Annual Financial Report

2018-2019

Selected Financial and Other Statistical Highlights

Fiscal Years Ended June 30

($ in millions)

	Actual FY15	Actual FY16	Actual FY17	Actual FY18	Actual FY19
CONSOLIDATED STATEMENT OF ACTIVITIES					
Total operating revenues	7,120	8,576	9,194	10,094	11,018
Tuition and fees, net[1]	845	903	938	1,096	1,156
Sponsored programs	910	904	967	1,006	1,022
Net patient service revenue	4,044	5,320	5,703	6,245	6,932
Investment income	402	439	541	579	676
Total operating expenses	6,723	8,140	8,851	9,561	10,499
Change in net assets from operating activities	397	436	343	533	519
Nonoperating change in net assets	122	585	1,392	1,794	332
Increase in total net assets	519	1,021	1,735	2,327	851
CONSOLIDATED STATEMENT OF FINANCIAL POSITION HIGHLIGHTS					
Investments, at fair value	11,566	12,262	13,977	15,734	16,499
Property, plant and equipment, net	5,154	6,203	6,452	7,319	8,029
Debt obligations[2]	2,190	2,560	2,703	3,574	3,706
Total assets	19,000	21,183	23,083	26,415	28,079
Total liabilities	5,509	6,671	6,835	7,841	8,655
Total net assets	13,491	14,512	16,248	18,574	19,424
RESEARCH (including ICR)					
Grants, contracts, and similar agreements:					
Federal government sources	663	658	668	678	722
Other government sources	23	23	23	23	12
Other	224	223	276	305	288
Total grants, contracts, and similar agreements	910	904	967	1,006	1,022
STUDENTS					
ENROLLMENT (FTE)					
Undergraduate	10,787	10,800	10,884	10,907	11,020
Graduate and professional	11,776	11,867	11,675	11,948	12,239
Total fall enrollment	22,563	22,667	22,559	22,855	23,260

(1) FY18 and FY19 tuition and fees, net include room and board revenue (previously included in Sales and services of auxiliary enterprises).

(2) FY16 includes LGH debt obligation and FY18 includes UPHS $600 million new money debt issuances.

Content

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

Fiscal Year 2019 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:

Endowment

- Against the backdrop of a volatile year for global equity markets, Penn's endowment returned 6.5%, increasing $873 million to $14.7 billion.
- Payouts from the endowment provided $581 million in budgetary support to the University during the fiscal year. Growing steadily, spending distributions from the endowment supported approximately 13% of the University's academic operating budget, up from less than 9% a decade ago.

Research

- Penn was ranked #1 in the world in patent filings for CAR-T cell and gene therapy as reported by Nature Biotechnology and as the 4th most innovative university in the world by Reuters in 2019.

Operating Performance

- Consolidated operating revenue increased 9.2%, from $10.1 billion to $11.0 billion in FY19. Strong operating and non-operating performance contributed to the 4.6% growth in net assets of $850.9 million, ending the year at $19.4 billion.

Fundraising Milestone

- In FY19, Penn's alumni, parents, and loyal supporters contributed $970 million in new gifts and pledges– the highest in Penn's history– and $626 million in cash receipts.

Students

- The Class of 2023 is comprised of 2,400 students hailing from 79 nations and all 50 states.
- Undergraduate debt reduction is a major goal. In the graduating Class of 2018, only 24% of students graduated with debt, with an average $22,103 over four years.
- As part Penn First Plus, the University's larger initiative which supports first generation students and those from lower incomes, Penn introduced financial supports, in addition to full coverage of tuition, room and board and fees, for Highly Aided students (family income of less than $65,500). New programs include laptop funding, summer savings expectation waivers, and funding for summer internships and research opportunities to more than 250 students in summer 2019.

Penn Medicine

- The University of Pennsylvania Health System ("UPHS") marked its 19th consecutive year of positive operating performance with a FY19 operating margin of 5.7%, or $437.7 million.

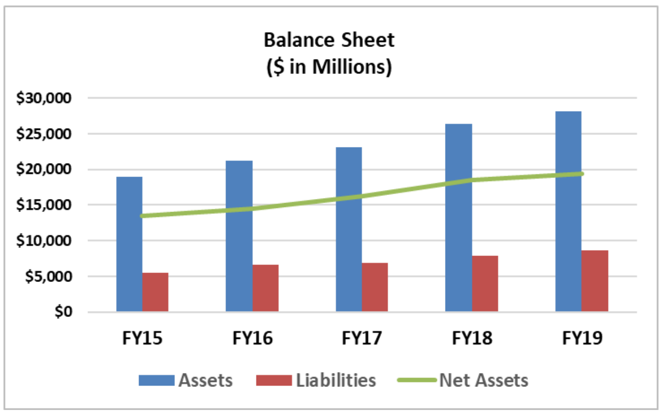
Overall, Penn's solid operating performance, fundraising, and investment management, coupled with our manageable capital funding and prudent debt management, have contributed to balance sheet strength that enables continued investment in *Penn Compact 2020*.

Penn

BALANCE SHEET AND NET ASSETS

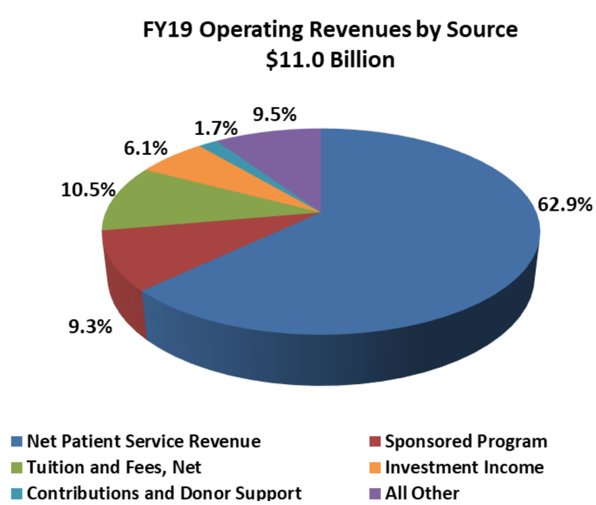
Total assets grew 6.3% over the prior year to $28.1 billion while liabilities increased 10.4% to $8.7 billion. Cash and cash equivalents decreased $55.7 million, or 3.9%, to $1.4 billion, primarily driven by planned capital spending on the UPHS New Patient Pavilion offset by $200 million proceeds from the University debt issuance in October 2018.

Net assets totaled $19.4 billion, an increase of $850.9 million, or 4.6%, from FY18 primarily due to strong operating and investment performance offset by an unfavorable pension adjustment. Since FY15, consolidated net assets have grown by 44.0%, impacted by favorable investment and operating performance, strong fundraising efforts, and UPHS regional expansion.



OPERATING REVENUE

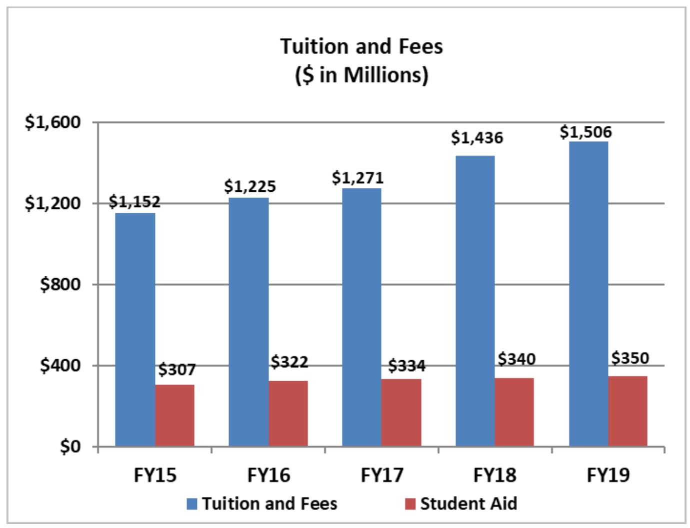
Total operating revenue increased by 9.2%, rising from $10.1 billion in FY18 to $11.0 billion in FY19.



Tuition and Fees

Tuition and student fee revenue increased 5.4% over FY18, from $1.1 billion to $1.2 billion, representing 10.5% of FY19 total operating revenue. This total is net of $350.0 million in undergraduate and graduate financial aid grants and scholarships, which increased by $10.4 million, or 3.1%, over the prior fiscal year.

