NEW ISSUE – BOOK-ENTRY ONLY

RATINGS
Moody's: Aaa
S&P: AAA

$500,000,000
President and Fellows of Harvard College
Taxable Bonds, Series 2020B

$500,000,000 2.517% Bonds, due October 15, 2050 Yield: 2.517% CUSIP No. 740816AP8†

Interest payable: April 15 and October 15 **Dated: Date of Delivery**

The President and Fellows of Harvard College Taxable Bonds, Series 2020B (the "Bonds") will be issued pursuant to the terms of an Indenture of Trust, dated as of April 1, 2020 (the "Indenture"), by and between President and Fellows of Harvard College (the "Institution") and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"). The proceeds of the Bonds will be used for general corporate purposes of the Institution and to pay certain costs of issuance of the Bonds.

The Bonds will be issued in fully-registered form in denominations of $1,000 and any integral multiple thereof and, when issued, will be registered under a global book-entry system in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York ("DTC"). DTC will act as securities depository for the Bonds. Individual purchases will be made in book-entry form only, in principal amounts of $1,000 and any integral multiple thereof. Purchasers of the Bonds will not receive physical certificates (except under certain circumstances described in the Indenture) representing their ownership interests in the Bonds purchased.

Interest on the Bonds will be payable on April 15 and October 15 of each year, commencing on October 15, 2020. So long as the Bonds are held by DTC, the principal, Redemption Price or Make-Whole Redemption Price (each as defined herein) of and interest on the Bonds will be payable by wire transfer to DTC, which in turn is required to remit such principal, Redemption Price or Make-Whole Redemption Price and interest to the Direct Participants (as defined herein) for subsequent disbursement to the Beneficial Owners of the Bonds, as more fully described in "BOOK-ENTRY ONLY SYSTEM AND GLOBAL CLEARANCE PROCEDURES" herein.

The Bonds are subject to redemption prior to their stated maturity as described herein. See "THE BONDS – Redemption" herein.

Interest on and profit, if any, on the sale of the Bonds are not excludable from gross income for federal, state or local income tax purposes. See "CERTAIN UNITED STATES FEDERAL TAX CONSIDERATIONS" herein.

The Bonds constitute unsecured general obligations of the Institution. The Institution has other unsecured general obligations outstanding. See APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019" attached hereto. Moreover, the Institution is not restricted by the Indenture or otherwise from incurring additional indebtedness. Such additional indebtedness, if issued, may be either secured or unsecured and may be entitled to payment prior to payment on the Bonds. See "SECURITY FOR THE BONDS" herein.

This cover page contains certain information for quick reference only. It is not intended to be a summary of this issue. Investors must read the entire Offering Memorandum to obtain information essential to the making of an informed investment decision.

The Bonds are offered by the Underwriters, when, as and if issued by the Institution and accepted by the Underwriters, subject to the approval of legality by Ropes & Gray LLP, Boston, Massachusetts, counsel to the Institution. In addition, certain other legal matters will be passed upon for the Underwriters by their counsel, Orrick, Herrington & Sutcliffe LLP, New York, New York. It is expected that the Bonds will be available for delivery to DTC in New York, New York on or about April 21, 2020.

Goldman Sachs & Co. LLC J.P Morgan Wells Fargo Securities
Barclays BofA Securities Citigroup Morgan Stanley TD Securities

April 14, 2020

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GENERAL INFORMATION

This Offering Memorandum does not constitute an offer to sell the Bonds in any jurisdiction in which or to any person to whom it is unlawful to make such an offer. No dealer, salesperson or other person has been authorized by Goldman Sachs & Co. LLC, as representative of itself and the other underwriters named on the cover page hereof (collectively, the "Underwriters") or the Institution to give any information or to make any representations, other than those contained herein, in connection with the offering of the Bonds and, if given or made, such information or representations must not be relied upon.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the Bonds, or determined that this Offering Memorandum is accurate or complete. Any representation to the contrary is a criminal offense. The Bonds have not been and will not be registered under the Securities Act of 1933, as amended (the "Securities Act"), and are being issued in reliance on an exemption or on exemptions contained therein. The Bonds are not exempt in every jurisdiction in the United States; some jurisdictions' securities laws (the "blue sky laws") may require a filing and a fee to secure the Bonds' exemption from registration.

The distribution of this Offering Memorandum and the offer or sale of Bonds may be restricted by law in certain jurisdictions. Neither the Institution nor the Underwriters represent that this Offering Memorandum may be lawfully distributed, or that any Bonds may be lawfully offered, in compliance with any applicable registration or other requirements in any such jurisdiction, or pursuant to an exemption available thereunder, or assume any responsibility for facilitating any such distribution or offering. In particular, no action has been taken by the Institution or the Underwriters which would permit a public offering of any of the Bonds or distribution of this Offering Memorandum in any jurisdiction where action for that purpose is required. Action may be required to secure exemptions from the blue sky registration requirements either for the primary distribution or any secondary sales that may occur. Accordingly, none of the Bonds may be offered or sold, directly or indirectly, and neither this Offering Memorandum nor any advertisement or other offering material may be distributed or published in any jurisdiction, except under circumstances that will result in compliance with any applicable laws and regulations.

All information set forth herein has been obtained from the Institution and other sources. Estimates and opinions are included and should not be interpreted as statements of fact. Summaries of documents do not purport to be complete statements of their provisions. The information and expressions of opinion herein are subject to change without notice, and neither the delivery of this Offering Memorandum nor any sale made hereunder will, under any circumstances, create any implication that there has been no change in the affairs of the Institution since the date hereof.

Certain statements included or incorporated by reference in this Offering Memorandum constitute "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995, Section 21E of the United States Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act. Such statements are generally identifiable by the terminology used such as "plan," "expect," "estimate," "budget," "intend," "projection" or other similar words. Such forward-looking statements include, but are not limited to, certain statements contained in the information in APPENDIX A – "CERTAIN INFORMATION CONCERNING THE INSTITUTION" and APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019." A number of important factors, including factors affecting the Institution's financial condition and factors which are otherwise unrelated thereto, could cause actual results to differ materially from those stated in such forward-looking statements. THE INSTITUTION DOES NOT PLAN TO ISSUE ANY UPDATES OR REVISIONS TO THOSE FORWARD-LOOKING STATEMENTS IF OR WHEN ITS EXPECTATIONS, OR EVENTS, CONDITIONS OR CIRCUMSTANCES ON WHICH SUCH STATEMENTS ARE BASED OCCUR.

The Underwriters have provided the following sentence for inclusion in this Offering Memorandum. The Underwriters have reviewed the information in this Offering Memorandum in accordance with, and as part of, their responsibility to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVERALLOT OR EFFECT TRANSACTIONS THAT STABILIZE OR MAINTAIN THE MARKET PRICE OF THE BONDS AT LEVELS ABOVE THOSE THAT MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.

References to website addresses presented herein are for informational purposes only and may be in the form of a hyperlink solely for the reader's convenience. Unless specified otherwise, such websites and the information or links contained therein are not incorporated into, and are not part of, this Offering Memorandum.

INFORMATION CONCERNING OFFERING RESTRICTIONS IN CERTAIN JURISDICTIONS OUTSIDE THE UNITED STATES

REFERENCES HEREIN TO THE "ISSUER" MEAN PRESIDENT AND FELLOWS OF HARVARD COLLEGE AND REFERENCES TO "BONDS" OR "SECURITIES" MEAN THE BONDS OFFERED HEREBY.

MINIMUM UNIT SALES

THE BONDS WILL TRADE AND SETTLE ON A UNIT BASIS (ONE UNIT EQUALING ONE BOND OF $1,000 PRINCIPAL AMOUNT). FOR ANY SALES MADE OUTSIDE THE UNITED STATES, THE MINIMUM PURCHASE AND TRADING AMOUNT IS 150 UNITS (BEING 150 BONDS IN AN AGGREGATE PRINCIPAL AMOUNT OF $150,000).

NOTICE TO INVESTORS IN THE EUROPEAN ECONOMIC AREA AND THE UNITED KINGDOM

THE BONDS ARE NOT INTENDED TO BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO AND SHOULD NOT BE OFFERED, SOLD OR OTHERWISE MADE AVAILABLE TO ANY RETAIL INVESTOR DOMICILED OR WITH A REGISTERED OFFICE IN ANY MEMBER STATE OF THE EUROPEAN ECONOMIC AREA (THE “EEA”) OR THE UNITED KINGDOM (THE “UK”) (COLLECTIVELY, “EUROPEAN INVESTORS”). FOR THESE PURPOSES, A RETAIL INVESTOR MEANS A PERSON WHO IS ONE (OR MORE) OF: (I) A RETAIL CLIENT AS DEFINED IN POINT (11) OF ARTICLE 4(1) OF DIRECTIVE 2014/65/EU AS AMENDED (“MIFID II”); (II) A CUSTOMER WITHIN THE MEANING OF DIRECTIVE 2016/97/EU (AS AMENDED, THE “INSURANCE DISTRIBUTION DIRECTIVE”), WHERE THAT CUSTOMER WOULD NOT QUALIFY AS A PROFESSIONAL CLIENT AS DEFINED IN POINT (10) OF ARTICLE 4(1) OF MIFID II; OR (III) NOT A QUALIFIED INVESTOR AS DEFINED IN REGULATION 2017/1129 (EU) (AS AMENDED OR SUPERSEDED, THE “PROSPECTUS REGULATION”). CONSEQUENTLY, NO KEY INFORMATION DOCUMENT REQUIRED BY REGULATION (EU) NO 1286/2014 (AS AMENDED, THE “PRIIPS REGULATION”) FOR OFFERING OR SELLING THE BONDS OR OTHERWISE MAKING THEM AVAILABLE TO RETAIL INVESTORS IN THE EEA OR THE UK HAS BEEN PREPARED. OFFERING OR SELLING THE BONDS OR OTHERWISE MAKING THEM AVAILABLE TO ANY RETAIL INVESTOR IN THE EEA OR THE UK MAY BE UNLAWFUL UNDER THE PRIIPS REGULATION. THIS OFFERING MEMORANDUM HAS BEEN PREPARED ON THE BASIS THAT THE OFFER OF BONDS IN ANY MEMBER STATE OF THE EEA OR THE UK IS NOT SUBJECT TO A REQUIREMENT TO PUBLISH A PROSPECTUS UNDER THE PROSPECTUS REGULATION AS THE MINIMUM INVESTMENT AMOUNT IS MORE THAN EUR 100,000 PER EUROPEAN INVESTOR AND THEREFORE AN EXEMPTION TO THE OBLIGATION TO PUBLISH A PROSPECTUS APPLIES. THIS OFFERING MEMORANDUM IS NOT A PROSPECTUS FOR THE PURPOSES OF THE PROSPECTUS REGULATION.

NOTICE TO PROSPECTIVE INVESTORS IN THE UNITED KINGDOM

THIS OFFERING MEMORANDUM WILL CONSISTUTE A FINANCIAL PROMOTION AND HAS NOT BEEN APPROVED FOR THE PURPOSES OF SECTION 21 OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 ("FSMA") AND DOES NOT CONSTITUTE AN OFFER TO THE PUBLIC IN ACCORDANCE WITH THE PROVISIONS OF SECTION 85 OF THE FSMA. IT IS FOR DISTRIBUTION ONLY TO, AND IS DIRECTED SOLELY AT, PERSONS WHO (I) ARE INVESTMENT PROFESSIONALS, AS SUCH TERM IS DEFINED IN ARTICLE 19(5) OF THE FINANCIAL SERVICES AND MARKETS ACT 2000 (FINANCIAL PROMOTION) ORDER 2005, AS AMENDED (THE "FINANCIAL PROMOTION ORDER") BROADLY PERSONS HAVING PROFESSIONAL EXPERIENCE IN MATTERS RELATING TO INVESTMENTS, (II) ARE PERSONS FALLING WITHIN ARTICLE 49(2)(A) TO (D) OF THE FINANCIAL PROMOTION ORDER INCLUDING HIGH NET WORTH COMPANIES, UNINCORPORATED ASSOCIATIONS, OR (III) ARE PERSONS TO WHOM AN INVITATION OR INDUCEMENT TO ENGAGE IN INVESTMENT ACTIVITY (WITHIN THE MEANING OF SECTION 21 OF THE FSMA) IN CONNECTION WITH THE ISSUE OR SALE OF ANY SECURITIES MAY OTHERWISE BE LAWFULLY COMMUNICATED OR CAUSED TO BE COMMUNICATED (ALL SUCH PERSONS TOGETHER BEING REFERRED TO AS "RELEVANT PERSONS"). THIS OFFERING MEMORANDUM IS DIRECTED ONLY AT RELEVANT PERSONS AND MUST NOT BE ACTED ON OR RELIED ON BY PERSONS WHO ARE NOT RELEVANT PERSONS. ANY INVESTMENT OR INVESTMENT ACTIVITY TO WHICH THIS OFFERING MEMORANDUM RELATES IS AVAILABLE ONLY TO RELEVANT PERSONS AND WILL BE ENGAGED IN ONLY WITH RELEVANT PERSONS. ANY PERSON WHO IS NOT A RELEVANT PERSON SHOULD NOT ACT OR RELY ON THIS OFFERING MEMORANDUM OR ANY OF ITS CONTENTS.

NOTICE TO PROSPECTIVE INVESTORS IN HONG KONG

THE BONDS MAY NOT BE OFFERED OR SOLD IN HONG KONG BY MEANS OF ANY DOCUMENT OTHER THAN (I) IN CIRCUMSTANCES WHICH DO NOT CONSTITUTE AN OFFER TO THE PUBLIC WITHIN THE MEANING OF THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE (CAP. 32 OF THE LAWS OF HONG KONG) ("COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE") OR WHICH DO NOT CONSTITUTE AN INVITATION TO THE PUBLIC WITHIN THE MEANING OF THE SECURITIES AND FUTURES ORDINANCE (CAP. 571 OF THE LAWS OF HONG KONG) ("SECURITIES AND FUTURES ORDINANCE"), OR (II) TO "PROFESSIONAL INVESTORS" AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER, OR (III) IN OTHER CIRCUMSTANCES WHICH DO NOT RESULT IN THE DOCUMENT BEING A "PROSPECTUS" AS DEFINED IN THE COMPANIES (WINDING UP AND MISCELLANEOUS PROVISIONS) ORDINANCE, AND NO ADVERTISEMENT, INVITATION OR DOCUMENT RELATING TO THE BONDS MAY BE ISSUED OR MAY BE IN THE POSSESSION OF ANY PERSON FOR THE PURPOSE OF ISSUE (IN EACH CASE WHETHER IN HONG KONG OR ELSEWHERE), WHICH IS DIRECTED AT, OR THE CONTENTS OF WHICH ARE LIKELY TO BE ACCESSED OR READ BY, THE PUBLIC IN HONG KONG (EXCEPT IF PERMITTED TO DO SO UNDER THE SECURITIES LAWS OF HONG KONG) OTHER THAN WITH RESPECT TO BONDS WHICH ARE OR ARE INTENDED TO BE DISPOSED OF ONLY TO PERSONS OUTSIDE HONG KONG OR ONLY TO "PROFESSIONAL INVESTORS" IN HONG KONG AS DEFINED IN THE SECURITIES AND FUTURES ORDINANCE AND ANY RULES MADE THEREUNDER.

NOTICE TO INVESTORS IN CANADA

THE BONDS MAY BE SOLD IN CANADA ONLY TO PURCHASERS PURCHASING, OR DEEMED TO BE PURCHASING, AS PRINCIPAL THAT ARE ACCREDITED INVESTORS, AS DEFINED IN NATIONAL INSTRUMENT 45-106 PROSPECTUS EXEMPTIONS OR SUBSECTION 73.3(1) OF THE SECURITIES ACT (ONTARIO), AND ARE PERMITTED CLIENTS, AS DEFINED IN NATIONAL INSTRUMENT 31-103 REGISTRATION REQUIREMENTS, EXEMPTIONS AND ONGOING REGISTRANT OBLIGATIONS. ANY RESALE OF THE BONDS MUST BE MADE IN ACCORDANCE WITH AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE PROSPECTUS REQUIREMENTS OF APPLICABLE SECURITIES LAWS.

SECURITIES LEGISLATION IN CERTAIN PROVINCES OR TERRITORIES OF CANADA MAY PROVIDE A PURCHASER WITH REMEDIES FOR RESCISSION OR DAMAGES IF THIS OFFERING MEMORANDUM (INCLUDING ANY AMENDMENT THERETO) CONTAINS A MISREPRESENTATION, PROVIDED THAT THE REMEDIES FOR RESCISSION OR DAMAGES ARE EXERCISED BY THE PURCHASER WITHIN THE TIME LIMIT PRESCRIBED BY THE SECURITIES LEGISLATION OF THE PURCHASER'S PROVINCE OR TERRITORY. THE PURCHASER SHOULD REFER TO ANY APPLICABLE PROVISIONS OF THE SECURITIES LEGISLATION OF THE PURCHASER'S PROVINCE OR TERRITORY FOR PARTICULARS OF THESE RIGHTS OR CONSULT WITH A LEGAL ADVISOR.

PURSUANT TO SECTION 3A.3 OF NATIONAL INSTRUMENT 33-105 UNDERWRITING CONFLICTS (NI 33-105), THE UNDERWRITERS ARE NOT REQUIRED TO COMPLY WITH THE DISCLOSURE REQUIREMENTS OF NI 33-105 REGARDING UNDERWRITERS CONFLICTS OF INTEREST IN CONNECTION WITH THIS OFFERING.

NOTICE TO INVESTORS IN KOREA

THE BONDS HAVE NOT BEEN AND WILL NOT BE REGISTERED WITH THE FINANCIAL SERVICES COMMISSION OF KOREA FOR PUBLIC OFFERING IN KOREA UNDER THE FINANCIAL INVESTMENT SERVICES AND CAPITAL MARKETS ACT AND ITS SUBORDINATE DECREES AND REGULATIONS (COLLECTIVELY THE "FSCMA"). THE BONDS MAY NOT BE OFFERED, SOLD OR DELIVERED, DIRECTLY OR INDIRECTLY, OR OFFERED OR SOLD TO ANY PERSON FOR RE-OFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN KOREA OR TO ANY RESIDENT OF KOREA EXCEPT AS OTHERWISE PERMITTED UNDER THE APPLICABLE LAWS AND REGULATIONS OF KOREA, INCLUDING THE FSCMA AND THE FOREIGN EXCHANGE TRANSACTION LAW AND ITS SUBORDINATE DECREES AND REGULATIONS (COLLECTIVELY, THE "FETL"). WITHOUT PREJUDICE TO THE FOREGOING, THE NUMBER OF BONDS OFFERED IN KOREA OR TO A RESIDENT IN KOREA SHALL BE LESS THAN FIFTY AND FOR A PERIOD OF ONE YEAR FROM THE ISSUE DATE OF THE BONDS, NONE OF THE BONDS MAY BE DIVIDED RESULTING IN AN INCREASED NUMBER OF THE BONDS. FURTHERMORE, THE BONDS MAY NOT BE RESOLD TO KOREAN RESIDENTS UNLESS THE PURCHASER OF THE BONDS COMPLIES WITH ALL APPLICABLE REGULATORY REQUIREMENTS (INCLUDING BUT NOT LIMITED TO GOVERNMENT REPORTING REQUIREMENTS UNDER THE FETL) IN CONNECTION WITH THE PURCHASE OF THE BONDS.

