare System Series A of 2016	07/2045	1.51% - 4.08%	183,440	
University of Pennsylvania Health System Taxable Note	08/2047	4.08%	200,000	
Lancaster General Hospital 2015 Taxable Note	08/2022	2.66%	72,805	75,211
Build to suit lease, net of related interest	Various	N/A	122,860	123,013
Mortgages, notes and capital leases	Various	Various	25,986	23,443
Variable rate debt obligations:				
NJHCFFA Princeton Healthcare System Series B of 2016	07/2045	1.05% - 1.18%	65,000	
NJHCFFA Princeton Healthcare System Series C of 2016	07/2045	1.24% - 1.37%	20,000	
LCHA Series A of 2012 revenue bonds	08/2041	1.58%	22,775	23,375
PHEFA Series A of 2014 revenue bonds	08/2045	0.89%	100,000	100,000
PHEFA Series A of 2008 revenue bonds	08/2037	1.51%	69,995	69,995
Total UPHS outstanding bonds payable			2,226,866	1,397,877
Unamortized issuance costs, premiums and discounts, net			145,671	96,860
Total UPHS debt obligations			2,372,537	1,494,737
Total University debt obligations			$ 3,574,192	$ 2,702,950

Contractual maturities of debt obligations and build-to-suit lease payments are as follows (in thousands):

	Academic Component	UPHS			University
Fiscal Year	Bond and Other Loan Obligations	Bond and Other Loan Obligations	Build-to-Suit Lease Payments	Total	Total
2019	$ 31,348	$ 97,633	$ 10,742	$ 108,375	$ 139,723
2020	16,540	47,619	10,992	58,611	75,151
2021	27,490	49,708	11,249	60,957	88,447
2022	18,356	57,225	11,512	68,737	87,093
2023	21,907	113,316	11,781	125,097	147,004
Thereafter	1,012,982	1,738,505	145,633	1,884,138	2,897,120
Total Principal	1,128,623	2,104,006	201,909	2,305,915	3,434,538
Unamortized issuance costs, premiums and discounts, net	73,032	145,671		145,671	218,703
Build-to-suit lease related interest			(79,049)	(79,049)	(79,049)
Total debt obligation	$ 1,201,655	$ 2,249,677	$ 122,860 (a)	$ 2,372,537	$ 3,574,192

(a) Present value of future lease payments

The University has letters of credit with various financial institutions to secure certain self-insured liabilities in the amount of $10,556,000 and $8,081,000 at June 30, 2018 and 2017, respectively. These letters of credit have evergreen provisions for automatic renewal. There have been no draws under these letters of credit.

Academic Component

On January 19, 2017, Pennsylvania Higher Educational Facilities Authority (PHEFA) issued Series A of 2017 revenue bonds (PHEFA 2017A bonds) with an aggregate principal amount of $178,395,000. The proceeds were used to fund or reimburse the University for the cost of various capital projects. Interest on the PHEFA 2017A bonds is fixed with coupons ranging between 4.00% to 5.00%.

The University has variable rate debt in the amount of $59,900,000 which is subject to optional tender by the holders upon seven days' notice. These bonds are reflected in the table above based on original scheduled maturities. In the event that the University receives notice of any optional tender on its variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds. However, in the event that the entire remarketing effort were to fail, the University would have the general obligation to purchase the bonds.

On June 14, 2016, the University entered into a five year agreement with a financial institution, whereby the institution has agreed to provide a line of credit in the amount of $100,000,000 for general purposes of the University. The University pays a fee annually on the unused amount of the line of credit. As of June 30, 2018, there have been no draws under the agreement.

UPHS

The PHEFA Revenue Bonds, Lancaster County Hospital Authority (LCHA) Revenue Bonds and New Jersey Health Care Facilities Financing Authority (NJHCFFA) Revenue Bonds are secured by master notes issued under the UPHS Master Trust Indenture (MTI). The MTI and related agreements contain certain restrictive covenants which limit the issuance of additional indebtedness, and among other things, require UPHS to meet an annual debt service coverage requirement of "income available for debt service" (excess of revenue over expenses plus depreciation, amortization, interest expense and extraordinary items) at an amount equal to 110% of the annual debt service requirements. If the coverage requirement for a particular year is not met, within six months of the close of that fiscal year, UPHS must retain the services of a consultant to make recommendations to improve the coverage requirement. UPHS must also implement the recommendations of the consultant to the extent that they can be feasibly implemented. UPHS will not be considered to be in default of the provisions of the MTI so long as UPHS has sufficient cash flow to pay total operating expenses and debt service for the fiscal year. In both 2018 and 2017, UPHS met its debt service coverage requirement under the MTI. Additionally, UPHS has pledged its gross revenues to secure its obligation under the MTI.

The NJHCFFA PHCS Series A, B and C of 2016 were issued on January 20, 2016 for the purpose of refinancing a majority of the outstanding PHCS debt through bond issuance and direct placement obligations.