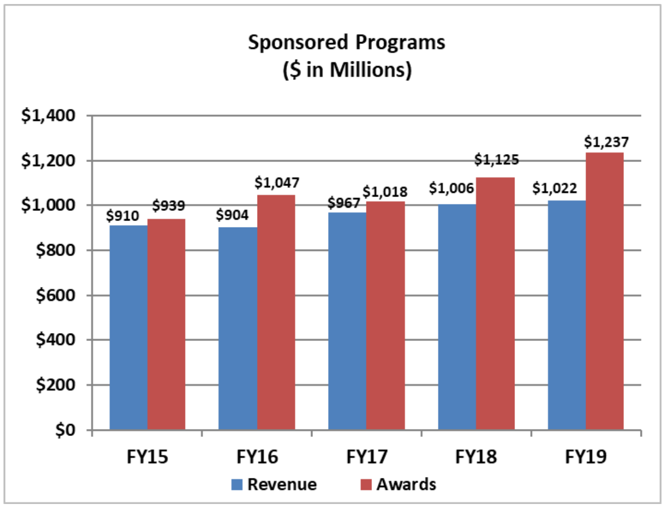
The *Penn Compact 2020*'s mission of Inclusion, Innovation, and Impact continues to be Penn's guiding principle. For more than a decade, Penn has been expanding access to a world-class education for families of all income levels by meeting 100% of a student's determined financial need. To promote inclusion 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, totaled $1.0 billion in FY19, an increase of $16.8 million or 1.7% over the prior fiscal year. Sponsored program revenue represented 9.3% of total operating revenue.

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 to be ranked #1 in the world in patent filings for CAR-T cell and gene therapy as reported by Nature Biotechnology and as the 4th most innovative university in the world by Reuters in 2019.



Government Awards

In FY19, a total of $771.2 million, or 62.9%, of Sponsored Program awards came from the federal government, Penn's largest source of research funding. Of the federal funding, $527.2 million, or 68.4%, came from the National Institutes of Health (NIH). The Perelman School of Medicine was among the top three medical schools nationwide in grants awarded by the NIH. Overall, total awards issued to Penn in FY19 increased by $112.3 million, or 10.0%.

Industry and Foundation Awards

Industry and foundation awards accounted for $437.5 million, or 35.4%, of total sponsored program awards. Industry awards, our fastest growing component of research revenue, increased 35.0% from $224.5 million in FY18 to $303 million in FY19.

Contributions

In FY19, 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 $669.4 million, a $213.5 million, or 46.8%, increase from the FY18 total of $455.9 million. FY19 contributions were comprised of $349.5 million to restricted endowment, $256.6 million to support operations, and $63.2 million toward capital.

Under Council for Advancement and Support of Education reporting standards, during FY19 Penn received 143 gifts of more than $1 million, with 56 of those coming from first-time donors at that level. Contributions to The Penn Fund increased 6.1% from $37.5 million in FY18 to $39.8 million in FY19 and annual giving increased by 4.6% from $82.2 million to $85.9 million. Donors established 84 new undergraduate scholarships.

Investment Income

Operating investment income, primarily endowment paid out in accordance with Penn's spending rule policy, increased by $97.2 million, or 16.8%, from $578.7 million in FY18 to $675.9 million in FY19. The spending rule policy is described in more detail under the Endowment section later in this report.

Other Revenue Sources

Other income increased 17.9% from $789.9 million in FY18 to $931.5 million in FY19. Independent operations decreased 0.4% to $77.0 million in FY19. Commonwealth appropriations, which predominantly provide support for Penn's School of Veterinary Medicine, increased 2.7% to $34.5 million in FY19.

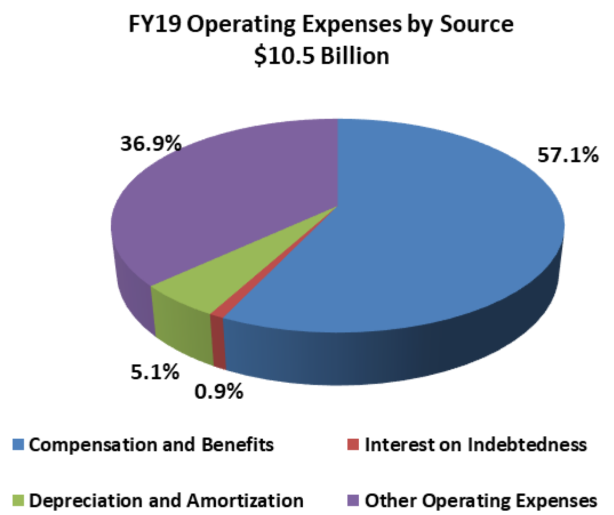
OPERATING EXPENSE

Total operating expenses increased by 9.8%, rising from $9.6 billion in FY18 to $10.5 billion in FY19. Compensation and benefits—the combination of salary, wages, and employee fringe benefits—is the largest expense component, representing 57.1% of total operating expenses. Salaries and wages increased 9.0%, from $4.3 billion in FY18 to $4.7 billion in FY19. Employee benefits increased 9.1% from $1.2 billion in FY18 to $1.3 billion in FY19.

Depreciation and amortization of $540.2 million, representing 5.1% of total operating expenses, increased 5.9% over FY18. Interest on indebtedness totaled $94.8 million, accounting for 0.9% of total operating expenses. Interest expense increased 4.8% from FY18 to FY19, primarily due to the $200 million of debt issued by the University in October 2018.

Other operating expenses, predominantly purchases of supplies and services, increased 11.8%, from $3.5

billion in FY18 to $3.9 billion in FY19, and represented 36.9% of total operating expense. Operating expenses were also impacted by increased spending on enterprise system implementations, predominantly the Workday Human Capital Management system, which went live on July 1, 2019, and expenses associated with the Next Generation Student Systems project, with multiple "go live" dates from 2015 to 2021.



CAPITAL EXPENDITURES

Capital expenditures for the Consolidated University increased from $868.5 million in FY18 to $1.2 billion in FY19.

In FY19, capital expenditures for the academic component of the University totaled $257.7 million, an increase of $5.1 million, or 2.0% over FY18.

These capital projects represent Penn's fulfillment of the objectives outlined in *Penn Connects 3.0*, 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.

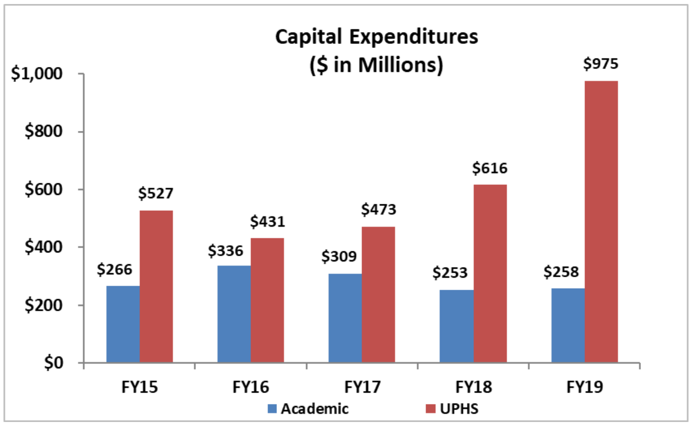
Academic project highlights include:

- 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 was renovated in a multi-phased approach which replaced 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 were completed in October 2018.
- Renovations to Richards Medical Research Labs Towers A and B focused on energy efficiency upgrades and building comfort including new lighting, mechanical, electrical, plumbing and fire protection systems, and replacing glazing within existing window frames to repurpose obsolete wet labs for use by the Center for Cognitive Neuroscience.
- Construction began on New College House West, a new 250,000 square foot undergraduate residential building along 40th Street between Walnut and Locust Streets. The estimated completion date is Summer 2021.

As described later in this report, UPHS invested $974.9 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 most recent Sustainability Annual Report, which showed a 13% reduction in building emissions since FY14, along with progress on other *Climate Action Plan* goals. Recent studies of the carbon footprint of the Morris Arboretum, New Bolton Center, UPHS facilities, and select properties from Penn's office campus real estate portfolio have resulted in new action plans to reduce the emissions from these buildings. 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.



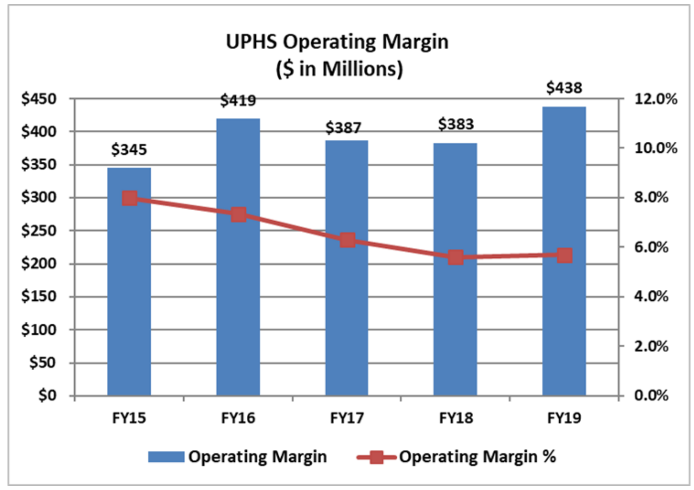
DEBT

Consolidated debt totaled $3.7 billion in FY19, an increase of $132.3 million, or 3.7%, from FY18. On October 18, 2018, the University issued revenue bonds with an aggregate principal amount of $183,145,000. The proceeds were used to reimburse the University for the cost of capital projects in the FY19 capital plan. 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.