NOTICE TO INVESTORS IN SINGAPORE

THIS OFFERING CIRCULAR HAS NOT BEEN REGISTERED AS A PROSPECTUS WITH THE MONETARY AUTHORITY OF SINGAPORE. ACCORDINGLY, THIS OFFERING CIRCULAR AND ANY OTHER DOCUMENT OR MATERIAL IN CONNECTION WITH THE OFFER OR SALE, OR INVITATION FOR SUBSCRIPTION OR PURCHASE, OF THE BONDS MAY NOT BE CIRCULATED OR DISTRIBUTED, NOR MAY THE BONDS BE OFFERED OR SOLD, OR BE MADE THE SUBJECT OF AN INVITATION FOR SUBSCRIPTION OR PURCHASE, WHETHER DIRECTLY OR INDIRECTLY, TO PERSONS IN SINGAPORE OTHER THAN (I) TO AN INSTITUTIONAL INVESTOR (AS DEFINED IN SECTION 4A OF THE SECURITIES AND FUTURES ACT, CHAPTER 289 OF SINGAPORE (THE "SFA")) UNDER SECTION 274 OF THE SFA, (II) TO A RELEVANT PERSON (AS DEFINED IN SECTION 275(2) OF THE SFA) PURSUANT TO SECTION 275(1) OF THE SFA, OR ANY PERSON PURSUANT TO SECTION 275(1A) OF THE SFA, AND IN ACCORDANCE WITH THE CONDITIONS SPECIFIED IN SECTION 275 OF THE SFA OR (III) OTHERWISE PURSUANT TO, AND IN ACCORDANCE WITH THE CONDITIONS OF, ANY OTHER APPLICABLE PROVISION OF THE SFA, IN EACH CASE SUBJECT TO CONDITIONS SET FORTH IN THE SFA.

WHERE THE BONDS ARE SUBSCRIBED OR PURCHASED UNDER SECTION 275 OF THE SFA BY A RELEVANT PERSON WHICH IS A CORPORATION (WHICH IS NOT AN ACCREDITED INVESTOR (AS DEFINED IN SECTION 4A OF THE SFA)) THE SOLE BUSINESS OF WHICH IS TO HOLD INVESTMENTS AND THE ENTIRE SHARE CAPITAL OF WHICH IS OWNED BY ONE OR MORE INDIVIDUALS, EACH OF WHOM IS AN ACCREDITED INVESTOR, THE SECURITIES (AS DEFINED IN SECTION 239(1) OF THE SFA) OF THAT CORPORATION SHALL NOT BE TRANSFERABLE FOR 6 MONTHS AFTER THAT CORPORATION HAS ACQUIRED THE BONDS UNDER SECTION 275 OF THE SFA EXCEPT: (1) TO AN INSTITUTIONAL INVESTOR UNDER SECTION 274 OF THE SFA OR TO A RELEVANT PERSON (AS DEFINED IN SECTION 275(2) OF THE SFA), (2) WHERE SUCH TRANSFER ARISES FROM AN OFFER IN THAT CORPORATION'S SECURITIES PURSUANT TO SECTION 275(1A) OF THE SFA, (3) WHERE NO CONSIDERATION IS OR WILL BE GIVEN FOR THE TRANSFER, (4) WHERE THE TRANSFER IS BY OPERATION OF LAW, (5) AS SPECIFIED IN SECTION 276(7) OF THE SFA, OR (6) AS SPECIFIED IN REGULATION 32 OF THE SECURITIES AND FUTURES (OFFERS OF INVESTMENTS) (SHARES AND DEBENTURES) REGULATIONS 2005 OF SINGAPORE ("REGULATION 32").

WHERE THE BONDS ARE SUBSCRIBED OR PURCHASED UNDER SECTION 275 OF THE SFA BY A RELEVANT PERSON WHICH IS A TRUST (WHERE THE TRUSTEE IS NOT AN ACCREDITED INVESTOR (AS DEFINED IN SECTION 4A OF THE SFA)) WHOSE SOLE PURPOSE IS TO HOLD INVESTMENTS AND EACH BENEFICIARY OF THE TRUST IS AN ACCREDITED INVESTOR, THE BENEFICIARIES' RIGHTS AND INTEREST (HOWSOEVER DESCRIBED) IN THAT TRUST SHALL NOT BE TRANSFERABLE FOR 6 MONTHS AFTER THAT TRUST HAS ACQUIRED THE BONDS UNDER SECTION 275 OF THE SFA EXCEPT: (1) TO AN INSTITUTIONAL INVESTOR UNDER SECTION 274 OF THE SFA OR TO A RELEVANT PERSON (AS DEFINED IN SECTION 275(2) OF THE SFA), (2) WHERE SUCH TRANSFER ARISES FROM AN OFFER THAT IS MADE ON TERMS THAT SUCH RIGHTS OR INTEREST ARE ACQUIRED AT A CONSIDERATION OF NOT LESS THAN S$200,000 (OR ITS EQUIVALENT IN A FOREIGN CURRENCY) FOR EACH TRANSACTION (WHETHER SUCH AMOUNT IS TO BE PAID FOR IN CASH OR BY EXCHANGE OF SECURITIES OR OTHER ASSETS), (3) WHERE NO CONSIDERATION IS OR WILL BE GIVEN FOR THE TRANSFER, (4) WHERE THE TRANSFER IS BY OPERATION OF LAW, (5) AS SPECIFIED IN SECTION 276(7) OF THE SFA, OR (6) AS SPECIFIED IN REGULATION 32.

NOTICE TO INVESTORS IN JAPAN

THE SECURITIES HAVE NOT BEEN AND WILL NOT BE REGISTERED UNDER THE FINANCIAL INSTRUMENTS AND EXCHANGE ACT OF JAPAN (ACT NO. 25 OF 1948, AS AMENDED), OR THE FIEA. THE SECURITIES MAY NOT BE OFFERED OR SOLD, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO OR FOR THE BENEFIT OF ANY RESIDENT OF JAPAN (INCLUDING ANY PERSON RESIDENT IN JAPAN OR ANY CORPORATION OR OTHER ENTITY ORGANIZED UNDER THE LAWS OF JAPAN) OR TO OTHERS FOR REOFFERING OR RESALE, DIRECTLY OR INDIRECTLY, IN JAPAN OR TO OR FOR THE BENEFIT OF ANY RESIDENT OF JAPAN, EXCEPT PURSUANT TO AN EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE FIEA AND OTHERWISE IN COMPLIANCE WITH ANY RELEVANT LAWS AND REGULATIONS OF JAPAN.

SUMMARY OF THE OFFERING

Issuer	President and Fellows of Harvard College
Securities Offered	$500,000,000 2.517% Taxable Bonds, Series 2020B due October 15, 2050
Interest Accrual Dates	Interest will accrue from the Date of Issuance
Interest Payment Dates	April 15 and October 15 of each year, commencing October 15, 2020
Redemption	The Bonds are subject to optional redemption (i) prior to the Par Call Date, at the Make-Whole Redemption Price, and (ii) on or after the Par Call Date, at the Redemption Price, all as discussed more fully herein.
Date of Issuance	April 21, 2020
Authorized Denominations	$1,000 and any integral multiple thereof
Exemption From Registration	The Bonds are being offered pursuant to an exemption from registration under Section 3(a)(4) of the Securities Act of 1933.
Form and Depository	The Bonds will be delivered solely in registered form under a global book-entry system through the facilities of DTC.
Use of Proceeds	The net proceeds of the Bonds will be used for general corporate purposes of the Institution and to pay certain costs of issuance of the Bonds. See “PLAN OF FINANCE” herein.
Ratings	Moody’s: Aaa S&P: AAA

OFFERING MEMORANDUM

Relating to

$500,000,000

PRESIDENT AND FELLOWS OF HARVARD COLLEGE TAXABLE BONDS, SERIES 2020B

INTRODUCTION

The purpose of this Offering Memorandum, which includes the cover page, the table of contents and appendices, is to provide certain information concerning the sale and delivery by President and Fellows of Harvard College (the "Institution") of its $500,000,000 aggregate principal amount of President and Fellows of Harvard College Taxable Bonds, Series 2020B (the "Bonds"). This Introduction contains only a brief summary of certain of the terms of the Bonds being offered and a brief description of the Offering Memorandum. All statements contained in this Introduction are qualified in their entirety by reference to the entire Offering Memorandum.

Purpose of the Bonds and the Plan of Finance

The proceeds of the Bonds are expected to be used for general corporate purposes of the Institution and to pay costs of issuance of the Bonds.

The Institution expects that concurrently with the issuance of the Bonds, the Massachusetts Development Finance Agency ("MDFA") will issue on behalf of the Institution $346,680,000 principal amount of its tax-exempt Revenue Bonds, Harvard University Issue, Series 2020A (the "Series 2020A Bonds"), in order to refinance a portion of the Institution's commercial paper program. If issued, the Series 2020A Bonds will be special obligations of MDFA payable solely from payments made by the Institution under a Loan and Trust Agreement (the "Loan Agreement"), and the payment obligation of the Institution pursuant to the Loan Agreement will be an unsecured general obligation of the Institution and the Series 2020A Bonds will be offered pursuant to a separate offering document. The issuance of the Bonds is not contingent on the issuance of the Series 2020A Bonds, and the issuance of the Series 2020A Bonds is not contingent on the issuance of the Bonds.

See "PLAN OF FINANCE" and "ESTIMATED SOURCES AND USES OF FUNDS" herein.

The Institution

The Institution is an educational corporation existing under the laws of The Commonwealth of Massachusetts. Important information on the financial condition of the Institution is set forth in APPENDIX A – "CERTAIN INFORMATION CONCERNING THE

INSTITUTION" and APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019" attached hereto, both of which should be read in their entirety.

The Bonds

The Bonds are being issued pursuant to an Indenture of Trust, dated as of April 1, 2020 (the "Indenture"), by and between the Institution and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"). Pursuant to the Indenture, on each Payment Date, until the principal of and interest on the Bonds shall have been paid or provision for such payment shall have been made as provided in the Indenture, the Institution will pay the Trustee a sum equal to the amount payable on such Payment Date as principal of or interest on the Bonds. See "THE BONDS" herein.

Security for the Bonds

The Bonds constitute unsecured general obligations of the Institution. The Institution has other unsecured general obligations outstanding. See "Outstanding Indebtedness" below. Moreover, the Institution is not restricted by the Indenture or otherwise from incurring additional indebtedness. Such additional indebtedness, if issued, may be either secured or unsecured and may be entitled to payment prior to payment on the Bonds. See "SECURITY FOR THE BONDS" herein.

Additional Bonds

The Institution may, from time to time, without the consent of the holders of the Bonds, issue additional bonds under the Indenture in addition to the Bonds (the "Additional Bonds"). If issued, the Additional Bonds will become part of the same series as the Bonds being offered by this Offering Memorandum and will have the same interest rate, redemption provisions, maturity date and CUSIP number as one or more of the Bonds.

Outstanding Indebtedness

The Institution has other unsecured general obligations outstanding. As of June 30, 2019, the Institution had approximately $4.82 billion principal amount of indebtedness outstanding, including long-term debt and commercial paper. Subsequent to June 30, 2019, the Institution paid down approximately $118.4 million principal amount of long-term debt and drew down an additional $100.1 million of commercial paper, leaving approximately $4.81 billion principal amount outstanding. Upon delivery of the Bonds and the Series 2020A Bonds, and excluding the commercial paper to be defeased with the proceeds of the Series 2020A Bonds, the total outstanding principal amount of indebtedness is expected to be approximately $5.22 billion. See, "PLAN OF FINANCING" herein.

For additional information regarding the outstanding indebtedness of the Institution, see APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019" attached hereto.

Redemption

The Bonds are subject to optional redemption by the Institution prior to maturity at the Redemption Price or Make-Whole Redemption Price (as applicable), all as described herein. See “THE BONDS – Redemption” herein.

Book-Entry Only System and Global Clearance Procedures

When delivered, the Bonds will be registered in the name of Cede & Co., the nominee of The Depository Trust Company (“DTC”). DTC will act as the securities depository for the Bonds. Purchases of the Bonds may be made in book-entry form only, through brokers and dealers who are, or who act through, Direct Participants (as defined herein). Beneficial Owners of the Bonds will not receive physical delivery of certificated securities (except under certain circumstances described in the Indenture). Payment of the principal, Redemption Price or Make-Whole Redemption Price of and interest on the Bonds are payable by the Trustee to DTC, which will in turn remit such payments to the Direct Participants, which will in turn remit such payments to the Beneficial Owners of the Bonds. In addition, so long as Cede & Co. is the registered owner of the Bonds, the right of any Beneficial Owner to receive payment for any Bond will be based only upon and subject to the procedures and limitations of the DTC book-entry system. Beneficial interests in the Bonds may be held through DTC, Clearstream Banking, S.A. (“Clearstream Banking”) or Euroclear Bank S.A./N.V. as operator of the Euroclear System (“Euroclear”), directly as a participant or indirectly through organizations that are participants in such system. See “BOOK-ENTRY ONLY SYSTEM AND GLOBAL CLEARANCE PROCEDURES” herein.

Certain Information Related to this Offering Memorandum

The descriptions herein of the Indenture and other documents relating to the Bonds do not purport to be complete and are qualified in their entirety by reference to such documents, and the description herein of the Bonds is qualified in its entirety by the form thereof and the information with respect thereto included in such documents. See APPENDIX C – “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE” attached hereto for a brief summary of the Indenture, including descriptions of certain duties of the Trustee, rights and remedies of the Trustee and the Bondholders upon an Event of Default, and provisions relating to amendments of the Indenture and procedures for defeasance of the Bonds.

All capitalized terms used in this Offering Memorandum and not otherwise defined herein have the same meanings as in the Indenture. See APPENDIX C – “SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE” attached hereto for definitions of certain words and terms used but not otherwise defined herein.

The information and expressions of opinion herein speak only as of their date and are subject to change without notice. Neither delivery of this Offering Memorandum nor any sale made hereunder nor any future use of this Offering Memorandum will, under any circumstances, create any implication that there has been no change in the affairs of the Institution.

ESTIMATED SOURCES AND USES OF FUNDS

The table below sets forth the estimated sources and uses of funds (rounded to the nearest dollar) in connection with the issuance of the Bonds.

	Total
Sources of Funds:	
Principal Amount of Bonds	$500,000,000
Total Sources	$500,000,000
Uses of Funds:	
Corporate Purposes	$497,878,082
Costs of Issuance[1]	2,121,918
Total Uses	$500,000,000

(1) Includes the Underwriters' compensation and other costs of issuing the Bonds.

PLAN OF FINANCE

The proceeds of the Bonds will be used for general corporate purposes of the Institution and to pay costs of issuance of the Bonds.

The proceeds of the Series 2020A Bonds are expected to be applied to (i) refinance approximately $450,000,000 of the Institution's outstanding commercial paper and (ii) pay the costs of issuance of the Series 2020A Bonds.

Simultaneously with the issuance and delivery of the Series 2020A Bonds, a portion of the proceeds thereof will be deposited in escrow with the Trustee, and will be used to purchase defeasance securities. It is anticipated that Causey Demgen & Moore P.C. will provide a verification report certifying as to the sufficiency of such Defeasance Securities to defease the Commercial Paper. Upon such defeasance, the Commercial Paper will be deemed to have been paid and will no longer be outstanding.

THE BONDS

Description of the Bonds

The Bonds will be dated as of the date of their original issuance and will bear interest and mature (subject to prior redemption) as shown on the front cover page hereof. The Bonds will be delivered in the form of fully-registered Bonds in denominations of $1,000 and any integral multiple thereof. The Bonds will be registered initially in the name of "Cede & Co.," as nominee of the Securities Depository and will be evidenced by one Bond in the total aggregate principal amount of the Bonds. Registered ownership of the Bonds, or any portions thereof, may not thereafter be transferred except as set forth in the Indenture. See APPENDIX C – "SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE."

Interest on the Bonds will be payable on April 15 and October 15 of each year (each, an "Interest Payment Date"), commencing on October 15, 2020 and will be calculated on the basis of a three hundred sixty (360) day year consisting of twelve (12) thirty (30) day months.

The principal and Redemption Price or Make-Whole Redemption Price (as applicable) of the Bonds will be payable by check or by wire transfer of immediately available funds in lawful money of the United States of America at the Designated Office of the Trustee.

Interest on the Bonds will be payable from the later of (i) the date of issuance and (ii) the most recent Interest Payment Date to which interest has been paid or duly provided for. Payment of the interest on each Interest Payment Date will be made to the Person whose name appears on the bond registration books of the Trustee as the Holder thereof as of the close of business on the Record Date for each Interest Payment Date, such interest to be paid by check mailed by first class mail to such Holder at its address as it appears on such registration books, or, upon the written request of any Holder of at least $1,000,000 in aggregate principal amount of Bonds, submitted to the Trustee at least one (1) Business Day prior to the Record Date, by wire transfer in immediately available funds to an account within the United States designated by such Holder. Notwithstanding the foregoing, as long as Cede & Co. is the Holder of all or part of the Bonds in Book-Entry Form, said principal, Redemption Price, Make-Whole Redemption Price and interest payments will be made to Cede & Co. by wire transfer in immediately available funds.

Redemption

Optional Redemption at Par

The Bonds will be subject to optional redemption prior to maturity on or after the applicable Par Call Date, at the direction of the Institution, in whole or in part (and, if in part, in Authorized Denominations and on a pro rata basis, subject to the provisions described below under "Selection of Bonds for Redemption"), on any Business Day, in such order of maturity as directed by the Institution, at the Redemption Price. "Redemption Price" means 100% of the principal amount of a Bond to be redeemed plus accrued and unpaid interest on such Bond to the redemption date. "Par Call Date" means April 15, 2050 (*i.e.*, six months prior to maturity of the Bonds).