On December 13, 2017, PHEFA issued Series A of 2017 Health System revenue bonds (PHEFA UPHS 2017A bonds) with an aggregate principal amount of $400,000,000. Proceeds of $171,600,000 were used to fund or reimburse the Health System for the cost of various capital projects. The remaining proceeds of $269,200,000, including the issuance premium, were deposited in a capital project fund held by trustee to be drawn upon for future capital expenditures. This portion of the financing is reflected as a noncash transaction in the Statement of Cash Flows. Future reimbursements from the capital project fund will be accounted for as a cash inflow from investing activities in the Statement of Cash Flows. Interest on the PHEFA UPHS 2017A bonds is fixed with coupons ranging between 3.125% to 5.00%.

On December 13, 2017, The Trustees of the University of Pennsylvania issued 4.008% Taxable Health System Bonds. (UPHS Taxable 2017 bonds) with an aggregate principal amount of $200,000,000. The proceeds were used to fund or reimburse the Health System for the cost of various capital projects. Interest on the PHEFA UPHS 2017A bonds is fixed with coupon of 4.008%.

On August 25, 2016, PHEFA issued Series C of 2016 Health System refunding revenue bonds (PHEFA UPHS 2016C bonds) with an aggregate principal amount of $129,290,000. The proceeds were used to fund an escrow which will be used to refund $123,400,000 from PHEFA UPHS Series A of 2011 bonds. The refunded PHEFA UPHS Series A of 2011 bonds were legally defeased, and as such, are no longer included among UPHS's reported liabilities. Interest on the PHEFA UPHS 2016C bonds is fixed with coupons ranging between 2.00% to 5.00%.

As a result of the legal defeasance of debt associated with the issuance of PHEFA UPHS 2016C bonds, UPHS reported a loss on early extinguishment of debt in Pension, OPEB and other, net on the Consolidated Statements of Activities in the amount of $27,947,000 for the year ended June 30, 2017.

UPHS has variable rate debt in the amount of $69,995,000 which is subject to optional tender by the holders upon seven days' notice. These bonds are reflected in the debt obligations maturity table above based on original scheduled maturities. In the event that UPHS receives notice of any optional tender on its variable rate demand bonds, the purchase price will be repaid from the remarketing of the bonds. However, in the event that the entire remarketing effort were to fail, UPHS has in place a renewable direct pay letter of credit issued by Bank of America with an expiration date of April 15, 2023. In the event that the letter of credit cannot be drawn upon, UPHS would have the general obligation to purchase the bonds.

On April 13, 2016, UPHS entered into a three year agreement with a financial institution, whereby the institution has agreed to provide a line of credit in the amount of $100,000,000 for general purposes of UPHS. UPHS pays a fee annually on the unused amount of the line of credit. As of June 30, 2018, there have been no draws under the agreement.

Interest Rate Swap Agreements

The University enters into interest rate swap agreements to synthetically modify the interest rate terms of its long term debt portfolio. These agreements are not entered into for trading or speculative purposes. Fair value of these agreements is determined by obtaining quotes from Goldman Sachs Mitsui Marine Derivative Products, L.P. (GSMMDP) and Merrill Lynch, respectively, which are based on the income approach, using observable market data to discount future net payment streams and accordingly considers this to be a Level 2 measurement. The quotes provided also represent the amount the University would accept or be required to pay to transfer the agreement to GSMMDP and Merrill Lynch, respectively, or exit price as defined by the Fair Value Measurements standard. The University also takes into account the risk of nonperformance. On January 1, 2018 UPHS exercised its option to terminate early the $69,995,000 notional value swap resulting in a market value adjustment gain of $164,000.

The following table summarizes the terms of the University's remaining interest rate swap agreements (in thousands):

	Academic Component	UPHS		
Notional Amounts	$ 101,950	$ 22,775	$ 21,395	$ 21,395
Trade Date	11/6/2007	7/28/2006	7/15/2009	1/7/2010
Maturity Date	7/1/2034	7/1/2041	8/15/2023	8/15/2023
Rates:				
Receive	67% of 1-Month LIBOR	70% of 1-month LIBOR	3.184%	2.902%
Pay	3.573%	3.980%	SIFMA index	SIFMA index

The following tables summarize the fair value of the interest rate swap agreements, not designated as hedging instruments, as of June 30, 2018 and 2017, and the related gains/(losses) on the interest rate swap agreements, both realized and unrealized, for the years ended June 30, 2018 and 2017 (in thousands):

Consolidated Statements of Position	Line Item	2018	2017
Asset interest rate swaps			
UPHS	Other assets	$ 1,292	$ 2,635
Total Asset interest rate swaps		$ 1,292	$ 2,635
Liability interest rate swaps			
Academic Component	Accrued expenses and other liabilities	$ 15,922	$ 21,929
UPHS	Accrued expenses and other liabilities	4,799	7,524
Total Liability interest rate swaps		$ 20,721	$ 29,453