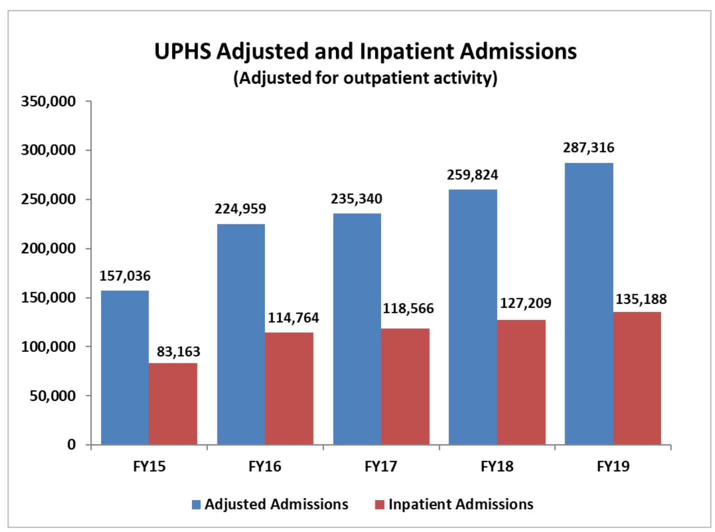
UNIVERSITY OF PENNSYLVANIA HEALTH SYSTEM

UPHS includes six major hospitals – the Hospital of the University of Pennsylvania (HUP), 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 19th consecutive year of positive operating performance with a FY19 UPHS operating margin of 5.7%, or $437.7 million.



Total FY19 UPHS operating revenues were $7.6 billion, reflecting a 12.0% increase over the prior year. Patient services revenue, the largest revenue component at 62.9% share of total Consolidated University operating revenue, increased by 11.0% from $6.2 billion in FY18 to $6.9 billion in FY19. Due to the membership substitution with Princeton HealthCare System effective January 1, 2018, the FY18 Statement of Activities reflects six months of Princeton HealthCare System activity.



UPHS operating expenses for FY19 were $7.2 billion, an increase of 11.8% over the prior year. The increase in unrestricted net assets for UPHS, including non-operating revenue and realized/unrealized gain on investments, totaled $96.5 million for FY19, a decrease of $947.7 million from prior year. The decrease was attributable to the FY18 Princeton membership substitution contribution of $398.5 million, the FY18 favorable pension adjustment, and higher investment returns during FY18.

FY19 Days Cash on Hand was 235 days, a decrease of 25 days from the prior year primarily due to increased construction activities. Debt-to-Capitalization decreased to 30.8% in FY19 from 31.6% in FY18.

UPHS capital expenditures for FY19 were $974.9 million, an increase of $359.1 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 in Philadelphia.

The $1.5 billion 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.

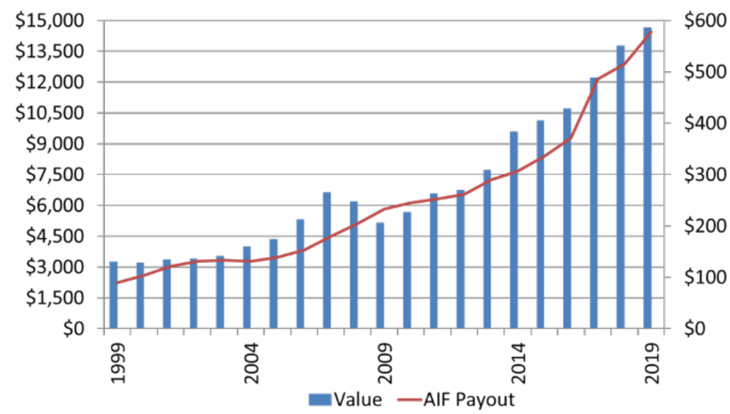
ENDOWMENT

The University of Pennsylvania's endowment totaled $14.7 billion as of June 30, 2019, an increase of $873 million over the past year. Penn's endowment is comprised of over 7,000 individual endowment funds benefiting the University's schools, centers, and Health System.

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.

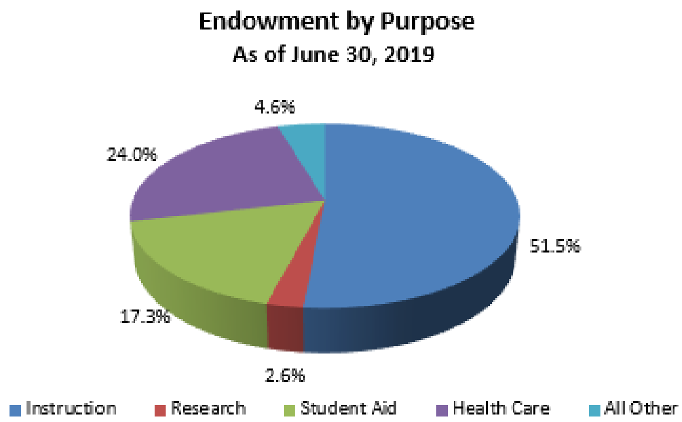
Endowment Growth and AIF Payout
($ in millions)



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 2019 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.

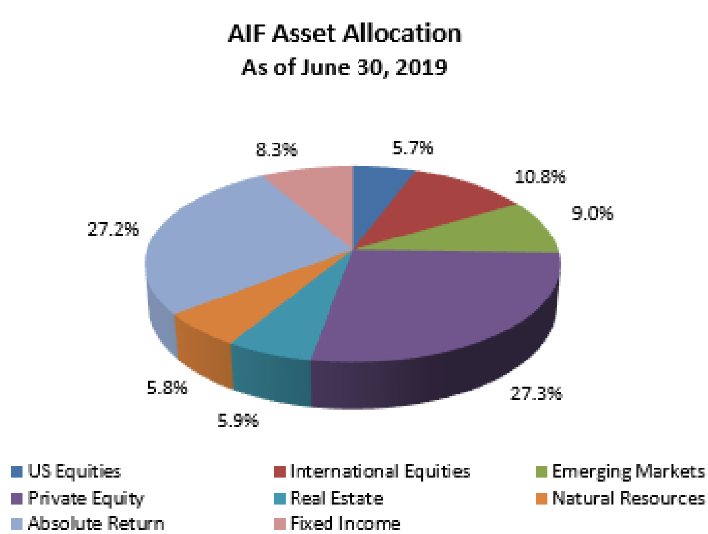
Payouts from the endowment provided $581 million in budgetary support to the University during the fiscal year. Spending support from the AIF for University operations has grown steadily over the past decade, increasing even through the financial crisis. For the year ended June 30, 2019, spending distributions 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 toward 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 2019.

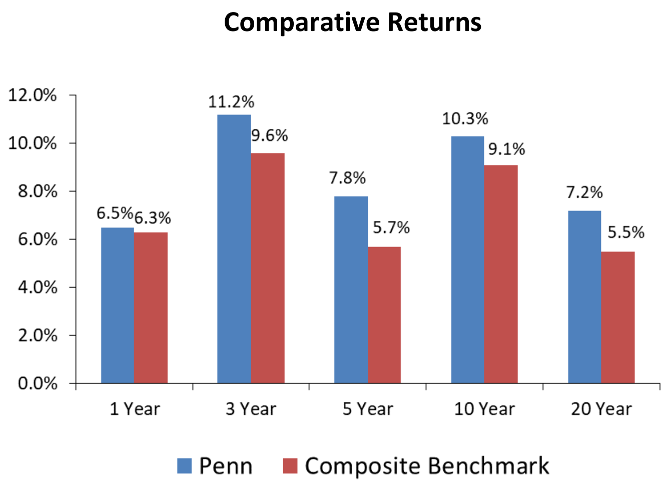
The AIF portfolio includes investments in illiquid funds, some of which require Penn to make capital commitments that will be drawn down and invested over a period of time. As of June 30, 2019, the AIF had $3.5 billion in outstanding commitments to various limited partnerships. The AIF maintains a conservative liquidity profile that can accommodate these commitments in both normal environments and periods of market stress or dislocation.

AIF PERFORMANCE

The AIF returned 6.5% in fiscal 2019, increasing by $1.4 billion to a total value of $13.7 billion after spending, gifts, and other transfers. The broad endowment ended the year at $14.7 billion, an increase of $873 million.

Against the backdrop of a volatile year for global equity markets, most of Penn's equity-oriented asset classes produced positive returns. Outperformance relative to Penn's composite benchmark (a blend of asset class benchmarks) was driven by notable relative performance in the private equity and absolute return 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 2020, Penn will build upon the many achievements of FY19 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 FY20.

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, 2019 and 2018, 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, 2019 and 2018, 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.