Optional Redemption at Make-Whole Redemption Price

Prior to the applicable Par Call Date, the Bonds will be subject to optional redemption prior to maturity, at the direction of the Institution, in whole or in part (and, if in part, in Authorized Denominations and on a pro rata basis, subject to the provisions described below under "Selection of Bonds for Redemption"), on any Business Day, in such order of maturity as directed by the Institution, at the Make-Whole Redemption Price. The Institution shall retain an independent accounting firm or an independent financial advisor to determine the Make-Whole Redemption Price and perform all actions and make all calculations required to determine the Make-Whole Redemption Price. The Trustee and the Institution may conclusively rely on such accounting firm's or financial advisor's calculations in connection with, and its determination of, the Make-Whole Redemption Price, and neither the Trustee nor the Institution will have any liability for their reliance. The determination of the Make-Whole Redemption Price by such accounting firm or financial advisor shall be conclusive and binding on the Trustee, the Institution and the Holders of the Bonds.

“Make-Whole Redemption Price” means the greater of (i) 100% of the principal amount of a Bond to be redeemed and (ii) the sum of the present value of the remaining scheduled payments of principal and interest to the maturity date of such Bond, not including any portion of those payments of interest accrued and unpaid as of the date on which such Bond is to be redeemed, discounted to the date on which such Bond is to be redeemed on a semi-annual basis assuming a 360-day year consisting of twelve 30-day months at the adjusted Treasury Rate plus twenty (20) basis points, plus, in each case, accrued and unpaid interest on such Bond to the redemption date.

“Treasury Rate” means, with respect to any redemption date, the rate per annum equal to the semiannual equivalent yield to maturity or interpolated (on a day count basis) of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

“Comparable Treasury Issue” means the United States Treasury security or securities selected by a Designated Investment Banker as having an actual or interpolated maturity comparable to the remaining term of the Bonds to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of a comparable maturity to the remaining term of such Bonds.

“Comparable Treasury Price” means, with respect to any redemption date, the average of the Primary Treasury Dealer Quotations for such redemption date or, if the Designated Investment Banker obtains only one Primary Treasury Dealer Quotation, such Primary Treasury Dealer Quotation.

“Designated Investment Banker” means a Primary Treasury Dealer appointed by the Institution.

“Primary Treasury Dealer” means one or more entities appointed by the Institution, which, in each case, is a primary U.S. Government securities dealer in The City of New York, New York, and its successors.

“Primary Treasury Dealer Quotations” means, with respect to each Primary Treasury Dealer and any redemption date, the average, as determined by the Designated Investment Banker, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Designated Investment Banker by such Primary Treasury Dealer at 3:30 p.m. New York time on the third Business Day preceding such redemption date.

“Business Day” means any day other than (A) a Saturday or Sunday or legal holiday or a day on which banking institutions in the city or cities in which the Designated Office of the Trustee is located are authorized by law or executive order to close or (B) a day on which the New York Stock Exchange is closed.

Partial Redemption of Bonds

Upon surrender of any Bond redeemed in part only, the Institution will execute (but need not prepare) and the Trustee will prepare or cause to be prepared, authenticate and deliver to the Holder thereof, at the expense of the Institution, a new Bond or Bonds of Authorized Denominations, equal in aggregate principal amount to the unredeemed portion of the Bond surrendered.

Notice of Redemption

Notice of redemption will be mailed by the Trustee by first class mail, or sent by electronic means, not less than twenty (20) days, nor more than sixty (60) days prior to the redemption date, to the respective Holders of any Bonds designated for redemption at their addresses appearing on the bond registration books of the Trustee. If the Bonds are no longer held by the Securities Depository or its successor or substitute, the Trustee shall also give notice of redemption by electronic means to such securities depositories and/or securities information services as shall be designated in a certificate of the Institution. Each notice of redemption shall state the date of such notice, the date of issue of the Bonds, the redemption date, the Redemption Price or the manner of determining the Make-Whole Redemption Price (as applicable), the place or places of redemption (including the name and appropriate address or addresses of the Trustee), the maturity (including CUSIP number, if any), and, in the case of Bonds to be redeemed in part only, the portion of the principal amount thereof to be redeemed. Each such notice will also state that on said date there will become due and payable on each of said Bonds the Redemption Price or Make-Whole Redemption Price (as applicable) thereof or of said specified portion of the principal amount thereof in the case of a Bond to be redeemed in part only, and that from and after such redemption date interest thereon shall cease to accrue, and shall require that such Bonds be then surrendered.

Failure by the Trustee to give notice as described above to any one or more of the securities information services or depositories designated by the Institution, or the insufficiency of any such notice will not affect the sufficiency of the proceedings for redemption. Failure by the Trustee to mail notice of redemption to any one or more of the respective Holders of any Bonds designated for redemption will not affect the sufficiency of the proceedings for redemption with respect to the Holders to whom such notice was mailed.

The Institution may instruct the Trustee to provide conditional notice of redemption, which may be conditioned upon the receipt of moneys or any other event. Additionally, any such notice may be rescinded by written notice given to the Trustee by the Institution no later than two (2) Business Days prior to the date specified for redemption. The Trustee will give notice of such rescission, as soon thereafter as practicable, in the same manner, to the same Persons, as notice of such redemption was given.

The Trustee will not be required to transfer or exchange (i) any Bond during the fifteen (15) days next preceding the selection of Bonds for redemption or (ii) any Bond called for redemption.

Effect of Redemption

Notice of redemption having been duly given as provided in the Indenture and as described above, and moneys for payment of the Redemption Price or Make-Whole Redemption Price (as applicable) of the Bonds (or portion thereof) so called for redemption being held by the Trustee, on the date fixed for redemption designated in such notice, the Bonds (or portion thereof) so called for redemption shall become due and payable at the Redemption Price or Make-Whole Redemption Price (as applicable) specified in such notice, interest on the Bonds so called for redemption shall cease to accrue, said Bonds (or portion thereof) will cease to be entitled to any benefit or security under the Indenture, and the Holders of said Bonds will have no rights in respect thereof except to receive payment of said Redemption Price or Make-Whole Redemption Price from funds held by the Trustee for such payment.

Selection of Bonds for Redemption

If less than all of the Bonds are called for optional redemption, the Institution will select the maturity or maturities from which the Bonds are to be redeemed. If the Bonds are registered in book-entry only form and so long as DTC or a successor securities depository is the sole registered owner of the Bonds, if less than all of the Bonds of a maturity are called for prior redemption, the particular Bonds or portions thereof to be redeemed shall be selected on a pro rata pass-through distribution of principal basis in accordance with DTC procedures, provided that, so long as the Bonds are held in book-entry form, the selection for redemption of such Bonds shall be made in accordance with the operational arrangements of DTC then in effect.

It is the Institution's intent that redemption allocations made by DTC be made on a pro rata pass-through distribution of principal basis as described above. However, neither the Institution nor the Underwriters can provide any assurance that DTC, DTC's Direct and Indirect Participants (as defined herein) or any other intermediary will allocate the redemption of Bonds on such basis. If the DTC operational arrangements do not allow for the redemption of the Bonds on a pro rata pass-through distribution of principal basis as discussed above, then the Bonds will be selected for redemption, in accordance with DTC procedures.

BOOK-ENTRY ONLY SYSTEM AND GLOBAL CLEARANCE PROCEDURES

The information set out below is subject to any change in or reinterpretation of the rules, regulations and procedures of DTC, Euroclear or Clearstream Banking (DTC, Euroclear and Clearstream Banking together, the "Clearing Systems") currently in effect. The information in this section concerning the Clearing Systems has been obtained from sources that the Institution believes to be reliable, but none of the Institution, the Trustee or the Underwriters take any responsibility for the accuracy, completeness or adequacy of the information in this section. Investors wishing to use the facilities of any of the Clearing Systems are advised to confirm the continued applicability of the rules, regulations and procedures of the relevant Clearing System. The Institution will not have any responsibility or liability for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the Bonds held through the facilities of any Clearing System or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.

NEITHER THE INSTITUTION NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATIONS TO DIRECT PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE PAYMENTS TO OR THE PROVIDING OF NOTICE FOR DIRECT PARTICIPANTS, INDIRECT PARTICIPANTS OR BENEFICIAL OWNERS.

SO LONG AS CEDE & CO. IS THE REGISTERED OWNER OF THE BONDS, AS NOMINEE OF DTC, REFERENCES HEREIN TO THE BONDHOLDERS OR REGISTERED OWNERS OF THE BONDS SHALL MEAN CEDE & CO. AND SHALL NOT MEAN THE BENEFICIAL OWNERS OF THE BONDS.

Clearing Systems

DTC Book-Entry Only System

DTC will act as securities depository for the Bonds. The Bonds will be issued as fully-registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully-registered Bond certificate will be issued for the Bonds in their aggregate principal amount and will be deposited with DTC.

DTC is a limited-purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues and money market instruments (from over 100 countries) that DTC's participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities through electronic computerized book-entry transfers and pledges between Direct Participants' accounts. This eliminates the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants," and together with Direct Participants, "Participants"). The DTC Rules applicable to its Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of the Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Bonds on DTC's records. The ownership interest of each actual purchaser of each Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Bonds are to be accomplished by entries made on the books of Direct and Indirect Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in the Bonds, except in the event that use of the book-entry system for the Bonds is discontinued.

To facilitate subsequent transfers, all Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of the Bonds with DTC and their registration in the name of Cede & Co. or such other DTC nominee do not effect any change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

Redemption notices shall be sent to DTC. Subject to the provisions described above in "THE BONDS—Selection of Bonds for Redemption," if less than all of the Bonds are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant in such Bonds to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Bonds unless authorized by a Direct Participant in accordance with DTC's MMI Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Institution as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Payments of principal, Redemption Price and Make-Whole Redemption Price and interest payments on the Bonds will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Institution or the Trustee, on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Underwriters, the Trustee or the Institution, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of principal, Redemption Price, Make-Whole Redemption Price and interest to Cede & Co. (or such other nominee as may be requested by an authorized representative of DTC) is the responsibility of the Institution or the Trustee, disbursement of such payments to Direct Participants will be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners will be the responsibility of Direct and Indirect Participants.

DTC may discontinue providing its services as securities depository with respect to the Bonds at any time by giving reasonable notice to the Institution or the Trustee. Under such circumstances, in the event that a successor securities depository is not obtained, such Bond certificates are required to be printed and delivered. The Institution may decide to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, the Bond certificates will be printed and delivered to DTC. See "Certificated Bonds" below.

The information herein concerning DTC and DTC's book-entry system has been obtained from sources that the Institution and the Underwriters believe to be reliable, but the Institution and the Underwriters take no responsibility for the accuracy thereof.

Each person for whom a Participant acquires an interest in the Bonds, as nominee, may desire to make arrangements with such Participant to receive a credit balance in the records of such Participant, and may desire to make arrangements with such Participant to have all notices of redemption or other communications to DTC, which may affect such persons, to be forwarded in writing by such Participant and to have notification made of all interest payments. NONE OF THE INSTITUTION, THE UNDERWRITERS OR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO SUCH PARTICIPANTS OR THE PERSONS FOR WHOM THEY ACT AS NOMINEES WITH RESPECT TO THE BONDS.

So long as Cede & Co. is the registered owner of the Bonds, as nominee for DTC, references herein to Bondholders or registered owners of the Bonds shall mean Cede & Co., as aforesaid, and shall not mean the Beneficial Owners of the Bonds.

When reference is made to any action which is required or permitted to be taken by the Beneficial Owners, such reference shall only relate to those permitted to act (by statute, regulation or otherwise) on behalf of such Beneficial Owners for such purposes. When notices are given, they shall be sent by the Trustee to DTC only.

For every transfer and exchange of Bonds, the Beneficial Owner may be charged a sum sufficient to cover any tax, fee or other governmental charge that may be imposed in relation thereto.

The Institution, in its sole discretion and without the consent of any other person, may terminate the services of DTC with respect to the Bonds if the Institution determines that (i) DTC is unable to discharge its responsibilities with respect to the Bonds, or (ii) a continuation of the requirement that all of the Outstanding Bonds be registered in the registration books kept by the Trustee in the name of Cede & Co., as nominee of DTC, is not in the best interests of the Beneficial Owners. In the event that no substitute securities depository is found by the Institution or restricted registration is no longer in effect, Bond certificates will be delivered.

NONE OF THE INSTITUTION, THE UNDERWRITERS OR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO DIRECT PARTICIPANTS, TO INDIRECT PARTICIPANTS, OR TO ANY BENEFICIAL OWNER WITH RESPECT TO:

(I) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC, ANY DIRECT PARTICIPANT, OR ANY INDIRECT PARTICIPANT; (II) ANY NOTICE THAT IS PERMITTED OR REQUIRED TO BE GIVEN TO THE OWNERS OF THE BONDS UNDER THE INDENTURE; (III) THE SELECTION BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY PERSON TO RECEIVE PAYMENT IN THE EVENT OF A PARTIAL REDEMPTION OF THE BONDS; (IV) THE PAYMENT BY DTC OR ANY DIRECT PARTICIPANT OR INDIRECT PARTICIPANT OF ANY AMOUNT WITH RESPECT TO THE PRINCIPAL OR REDEMPTION PREMIUM, IF ANY, OR INTEREST DUE WITH RESPECT TO THE BONDS; (V) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY DTC AS THE OWNER OF THE BONDS; OR (VI) ANY OTHER MATTER.

Euroclear and Clearstream Banking

Euroclear and Clearstream Banking each hold securities for their customers and facilitate the clearance and settlement of securities transactions by electronic book-entry transfer between their respective account holders. Euroclear and Clearstream Banking provide various services including safekeeping, administration, clearance and settlement of internationally traded securities and securities lending and borrowing. Euroclear and Clearstream Banking also deal with domestic securities markets in several countries through established depositary and custodial relationships. Euroclear and Clearstream Banking have established an electronic bridge between their two systems across which their respective participants may settle trades with each other.

Euroclear and Clearstream Banking customers are worldwide financial institutions, including underwriters, securities brokers and dealers, banks, trust companies and clearing corporations. Indirect access to Euroclear and Clearstream Banking is available to other institutions that clear through or maintain a custodial relationship with an account holder of either system, either directly or indirectly.

Clearing and Settlement Procedures

The Bonds sold in offshore transactions will be initially issued to investors through the book-entry facilities of DTC, or Clearstream Banking and Euroclear in Europe if the investors are participants in those systems, or indirectly through organizations that are participants in the systems. For any of such Bonds, the record holder will be DTC's nominee. Clearstream Banking and Euroclear will hold omnibus positions on behalf of their participants through customers' securities accounts in Clearstream Banking's and Euroclear's names on the books of their respective depositories.

The depositories, in turn, will hold positions in customers' securities accounts in the depositories' names on the books of DTC. Because of time zone differences, the securities account of a Clearstream Banking or Euroclear participant as a result of a transaction with a participant, other than a depository holding on behalf of Clearstream Banking or Euroclear, will be credited during the securities settlement processing day, which must be a business day for Clearstream Banking or Euroclear, as the case may be, immediately following the DTC settlement date. These credits or any transactions in the securities settled during the processing will be reported to the relevant Euroclear participant or Clearstream Banking participant on that business day. Cash received in Clearstream Banking or Euroclear as a result of sales of securities by or through a

Clearstream Banking participant or Euroclear participant to a Direct Participant, other than the depository for Clearstream Banking or Euroclear, will be received with value on the DTC settlement date but will be available in the relevant Clearstream Banking or Euroclear cash account only as of the business day following settlement in DTC.

Transfers between participants will occur in accordance with DTC rules. Transfers between Clearstream Banking participants or Euroclear participants will occur in accordance with their respective rules and operating procedures. Cross-market transfers between persons holding directly or indirectly through DTC, on the one hand, and directly or indirectly through Clearstream Banking participants or Euroclear participants, on the other, will be effected in DTC in accordance with DTC rules on behalf of the relevant European international clearing system by the relevant depositories; however, cross-market transactions will require delivery of instructions to the relevant European international clearing system by the counterparty in the system in accordance with its rules and procedures and within its established deadlines in European time. The relevant European international clearing system will, if the transaction meets its settlement requirements, deliver instructions to its depository to take action to effect final settlement on its behalf by delivering or receiving securities in DTC, and making or receiving payment in accordance with normal procedures for same day funds settlement applicable to DTC. Clearstream Banking participants or Euroclear participants may not deliver instructions directly to the depositories.

The Institution will not impose any fees in respect of holding the Bonds; however, holders of book-entry interests in the Bonds may incur fees normally payable in respect of the maintenance and operation of accounts in the Clearing Systems.

Initial Settlement

Interests in the Bonds will be in uncertified book-entry form. Purchasers electing to hold book-entry interests in the Bonds through Euroclear and Clearstream Banking accounts will follow the settlement procedures applicable to conventional Eurobonds. Book-entry interests in the Bonds will be credited to Euroclear and Clearstream Banking participants' securities clearance accounts on the business day following the date of delivery of the Bonds against payment (value as on the date of delivery of the Bonds). Direct Participants acting on behalf of purchasers electing to hold book-entry interests in the Bonds through DTC will follow the delivery practices applicable to securities eligible for DTC's Same Day Funds Settlement system. Direct Participants' securities accounts will be credited with book-entry interests in the Bonds following confirmation of receipt of payment to the Institution on the date of delivery of the Bonds.

Secondary Market Trading

Secondary market trades in the Bonds will be settled by transfer of title to book-entry interests in the Clearing Systems. Title to such book-entry interests will pass by registration of the transfer within the records of Euroclear, Clearstream Banking or DTC, as the case may be, in accordance with their respective procedures. Book-entry interests in the Bonds may be transferred within Euroclear and within Clearstream Banking and between Euroclear and Clearstream Banking in accordance with procedures established for these purposes by Euroclear and Clearstream Banking. Book-entry interests in the Bonds may be transferred within DTC in accordance with procedures established for this purpose by DTC. Transfer of book-entry interests in the Bonds between Euroclear or Clearstream Banking and DTC may be effected in accordance with procedures established for this purpose by Euroclear, Clearstream Banking and DTC.

General

None of Euroclear, Clearstream Banking or DTC is under any obligation to perform or continue to perform the procedures referred to above, and such procedures may be discontinued at any time.

Neither the Institution nor any of their agents will have any responsibility for the performance by Euroclear, Clearstream Banking or DTC or their respective direct or indirect participants or account holders of their respective obligations under the rules and procedures governing their operations or the arrangements referred to above.