Consolidated Statements of Activities	Line Item	2018	2017
Academic Component	Return on investments, net	$ 3,175	$ 6,424
UPHS	Return on investments, net	(323)	(767)
Total		$ 2,852	$ 5,657

13. Net Assets

The major components of net assets at June 30, 2018 and 2017 are as follows (in thousands):

2018	Unrestricted	Temporarily restricted	Permanently restricted	Total
General operating	$ 4,259,171	$ 306,506		$ 4,565,677
Sponsored programs	57,502			57,502
Capital		118,493		118,493
Student loans	7,949			7,949
Planned giving agreements		29,312	$ 17,592	46,904
Endowment	6,828,370	3,099,924	3,849,147	13,777,441
Total	$ 11,152,992	$ 3,554,235	$ 3,866,739	$ 18,573,966

2017	Unrestricted	Temporarily restricted	Permanently restricted	Total
General operating	$ 3,482,264	$ 267,246		$ 3,749,510
Sponsored programs	42,749			42,749
Capital		84,411		84,411
Student loans	10,174	1,291	$ 17,152	28,617
Planned giving agreements		113,599	15,340	128,939
Endowment	5,931,351	2,641,506	3,640,350	12,213,207
Total	$ 9,466,538	$ 3,108,053	$ 3,672,842	$ 16,247,433

14. Operating Leases

The University leases research labs, office space and equipment under operating leases expiring through December 2043. Rental expense for the years ended June 30, 2018 and 2017 totaling $114,060,000 and $99,417,000, respectively, is included in the accompanying Consolidated Statements of Activities.

At June 30, 2018, future minimum lease payments under existing operating leases were as follows (in thousands):

2019	$ 97,936
2020	82,488
2021	74,077
2022	63,582
2023	52,951
Thereafter	338,454
Total Minimum lease payments	$ 709,488

15. Functional Classification of Expenditures

Expenses for the years ended June 30, 2018 and 2017 are categorized on a functional basis as follows (in thousands):

	2018					2017
	Compensation and benefits	Depreciation and amortization	Interest on indebtedness	Other operating expense	Total	Total
Instruction	$ 893,751	$ 66,893	$ 5,952	$ 442,956	$ 1,409,552	$ 1,333,880
Research	439,251	41,647	22,284	336,450	839,632	798,539
Hospital and physician practices	3,634,858	309,259	54,800	2,378,661	6,377,578	5,736,697
Auxiliary enterprises	35,030	35,347	5,879	88,028	164,284	160,193
Other educational activities	148,560	14,504	686	39,256	203,006	183,973
Student services	55,044	-	149	43,437	98,630	98,527
Academic support	38,816	16,209	239	36,669	91,933	179,571
Management and general	243,557	20,130	310	40,086	304,083	287,445
Independent operations	8,062	5,932	177	58,150	72,321	72,106
Total	$ 5,496,929	$ 509,921	$ 90,476	$ 3,463,693	$ 9,561,019	$ 8,850,931

Operation and maintenance of PPE and depreciation are allocated to functional classifications based on square footage. Interest expense is allocated to the functional classifications of the activity that directly benefited from the proceeds of the debt.

16. Subsequent Events

The University has evaluated subsequent events for the period from June 30, 2018 through September 27, 2018, the date the consolidated financial statements were issued.

Trustees of the University of Pennsylvania

As of June 30, 2018

Statutory Officers

As of June 30, 2018

President
Dr. Amy Gutmann

Provost
Dr. Wendell E. Pritchett

Executive Vice President
Mr. Craig R. Carnaroli

Executive Vice President of the University of Pennsylvania for the Health System and Dean, Perelman School of Medicine
Dr. J. Larry Jameson

Senior Vice President and Chief of Staff
Mr. Gregory Rost

Senior Vice President and General Counsel of the University of Pennsylvania and the University of Pennsylvania Health System
Wendy S. White, Esq.

Senior Vice President for Development and Alumni Relations
Mr. John H. Zeller

Senior Vice President for Institutional Affairs and Chief Diversity Officer
Ms. Joann Mitchell

Vice President for Audit, Compliance, and Privacy
Mr. Gregory J. Pellicano

Vice President for Budget and Management Analysis
Mr. Trevor C. Lewis

Vice President for Business Services
Ms. Marie Witt

Vice President for Facilities and Real Estate Services
Ms. Anne Papageorge

Vice President for Finance and Treasurer
Ms. MaryFrances McCourt

Vice President for Government and Community Affairs
Mr. Jeffrey Cooper

Vice President for Human Resources
Dr. John J. Heuer

Vice President for Information Technology and University Chief Information Officer
Mr. Thomas H. Murphy

Vice President for Public Safety
Ms. Maureen Rush

Vice President for University Communications
Mr. Stephen J. MacCarthy

Vice President and University Secretary
Ms. Leslie Laird Kruhly

Comptroller
Mr. John Horn

"Doors of wisdom are never shut." -Benjamin Franklin