Emphasis of Matter

As discussed in Note 1 to the consolidated financial statements, the University changed the manner in which it presents net assets and reports certain aspects of its financial statements as a not-for-profit entity in 2019. Our opinion is not modified with respect to this matter.

PricewaterhouseCoopers LLP

September 26, 2019

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Consolidated Statements of Financial Position

University of Pennsylvania
(in thousands)

	June 30, 2019	June 30, 2018
Assets		
Cash and cash equivalents	$ 1,375,469	$ 1,431,172
Accounts receivable, net	398,058	451,936
Patient receivables, net	830,935	758,472
Contributions receivable, net	488,450	280,634
Loans receivable, net	72,362	79,360
Other assets	385,798	360,640
Investments, at fair value	16,499,386	15,733,881
Property, plant and equipment, net	8,028,992	7,318,619
Total assets	$ 28,079,450	$ 26,414,714
Liabilities		
Accounts payable	$ 346,986	$ 289,096
Accrued expenses and other liabilities	2,495,808	2,290,303
Deferred income	192,302	206,436
Deposits, advances and agency funds	190,078	170,728
Federal student loan advances	71,265	68,686
Accrued retirement benefits	1,651,685	1,241,307
Debt obligations	3,706,493	3,574,192
Total liabilities	8,654,617	7,840,748
Net assets		
Without donor restrictions	11,392,252	11,152,992
With donor restrictions	8,032,581	7,420,974
Total net assets	19,424,833	18,573,966
Total liabilities and net assets	$ 28,079,450	$ 26,414,714

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, 2019 and 2018
(in thousands)

	2019	2018
Without donor restrictions		
Revenue and other support:		
Tuition and fees, net	$ 1,155,894	$ 1,096,249
Commonwealth appropriations	34,518	33,606
Sponsored programs	1,022,338	1,005,570
Contributions and donor support	188,805	267,450
Investment income	675,865	578,700
Net patient service revenue	6,932,160	6,245,081
Other income	931,484	789,890
Independent operations	77,047	77,385
	11,018,111	10,093,931
Expenses:		
Compensation and benefits	5,991,191	5,496,929
Depreciation and amortization	540,235	509,921
Interest on indebtedness	94,810	90,476
Other operating expenses	3,872,702	3,463,693
	10,498,938	9,561,019
Increase in net assets from operations	**519,173**	**532,912**
Nonoperating revenue, net gains, reclassifications and other:		
Return on investments, net of amounts classified as operating revenue	103,711	507,321
Pension, OPEB and other, net	(426,535)	201,838
Contributions and donor support for capital related activities	42,911	444,383
Total nonoperating revenue, net gains, reclassifications and other	(279,913)	1,153,542
Increase in net assets without donor restrictions	239,260	1,686,454
With donor restrictions		
Contributions	598,622	397,271
Return on investments, net	464,755	753,550
Net assets released from restrictions	(451,770)	(510,742)
Increase in net assets with donor restrictions	611,607	640,079
Increase in total net assets	**850,867**	**2,326,533**
Net assets, beginning of year	18,573,966	16,247,433
Net assets, end of year	$ 19,424,833	$ 18,573,966

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

Consolidated Statements of Cash Flows

University of Pennsylvania
for the years ended June 30, 2019 and 2018
(in thousands)

	2019	2018
Cash flows from operating activities:		
Increase in net assets	$ 850,867	$ 2,326,533
Adjustment to reconcile increase in net assets to net cash provided by operating activities:		
Depreciation and amortization	521,795	495,430
Provision for bad debts	8,040	7,907
Gain on investments, net	(739,519)	(1,383,213)
(Gain) loss on disposal of plant, property and equipment	(10,915)	680
Donated equipment	(531)	(2,057)
Proceeds from split-interest agreements designated for operations	-	82,844
Receipt of contributed securities	(75,188)	(53,070)
Proceeds from contributed securities	22,816	18,456
Receipt of contributions designated for the acquisition of long-lived assets and long-term investment	(213,867)	(612,028)
Pension, OPEB and other, net	426,535	(201,838)
Changes in operating assets and liabilities:		
Patient, accounts and loans receivable	(17,451)	(78,702)
Contributions receivable	(209,992)	(38,520)
Other assets	(27,718)	(36,867)
Accounts payable, accrued expenses and accrued retirement benefits	118,862	124,264
Deposits, advances and agency funds	19,167	20,034
Deferred income	(14,134)	(9,177)
Net cash provided by operating activities	658,767	660,676
Cash flows from investing activities:		
Purchase of investments	(13,267,225)	(12,390,888)
Proceeds from sale of investments	13,369,735	12,487,507
Purchase of property, plant and equipment	(1,232,647)	(868,479)
Cash acquired in Princeton HealthCare System (PHCS) membership substitution	-	46,440
Net cash used by investing activities	(1,130,137)	(725,420)
Cash flows from financing activities:		
Proceeds from contributions received designated for the acquisition of long-lived assets and long-term investment	213,867	192,153
Proceeds from contributed securities received designated for the acquisition of long-lived assets and long-term investment	51,913	34,208
Federal student loan advances	2,579	(13,323)
Repayment of long-term debt	(139,692)	(60,245)
Proceeds from issuances of long-term debt	287,000	370,305
Net cash provided by financing activities	415,667	523,098
Net (decrease) increase in cash and cash equivalents	(55,703)	458,354
Cash and cash equivalents, beginning of year	1,431,172	972,818
Cash and cash equivalents, end of year	$ 1,375,469	$ 1,431,172
Supplemental disclosure of cash flow information:		
Cash paid for interest, net of amounts capitalized	$ 95,392	$ 90,727
Contributed securities received	75,188	53,070
Increase (decrease) in accrued plant, property and equipment	51,392	(63)
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:

> Without donor restrictions – includes net assets that are not subject to donor-imposed restrictions.
>
> With donor restrictions – includes net assets that are (i) subject to legal or donor-imposed restrictions that will be met by actions of the University and/or the passage of time, and (ii) the original values 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 net assets without donor restrictions. Gains and losses on investments are reported as increases or decreases in net assets without donor restrictions 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 net assets with donor restrictions and released from restrictions to net assets without donor restrictions when the asset is placed in service or in accordance with donor-specified terms.

Expirations of 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):

Net Assets With Donor Restrictions	**2019**	**2018**
Net assets released from restrictions	$ (451,770)	$ (510,742)

Net Assets Without Donor Restrictions	**2019**	**2018**
Contributions and donor support	$ 118,068	$ 190,445
Investment income	290,791	274,407
Contributions and donor support for capital related activities	42,911	45,890
Net assets released from restrictions	$ 451,770	$ 510,742

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.

Certain material reclassifications have been made to fiscal year 2018 reported amounts in the Consolidated Financial Statements to conform to the current presentation, including the reclassification of Room and board revenue (previously included in Sales and services of auxiliary enterprises) to Tuition and fees, net on the Consolidated Statements of Activities and the reclassification of UPHS bad debt provision for patient receivables to change in Patient, accounts and loans receivable on the Consolidated Statements of Cash Flow. Additionally, prior year amounts for Temporarily restricted and Permanently restricted net assets were combined as Net assets with donor restrictions.

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, 2019 and 2018. 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 liquid investments available for current operations, excluding amounts reported as investments, with maturities of three months or less when purchased and are carried at cost which approximates fair value.

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. 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 managers 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 managers 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 managers 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 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 6,682 donor-restricted endowment funds and 920 quasi-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 the following as net assets with donor restrictions for reporting purposes: (i) the original value of donated assets required to be invested in perpetuity; (ii) the original value of subsequent donated assets required to be invested in perpetuity; (iii) accumulations to the donated assets invested in perpetuity made in accordance with the direction of the applicable donor gift instrument at the time the accumulation is added to the fund; and (iv) donated assets and accumulations that are subject to legal or donor-imposed restrictions that will be met by actions of the University and/or the passage of time. 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, including funds whose fair value is less than the original donated value.

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, including funds whose fair value is less than the original donated value, is designed to manage annual spending levels and is independent of the cash yield and appreciation of investments for the year. For fiscal year 2019, 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 $577,039,000 in 2019 and by $516,034,000 in 2018.

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

Tuition and fees includes tuition, room and board, and other student fees which are recognized as revenue over time during the fiscal year in which the related academic services are rendered. Tuition and fees received in advance of services to be rendered are reported as Deferred income on the Consolidated Statements of Financial Position. The University maintains a policy of offering qualified applicants admission to the University without regard to financial circumstance, as well as meeting in full the demonstrated financial need of those admitted. Tuition and fees have been reduced by certain grants and scholarships in the amount of $349,981,000 in 2019 and $339,568,000 in 2018.