The information herein concerning Euroclear, Clearstream Banking and DTC has been obtained from sources that the Institution and the Underwriters believe to be reliable, but the Institution and the Underwriters take no responsibility for the accuracy thereof.

Certificated Bonds

DTC may discontinue providing its services as securities depository with respect to the Bonds at any time by giving reasonable notice to the Institution or the Trustee. In addition, the Institution may determine that continuation of the system of book-entry transfers through DTC (or a successor securities depository) is not in the best interests of the Beneficial Owners. If for either reason the book-entry-only system is discontinued, Bond certificates will be delivered as described in the Indenture, and the Beneficial Owner, upon registration of certificates held in the Beneficial Owner's name, will become the Bondowner. Thereafter, the Bonds may be exchanged for an equal aggregate principal amount of the Bonds in other authorized denominations and of the same maturity, upon surrender thereof at the principal corporate trust office of the Trustee. The transfer of any Bond may be registered on the books maintained by the Trustee for such purpose only upon assignment in form satisfactory to the Trustee. For every exchange or registration of transfer of the Bonds, the Trustee may make a charge sufficient to reimburse them for any tax or other governmental charge required to be paid with respect to such exchange or registration of transfer, and the Trustee may also require the Bondowners requesting such exchange to pay a reasonable sum to cover any expenses incurred by the Institution in connection with such exchange. The Trustee will not be required to exchange (i) any Bond during the fifteen (15) days next preceding the selection of Bonds for redemption or (ii) any Bond called for redemption.

SECURITY FOR THE BONDS

General

The Indenture provides that, on or before each Payment Date, the Institution will pay the Trustee a sum equal to the amount payable on such Payment Date as principal of and interest on the Bonds. In addition, the Indenture provides that each such payment made will at all times be sufficient to pay the total amount of principal (whether at maturity or upon acceleration) and interest becoming due and payable on the Bonds on such Payment Date. If on any Payment Date, the amounts held by the Trustee in the accounts within the Bond Fund (as described below) are insufficient to make any required payments of principal of (whether at maturity or upon acceleration) and interest on the Bonds as such payments become due, the Institution is required to pay such deficiency to the Trustee. Upon the receipt thereof, the Trustee will deposit all payments received from the Institution into certain funds and accounts established pursuant to the Indenture. See "Certain Funds and Accounts Established by the Indenture" below.

The Bonds constitute unsecured general obligations of the Institution. The Bonds are not secured by a reserve fund, mortgage lien or security interest on or in any funds or other assets of the Institution, except for funds held from time to time by the Trustee for the benefit of the Holders of the Bonds under the Indenture. As described above, the Institution is not required to deposit with the Trustee amounts necessary to pay the principal of and interest on the Bonds until the Payment Date on which such amounts become due and payable; therefore, the funds held from time to time by the Trustee for the benefit of the Holders of the Bonds under the Indenture are expected to be minimal.

The Institution has other unsecured general obligations outstanding. See APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019" attached hereto. Moreover, the Institution is not restricted by the Indenture or otherwise from incurring additional indebtedness. Such additional indebtedness, if issued, may be either secured or unsecured and may be entitled to payment prior to payment on the Bonds. The Indenture also does not contain any financial covenants limiting the ability of the Institution to encumber or dispose of its property or merge with any other entity, or any covenants. Further, the Institution is not required by the Indenture to produce revenues at any specified level or to obtain any insurance with respect to its property or operations.

Certain Funds and Accounts Established by the Indenture

Under the Indenture, the Trustee has established for the sole benefit of the Bondholders, a master fund referred to as the "Indenture Fund," containing the Series 2020B Bond Fund, the Series 2020B Redemption Fund, the Series 2020B Expense Fund and each of the funds and accounts contained therein. The Institution has pledged, assigned and transferred the Indenture Fund and all amounts held therein to the Trustee for the benefit of the Bondholders to secure the full payment of the principal, Make-Whole Redemption Price of and interest on the Bonds in accordance with their terms and the provisions of the Indenture. The Indenture Fund and all amounts on deposit therein constitute collateral security to secure the full payment of the principal, Make-Whole Redemption Price of and interest on the Bonds in accordance with their terms and provisions of the Indenture. Due to the timing of payments by the Institution to the Trustee, in general there is not expected to be any money in the Indenture Fund except for a brief period of time on the Interest Payment Dates.

For information on other funds and accounts established by the Indenture, see APPENDIX C – "SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE" attached hereto.

CERTAIN U.S. FEDERAL TAX CONSIDERATIONS

The following discussion summarizes certain U.S. federal tax considerations generally applicable to holders of the Bonds that acquired those Bonds in the initial offering. The discussion below is based upon laws, regulations, rulings, and decisions in effect and available on the date hereof, all of which are subject to change, possibly with retroactive effect. Prospective investors should note that no rulings have been or are expected to be sought from the IRS with respect to any of the U.S. federal tax considerations discussed below, and no assurance can be given that the IRS will not take contrary positions. Further, the following discussion does not deal with U.S. tax consequences applicable to any given investor, nor does it address the U.S. tax considerations applicable to all categories of investors, some of which may be subject to special taxing rules (regardless of whether or not such investors constitute U.S. Holders), such as certain U.S. expatriates or long-term residents, individual retirement accounts or other tax-deferred accounts, banks, REITs, RICs, insurance companies, tax-exempt organizations, dealers or traders in securities or currencies, partnerships, S corporations, estates and trusts, investors that hold their Bonds as part of a hedge, straddle or an integrated or conversion transaction, certain accrual method taxpayers that are required to prepare certified financial statement or file financial statements with certain regulatory or governmental agencies, or investors whose "functional currency" is not the U.S. dollar. Furthermore, it does not address (i) alternative minimum tax consequences, (ii) the net investment income tax imposed under Section 1411 of the Code, or (iii) the indirect effects on persons who hold equity interests in a holder. This summary also does not consider the taxation of the Bonds under state, local or non-U.S. tax laws. In addition, this summary generally is limited to U.S. tax considerations applicable to investors that acquire their Bonds pursuant to this offering for the issue price that is applicable to such Bonds within the meaning of Section 1273 of the Code (i.e., the price at which a substantial amount of the Bonds is sold to the public) and who will hold their Bonds as "capital assets" within the meaning of Section 1221 of the Code.

As used herein, "U.S. Holder" means a beneficial owner of a Bond that for U.S. federal income tax purposes is an individual citizen or resident of the United States, a corporation or other entity taxable as a corporation created or organized in or under the laws of the United States or any state thereof (including the District of Columbia), an estate the income of which is subject to U.S. federal income taxation regardless of its source or a trust where a court within the United States is able to exercise primary supervision over the administration of the trust and one or more United States persons (as defined in the Code) have the authority to control all substantial decisions of the trust (or a trust that has made a valid election under U.S. Treasury Regulations to be treated as a domestic trust). As used herein, "Non-U.S. Holder" generally means a beneficial owner of a Bond (other than a partnership) that is not a U.S. Holder. If a partnership holds Bonds, the tax treatment of such partnership or a partner in such partnership generally will depend upon the status of the partner and upon the activities of the partnership. Partnerships holding Bonds, and partners in such partnerships, should consult their own tax advisors regarding the tax consequences of an investment in the Bonds (including their status as U.S. Holders or Non-U.S. Holders).

Prospective investors should consult their own tax advisors in determining the U.S. federal, state, local or non-U.S. tax consequences to them from the purchase, ownership and disposition of the Bonds in light of their particular circumstances.

U.S. Holders

Interest. Payments of interest on a Bond generally will be taxable to a U.S. Holder as ordinary interest income at the time such payments are accrued or are received (in accordance with the U.S. Holder's regular method of tax accounting), provided such interest is "qualified stated interest" within the meaning of section 1272 of the Code. For purposes of this discussion, the term "qualified stated interest" on a Bond means all interest thereon based on a fixed rate, and payable unconditionally at fixed periodic intervals of one year or less during the entire term of the instrument.

Original Issue Discount. To the extent that the issue price of any bond of a maturity of the Bonds is less than the aggregate of the amounts (other than qualified stated interest) to be paid over the term of that Bond by at least the defined *de minimis* amount, the difference may constitute original issue discount ("OID") on that Bond. U.S. Holders of Bonds will be required to include OID in income for U.S. federal income tax purposes as it accrues, in accordance with a constant yield method based on a compounding of interest (which may be before the receipt of cash payments attributable to such income). Under this method, U.S. Holders generally will be required to include in income increasingly greater amounts of OID in successive accrual periods.

Amortizable Bond Premium. Bonds purchased for an amount in excess of the principal amount payable at maturity (or, in some cases, at their earlier call date) will be treated as issued at a premium. A U.S. Holder of a Bond issued at a premium may make an election, applicable to all debt securities purchased at a premium by such U.S. Holder, to amortize such premium, using a constant yield method over the term of such Bond. Such election may not be revoked without the consent of the IRS. If a U.S. Holder elects to amortize the premium, such U.S. Holder will be required to reduce its U.S. Federal income tax basis in the Bond by the amount of the premium amortized during the holding period of the U.S. Holder. If such U.S. Holder does not elect to amortize premium, the amount of premium will be included in its U.S. Federal income tax basis in the Bond, and such unamortized premium will decrease the amount of gain or increase the amount of loss otherwise recognized on the disposition of such Bond. These rules are complex and prospective purchasers of Bonds are urged to consult their own tax advisors regarding the application of the amortizable bond premium rules to their particular situation.

Sale or other Taxable Disposition of a Bond. Unless a nonrecognition provision of the Code applies, the sale, exchange, redemption, retirement (including pursuant to an offer by the Institution) or other taxable disposition of a Bond will be a taxable event for U.S. federal income tax purposes. In such event, in general, a U.S. Holder of a Bond will recognize gain or loss equal to the difference between (i) the amount of cash plus the fair market value of property received (except to the extent attributable to accrued but unpaid qualified stated interest on the Bond, which will be taxed in the manner described above) and (ii) the U.S. Holder's adjusted U.S. federal income tax basis in the Bond (generally, the purchase price paid by the U.S. Holder for the Bond, decreased by any amortized premium, and increased by the amount of any OID previously included in income by such U.S. Holder with respect to such Bond). Any such gain or loss generally will be capital gain or loss. In the case of a non-corporate U.S. Holder of the Bonds, the maximum marginal U.S. federal income tax rate applicable to any such gain will be lower than the maximum marginal U.S. federal income tax rate applicable to ordinary income if such U.S.

Holder's holding period for the Bonds exceeds one year. The deductibility of capital losses is subject to limitations.

Effect of Defeasance. Pursuant to the Indenture, the Bonds are subject to legal defeasance without the consent of the holders of the Bonds. Defeasance of any of the Bonds may be treated as a taxable constructive exchange of that Bond for the defeased Bond. Assuming that the Bonds are treated as publicly traded debt instruments for U.S. federal income tax purposes (which is expected to be the case), a U.S. Holder of a Bond generally will recognize gain or loss equal to the difference between (i) the fair market value of such U.S. Holder's Bonds on the date of the defeasance (except to the extent of accrued but unpaid interest on the Bonds which will be taxed in the manner described above under "Interest") and (ii) the U.S. Holder's adjusted U.S. federal income tax basis in the Bonds (generally, the purchase price paid by the U.S. Holder for the Bond, decreased by any amortized premium, and increased by the amount of any OID previously included in income by such U.S. Holder with respect to such Bond). Any such gain or loss generally will be capital gain or loss. In the case of a non-corporate U.S. Holder of the Bonds, the maximum marginal U.S. federal income tax rate applicable to any such gain will be lower than the maximum marginal U.S. federal income tax rate applicable to ordinary income if such U.S. Holder's holding period for the Bonds exceeds one year. The deductibility of capital losses is subject to limitations. The Institution may be required to report certain information regarding such a defeasance that may be relevant to U.S. Holders either (1) by filing Form 8937 with the IRS and providing copies to certain of its U.S. Holders or (2) by posting the form on its website.

Information Reporting and Backup Withholding. Payments on the Bonds generally will be subject to U.S. information reporting and possibly to "backup withholding." Under Section 3406 of the Code and applicable U.S. Treasury Regulations issued thereunder, a non-corporate U.S. Holder of the Bonds may be subject to backup withholding at the current rate of 24% with respect to "reportable payments," which include interest paid on the Bonds and the gross proceeds of a sale, exchange, redemption, retirement or other disposition of the Bonds. The payor will be required to deduct and withhold the prescribed amounts if (i) the payee fails to furnish a U.S. taxpayer identification number ("TIN") to the payor in the manner required, (ii) the IRS notifies the payor that the TIN furnished by the payee is incorrect, (iii) there has been a "notified payee underreporting" described in Section 3406(c) of the Code or (iv) the payee fails to certify under penalty of perjury that the payee is not subject to withholding under Section 3406(a)(1)(C) of the Code. Amounts withheld under the backup withholding rules may be refunded or credited against the U.S. Holder's federal income tax liability, if any, provided that the required information is timely furnished to the IRS. Certain U.S. holders (including among others, corporations and certain tax-exempt organizations) are not subject to backup withholding. A holder's failure to comply with the backup withholding rules may result in the imposition of penalties by the IRS.

Non-U.S. Holders

Interest. Subject to the discussions below under the headings "Information Reporting and Backup Withholding" and "Foreign Account Tax Compliance Act ("FATCA")—U.S. Holders and Non-U.S. Holders," payments of principal of, and interest on, any Bond to a Non-U.S. Holder, other than (1) a controlled foreign corporation, a such term is defined in the Code, which is related to the Institution through stock ownership and (2) a bank which acquires such Bond in consideration of an extension of credit made pursuant to a loan agreement entered into in the ordinary course of business, will not be subject to any U.S. federal withholding tax provided that the beneficial owner of the Bond provides a certification completed in compliance with applicable statutory and regulatory requirements, which requirements are discussed below under the heading "Information Reporting and Backup Withholding."

If a Non-U.S. Holder does not claim, or does not qualify for, the benefit of the portfolio interest exemption, the Non-U.S. Holder may be subject to a 30% withholding tax on interest payments on the Bonds. However, the Non-U.S. Holder may be able to claim the benefit of a reduced withholding tax rate (generally on Form W-8BEN or Form W-8BEN-E under an applicable income tax treaty between the Non-U.S. Holder's country of residence and the United States. Non-U.S. Holders are urged to consult their own tax advisors regarding their eligibility for treaty benefits.

If, under the Code, interest on the Bonds is "effectively connected with the conduct of a trade or business within the United States" by a Non-U.S. Holder (and, if an applicable income tax treaty so requires, is attributable to the conduct of a trade or business through a permanent establishment or fixed base in the United States), such interest will be subject to U.S. federal income tax in a similar manner as if the Bonds were held by a U.S. Holder, as described above, and in the case of Non-U.S. Holders that are corporations may be subject to U.S. branch profits tax at a rate of up to 30%, unless an applicable income tax treaty provides otherwise. Such Non-U.S. Holder will not be subject to withholding taxes, however, if it provides a properly executed Form W-8ECI to the Institution or its paying agent, if any.

Sale or other Taxable Disposition of a Bond. Subject to the discussions below under the headings "Information Reporting and Backup Withholding" and "Foreign Account Tax Compliance Act ("FATCA")—U.S. Holders and Non-U.S. Holders," any gain realized by a Non-U.S. Holder upon the sale, exchange, redemption, retirement (including pursuant to an offer by the Institution, or a deemed retirement due to the defeasance of the Bond) or other disposition of a Bond generally will not be subject to U.S. federal income tax, unless (i) such gain is effectively connected with the conduct by such Non-U.S. Holder of a trade or business within the United States (in which case the U.S. branch profits tax may also apply), unless an applicable income tax treaty provides otherwise; or (ii) in the case of any gain realized by an individual Non-U.S. Holder, such holder is present in the United States for 183 days or more in the taxable year of such sale, exchange, redemption, retirement (including pursuant to an offer by the Institution) or other disposition and certain other conditions are met.

Information Reporting and Backup Withholding. Subject to the discussion below under the heading "Foreign Account Tax Compliance Act ("FATCA")—U.S. Holders and Non-U.S. Holders," under current U.S. Treasury Regulations, payments of principal and interest on any Bonds to a Non-U.S. Holder will not be subject to any backup withholding tax requirements if the Non-U.S. Holder of the Bond or a financial institution holding the Bond on behalf of the Non-U.S. Holder in the ordinary course of its trade or business provides an appropriate certification to the payor and the payor does not have actual knowledge that the certification is false. If a Non-U.S. Holder provides the certification, the certification must give the name and address of such Non-U.S. Holder, state that such Non-U.S. Holder is not a United States person, or, in the case of an individual, that such Non-U.S. Holder is neither a citizen nor a resident of the United States, and the Non-U.S. Holder must sign the certificate under penalties of perjury. The current backup withholding tax rate is 24%.

Payments of interest on the Bonds and proceeds from the sale or other disposition of the Bonds are expected to be reported to the IRS as required by applicable Treasury Regulations. Copies of these information returns may also be made available under the provisions of a specific treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established. Payments of proceeds from the sale or other disposition of the Bonds generally will be subject to information reporting if the disposition is effected within the United States or through certain U.S.-related financial intermediaries unless the Non-U.S. Holder provides the applicable withholding agent with a statement certifying, among other things, that the Non-U.S. Holder is not a "United States person" within the meaning of the Code (generally on IRS Form W-8BEN or W-8BEN-E). Payments subject to information reporting may be subject to backup withholding if the Non-U.S. Holder fails to certify the holder's non-U.S. status as described above. Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against the Non-U.S. Holder's U.S. federal income tax liability provided that the required information is timely furnished to the IRS. Potential holders should consult their own tax advisors regarding qualification for an exemption and the procedures for obtaining such an exemption.

Foreign Account Tax Compliance Act ("FATCA")—U.S. Holders and Non-U.S. Holders

Certain withholding rules imposed under Section 1471 through 1474 of the Code (otherwise known as the "Foreign Account Tax Compliance Act" or "FATCA") generally impose a 30% U.S. withholding tax on certain payments made (including OID, if any) to non-U.S. financial institutions and certain other non-U.S. financial entities (whether such financial institutions or nonfinancial entities are beneficial owners or intermediaries), unless they satisfy certain due diligence and information reporting requirements. An intergovernmental agreement between the United States and the holder's jurisdiction may modify these requirements. While withholding under FATCA would also have applied to payments of gross proceeds from the sale or other disposition of the Bonds on or after January 1, 2019, proposed U.S. Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Although these U.S. Treasury Regulations are not final, they can be relied upon until final U.S. Treasury Regulations are issued. Failure to comply with the additional certification, information reporting and other specified requirements imposed under FATCA could also result in the 30% withholding tax being imposed on certain "passthru" payments with respect to, Bonds held by or through a foreign entity. However, under current guidance, withholding under FATCA will apply to certain "passthru" payments no earlier than the date that is two years after publication of final U.S. Treasury Regulations defining the term "foreign passthru payments." Prospective holders are encouraged to consult with their own tax advisors regarding the implications of this legislation and the applicable regulations on their investment in a Bond.