Sponsored Programs

Sponsored programs includes revenue from exchange and conditional non-exchange agreements with governments, foundations and private sources generally for research activities. Revenue from exchange agreements is generally recognized at a point in time when performance obligations are met, and revenue from conditional non-exchange agreements is generally recognized as the related costs are incurred. Non-exchange agreements are considered conditional if the terms of the agreement include both a right of return/release of assets received/promised and a barrier. These agreements become unconditional as barriers are met. At June 30, 2019, the University has unrecorded conditional agreements of $1,868,237,000. In 2019 and 2018, sponsored programs revenue earned from governmental sources totaled $753,118,000 and $730,368,000, respectively. 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. The University negotiates its federal indirect rate with its cognizant federal agency. 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

Contributions are revenues from unconditional non-exchange agreements with private sources and foundations. Contributions are recognized in the period received and reported as increases in the appropriate net asset category based on the presence or absence of donor imposed restrictions. Non-exchange agreements are considered conditional if the terms of the agreement include both a right of return/release of assets received/promised and a barrier. These agreements become unconditional as barriers are met. Contributions and donor support without donor restrictions also includes net assets released as a result of corresponding expenditures which met donor imposed 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 2.32% to 2.99%, 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 contracts with patients of UPHS in which its performance obligation is to provide health care services. Net patient service revenue is recorded over time during the period these performance obligations are satisfied and at the determined transaction price, which represents the estimated net realizable amounts due from patients, third-party payers and others for health care services rendered. Estimated net realizable amounts represent amounts due, net of implicit and explicit price concessions. Implicit price concessions are based on management’s assessment of expected net collections considering economic conditions, historical experience, trends in health care coverage and other collection indicators. 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. Patient receivables are written off after collection efforts have been followed in accordance with UPHS’ policy. Certain revenue received from third-party payers 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 University adopted this standard for fiscal year 2019 using the modified retrospective method and elected the practical expedient to apply to contracts not yet completed as of the beginning of the fiscal year. The adoption of this standard did not materially impact the University's results of operations or financial position.

In June 2018, the FASB issued a standard entitled 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 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 University adopted this standard for fiscal year 2019 on a modified prospective basis for contracts not yet completed as of, or entered into subsequent to, the beginning of the fiscal year. The adoption of this standard did not materially impact the University's results of operations or financial position.

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 University adopted this standard for fiscal year 2019, on a retrospective basis.

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, restricted cash and restricted cash equivalents ("Total Cash"). Additionally, a disclosure describing the nature of the restrictions and a reconciliation of Total 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.

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 $234,722,000 and $198,394,000 in 2019 and 2018, respectively, to further the research and educational activities of PSOM and $5,671,000 and $4,874,000 in 2019 and 2018, respectively, for other activities. In addition, UPHS recognized operating expenses of $19,770,000 and $19,844,000 in 2019 and 2018, 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, 2019 and 2018 (in thousands):

	2019	2018
Net patient service revenue	$ 6,940,977	$ 6,252,911
Other revenue	653,071	529,240
Total expenses	(7,156,362)	(6,399,423)
Excess of revenue over expenses from operations	437,686	382,728
Nonoperating, net	(310,922)	728,454
Increase in net assets	$ 126,764	$ 1,111,182
Total current assets	$ 1,876,193	$ 1,992,168
Assets whose use is limited:		
Held by trustees	163,598	274,300
RRG/Captive	219,879	207,403
Donor restricted and other	678,137	648,104
Designated	2,731,038	2,584,262
Property and equipment, net	4,760,563	4,103,777
Investments and other assets	1,152,231	1,204,215
Total assets	$ 11,581,639	$ 11,014,229
Total current liabilities	$ 1,243,888	$ 1,110,380
Long-term debt, net of current portion	2,283,002	2,274,859
Other liabilities	2,132,973	1,833,978
Total liabilities	$ 5,659,863	$ 5,219,217
Net assets		
Without donor restrictions	$ 5,234,000	$ 5,137,511
With donor restrictions	687,776	657,501
Total net assets	$ 5,921,776	$ 5,795,012
Total liabilities and net assets	$ 11,581,639	$ 11,014,229

Net Patient Service Revenue

Net Patient Service Revenue (NPSR) for the years ended June 30, 2019 and 2018 is derived from the following payers:

	2019	2018
Medicare (including Managed Medicare)	34%	31%
Medicaid (including Managed Medicaid)	10%	11%
Managed Care	35%	37%
Independence Blue Cross (IBC)	16%	17%
Commercial	4%	3%
Self Pay	1%	1%
	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 other 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 $24,968,000 and $19,189,000 were incurred as a result of providing services to charity patients for the years ended June 30, 2019 and 2018, 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, 2019 and 2018. The gross liability recorded under this program is $732,389,000 and $734,383,000 at June 30, 2019 and 2018, respectively, with a corresponding receivable of $103,777,000 and $106,673,000 at June 30, 2019 and 2018, 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 net assets without donor restrictions of PHCS on January 1, 2018. Additionally, contribution income of $18,416,000 was recorded in net assets with donor restrictions 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
Without donor restrictions	$ 398,493
With donor restrictions	18,416
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 year ended June 30, 2018, as if the affiliation had occurred on July 1, 2017, is as follows (unaudited and in thousands):

	2018
Total operating revenue	$ 7,020,438
Total operating expense	6,636,843
Operating gain	$ 383,595
Nonoperating activity, net	275,329
Increase in net assets without donor restrictions	$ 658,924

3. Accounts Receivable

Accounts receivable are reported at their net realizable value. The major components of receivables, net of allowances for doubtful accounts of $22,086,000 and $20,363,000 at June 30, 2019 and 2018, respectively, are as follows (in thousands):

	2019	2018
Sponsored research	$ 130,161	$ 140,790
Malpractice	103,777	106,673
Student	18,614	25,298
Trade	60,949	96,181
Investment income	8,096	5,884
Other	76,461	77,110
Total Accounts receivable	$ 398,058	$ 451,936

4. Loans Receivable

Loans receivable, and related allowances for doubtful accounts, consist of the following at June 30, 2019 and 2018 (in thousands):

2019	Receivable	Allowance	Net
Student Loans:			
Federally-sponsored	$ 50,509		$ 50,509
Other	14,406	$ 3,275	11,131
Total Student loans	$ 64,915	$ 3,275	$ 61,640
Other	10,964	242	10,722
Total	$ 75,879	$ 3,517	$ 72,362

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

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, 2019 and 2018, is as follows (in thousands):

	2019	2018
Unconditional promises expected to be collected in:		
Less than one year	$ 171,791	$ 134,133
One year to five years	280,978	169,363
Over five years	117,343	29,896
	570,112	333,392
Less: Discount	(45,638)	(20,912)
Less: Allowances for doubtful amounts	(36,024)	(31,846)
Total Contributions receivable, net	$ 488,450	$ 280,634

At June 30, 2019 and 2018, the University has outstanding unrecorded conditional promises to give, including non-legally binding bequests, of $474,184,000 and $312,013,000, respectively. When conditional promises to give become unconditional or non-legally binding bequests cash payments are received, 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, 2019 and June 30, 2018 is as follows (in thousands):

Assets	**Level 1**	**Level 2**	**Level 3**	**Investments at NAV**	**2019**
Short-term	$ 1,188,571				$ 1,188,571
Equity:					
US equities	721,261			$ 1,077,918	1,799,179
International equities	190,694			1,055,871	1,246,565
Emerging market equities	153,435			1,091,866	1,245,301
Total Equity	1,065,390			3,225,655	4,291,045
Debt:					
US treasuries	1,716,743	$ 41,860			1,758,603
Corporate bonds	1,548	100,706		26,849	129,103
High yield				98	98
Total Debt	1,718,291	142,566		26,947	1,887,804
Split-interest agreements	86,492		$ 322,631		409,123
Absolute return				3,259,286	3,259,286
Real estate		59		804,620	804,679
Private equity			14,426	3,832,884	3,847,310
Natural resources	157,440			650,414	807,854
Derivative instruments		1,167			1,167
Other			2,547		2,547
Total assets	$ 4,216,184	$ 143,792	$ 339,604	$ 11,799,806	$ 16,499,386

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

Included in Short-term investments is $43,287,000 and $158,105,000 of amounts held by trustees under indenture and escrow agreements at June 30, 2019 and 2018, respectively.

At June 30, 2019 and 2018, Short-term investments include $85,301,000 and $70,708,000, respectively, of outstanding receivables from trading activities. At June 30, 2019 and 2018, Short-term investments include $49,929,000 and $50,961,000, respectively, of outstanding payables from trading activities.

As of June 30, 2019 and 2018 there were no transfers between Level 1 and 2.

Liabilities related to equity short positions of $362,826,000 and $289,977,000 at June 30, 2019 and 2018, 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 $3,491,742,000 which represents 25.6% of the AIF value as of June 30, 2019.

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):

	Fair Value		Outstanding	Redemption	Redemption
Strategy	**June 30, 2019**	**June 30, 2018**	**Commitments**	**Terms**	**Restrictions**
Short-term	$ 1,188,571	$ 996,590		Daily	None
Equity					
Managed accounts	764,350	952,964		Daily and semi-annually with varying notice periods	None
Mutual funds	257,144	378,636		Daily	None
Private funds (1)	3,269,551	2,981,004	$ 93,300	Weekly to annually with varying notice periods	Lock-up provisions ranging from 0 to 5 years and side pocket investments (2)
Total Equity	4,291,045	4,312,604	93,300		
Debt					
Managed accounts	1,860,857	1,868,768		Daily	None
Private funds (1)	26,947	99,687		Daily	None; side pocket investments (2)
Total Debt	1,887,804	1,968,455			
Absolute return	3,259,286	3,176,304	408,877	Range from monthly to annually and close-ended funds not available for redemption	Lock-up provisions ranging from 0 to 5 years with earlier redemptions subject to redemption fee, close-ended funds not available for redemption, and side pocket investments (2)
Real estate	804,679	687,786	954,328	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Private equity	3,847,310	3,190,770	1,843,135	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Natural resources					
Managed accounts	149,433	222,670		Daily	None
Private funds (1)	658,421	766,991	192,102	Close-ended funds not available for redemption	Close-ended funds not available for redemption
Total Natural Resources	807,854	989,661	192,102		
Totals	$ 16,086,549	$ 15,322,170	$ 3,491,742		

(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.

(2) Side pocket investments represents investments designated by a manager that are not available for liquidity in an otherwise liquid fund vehicle.

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 $86,492,000 and $77,817,000 at June 30, 2019 and 2018, respectively. Included in these amounts are assets related to the University Academic Component charitable gift annuities totaling $42,158,000 and $41,147,000 at June 30, 2019 and 2018, 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 $171,392,000 and $167,480,000 at June 30, 2019 and 2018, 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 $27,323,000 and $28,326,000 as of June 30, 2019 and 2018, respectively, as required by the laws of the following states where certain individual donors reside: California, Maryland, 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, 2019 and 2018 is as follows (in thousands):

	2019	2018
Charitable remainder trusts	$ 18,511	$ 17,239
Charitable lead trusts	4,568	5,621
Perpetual trusts	299,552	298,116
Total	$ 322,631	$ 320,976

Changes to the reported amounts of split-interest agreements measured at fair value using unobservable (Level 3) inputs as of June 30, 2019 and 2018 are as follows (in thousands):

	Charitable Remainder Trusts	Charitable Lead Trusts	Perpetual Trusts	Total
June 30, 2018	$ 17,239	$ 5,621	$ 298,116	$ 320,976
Net realized gains			6,994	6,994
Net unrealized gains/(losses)	724	(1,023)	(4,055)	(4,354)
Acquisitions	1,191			1,191
Liquidations	(643)	(30)	(1,503)	(2,176)
June 30, 2019	$ 18,511	$ 4,568	$ 299,552	$ 322,631

	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

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, 2019 and 2018 (in thousands):

	2019			
	Notional Amount	Gross Derivative Assets	Gross Derivative Liabilities	Derivative Gains
Foreign currency contracts	$ 121,124	$ 1,167	$ 33	$ 369
Futures contracts	(398,548)			3,210
Options contracts	(122,014)		627	
Total	$ (399,438)	$ 1,167	$ 660	$ 3,579

	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		(28,906)				153		
Total	$	(328,619)	$	10,386	$	6,429	$	(86,039)

The notional amount is representative of the volume and activity of the respective derivative type during the years ended June 30, 2019 and 2018.

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, 2019 and 2018 is presented below (in thousands):

		2019		2018
AIF investment income	$	90,494	$	100,290
AIF realized and unrealized gains		793,459		1,349,913
Return on AIF		883,953		1,450,203
Other investment gains		69,588		114,961
Total Return on investments, net	$	953,541	$	1,565,164

7. Endowment

The composition and changes to the amount of the University's endowment at June 30, 2019 are as follows (in thousands):

		Without Donor Restrictions		With Donor Restrictions		Total
Donor-restricted endowment funds			$	7,397,533	$	7,397,533
Quasi-endowment funds	$	7,252,228				7,252,228
June 30, 2019	$	7,252,228	$	7,397,533	$	14,649,761

		Without Donor Restrictions		With Donor Restrictions		Total
Net assets, June 30, 2018	$	6,828,370	$	6,949,071	$	13,777,441
Investment return		414,032		400,565		814,597
New gifts		6,999		357,012		364,011
Allocation of endowment assets for expenditure		(577,039)				(577,039)
Other investment allocation		(3,793)				(3,793)
Transfers to create board designated funds		288,291				288,291
Other transfers		3,634		(17,381)		(13,747)
Released from restriction		291,734		(291,734)		
Net assets, June 30, 2019	$	7,252,228	$	7,397,533	$	14,649,761

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

	Without Donor Restrictions	With Donor Restrictions	Total
Donor-restricted endowment funds		$ 6,949,071	$ 6,949,071
Quasi-endowment funds	$ 6,828,370		6,828,370
June 30, 2018	$ 6,828,370	$ 6,949,071	$ 13,777,441

	Without Donor Restrictions	With Donor Restrictions	Total
Net assets, June 30, 2017	$ 5,931,351	$ 6,281,856	$ 12,213,207
Investment return	768,231	744,741	1,512,972
New gifts	13,786	167,893	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)	14,865	11,511
PHCS membership substitution	163,024	18,418	181,442
Released from restriction	278,702	(278,702)	
Net assets, June 30, 2018	$ 6,828,370	$ 6,949,071	$ 13,777,441

The University has no endowment funds with donor restrictions for which the fair value at June 30, 2019 and 2018 is less than the original donated value.

8. Property, Plant and Equipment, net

The components of PPE at June 30, 2019 and 2018 are as follows (in thousands):

	Estimated Useful Life in years	2019	2018
Land and land improvements	N/A to 20	$ 438,885	$ 431,440
Buildings and fixed equipment	5 to 50	10,032,085	9,357,800
Moveable equipment and other	4 to 20	2,013,160	1,935,319
Construction-in-progress		1,354,708	929,115
		13,838,838	12,653,674
Less: Accumulated depreciation		(5,809,846)	(5,335,055)
Property, plant and equipment, net		$ 8,028,992	$ 7,318,619

The University recorded $539,372,000 and $507,890,000 of depreciation expense for the years ended June 30, 2019 and 2018, respectively.

The University capitalized $35,748,000 and $19,027,000 of interest costs for the years ended June 30, 2019 and 2018, respectively.

The University has conditional asset retirement obligations of $16,320,000 and $20,364,000 as of June 30, 2019 and 2018, 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, 2019 and 2018 are as follows (in thousands):

2019	Assets	Liabilities	Net Assets
June 30, 2018	$ 398,793	$ (46,965)	$ 351,828
New contributions	8,552	(8,898)	(346)
Investment income	1,882	(1,545)	337
Realized and unrealized gain, net	7,787		7,787
Payments and settlements	(7,891)	8,593	702
Actuarial adjustment		(1,496)	(1,496)
Net change	10,330	(3,346)	6,984
June 30, 2019	$ 409,123	$ (50,311)	$ 358,812

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

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 $27,979,000 and $37,613,000 at June 30, 2019 and 2018, 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 $3,182,000 and $3,299,000 at June 30, 2019 and 2018, 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, 2019, approximately $669,913,000 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 $212,316,000 and $194,597,000 as of June 30, 2019 and 2018, 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):

2019	**Pension Benefits**	**Other Postretirement Benefits**	**Total**
Change in Plan Assets			
Fair value of plan assets, beginning of year	$ 2,590,798	$ 505,340	$ 3,096,138
University contributions	87,634	32,244	119,878
Plan participants' contributions	159	6,419	6,578
Actual return on plan assets	120,702	13,198	133,900
Benefits paid	(102,553)	(34,836)	(137,389)
Fair value of plan assets, end of year	$ 2,696,740	$ 522,365	$ 3,219,105

Change in Benefit Obligation						
Benefit obligation, beginning of year (PBO/APBO)	$	3,319,649	$	916,367	$	4,236,016
Service cost		68,923		30,269		99,192
Interest cost		139,344		38,741		178,085
Plan participants' contributions		159		6,419		6,578
Net actuarial (gain)/loss		324,954		57,368		382,322
Benefits paid		(102,553)		(34,836)		(137,389)
Benefit obligation, end of year (PBO/APBO)	$	3,750,476	$	1,014,328	$	4,764,804
Funded status, end of year	**$**	**1,053,736**	**$**	**491,963**	**$**	**1,545,699**
Other retirement programs						105,986
Accrued retirement benefits					$	1,651,685

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

The Accumulated Benefit Obligation for the Pension Benefits was $3,354,141,000 and $2,975,984,000 at June 30, 2019 and 2018, respectively.