The foregoing summary is included herein for general information only and does not discuss all aspects of U.S. federal taxation that may be relevant to a particular holder of Bonds in light of the holder's particular circumstances and income tax situation. Prospective investors are urged to consult their own tax advisors as to any tax consequences to them from the purchase, ownership and disposition of the Bonds, including the application and effect of state, local, non-U.S., and other tax laws.

CERTAIN ERISA CONSIDERATIONS

The Employee Retirement Income Security Act of 1974, as amended ("ERISA"), imposes certain restrictions on employee pension and welfare benefit plans subject to ERISA ("ERISA Plans") regarding prohibited transactions, and also imposes certain obligations on those persons who are fiduciaries with respect to ERISA Plans. Section 4975 of the Code imposes similar prohibited transaction restrictions on certain plans, including (i) tax-qualified retirement plans described in Section 401(a) and 403(a) of the Code, which are exempt from tax under section 501(a) of the Code and which are not governmental or church plans as defined herein ("Qualified Retirement Plans"), and (ii) individual retirement accounts described in Section 408(b) of the Code (the foregoing in clauses (i) and (ii), "Tax-Favored Plans"). Certain employee benefit plans, such as governmental plans (as defined in Section 3(32) of ERISA), non-U.S. plans (as described in Section 4(b)(4) of ERISA) and, if no election has been made under Section 410(d) of the Code, church plans (as defined in Section 3(33) of ERISA), are not subject to ERISA requirements or Section 4975 of the Code~~,~~ but may be subject to requirements or prohibitions under applicable federal, state, local, non-U.S. or other laws or regulations that are, to a material extent, similar to the requirements of ERISA and Section 4975 of the Code ("Similar Law").

In addition to the imposition of general fiduciary obligations, including those of investment prudence and diversification and the requirement that a plan's investment be made in accordance with the documents governing the plan, ERISA Plans are subject to prohibited transaction restrictions imposed by Section 406 of ERISA. ERISA Plans and Tax-Favored Plans are also subject to prohibited transaction restrictions imposed by Section 4975 of the Code. These rules generally prohibit a broad range of transactions between (i) ERISA Plans, Tax-Favored Plans and entities whose underlying assets include plan assets by reason of ERISA Plans or Tax-Favored Plans investing in such entities (collectively, "Benefit Plans") and (ii) persons who have certain specified relationships to the Benefit Plans (such persons are referred to as "Parties in Interest" or "Disqualified Persons"), in each case unless a statutory, regulatory or administrative exemption is available. The definitions of "Party in Interest" and "Disqualified Person" are expansive. While other entities may be encompassed by those definitions, they include most notably: (1) a fiduciary with respect to a Benefit Plan; (2) a person providing services to a Benefit Plan; and (3) an employer or employee organization any of whose employees or members are covered by a Benefit Plan. Certain Parties in Interest (or Disqualified Persons) that participate in a non-exempt prohibited transaction may be subject to a penalty (or an excise tax) imposed pursuant to Section 502(i) of ERISA (or Section 4975 of the Code) unless a statutory, regulatory or administrative exemption is available.

Certain transactions involving the purchase, holding or transfer of the Bonds might be deemed to constitute prohibited transactions under ERISA and the Code if assets of the Institution were deemed to be assets of a Benefit Plan. Under final regulations issued by the United States Department of Labor at 29 C.F.R. section 2510.3-101, as modified by Section 3(42) of ERISA (the "Plan Assets Regulation"), the assets of the Institution would be treated as plan assets of a Benefit Plan for the purposes of ERISA and the Code if the Benefit Plan acquires an "equity interest" in the Institution and none of the exceptions contained in the Plan Assets Regulation is applicable.

An equity interest is defined under the Plan Assets Regulation as an interest in an entity other than an instrument that is treated as indebtedness under applicable local law and that has no substantial equity features. Although there can be no assurances in this regard, it appears that the Bonds should be treated as debt without substantial equity features for purposes of the Plan Assets Regulation and accordingly the assets of the Institution should not be treated as the assets of Benefit Plans investing in the Bonds.

However, without regard to whether the Bonds are treated as an equity interest for such purposes, the acquisition or holding of Bonds by or on behalf of a Benefit Plan could be considered to give rise to a prohibited transaction if the Institution or the Trustee, or any of their respective affiliates, is or becomes a Party in Interest or a Disqualified Person with respect to such Benefit Plan. The fiduciary of a Benefit Plan that proposes to purchase and hold any Bonds should consider, among other things, whether such purchase and holding may involve (i) the direct or indirect extension of credit to a Party in Interest, (ii) the sale or exchange of any property between a Benefit Plan and a Party in Interest, and (iii) the transfer to, or use by or for the benefit of, a Party in Interest, of any Benefit Plan assets.

Certain status-based exemptions from the prohibited transaction rules could be applicable depending on the type and circumstances of the plan fiduciary making the decision to acquire a Bond. These are commonly referred to as prohibited transaction class exemptions or "PTCEs". Included among these exemptions are:

PTCE 75-1, which exempts certain–transactions between a Benefit Plan and certain brokers-dealers, reporting dealers and banks;

PTCE 96-23, which exempts transactions effected at the sole discretion of an "in-house asset manager";

PTCE 90-1, which exempts certain investments by an insurance company pooled separate account;

PTCE 95-60, which exempts certain investments effected on behalf of an "insurance company general account";

PTCE 91-38, which exempts certain investments by bank collective investment funds; and

PTCE 84-14, which exempts certain transactions effected at the sole discretion of a "qualified professional asset manager."

In addition, Section 408(b)(17) of ERISA and Section 4975(d)(20) of the Code generally provide for a statutory exemption from the prohibitions of Section 406(a) of ERISA and Section 4975 of the Code, commonly referred to as the "Service Provider Exemption". The Service Provider Exemption covers transactions involving "adequate consideration" between Benefit Plans and persons who are Parties in Interest solely by reason of providing services to such Benefit Plans or who are persons affiliated with such service providers, provided generally that such persons are not fiduciaries with respect to "plan assets" of any Benefit Plan involved in the transaction and that certain other conditions are satisfied.

The availability of each of these PTCEs and/or the Service Provider Exemption is subject to a number of important conditions which the Benefit Plan's fiduciary must consider in determining whether such exemptions apply. There can be no assurance that all the conditions of any such exemptions will be satisfied at the time that the Bonds are acquired by a purchaser, or thereafter, if the facts relied upon for utilizing a prohibited transaction exemption change, or that the scope of relief provided by these exemptions will necessarily cover all acts that might be construed as prohibited transactions. Therefore, a Benefit Plan fiduciary considering an investment in the Bond should consult with its counsel prior to making such purchase.

By its acceptance of a Bond, each purchaser will be deemed to have represented and warranted that either (i) no "plan assets" of any Benefit Plan or a plan subject to Similar Law have been used to purchase such Bond or (ii) the purchase and holding of such Bonds is exempt from the prohibited transaction restrictions of ERISA and Section 4975 of the Code pursuant to a statutory, regulatory or-administrative exemption and will not violate Similar Law.

The foregoing discussion is general in nature and is not intended to be all-inclusive. Due to the complexity of these rules and the penalties that may be imposed upon persons involved in non-exempt prohibited transactions, it is particularly important that any Benefit Plan fiduciary or other person considering whether to purchase Bonds on behalf of Benefit Plan should consult with its counsel regarding the applicability of the fiduciary responsibility and prohibited transaction provisions of ERISA and the Code to such investment and the availability of any of the exemptions referred to above. In addition, persons responsible for considering the purchase of Bonds by a governmental plan, non-electing church plan or non-U.S. plan should consult with its counsel regarding the applicability of any Similar Law to such an investment.

UNDERWRITING

The Institution has entered into a purchase contract with Goldman Sachs & Co. LLC, as representative of itself and the Underwriters, pursuant to which the Underwriters have agreed to purchase the Bonds from the Institution at a purchase price of $498,305,309.31 (representing the principal amount of the Bonds, less an underwriting discount of $1,694,690.69).

The purchase contract pursuant to which the Bonds are being sold provides that the Underwriters will purchase not less than all of the Bonds. The Underwriters' obligation to make such purchase is subject to certain terms and conditions set forth in the purchase contract, the approval of certain legal matters by counsel and certain other conditions.

J.P. Morgan Securities LLC ("JPMS"), one of the Underwriters of the Bonds, has entered into negotiated dealer agreements (each, a "Dealer Agreement") with each of Charles Schwab & Co., Inc. ("CS&Co.") and LPL Financial LLC ("LPL") for the retail distribution of certain securities offerings at the original issue prices. Pursuant to each Dealer Agreement, each of CS&Co. and LPL may purchase Bonds from JPMS at the original issue price less a negotiated portion of the selling concession applicable to any Bonds that such firm sells.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Securities, LLC, member NYSE, FINRA, NFA, and SIPC.

BofA Securities, Inc., one of the Underwriters of the Bonds, has entered into a distribution agreement with its affiliate Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S"). As part of this arrangement, BofA Securities, Inc. may distribute securities to MLPF&S, which may in turn distribute such securities to investors through the financial advisor network of MLPF&S. As part of this arrangement, BofA Securities, Inc. may compensate MLPF&S as a dealer for their selling efforts with respect to the Bonds.

Citigroup Global Markets Inc., one of the Underwriters of the Bonds, has entered into a retail distribution agreement with Fidelity Capital Markets, a division of National Financial Services LLC (together with its affiliates, "Fidelity"). Under this distribution agreement, Citigroup Global Markets Inc. may distribute municipal securities to retail investors at the original issue price through Fidelity. As part of this arrangement, Citigroup Global Markets Inc. will compensate Fidelity for its selling efforts.

Morgan Stanley & Co. LLC, one of the Underwriters of the Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Bonds.

TD Securities (USA) LLC ("TD Securities"), one of the Underwriters of the Bonds, has entered into a negotiated dealer agreement (the "TD Dealer Agreement") with TD Ameritrade for the retail distribution of certain securities offerings, including the Bonds at the original issue price. Pursuant to the TD Dealer Agreement, TD Ameritrade may purchase Bonds from the Underwriters at the original issue prices less a negotiated portion of the selling concession applicable to any of the Bonds TD Ameritrade sells.

The Underwriters may offer and sell the Bonds to certain dealers and others at a price lower than the initial offering price. The offering price of Bonds may be changed from time to time by the Underwriters. The Underwriters and their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities.

In the ordinary course of their various business activities, the Underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Institution.

CONTINUING DISCLOSURE

The Institution covenants in the Indenture to furnish to the Trustee copies of its audited financial statements not later than March 1 of each year unless available on EMMA (defined below) or any successor thereto or to functions thereof. Except for providing such annual audited financial statements, the Institution has not undertaken either to supplement or update the information included in this Offering Memorandum.

The Institution has entered into continuing disclosure undertakings (the "Continuing Disclosure Undertakings") in connection with revenue bonds issued for the benefit of the Institution. See APPENDIX B – "HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019." Holders and prospective purchasers of the Bonds may obtain copies of the information provided by the Institution under those Continuing Disclosure Undertakings on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access system ("EMMA"). Each Continuing Disclosure Undertaking terminates when the related revenue bonds are paid or deemed paid in full.

APPROVAL OF LEGALITY

Legal matters incident to validity of the Bonds and certain other matters are subject to the approving opinion of Ropes & Gray LLP, counsel to the Institution. The proposed form of opinion of counsel to the Institution relating to the validity of the issuance of the Bonds and certain other matters is attached hereto as Appendix D. In addition, certain other legal matters will be passed upon for the Underwriters by their counsel, Orrick, Herrington & Sutcliffe LLP.

INDEPENDENT ACCOUNTANTS

The financial statements of the Institution as of and for the fiscal year ended June 30, 2019, included in Appendix B to this Offering Memorandum, have been audited by PricewaterhouseCoopers LLP, independent accountants, as stated in their report appearing in Appendix B hereto.

RATINGS

Moody's Investors Service, Inc. ("Moody's") assigned a rating of "Aaa" with a stable outlook to the Bonds and S&P Global Ratings ("S&P") assigned a rating of "AAA" with a stable outlook to the Bonds. Any explanation of the significance of such ratings may only be obtained from Moody's and S&P. Generally, rating agencies base their ratings on information and materials furnished and on investigation, studies, and assumptions by the rating agencies. There is no assurance that the rating mentioned above will remain in effect for any given period of time or that a rating might not be lowered or withdrawn entirely, if in the judgment of the rating agency originally establishing the rating, circumstances so warrant. Any such downward change in or withdrawal of a rating might have an adverse effect on the market price or marketability of the Bonds.

MISCELLANEOUS

All quotations from and summaries and explanations of the Indenture and of other statutes and documents contained herein do not purport to be complete, and reference is made to said documents and statutes for full and complete statements of their provisions. Copies of the Indenture may be obtained upon request directed to the Underwriters or the Institution.

Any statements in this Offering Memorandum involving matters of opinion are intended as such and not as representations of fact. This Offering Memorandum is not to be construed as a contract or agreement between the Institution and Holders of any of the Bonds.

The execution and delivery of this Offering Memorandum has been duly authorized by the Institution.

PRESIDENT AND FELLOWS OF HARVARD COLLEGE

By: ______________________________

Vice President for Finance and Chief Financial Officer

APPENDIX A

CERTAIN INFORMATION CONCERNING THE INSTITUTION

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April 14, 2020

HARVARD UNIVERSITY

MASSACHUSETTS HALL
CAMBRIDGE, MASSACHUSETTS 02138

The following is information with respect to President and Fellows of Harvard College ("Harvard" or the "University").

The University

Harvard is one of the nation's oldest and most prestigious institutions of higher education, dedicated to teaching and research to push the boundaries of human knowledge. Harvard is an educational corporation incorporated in 1650 by act of the Colony of Massachusetts Bay confirmed, as amended, in the Constitution of 1780 of The Commonwealth of Massachusetts. It is exempt from federal income tax pursuant to Section 501(c)(3) of the Internal Revenue Code. Its principal sites are in Cambridge, Massachusetts and the Allston and Longwood areas of Boston, Massachusetts. The University consists of Harvard College, eleven graduate schools and several research institutes and museums.

By charter, Harvard has two governing boards – President and Fellows (also known as the "Corporation") and the Board of Overseers (the "Board"). The Corporation consists of the President and Treasurer, along with eleven Fellows. Members of the Corporation (including the President and Treasurer) are elected by the Corporation, subject to the counsel and consent of the Board. The Corporation oversees the management of the financial affairs of the University without need of consent by the Board to specific transactions. The members of the Corporation are:

Name	Title
Lawrence S. Bacow	President and Professor of Public Policy, Harvard University
Paul J. Finnegan	Treasurer, Harvard University Co-CEO, Madison Dearborn Partners
Timothy R. Barakett	Chairman, TRB Advisors
Kenneth I. Chenault	Chairman and Managing Director, General Catalyst
Mariano-Florentino Cuéllar	Justice, Supreme Court of California
William F. Lee	Partner, Wilmer Cutler Pickering Hale and Dorr LLP
Biddy Martin	President and Professor of German and Sexuality, Women's and Gender Studies, Amherst College
Karen Gordon Mills	Senior Fellow, Harvard Business School Former Administrator, U.S. Small Business Administration President, MMP Group
Penny Pritzker	Founder and Chairman, PSP Partners
David M. Rubenstein	Co-Founder and Co-Executive Chairman, The Carlyle Group
Shirley M. Tilghman	President Emerita, Princeton University Professor of Molecular Biology and Public Affairs, Princeton University
Theodore V. Wells, Jr.	Partner, Paul, Weiss, Rifkind, Wharton & Garrison LLP

The Board consists of the President and the Treasurer *ex-officiis* and 30 persons elected by the alumni of the University for six-year staggered terms. A member of the Board may serve more than one term. The consent of the Board is required for certain acts of the Corporation, including the election of successors to Fellows, certain academic and administrative appointments (including the President and the Treasurer) and the awarding of degrees. The Board also reviews the academic performance of the University through more than 50 visiting committees composed of both Board members and others.

Administration

The academic affairs of the University are managed by the President, the Provost and the deans of the University's faculties. The non-academic affairs of the University are managed by the President, the Treasurer, the Executive Vice President and nine Vice Presidents. The principal administrative officers of the University are as follows:

Name	Title
Lawrence S. Bacow	President
Alan M. Garber	Provost
Paul J. Finnegan	Treasurer
Katherine N. Lapp	Executive Vice President
Paul Andrew	Vice President for Public Affairs and Communications
Marc Goodheart	Vice President and Secretary of the University
Marilyn Hausammann	Vice President for Human Resources
Thomas J. Hollister	Vice President for Finance and Chief Financial Officer
Diane Lopez	Vice President and General Counsel
Anne H. Margulies	Vice President and Chief Information Officer
Brian K. Lee	Vice President for Alumni Affairs and Development
Martha Whitehead	Vice President for the Harvard Library
Meredith Weenick	Vice President for Campus Services

Harvard Management Company

Harvard Management Company, Inc. ("HMC"), a wholly owned subsidiary of Harvard University founded in 1974, has delegated authority to manage the General Investment Account and substantially all of the financial assets of the University pursuant to an Investment Advisory Agreement. Led by CEO, N. P. "Narv" Narvekar, HMC's mission is to help ensure that Harvard University has financial resources to maintain and expand its teaching, learning, and research activities.

HMC is governed by a Board of Directors, which includes the President, Treasurer, and Chief Financial Officer of the University, and the President of HMC. Information on other members of HMC's management team, as of the date hereof, is available at: https://www.hmc.harvard.edu/about.

HMC's approach to endowment management employs a mix of internal and external management teams that focus on specific investment areas. This "hybrid model" of investing provides depth and breadth to HMC's market perspectives.

Allston Development

On October 17, 2013, the Boston Redevelopment Authority unanimously approved Harvard's Institutional Master Plan ("IMP"), a ten-year development plan for the extension of its campus in Allston. The IMP outlines seven new building projects and two major renovations on the Allston campus, which the University anticipates will eventually encompass a total of 1.4 million square-foot new construction and 500,000 square-foot renovation spaces for facilities such as new academic and faculty buildings, an addition/renovation to Harvard Stadium, and a hotel and conference center. The IMP also features a description of the future development of an Enterprise Research Campus ("ERC") on the former CSX rail yards. This 36-acre tract, often referred to as Allston Landing North, is intended to attract private and non-profit entities to interact with faculty and students of the University and other area institutions. Work on each of these projects is progressing. In November 2018, Harvard formed a wholly owned subsidiary, the Harvard Allston Land Company ("HALC"), to oversee development of the ERC and, in December 2019, HALC designated a preferred developer for the initial phase of the ERC.

Outside of the regulatory scope of the IMP, other projects are also in process. Among them is the Science and Engineering Complex, future home of the Harvard John A. Paulson School of Engineering and Applied Sciences. This project was unanimously approved in April 2016 by the Boston Redevelopment Authority, and construction is nearly complete. The complex is scheduled to open in 2020. The University also engaged a third-party real estate partner, Samuels and Associates, to develop Barry's Corner at the intersection of Western Avenue and North Harvard Street. Work there includes Continuum, a mixed-use residential and retail project that includes 325 rental apartments, shops and street side restaurants. Continuum opened its doors to residents in August 2015.

When the IMP projects are combined with previously permitted projects such as Continuum and the Science and Engineering Complex, the University's plans in Allston over the next decade are expected to include more than 2.5 million square feet of development and renovation. Throughout this time, the University expects to continue to focus on property improvements, property leasing, and community engagement with respect to its Allston development projects.

Student Applications and Enrollment

The University receives applications substantially in excess of the number of students it can accept into its undergraduate and graduate programs. The following table shows applications received and the number of freshmen admitted to and enrolled in Harvard College for the fall terms of the academic years indicated.

Recent Application Statisitics

Academic Year	Freshman Applications Received	Freshmen Admitted	Freshmen Enrolled	Selectivity (%)	Yield (%)
2015-16	37,307	2,080	1,660	5.6%	79.8%
2016-17	39,041	2,110	1,663	5.4%	78.8%
2017-18	39,506	2,037	1,687	5.2%	82.8%
2018-19	42,749	2,024	1,653	4.7%	81.7%
2019-20	43,330	2,009	1,649	4.6%	82.1%

Source: University Records

The following table shows the total number of full-time equivalent undergraduate students and graduate-degree students enrolled for the fall term of the academic years indicated. (Figures do not include the Harvard Division of Continuing Education.)

Student Enrollment			
Academic Year	**Undergraduate**	**Graduate**	**Total**
2015-16	6,634	12,729	19,363
2016-17	6,645	12,836	19,481
2017-18	6,697	13,032	19,729
2018-19	6,722	13,206	19,928
2019-20	6,716	13,410	20,126

Source: University Records

Tuition, Fees and Room & Board

The following table shows undergraduate charges for the academic years indicated.

Tuition, Fees and Room & Board			
Academic Year	**Tuition and Fees**	**Average Room and Board**	**Total**
2015-16	$45,278	$15,381	$60,659
2016-17	$47,074	$15,951	$63,025
2017-18	$48,949	$16,660	$65,609
2018-19	$50,420	$17,160	$67,580
2019-20	$51,925	$17,682	$69,607

Source: University Records

Student Financial Aid

The University undergraduate admissions policy provides that admissions is need-blind, which allows the University to bring the best students to Harvard College, regardless of their ability to pay. Approximately 54% of Harvard College students receive need-based scholarships, and 20% of these students pay nothing to attend. The average family contribution is $12,000. Typically, undergraduate aid packages consist of grants and employment, with a small percentage of students electing loans.

Harvard participates in the U.S. Department of Education's William D. Ford Federal Direct Student Loan Program. The net outstanding amount of student loans from University sources as of June 30, 2019 included $0.2 million of loans issued by Harvard under federally guaranteed programs, $47.9 million of loans made under federally funded revolving loan programs and $84 million of loans funded through gifts or unrestricted funds of the faculties. The following table shows the net outstanding amount of student loans from all University sources, as of June 30 of each of the years indicated.

Student Loans Outstanding (net of reserves for bad debt)

(in $ millions)

2015	2016	2017	2018	2019
$162.7	$162.1	$156.0	$143.7	$132.1

Source: University Records

Faculty and Staff

Harvard employs approximately 2,500 faculty. Faculty tenure decisions are subject to the approval of the President, while certain other appointments (such as the Provost, faculty deans, vice presidents, University Professors, and selected others) are subject to the approval of the governing boards' Joint Committee on Appointments. The University had approximately 19,512 employees as of October 31, 2019 (not including graduate student appointments and similar positions and temporary or less than half-time workers). Each school at the University has significant autonomy in establishing its own staffing policies, which include hiring and wage and salary administration.

Labor Relations

The University considers its relations with its employees to be good. Approximately 6,400 of its employees are covered under seven collective bargaining agreements, represented by ten labor unions. Bargaining units consist of clerical and technical workers; dining service workers; custodians; arborists and gardeners; maintenance tradespersons; police officers; and museum, parking and security guards. The collective bargaining agreements covering these employees have varying expiration dates between calendar years 2020 and 2023.

Negotiations with a newly formed union, the Harvard Graduate Students Union-United Auto Workers, which represents approximately 5,000 graduate students, are currently underway and there is no contract in place.

Litigation

The University is subject to various suits, audits, investigations and other legal proceedings in the course of its operations. While the University's ultimate liability, if any, is not determinable at present, no such proceedings are pending or threatened that, in management's opinion, would be likely to have a material adverse effect on the University's ability to meet its commitments related to the Bonds (as defined in the Official Statement to this transaction).

Additional Information

For the fiscal year ended June 30, 2019 the return on the Harvard endowment was 6.5%. The value of the endowment on June 30, 2019 was $40.9 billion.

COVID-19 Disclosure

The outbreak of COVID-19, a respiratory disease caused by a new strain of coronavirus, has been declared a pandemic by the World Health Organization. Harvard is closely monitoring the COVID-19 pandemic and its impact on the University community. To protect the health of its students, faculty and staff, the University has taken significant steps to promote social distancing in the University community. Since the week of March 23, 2020, undergraduate and graduate course instruction has been conducted through virtual means. Most students have vacated the campus, with those who remain subject to "social distancing" measures and reduced on-campus services. Students will continue to meet their academic requirements virtually for the remainder of the 2019 – 20 academic year. While some faculty and staff are working on-campus to ensure continuity of essential research and operations, most faculty and staff have transitioned to remote work. Given the uncertainty over the progression of the virus and governmental emergency orders to close non-essential businesses, there is no timetable for when instruction, research and campus operations will return to normal.

The COVID-19 pandemic has negatively affected national, state, and local economies and global financial markets, and the higher education landscape in general. While the financial impact on the University cannot be quantified at this time, the pandemic may have a material adverse effect on the current and future financial profile and operating performance of the University. While the impact on the University's endowment cannot be quantified at this time, investment performance will be impacted by the downturn in financial markets.

The University continues to monitor the course of the pandemic and is prepared to take additional measures to protect the health of the University community and promote the continuity of its research and academic mission. The full impact of the COVID-19 pandemic and the scope of any adverse impact on the University's finances and operations cannot be determined at this time.

APPENDIX B

HARVARD UNIVERSITY FINANCIAL REPORT - FISCAL YEAR 2019

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FINANCIAL REPORT
FISCAL YEAR 2019

HARVARD
UNIVERSITY

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Message from the President

I am pleased to submit Harvard University's financial results for fiscal year 2019.

In my first full year as president of Harvard, I have been privileged to witness a period of remarkable breakthroughs, discovery, and educational attainment. We celebrated the first-ever visible image of a black hole captured by researchers from the Event Horizon Telescope, a collaboration between Harvard researchers and colleagues from around the world. In Boston and Cambridge we have continued to contribute to housing, workforce development, and economic growth in the communities where we live and work. The coming year will see further progress in Allston with the opening of the new Science and Engineering Complex, further evolution of the Enterprise Research Campus, and boundary-breaking arts programming and research taking shape at the ArtLab on North Harvard Street in Barry's Corner.

By growing our financial aid budget, making the case for an immigration policy that encourages the free flow of talent and ideas, and winning a favorable judgement in the case challenging Harvard College's admissions policy, we sought to ensure that the academic experience of Harvard is accessible to a diverse array of students and scholars, committed to improving the world, from across the country and around the globe.

While our financial resources remain strong, we, along with all of our colleagues in higher education, must be conscious of the challenges in our current climate. The prospect of a long-running period of economic expansion coming to an end is very real. Uncertainty in federal research funding and the damaging tax on college and university endowments in the Tax Cuts and Jobs Act also have the potential to hinder Harvard's ability to grow investments in financial aid, teaching, and research across campus. Our challenge is to acknowledge these realities, advocate for policies and laws that will support our mission and continue to manage our finances prudently and thoughtfully so that we can make the investments in students, faculty, teaching and research that make a positive and lasting impact in the world.

I'm grateful to Harvard's friends and donors around the world, who share my confidence in the mission and values of our University, and who continue to invest in the critical work we do. This support and the careful stewardship of our resources are an essential partnership—together they enable opportunity for future generations of students and scholars who will think critically, expand the boundaries of our knowledge, and help us become the society we aspire to be.

All the best,

Lawrence S. Bacow
PRESIDENT

October 24, 2019

Financial Overview

From the Vice President for Finance and the Treasurer

Harvard University's teaching and research mission was advanced by healthy financial results during this past year, which enabled increased scholarships and financial aid, University-funded research, investments in faculty and staff, as well as renewed classroom, lab, housing and common spaces.

Please take a moment to read the Financial Overview on pages 5 through 11, to see a more detailed review of how the University's stewardship of financial resources is aimed at advancing teaching, learning, and research priorities to make a positive impact on the world.

The overall strength and financial health of the University depends upon the local management of individual schools and units. The aggregate surplus of $298 million was made possible by careful stewardship from the leaders of Harvard's schools and units in matching expenditures with revenues. Individual surpluses are earned and retained locally and are being used across the University to further advance mission-related priorities, reduce debt, and build reserve funds for future investments or inevitable "rainy days" to come.

Distributions from the endowment provided $1.9 billion or 35% of total revenue for the year, and another 9% of revenue came from current gifts of philanthropy. We are enormously grateful to Harvard's past and present donors for their generosity in providing the resources that enable the University's mission and its aspirational pursuit of excellence. We are also very supportive of the constant, painstaking progress in restructuring the endowment portfolio by Narv Narvekar and his colleagues at Harvard Management Company. We encourage you to read Narv's letter on page 12 of this report.

Throughout its history, Harvard has managed through countless different economic circumstances, each presenting unique challenges and opportunities for the University. Our ability to weather these challenges, and emerge stronger thereafter, demonstrates the University's resilience, cultivated through leadership and careful planning. This diligence in planning strengthens our capacities to manage through challenging times, sustain critical programs today and tomorrow, and maintain momentum for the future. As we monitor the current and unfolding macro environment, there are reasons to be cautious:

- Revenues in higher education are under pressure as the number of students nationally has plateaued, tuition costs have reached limits of affordability, the outlook for Federal research funding is uncertain, and expectations for return assumptions in the investment markets are muted.

- The recently passed Tax Cuts and Jobs Act has imposed new taxes upon, among other things, our endowment and is estimated to cost the University approximately $50 million this past year. This new burden is approximately equal to 1% of revenues, or viewed in the context of maintaining affordability, less money is now available for University to maintain financial aid, which totaled $193 million for undergraduates this past year.

- Although large in absolute dollars, Harvard's endowment is fully utilized in supporting current operations (see further discussion on pages 10 through 11). The use of the endowment is restricted to thousands of activities across the University and is managed to last forever. Lastly, contrary to popular perception about wealth, Harvard's endowment size trails other higher educational institutions on a per-student basis due to the size, breadth and diversity of Harvard's schools and students.

- The recent inversion of the interest rate curve and investment market volatility remind us that the current economic expansion, already the longest in United States history, cannot go on forever. Rainy day reserves will be needed.

The University has taken several steps in recent years to prepare for the end of the current economic expansion, including reducing debt levels, increasing cash holdings, and strengthening reserves. Schools and units annually prepare rolling-five year financial plans, and are including "downside" scenarios as part of this year's exercise. The University has learned from history and is preparing for the future with a collective "Recession Playbook" designed to spark planning and imagine innovative change. We are also focused on educating our community—faculty, staff, students and alumni—on Harvard's financial model and the risks and opportunities in higher education today.

The wisest thing Harvard can do with its financial resources is to allocate them to maximize excellence in its teaching, research, and scholarship. This is ideally an act of everyday stewardship as times and priorities continuously evolve, and developing the habit of reallocating resources is a successful evolutionary strategy in all economic conditions. In preparing for the next recession, our schools and units will need to focus on academic and research priorities where continuing and increased investment is essential, but also focus on activities where there may be opportunities to limit or reduce scale or scope.

In closing, we want to thank each and every donor to the University—past and present—for understanding that Harvard's excellence in teaching and research is made possible through your philanthropy. We also want to thank Harvard's faculty and staff for their vital contributions, on a daily basis, in making Harvard one of the world's preeminent institutions.

Thomas J. Hollister
VICE PRESIDENT FOR FINANCE

Paul J. Finnegan
TREASURER

October 24, 2019

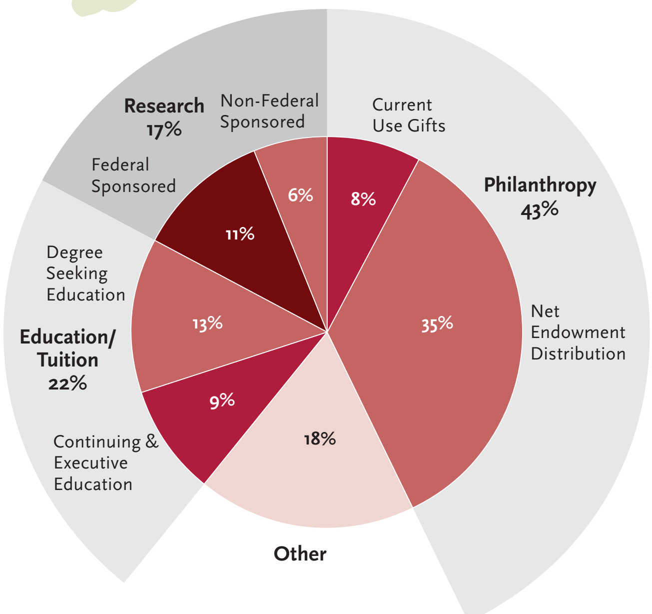
Harvard University's stewardship of its financial resources is aimed at advancing teaching, learning, and research priorities to make a positive impact in the world. This includes expanding access to education across the globe, supporting students with our strong financial aid program, fulfilling our ongoing commitment to public service, and greatly impacting how problems are understood and addressed through research. The key financial highlights for fiscal year 2019 included in this report demonstrate the University's continued commitment to advancing these priorities.

FINANCIAL OVERVIEW

The University ended fiscal year 2019 with an operating surplus of $298 million compared to $196 million in fiscal year 2018. The University's net assets increased by $2.3 billion to $49.3 billion at June 30, 2019, due to investment returns on the endowment, generous contributions, and a disciplined focus on financial management.

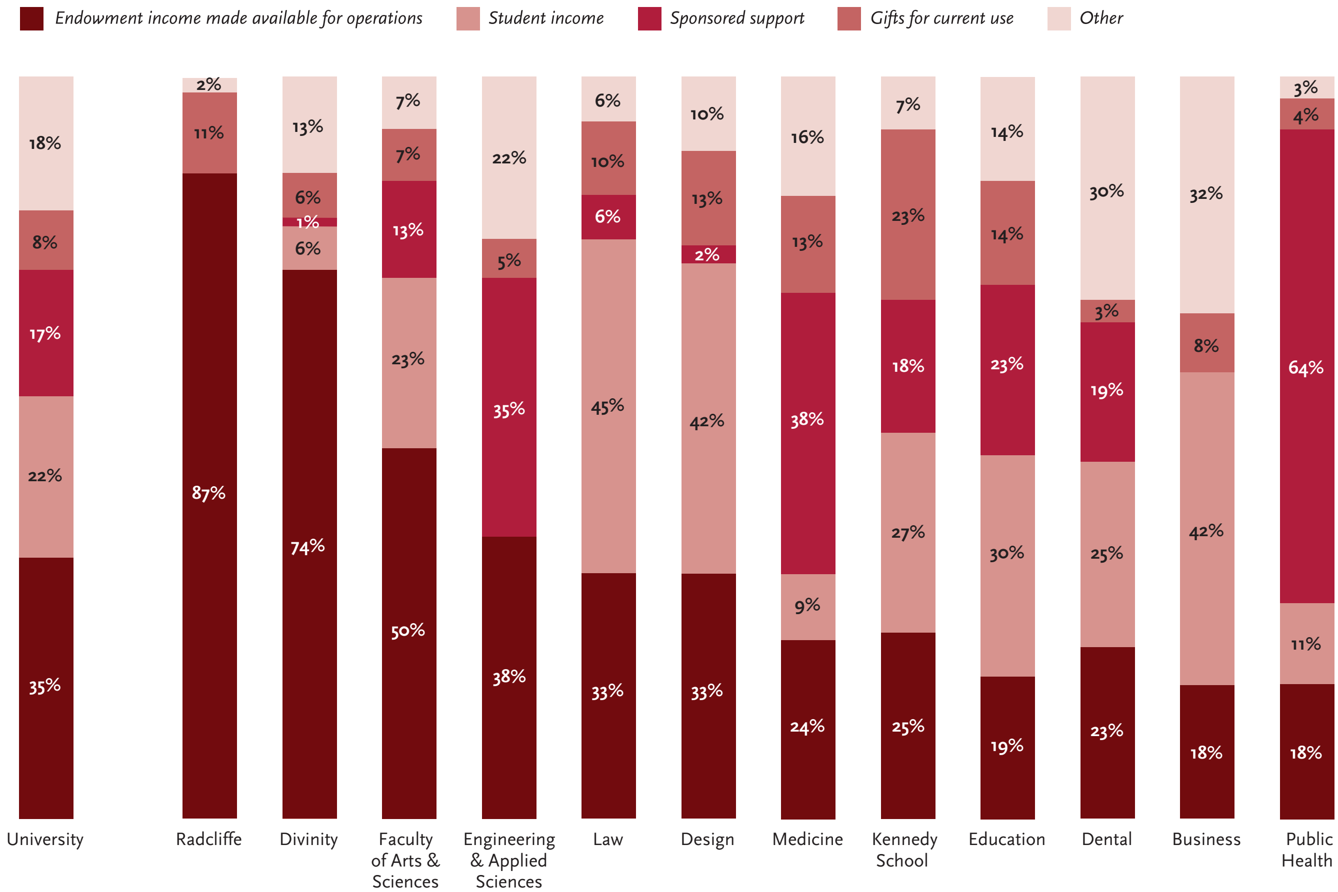
In fiscal year 2019, total operating revenue increased 6% rising to $5.5 billion. Harvard's diversified revenue portfolio relies on three main sources of revenue: education or tuition, sponsored research, and philanthropy. Total education revenue reflects tuition, board and lodging payments from both traditional degree seeking students including graduate, professional, and undergraduate, as well as executive and continuing education programs. In support of the research enterprise, our talented faculty apply for external grants to further global, research-critical priorities including curing cancer, understanding diverse cultures, and developing clean energy. This sponsored funding makes up 17% of revenue. Revenue generated each year from tuition and sponsored research is not sufficient to fund our operations and as such, the University relies on philanthropy to fill in the gap. In fiscal year 2019, our donors supported 43% of revenue through their generosity and belief in the broad impact of education and research at Harvard.