Net Periodic Benefit Cost

The components of net periodic benefit cost for pension benefits and other postretirement benefits are detailed below (in thousands). In the Consolidated Statements of Activities, service cost is reported as Compensation and benefits while the remaining components of net periodic benefit cost are reported as Pension, OPEB and other, net.

2019	Pension Benefits	Other Postretirement Benefits	Total
Net Periodic Cost			
Service cost	$ 68,923	$ 30,269	$ 99,192
Interest cost	139,344	38,741	178,085
Expected return on plan assets	(169,595)	(37,969)	(207,564)
Amortization of:			
Net prior service cost		(386)	(386)
Net losses	30,968	2,447	33,415
Net periodic benefit cost	$ 69,640	$ 33,102	$ 102,742

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

Net Assets Without Donor Restrictions

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):

2019	Pension Benefits	Other Postretirement Benefits	Total
Net Assets Without Donor Restrictions			
Net actuarial loss	$ 928,685	$ 195,165	$ 1,123,850
Net prior service cost/(credit)		(2,759)	(2,759)
Total	$ 928,685	$ 192,406	$ 1,121,091
Adjustment to net assets without donor restrictions (gain)/loss	$ 342,879	$ 80,077	$ 422,956

2018	Pension Benefits	Other Postretirement Benefits	Total
Net Assets Without Donor Restrictions			
Net actuarial loss	$ 585,806	$ 115,475	$ 701,281
Net prior service cost/(credit)		(3,146)	(3,146)
Total	$ 585,806	$ 112,329	$ 698,135
Adjustment to net assets without donor restrictions (gain)/loss	$ (153,023)	$ (61,924)	$ (214,947)

The estimated amount that will be amortized from Net assets without donor restrictions into net periodic benefit cost in 2020 is as follows (in thousands):

	Pension Benefits	Other Postretirement Benefits
Amortization of prior service credit		$ (387)
Amortization of net losses	$ 53,548	6,992

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	**2019**	**2018**	**2019**	**2018**
Discount rate	3.72%	4.28%	3.81%	4.29%
Salary increase	3.92%	3.03%	N/A	N/A
Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost				
Discount rate	4.26%	4.24%	4.29%	4.00%
Expected long-term return on plan assets	7.30%	7.46%	7.50%	7.50%
Salary increase	3.80%	3.99%	N/A	N/A
Assumed Health Care Cost Trend Rates				
Initial trend rate	N/A	N/A	6.28%	6.54%
Ultimate trend rate	N/A	N/A	4.71%	4.71%
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):

2019	1-Percentage Point Increase	1-Percentage Point Decrease
Effect on total of service and interest cost	$ 17,240	$ (12,884)
Effect on APBO	194,519	(151,248)

Expected Contributions

The University expects to contribute $128,772,000 and $31,204,000 for pension benefits and other postretirement benefits, respectively, during the fiscal year ending June 30, 2020.

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, 2020	$ 125,108	$ 27,638	$ 157
June 30, 2021	129,259	30,006	162
June 30, 2022	137,218	32,093	167
June 30, 2023	145,783	34,344	170
June 30, 2024	154,636	36,512	173
June 30, 2025 to June 30, 2029	893,644	213,693	900

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, 2019 and 2018, is as follows (in thousands):

Pension Benefits:

Assets	Level 1	Level 2	Level 3	Investments at NAV	2019
Short-term	$ 68,135				$ 68,135
Equity:					
US equities	224,330	$ 459		$ 165,882	390,671
International equities	126,403			234,903	361,306
Emerging market equities	191			163,689	163,880
Debt:					
US treasuries	358,601	7,699		1,301	367,601
Corporate bonds	85,863	79,915		188,261	354,039
Absolute return				547,478	547,478
Real estate				60,890	60,890
Private equity	2,611			221,968	224,579
Natural resources	68,499			89,928	158,427
Total assets	$ 934,633	$ 88,073	$ -	$ 1,674,300	$ 2,697,006

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2019
Derivative instruments		$ 266			$ 266
Total liabilities	$ -	$ 266	$ -	$ -	$ 266

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

Other Postretirement Benefits:

Assets	Level 1	Level 2	Level 3	Investments at NAV	2019
Short-term	$ 25,184				$ 25,184
Equity:					
US equities				$ 62,356	62,356
International equities				79,723	79,723
Emerging market equities	4,409			48,233	52,642
Debt:					
US treasuries	22,771				22,771
Corporate bonds				10,702	10,702
Absolute return				165,196	165,196
Real estate				24,102	24,102
Private equity				47,373	47,373
Natural resources	22,752			9,629	32,381
Total	$ 75,116	$ -	$ -	$ 447,314	$ 522,430

Liabilities	Level 1	Level 2	Level 3	Investments at NAV	2019
Derivative instruments		$ 65			$ 65
Total	$ -	$ 65	$ -	$ -	$ 65

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

As of June 30, 2019, the University has unfunded commitments to limited partnerships totaling $407,514,000, 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, 2019 and 2018 there were no transfers between Level 1 and 2.

Plan asset allocations by category are as follows:

2019	Pension Benefits		Other Postretirement Benefits	
Allocation of Plan Assets	Target	Actual	Target	Actual
Short-term	0.0%	2.5%	0.0%	4.8%
Equity:				
US equities	12.7%	14.5%	10.0%	11.9%
International equities	13.4%	13.4%	16.0%	15.3%
Emerging markets equities	6.1%	6.1%	10.0%	10.1%
Debt:				
US treasuries	24.0%	13.6%	7.0%	4.4%
Corporate bonds	3.2%	13.1%	0.0%	2.0%
Absolute return	22.2%	20.3%	34.0%	31.6%
Real estate	2.1%	2.3%	4.0%	4.6%
Private equity	8.3%	8.3%	9.0%	9.1%
Natural resources	8.0%	5.9%	10.0%	6.2%
Total	100.0%	100.0%	100.0%	100.0%

12. Debt Obligations

Debt obligations at June 30, 2019 and 2018 are as follows (in thousands):

	Final Maturity	Effective Interest Rate at June 30, 2019	2019	2018
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 2018 revenue bonds	08/2048	2.08% - 3.76%	183,145	
Series A of 2017 revenue bonds	08/2046	2.26% - 3.72%	178,395	178,395
Series A of 2016 revenue bonds	08/2041	0.91% - 2.93%	167,435	168,565
Series A of 2015 revenue bonds	10/2045	1.17% - 2.99%	191,090	196,110
Series B of 2015 revenue bonds	10/2038	1.17% - 3.38%	160,950	162,395
Series C of 2015 revenue bonds	10/2035	3.68%	8,020	8,020
Series A of 2011 revenue bonds	09/2021	3.49% - 3.68%	7,590	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	3.70% - 3.99%	4,435	6,545
Series C of 2009 revenue bonds	09/2019	3.70%	4,095	7,970
Other loans	05/2031	1.00% - 4.50%	12,774	12,663
Variable rate debt obligations:				
PHEFA Series of 1990 revenue bonds	12/2020	2.13%	6,500	6,500
Washington County Authority Series of 2004	07/2034	1.50%	51,200	53,400
Total Academic Component outstanding bonds payable			1,292,564	1,128,623
Unamortized issuance costs, premiums and discounts, net			83,910	73,032
Total Academic Component debt obligations			$ 1,376,474	$ 1,201,655
UPHS:				
Fixed rate debt obligations:				
Lancaster County Hospital Authority (LCHA)				
Series A of 2016 revenue bonds	08/2042	1.04% - 3.52%	$ 160,590	$ 164,540
Series B of 2016 revenue bonds	08/2046	1.43% - 3.58%	128,050	128,050
PHEFA				
Series A of 2017 revenue bonds	08/2047	2.60% - 3.68%	400,000	400,000
Series C of 2016 revenue bonds	08/2041	0.76% - 3.08%	128,730	129,015
Series A of 2015 revenue bonds	08/2045	1.38% - 4.00%	278,975	300,445
Series A of 2012 revenue bonds	08/2042	1.99% - 4.08%	136,360	136,950
Series A of 2009 revenue bonds	08/2021	4.37% - 4.67%	22,780	33,005
Series B of 2008 revenue bonds	08/2037			52,000
New Jersey Health Care Facilities Financing Authority (NJHCFFA)				
Princeton Healthcare System Series A of 2016	07/2045	1.51% - 3.88%	178,670	183,440
University of Pennsylvania Health System Taxable Note	08/2047	4.01%	200,000	200,000
Lancaster General Hospital 2015 Taxable Note	08/2022	2.66%	70,335	72,805
Build to suit lease, net of related interest	Various	N/A	75,094	122,860
Line of credit, outstanding balance	04/2022	2.85%	87,000	-
Mortgages, notes and capital leases	Various	Various	76,312	25,986
Variable rate debt obligations:				
PHEFA Series A of 2014 revenue bonds	08/2045	2.03%	100,000	100,000
PHEFA Series A of 2008 revenue bonds	08/2037	1.90%	69,995	69,995
NJHCFFA Princeton Healthcare System Series B of 2016	07/2045	2.30%	65,000	65,000
NJHCFFA Princeton Healthcare System Series C of 2016	07/2045	2.30%	20,000	20,000
LCHA Series A of 2012 revenue bonds	08/2041			22,775
Total UPHS outstanding bonds payable			2,197,891	2,226,866
Unamortized issuance costs, premiums and discounts, net			132,128	145,671
Total UPHS debt obligations			2,330,019	2,372,537
Total University debt obligations			$ 3,706,493	$ 3,574,192