FISCAL YEAR 2019 UNIVERSITY REVENUE SOURCES



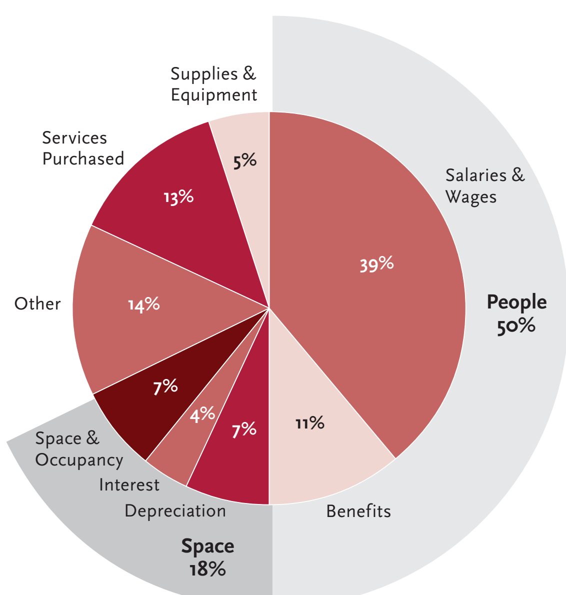
For Harvard's many schools and units, revenue profiles vary widely, with each drawing a different proportion of its budget from its endowment and other sources.

FISCAL YEAR 2019 SOURCES OF OPERATING REVENUE



The University's operating expenses increased by 4% to $5.2 billion driven by the investment in people and space, which make up nearly 70% of the University's operating expenses. People are Harvard's most valuable asset. Across our campuses, the unique backgrounds and interests of our students, faculty, and staff come together to create a community where learning and research thrive. As the fifth largest employer in Massachusetts, Harvard invests heavily in human capital; compensation expense (i.e. salaries, wages and benefits) increased 4% from the prior fiscal year and continues to represent half the University's total operating expense.

FISCAL YEAR 2019 OPERATING EXPENSES



Investment in space is the second largest portion of the University's operations. Maintaining Harvard's historic campus is an ongoing expensive investment and requires preserving architecturally significant buildings in accordance with state and local regulations while also renewing and operating spaces to facilitate the highest modes of teaching and research. The University's most recent investments in space are detailed on the next page.

BALANCE SHEET

Investments

In fiscal year 2019, the return on the endowment was 6.5% and its value (after the net impact of distributions from the endowment for operations, federal taxes, and the addition of new gifts to the endowment during the year) increased from $39.2 billion at the end of fiscal year 2018 to $40.9 billion at the end of fiscal year 2019. More information can be found in the Message from the CEO of Harvard Management Company, found on page 12 of this report.

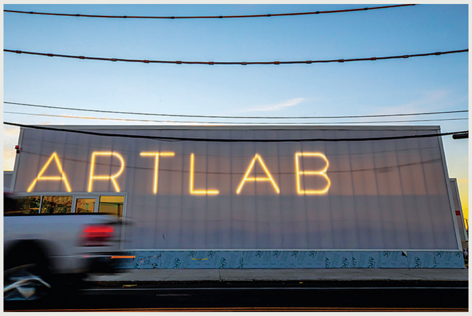
Debt

Bonds and notes payable decreased modestly from $5.3 billion at June 30, 2018 to $5.2 billion at June 30, 2019, resulting from scheduled maturity payments. In addition, related interest expense also decreased 3% to $182 million. The University continues to closely manage its debt and has reduced its debt balance from $6.3 billion in fiscal year 2011 to $5.2 billion as of June 30, 2019.

Fixed assets

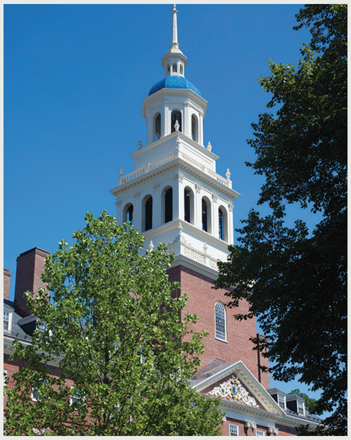
The University invested $903 million in capital projects and acquisitions during fiscal year 2019, compared to $908 million in fiscal year 2018.

Significant progress on several noteworthy projects includes:



Construction of the **Harvard ArtLab**, an interdisciplinary center for creativity and innovation on the University's campus in Allston. It houses **experimental performance space** as well as art and recording studios, a workshop, and offices, and is open to students and faculty members from across the University. The ArtLab joins an "innovation" cluster that includes the iLab, the Pagliuca Life Lab, and the Launch Lab, a workspace for startups launched by University alumni.

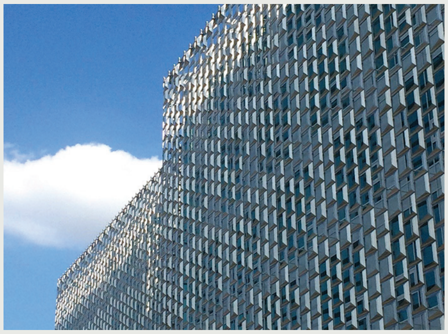
Construction of a new building at the Law School, which will foster and expand the experiential and clinical learning and support research programs.



Completion of **Lowell House** and commencement of **Adams House** renovations for the undergraduate long-term house renewal initiative.

Completion of the **Smith Campus Center**, which offers a new front door to Harvard and will greatly enhance the public realm, enliven the area, create a useable year-round amenity, and result in a more cohesive and collaborative community.

Construction of the **Schwartz Pavilion**, a covered, open-air performance and gathering space on the Business School's campus for exchange and socializing, recreation, and reflection. It is designed to be a dynamic hub of activity that supports seasonal and programmatic flexibility.



Ongoing construction activities for the **Allston Science and Engineering Complex**, District Energy Facility, and related infrastructure work, which will anchor an innovation area that will lead to the development of an enterprise research campus, combining science and engineering innovation with business expertise.

EDUCATION

In fiscal year 2019, across its 12 schools, Harvard enrolled 23,336 students from around the globe, with 6,722 or 29% of those students enrolled at the College.

Total student income

Total student revenue increased approximately 7% to $1.2 billion in fiscal year 2019, including $504 million related to net undergraduate and graduate programs and $500 million in net executive and continuing education. Net undergraduate and graduate tuition income increased 4% in fiscal year 2019. Due to the University's steadfast commitment to undergraduate financial aid, net undergraduate tuition contributed only 3% growth. In addition to these traditional education programs, Harvard continues to experience a rising demand for expanded continuing and executive program offerings across the University, which contributed to a 12% increase in net income from continuing and executive education.

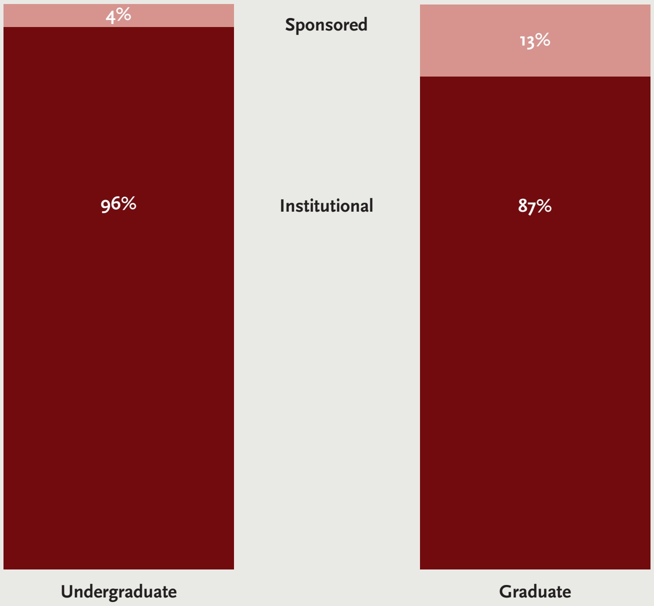
Undergraduate and graduate programs and financial aid

Harvard is committed to cultivating a diverse community of bright and talented students regardless of their ability to pay. Thanks to our groundbreaking financial aid program, approximately 54% of Harvard College students receive need-based scholarships and pay an average of $12,000. Additionally, 20% of these Harvard College students pay nothing to attend. Since launching the Harvard financial aid initiative in 2004, the College has awarded over $2 billion in grant aid, and the undergraduate financial aid budget has increased by over 140% from $80 million in 2005 to $193 million in 2019. The average cost of attendance for all Harvard College students is $38,200.

Since launching the Harvard financial aid initiative in 2004, the College has awarded over $2 billion in grant aid.

During fiscal year 2019, scholarships and other student awards spending rose by $21 million or 4% from $592 million to $613 million. The following chart shows the sources of student financial aid and scholarships awarded during fiscal 2019 and reflects the institutional commitment to financial aid:

SOURCES OF STUDENT FINANCIAL AID



Executive and continuing education

Over the past decade, the University has continuously worked to extend a Harvard education to audiences beyond the traditional on-campus undergraduate and graduate student. Nine of our twelve schools have executive education programs for both individuals and organizations. These programs reach thousands of professionals around the world, helping them achieve their professional potential and make a difference in their organizations. At the Division of Continuing Education, several free courses and nearly 800 for-credit courses encourage students to explore opportunities for personal and professional growth.

Reaching an even more global audience, HarvardX offers online courses to people around the world. Content on HarvardX presents an academically diverse, high quality, innovative collection of free online learning activities empowering faculty to improve teaching and learning on-campus, online, and beyond. To date, HarvardX has offered over 90 unique courses to approximately two million unique users, including over one million international registrants.

RESEARCH

Harvard scholars conduct research in almost every field, seeking to expand human knowledge through analysis, innovation, and insight. In 2019, research was supported by $937 million of sponsored research funds. In addition, a year ago, the University funded $361 million in institutional funds, as reported in the 2018 National Science Foundation Higher Education and Research Development (HERD) Survey (2019 results are not yet available). Research is carried out both in the departments of the schools and at more than 100 research centers, on campus and around the world. Researchers include faculty members, visiting scholars, post-doctoral fellows, and graduate and undergraduate students, and they collaborate with colleagues across the University, at affiliated institutions, and at other research institutions.

> **While there is no replacing the role of the federal government as the leading source of basic research funding, Harvard is increasingly diversifying its sponsored research funding through strong partnerships with non-federal sources. The diversification is increasingly important not just as a funding source, but also as a way to collaborate with foundations and industry partners to translate discoveries into new technologies, treatments, and therapies.**

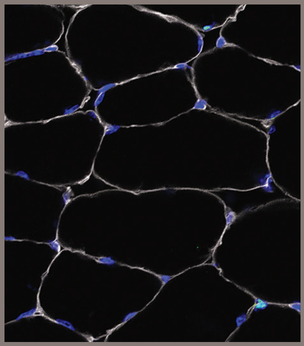
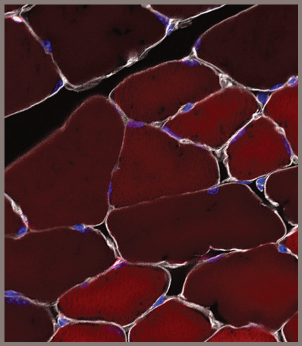
During fiscal year 2019, the University saw continued growth in research funding. In aggregate, revenue from federal and non-federal sponsored sources increased by 3% to $937 million. Federal funding, which accounted for approximately 67% of total sponsored revenue in fiscal year 2019, increased 1% to $631 million. The University's relationships with corporations, foundations and other non-federal sponsors expanded in fiscal year 2019, resulting in a 6% increase in non-federal sponsored revenues, which totaled $307 million. Nonfederal funding has been an area of growth in the past few years, as researchers look beyond the federal government for research funding support. In addition, Harvard devotes significant institutional resources to leverage these federal and non-federal investments. This funding is crucial to support the initial development or early-stage research which enables the researchers to develop an idea to a state in which it can be presented to sponsors for additional funding.

SEEING THE UNSEEABLE

After over a decade's worth of work, a global team of astronomers, led by Harvard scientists, has for the first time captured an image of a black hole. This image capture opens the door for astronomers and physicists to test Einstein's theories of gravity and general relativity under the most extreme conditions in the Universe.

TEXAS A&M AND HARVARD NASA-FUNDED ATMOSPHERIC RESEARCH PROJECT

Texas A&M and Harvard researchers are teaming up on a $30 million NASA-funded atmospheric research project. The $30 million funding came from NASA's Earth Venture program and will fund a project that will investigate how strong summertime convective storms over North America can change the chemistry of the stratosphere.

EDITING GENES AT THE SOURCE

Breakthrough research shows that stem cell genes can be edited in living systems rather than in a dish. The findings have major implications for biotechnology research and the development of therapeutics for genetic diseases as it changes the way we study stem cells in the body and it is a crucial step towards developing effective gene therapies.

PHILANTHROPY

Combining gifts for current use and Harvard's endowment distribution, philanthropy accounts for 43% of fiscal year 2019 revenue. Every gift is essential in facilitating excellence in our academic programs, recruiting and retaining our world-class faculty and staff, enhancing student life, and providing opportunities through financial aid.

Gifts for current use

In fiscal year 2019, Harvard received current use gifts from alumni, foundations, and others totaling $472 million, representing approximately 8% of operating revenues. Support for the University comes from donations of all sizes; 80% of gifts in fiscal year 2019 averaged $150 per donor. We are grateful to all donors whose generosity enables Harvard to create a vibrant culture of academic discovery.

The Harvard endowment

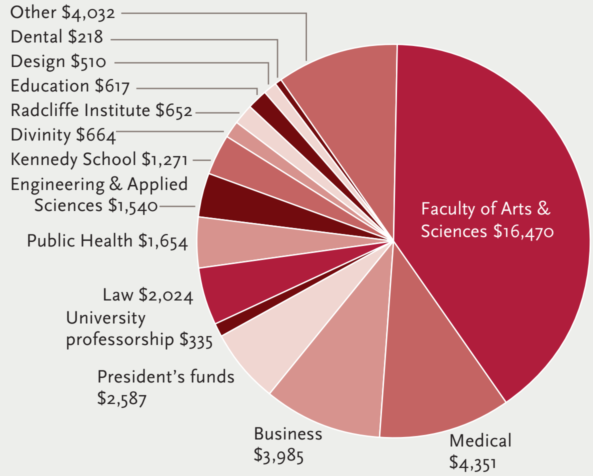
Harvard's endowment is a dedicated and permanent source of support for the University and its mission of teaching and research, in the present and forever. The aggregate endowment is made up of more than 13,000 individual endowments created over the last 350 years, which support faculty and students, including professorships and financial aid for undergraduates, graduate fellowships, and student life and activities.

Donor contributions to the endowment have enabled leading financial aid programs, groundbreaking discoveries in scientific research, and hundreds of professorships across a wide range of academic fields. Each year, a portion of the endowment is paid out as an annual distribution to support the University's annual operations. Any appreciation in excess of this annual distribution is retained in the endowment so it can grow and support future generations. As a result, the endowment can provide the financial foundation for the University for generations to come.

Cash gifts for endowment were $613 million in fiscal year 2019 compared to $646 million in fiscal year 2018.

MARKET VALUE OF THE ENDOWMENT AS OF JUNE 30, 2019

In millions of dollars



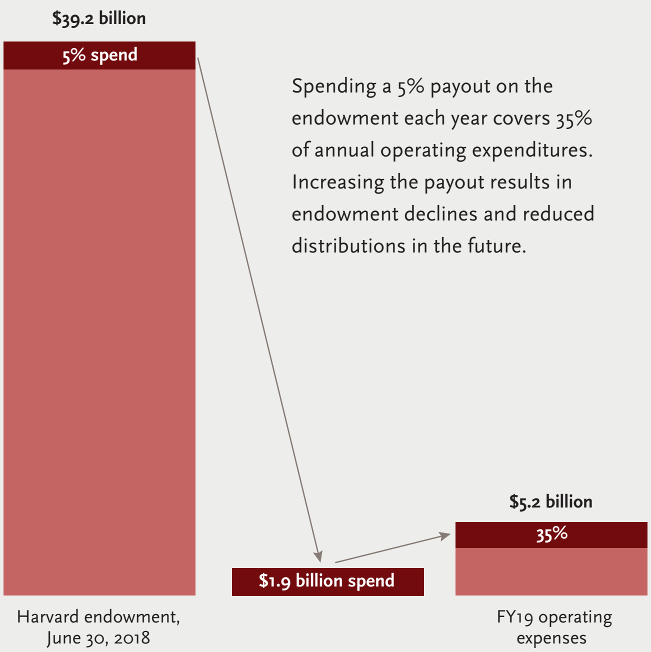
> "Whether our colleges and universities are public or private, we all rely upon the generosity of the American people, who contribute both to research and financial aid. We are excellent because of them, and must endeavor to deserve their support. So it's up to us to remember, always our collective obligation to the public good." — PRESIDENT LAWRENCE S. BACOW

Endowment returns made available for operations

The University's endowment spending practice has to balance two competing goals: the need to fund the operating budget with a stable and predictable distribution, and the obligation to maintain the long-term value of the endowment. There is a common misconception that endowments, including Harvard's, can be accessed like bank accounts, used for anything at any time as long as funds are available. In reality, Harvard's flexibility in spending from the endowment is limited by the fact that it is designed to last forever, which is crucial for an institution intended to serve generations of students and pursue research on big questions—questions that cannot be answered in one lifetime.