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
2020	$ 16,731	$ 47,017	$ 6,487	$ 53,504	$ 70,235
2021	27,698	49,035	6,649	55,684	83,382
2022	25,308	143,550	6,815	150,365	175,673
2023	26,365	112,616	6,986	119,602	145,967
2024	27,646	54,586	7,160	61,746	89,392
Thereafter	1,168,816	1,715,993	83,758	1,799,751	2,968,567
Total Principal	1,292,564	2,122,797	117,855	2,240,652	3,533,216
Unamortized issuance costs, premiums and discounts, net	83,910	132,128		132,128	216,038
Build-to-suit lease related interest			(42,761)	(42,761)	(42,761)
Total debt obligation	$ 1,376,474	$ 2,254,925	$ 75,094 (a)	$ 2,330,019	$ 3,706,493

(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 $15,540,000 and $10,556,000 at June 30, 2019 and 2018, respectively. These letters of credit have evergreen provisions for automatic renewal. There have been no draws under these letters of credit.

Academic Component

On October 18, 2018, Pennsylvania Higher Educational Facilities Authority (PHEFA) issued Series A of 2018 revenue bonds (PHEFA 2018A bonds) with an aggregate principal amount of $183,145,000. The proceeds were used to fund or reimburse the University for the cost of various capital projects. Interest on the PHEFA 2018A bonds is fixed with coupons ranging between 3.25% to 5.00%.

The University has variable rate debt in the amount of $57,700,000 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, 2019, 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 2019 and 2018, 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%.

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.

UPHS secured an $82,132,000 loan on December 21, 2019 for the sole purpose of funding the development of a new ambulatory building. As of June 30, 2019, $51.6 million has been deposited in an escrow account held by trustee, and is reflected as a noncash transaction in the Statement of Cash Flows. The remaining $30.5 million of the loan will be deposited in the escrow account in scheduled increments through April, 2020. As of June 30, 2019, $27.8 million has been drawn down to reimburse construction costs incurred by UPHS and is accounted for as a cash inflow from investing activities in the Statement of Cash Flows.

In June of 2019, UPHS purchased a building that was originally financed as a build-to-suit lease. The result of the purchase reduced the build-to-suit leases liability by $47,272,000.

UPHS maintains a $100,000,000 line of credit to supplement liquidity and issue letters of credit to cover balances due on construction projects and reinsurance agreements. As of June 30, 2019, there were outstanding balances of $87,000,000 and a zero balance as of June 30, 2018. Letters of credit issued under the line are noted in contingencies and commitments.

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	$ 22,175	$ 17,950	$ 17,950
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, 2019 and 2018, and the related gains/(losses) on the interest rate swap agreements, both realized and unrealized, for the years ended June 30, 2019 and 2018 (in thousands):

Consolidated Statements of Financial Position	**Line Item**	**2019**	**2018**
Asset interest rate swaps			
UPHS	Other assets	$ 1,469	$ 1,292
Total Asset interest rate swaps		$ 1,469	$ 1,292
Liability interest rate swaps			
Academic Component	Accrued expenses and other liabilities	$ 21,379	$ 15,922
UPHS	Accrued expenses and other liabilities	6,371	4,799
Total Liability interest rate swaps		$ 27,750	$ 20,721

Consolidated Statements of Activities	**Line Item**	**2019**	**2018**
Academic Component	Return on investments, net	$ (7,497)	$ 3,175
UPHS	Return on investments, net	737	(323)
Total		$ (6,760)	$ 2,852

13. Net Assets

The major components of net assets at June 30, 2019 and 2018 are as follows (in thousands):

2019		Without donor restrictions		With donor restrictions		Total
General operating	$	4,085,420	$	449,779	$	4,535,199
Sponsored programs		44,217				44,217
Capital				133,693		133,693
Student loans		10,387				10,387
Planned giving agreements				51,576		51,576
Quasi-endowment		7,252,228				7,252,228
Endowment, subject to spending rule				3,203,289		3,203,289
Endowment, held in perpetuity				4,194,244		4,194,244
Total	$	11,392,252	$	8,032,581	$	19,424,833

2018		Without donor restrictions		With donor restrictions		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				46,904		46,904
Quasi-endowment		6,828,370				6,828,370
Endowment, subject to spending rule				3,099,924		3,099,924
Endowment, held in perpetuity				3,849,147		3,849,147
Total	$	11,152,992	$	7,420,974	$	18,573,966

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, 2019 and 2018 totaling $120,960,000 and $114,060,000, respectively, is included in the accompanying Consolidated Statements of Activities.

At June 30, 2019, future minimum lease payments under existing operating leases were as follows (in thousands):

2020	$	101,735
2021		88,750
2022		78,748
2023		67,668
2024		63,082
Thereafter		310,212
Total Minimum lease payments	$	710,195

15. Functional Classification of Expenditures

Expenses for the years ended June 30, 2019 and 2018 are categorized on a functional basis as follows (in thousands):

	2019					2018
	Compensation and benefits	Depreciation and amortization	Interest on indebtedness	Other operating expense	Total	Total
Instruction	$ 944,222	$ 69,925	$ 7,013	$ 480,426	$ 1,501,586	$ 1,409,552
Research	466,938	43,898	23,665	347,405	881,906	839,632
Hospital and physician practices	4,026,781	332,813	54,492	2,727,834	7,141,920	6,377,578
Auxiliary enterprises	37,797	36,079	7,695	82,497	164,068	164,284
Other educational activities	149,674	15,397	703	40,493	206,267	203,006
Student services	59,309	-	136	46,620	106,065	98,630
Academic support	40,544	16,726	640	37,043	94,953	91,933
Management and general	257,576	20,147	296	44,087	322,106	304,083
Independent operations	8,350	5,250	170	66,297	80,067	72,321
Total	$ 5,991,191	$ 540,235	$ 94,810	$ 3,872,702	$ 10,498,938	$ 9,561,019

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. Liquidity and Availability

As of June 30, 2019, financial assets and liquidity resources available within one year for general expenditure, such as operating expenses, scheduled principal payments on debt and capital construction costs not financed with debt, were as follows (in thousands):

Financial assets:	
Cash & cash equivalents	$ 1,375,469
Receivables, net	1,217,065
Pledge payments available for operations	75,598
Investments	7,958,710
Total financial assets available within one year	10,626,842
Liquidity resources:	
Bank lines of credit	113,000
Total financial assets and liquidity resources available within one year	$ 10,739,842

The University's cash flows have seasonal variations during the year attributable to tuition billing, patient service reimbursement and a concentration of contributions received at calendar and fiscal year-end. To manage liquidity, the University maintains lines of credit with several banks that are drawn upon as needed during the year to manage cash flows. Management has the discretion to utilize the full amount of quasi-endowment funds for general expenditures.

17. Subsequent Events

The University has evaluated subsequent events for the period from June 30, 2019 through September 26, 2019, the date the consolidated financial statements were issued.

On August 6, 2019, the University issued Series A of 2019 Taxable Bonds (Taxable 2019A Bonds) with an aggregate principal amount of $300,000,000. The proceeds of the Taxable 2019A Bonds will be used by the University for its general corporate purposes, including the financing or refinancing of capital projects and the payment of the costs of issuing the Taxable 2019A Bonds. The Taxable 2019A Bonds have a fixed interest rate of 3.610% and a single maturity in 2119.

On August 14, 2019, Pennsylvania Higher Educational Facilities Authority (PHEFA) issued Taxable Refunding Revenue Bonds, Series B of 2019 (PHEFA 2019B Bonds), in the aggregate principal amount of $213,585,000. The proceeds were used to fund an escrow, which will be used to refund $16,935,000 from the PHEFA Series of 2010, $136,745,000 from the PHEFA Series A of 2015 Bonds, and $45,570,000 from the PHEFA Series A of 2016 Bonds. The refunded bonds were legally defeased, and as such, will no longer be included among the University's reported liabilities in Fiscal Year 2020. The PHEFA 2019B Bonds have fixed interest rates ranging from 2.395% to 2.972% and maturities ranging from 2029 to 2045.

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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

"Tell me and I forget,
teach me and I may remember,
involve me and I learn."
-Benjamin Franklin