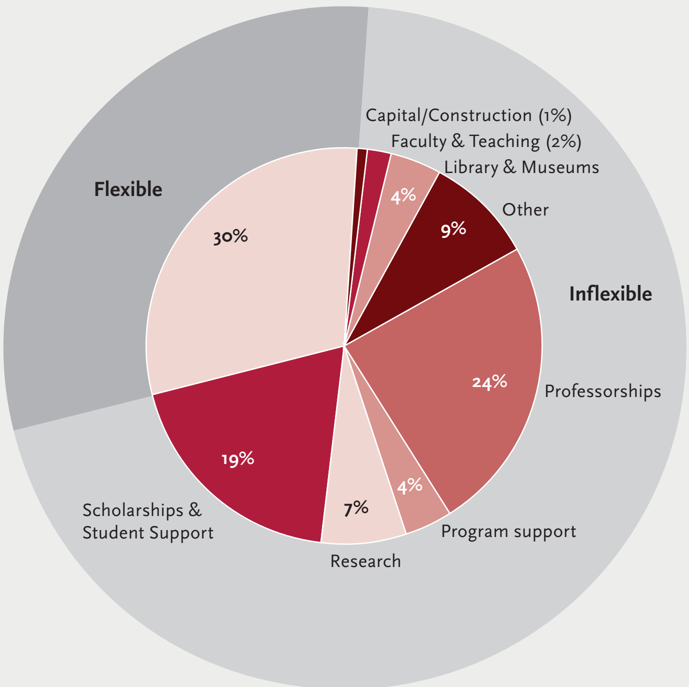
Harvard is obligated to preserve the purchasing power of the endowment by spending only a small fraction of its value each year. Spending significantly more than that over time, for whatever reason, would privilege the present over the future in a manner inconsistent with an endowment's fundamental purpose of maintaining intergenerational equity. As a general rule, Harvard targets an annual endowment payout rate of 5.0 to 5.5% of market value. In 2019, the payout rate was 5.1% compared to the 5.2% payout rate in 2018. This critical source of funding distributed $1.9 billion in the fiscal year ending June 30, 2019—representing 35% of Harvard's total operating revenue—and is the single largest source of revenue supporting the University.

ENDOWMENT PAYOUT



While the endowment is a critical source of funding, 70% of the annual distribution is restricted to specific programs, departments, or purposes and must be spent in accordance with the terms set forth by the donor. Funds without donor restriction are more flexible in nature and are critical in supporting structural operating expenses and transformative, strategic initiatives. In total, endowment funds support nearly every aspect of University operations.

ENDOWMENT SPENDING FLEXIBILITY



Tax reform

The Tax Cuts and Jobs Act of 2017 added a new series of tax burdens to the University, resulting in an estimated $49.8 million in additional taxes for fiscal year 2019. While this expense continues to be an estimate as final guidance has not been issued, generally accepted accounting principles require that an estimate be recorded during the period the expense is incurred. The final amount of tax paid will reflect the tax policies issued by the United States Treasury. Of the total tax expense, $37.7 million reflects the estimated net investment income tax for fiscal year 2019, relating to the University's investments. When these taxes are paid it will reduce the endowment funds available for the teaching and research mission. The remaining $12.1 million reflects estimated taxes for net investment income tax on operational revenues, changes to unrelated business taxable income including qualified transportation fringe taxes on commuter benefits and parking, and excise taxes on executive compensation.

Message from the CEO
OCTOBER 2019

Dear Members of the Harvard Community,

For the most recent fiscal year ended June 30, 2019, the return on the Harvard endowment was 6.5% and the value stood at $40.9 billion. The endowment also distributed more than $1.9 billion toward the University's operating budget, in support of financial aid, research funds, faculty support, and more.

Performance

ASSET CLASS	ALLOCATION	RETURN
Public Equity	26%	5.9%
Private Equity	20%	16%
Hedge Funds	33%	5.5%
Real Estate	8%	9.3%
Natural Resources	4%	-12.4%
Bonds/TIPS	6%	5.7%
Other Real Assets	2%	-8.3%
Cash & Other	2%	--
Endowment	**100%***	**6.5%**

**Due to rounding, the approximate allocation adds up to more than 100.*

As was the case in FY18, the past fiscal year was another in which asset allocation—or risk level—was a major factor in returns, albeit in a more nuanced manner. More specifically, all else being equal, greater exposure to venture capital (a high-risk/high-reward asset class) would have resulted in a significantly higher return. Harvard's exposure to venture capital is notably small in the context of leading endowments. Our ongoing assessment of Harvard's risk tolerance is discussed in further detail later in this letter.

While we are not pleased with this performance, we are mindful that HMC is an organization in the midst of significant restructuring and has a portfolio with certain illiquid legacy assets that weigh significantly on performance. There is also a solid base of strong legacy assets upon which we are building. Meaningfully higher or lower one-year returns would not impact the restructuring we continue to pursue. While some changes will take years to have an impact—and we are keenly aware that we are in a marathon and not a sprint—we can already detect positive indicators of progress.

HMC Progress and Challenges

At roughly the halfway point in the five-year restructuring, and with two full fiscal years complete, it is worth discussing our progress in HMC's turnaround and the challenges we still face.

Our early efforts have involved rebuilding the organizational structure and culture, constructing a generalist investment team, and establishing new investment processes. We have also recruited additional team members for both the generalist and support teams, and put in place incentives that reward collaboration, long-term investment thinking, and calculated risk-taking.

Culture, organizational structure, and incentives were central to the deep issues that HMC faced and are crucial to our solutions. Most importantly, we operate as one team, not as siloed specialists. We will succeed thanks to the dedication and skill of all team members. While we still have much work to do, we are well on our way and generally comfortable with the progress made to affect HMC's turnaround. To be sure, our efforts to improve and evolve do not end at the five-year mark; we will always strive to be better.

The past two years' reports have focused on these organizational changes, and while that work continues, I would like to focus this year's report on the progress and challenges within HMC's investment portfolio.

Portfolio Progress and Issues

The liquid and illiquid portions of HMC's portfolio are starkly different in terms of the time needed to see the effects of our changes. With regards to the more liquid parts of the portfolio, we have already had an impact and are generally pleased with the results. However, by definition, we cannot quickly impact the performance of the illiquid parts of the portfolio beyond asset sales. We continue to work diligently to build on the strengths of our illiquid assets and solve remaining problems. Not surprisingly, the five-year timeframe of our restructuring is needed primarily to address the issues in the illiquid parts of the portfolio.

Liquid Portfolio: Public Equities and Hedge Funds

Public equities and the majority of our hedge fund positions are the most liquid (although roughly 20% of our hedge fund allocations are illiquid, the remainder of this asset class is relatively liquid) and, therefore, are the areas in which the generalist investment team has had the most immediate impact over my time at HMC.

Here is some good news. Over two fiscal years, we have outperformed benchmarks for both asset classes. More importantly, on a combined basis, they outperformed the blended benchmark by more than 2.25% annualized over the same period. I regard this performance to be very good, albeit not excellent. While we do not fixate on benchmarks, I allude to them here simply to provide an illustration of our progress. If we think about benchmarks at all, it is in this context, as these two parts of the portfolio represent about 60% of the aggregate endowment.

We are particularly pleased with our hedge fund performance, as it was not driven by positive equity markets. By design, our current hedge fund portfolio has less exposure to equity markets than any such portfolio I have overseen during my twenty-one years in endowment management. Furthermore, as noted, about 20% of the hedge fund portfolio is illiquid. Since much of this legacy illiquid group has had unremarkable returns and has been a drag on performance, we are all the more pleased with our impact on the more liquid portion of the portfolio.

While we have been able to impact this portion of the portfolio and see the positive results, two full fiscal years is far too short a period to make a meaningful assessment of the true impact. As long-term investors, we think in terms of at least ten-year performance. As we build toward that timeframe in the liquid parts of the portfolio, there will be good and bad years. We understand the need to improve even further and I am highly confident that we are on a path to doing so. What is clear is that the early results provide a positive affirmation of our approach and represent a significant step forward for HMC.

Illiquid Portfolios: Private Equity, Real Estate, and Natural Resources

As many already know, the main challenges in the endowment's performance pertain to the illiquid assets. Prudently increasing the size of certain portfolios takes years to complete, as does reducing the size of others. In direct contrast to the more liquid parts of the portfolio, we can only have limited impact on performance in a short period of time. From the day of my arrival, we have been moving with a sense of urgency to implement the turnaround and reposition the illiquid investments.

Illiquid investments are an important component of long-term investment portfolios. HMC expects, to varying degrees, significant excess return from its illiquid assets above those available in public markets for three broad reasons. First, investors must be compensated for the greater risk of these investments. Second, investors must also be compensated for significant illiquidity — typically requiring multiple years to exit these assets. Third, certain strategies provide unique opportunities for significant alpha as well.

PRIVATE EQUITY (BUYOUTS, GROWTH, AND VENTURE CAPITAL)

Let us start with the good news. The private equity portfolio at HMC has historically been strong, a credit to both current and former HMC team members. Furthermore, we are excited about the portfolio additions and adjustments we have made over the last two years, but know that it will be years before we see the effects of those investments.

Today, our central concern is that HMC's allocation to buyouts, growth, and venture capital continues to be low relative to what likely makes sense for Harvard (see Risk Tolerance section). In this context, I expressed the goal of increasing such exposure when I joined. The goal of increasing private equity exposure was not made because private equity was performing well at the time (and has continued to perform particularly well since then). In fact, recent performance, and specifically the valuation environment, serve as a restraint. We certainly understand that private equity is a higher-risk/higher-return investment that will have difficult periods. Rather, we are stating our belief that some types of private equity — certainly not all — are generally a more attractive secular source of alpha and risk for HMC than some of the other higher-risk illiquid assets currently in the portfolio. We are early in the process of making this allocation transition.

A SOBERING THOUGHT

As many know, private equity funds draw down their capital over a period of years and then invest it for several more years before exiting. For now, and for the next few years, we will suffer the impact of the private equity "J-curve" — the natural progression of a fund's value in this space, where short-term losses precede long-term gains. Many peers dealt with these growing pains years, if not decades, ago. Early in my time, we modeled it to take 7 – 9 years to attain a meaningfully higher allocation to private equity in a prudent manner (i.e., subject to maintaining high manager quality, appropriate vintage year diversification, and being mindful of an aggressive valuation environment).

While we are making deliberate progress, we are obviously still early in the multiyear timeframe needed. Of note, some of the big IPOs of this past spring were backed by venture funds with vintage years from 2008 – 2013. Harvard did not participate in those funds in that era and therefore did not benefit significantly from those rewards in fiscal year 2019. Indeed, this is a long-term game.

REAL ESTATE

One goal from the outset was to reduce the size of our real estate exposure. We are pleased that HMC's real estate exposure is roughly half of the size it was in early 2017. We are also very fortunate that the dominant portion of that exposure continues to be managed by our former HMC colleagues, now with Bain Capital. Spinning-out the team to Bain Capital was a critical milestone for us as it secured stability in the expert management of this part of the portfolio.

The reduction in exposure was the result of significant asset sales early in my time and successful exits from assets by the Bain Capital team, as well as other external managers. We have also very selectively added commitments to other external managers. Like our recent private equity investments, it will take years to see the effects of our efforts.

NATURAL RESOURCES

Another portfolio goal was to reduce our exposure to natural resources. We are obviously disappointed with persistent negative returns in this legacy part of our portfolio; however, we are pleased to have cut our exposure by more than half — from 9% to roughly 4% of the overall endowment — since my arrival. Furthermore, we are pleased to have completely rebuilt an impressive team to manage this portfolio.

OUR PORTFOLIO CONSISTS OF THREE TYPES OF ASSETS:

1. **Deeply troubled assets.** We were forced to write-down or write-off approximately $1 billion of these investments early in my time at HMC, in FY17. Since then, our natural resources team has worked hard to salvage or dispose of these remaining investments.
2. **Good, but misaligned assets.** These are assets that we believe have a risk/return/liquidity profile that is not particularly appropriate for an endowment. We have sold over $1.1 billion of these assets to more appropriate investors. We expect to close on the sale of close to another $200 million over the remainder of the current fiscal year.
3. **Aligned assets.** These are quality assets that are well suited for an endowment in terms of risk/return/liquidity and are now well positioned, having undergone significant management changes since the arrival of our new natural resources team. In addition, we have deployed over $100 million in new, promising investments in this category.

After our initial large write-down in FY17, the performance of group 1 continued to be poor and still weighs on the overall performance of the natural resources portfolio. We should note that FY19's return includes an additional write-down in group 1 assets of about $100 million. Even without this write-down, FY19 returns for natural resources would have still been -7%, largely caused by the troubled assets in group 1, described above.

Harvard Risk Tolerance

Another significant milestone of the first half of our five-year transition was to put in place a new risk framework at HMC. This is a critical tool in our portfolio management and a central input to our discussions with the University regarding Harvard's risk tolerance.

These discussions commenced this past spring and are the deepest such conversations that HMC has had in recent years with the University, involving HMC Board members and University leadership.

We are focused upon and aware that HMC generally takes lower risk and, therefore, will likely generate lower returns than many peers over a market cycle. During these discussions we will determine if this approach is appropriate or not. The tradeoff is of course higher returns versus a less volatile revenue stream. Perhaps stating the obvious, higher returns lead to a larger endowment in the long run, while lower volatility can be helpful in budgeting for an institution with significant fixed costs. I believe that we will conclude these discussions over the next eighteen months or so, which will help inform allocation decisions in future years.

Closing Thoughts

At this midway point in our transition I am encouraged by the path that we are on and our progress to date. The first half of this turnaround essentially operated on multiple tracks: HMC's organizational restructuring, process development, and the repositioning of the endowment's investment portfolio.

Thanks to the hard work of a talented and dedicated team, we have made good progress. From developing the investment processes and risk framework that allow us to make informed decisions, to the formation of a generalist team and spinning-out four internal investment platforms, these changes have been significant. However, the speed at which they have been adopted by the organization is impressive. While we implemented these changes expediently, we are constantly looking for opportunities to improve or adapt in ways that support long-term performance.

The evolution of our public equity and hedge fund portfolios is exhibiting a significant positive impact and the early returns are encouraging. That being said, we need to maintain this momentum and improve even further in the years ahead.

On the illiquid side, we are using the five-year restructuring period to work our way to the marathon's starting line. Significant parts of this portfolio are very strong — a credit to former and current team members. We must build on that strength and also prudently grow certain parts of the illiquid portfolio. Once again, we must be deliberate and strategic to maintain high-quality standards and avoid excessive vintage year concentration.

Equally important, there are still many illiquid anchors weighing down the portfolio and our performance. Put another way, parts of the legacy portfolio do not have a prospect of generating a return commensurate with the risk and the illiquidity entailed, and may not provide a return at all. Through a combination of write-downs and asset sales, this problem is much smaller than it was two years ago, but still remains a significant challenge and a major priority for HMC. As we have said, it will take some years to execute a full course correction.

The endowment is a vital resource that allows Harvard University to maintain its leadership in teaching and research. Current and future generations of Harvard students, faculty, and scholars rely on us to maintain this critical source of support. Our team is well aware that meeting those needs requires continuous improvement and overcoming the challenges referred to above. I remain highly confident in our ability to do both.

Best regards,

N.P. "Narv" Narvekar
Chief Executive Officer

Report of Independent Auditors

To the Joint Committee on Inspection of the Governing Boards of Harvard University:

We have audited the accompanying consolidated financial statements of Harvard University and its subsidiaries (the "University"), which comprise the consolidated balance sheet as of June 30, 2019, and the related consolidated statements of changes in net assets with general operating account detail, changes in net assets of the endowment and of cash flows for the year 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 audit. We conducted our audit 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 Harvard University and its subsidiaries as of June 30, 2019 and the changes in their net assets and their cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter
As discussed in Note 2 to the consolidated financial statements, the University changed the manner in which it presents net assets and reports certain aspects of its consolidated financial statements as a not-for-profit entity in 2019. Our opinion is not modified with respect to this matter.

Other Matter
We previously audited the consolidated balance sheet as of June 30, 2018, and the related consolidated statements of changes in net assets with general operating account detail, changes in net assets of the endowment and of cash flows for the year then ended (not presented herein), and in our report dated October 25, 2018, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying summarized financial information as of June 30, 2018 and for the year then ended is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

PricewaterhouseCoopers LLP

October 24, 2019

PricewaterhouseCoopers LLP, 101 Seaport Boulevard, Suite 500, Boston, MA 02210
T: (617) 530 5000, F: (617) 530 5001, www.pwc.com/us

BALANCE SHEETS

with summarized financial information as of June 30, 2018

In thousands of dollars	June 30 2019	June 30 2018
ASSETS:		
Cash	**$ 158,640**	$ 144,982
Receivables, net *(Note 4)*	**296,321**	301,258
Prepayments and deferred charges	**266,719**	130,925
Notes receivable, net *(Note 5)*	**373,623**	381,795
Pledges receivable, net *(Note 6)*	**2,765,827**	1,837,792
Fixed assets, net *(Note 7)*	**8,271,711**	7,732,172
Interests in trusts held by others *(Note 3)*	**420,371**	408,968
Securities pledged to counterparties, at fair value *(Note 3)*	**49,971**	162,790
Investment portfolio, at fair value *(Note 3)*	**46,723,970**	45,647,599
TOTAL ASSETS	**$ 59,327,153**	**$ 56,748,281**
LIABILITIES:		
Accounts payable	**$ 398,134**	$ 359,847
Deferred revenue and other liabilities	**1,517,022**	1,327,454
Other liabilities associated with the investment portfolio *(Notes 3 and 10)*	**875,141**	884,501
Liabilities due under split interest agreements *(Note 9)*	**859,744**	862,413
Bonds and notes payable *(Note 10)*	**5,213,349**	5,300,921
Accrued retirement obligations *(Note 11)*	**1,120,544**	983,552
Government loan advances *(Note 5)*	**66,733**	65,409
TOTAL LIABILITIES	**10,050,667**	**9,784,097**
NET ASSETS	**49,276,486**	**46,964,184**
TOTAL LIABILITIES AND NET ASSETS	**$ 59,327,153**	**$ 56,748,281**

	Without donor restrictions	With donor restrictions	June 30 2019	June 30 2018
NET ASSETS:				
General Operating Account (GOA) *(Note 8)*	$ 4,890,118	$ 2,883,299	$ 7,773,417	$ 7,171,297
Endowment *(Note 8)*	7,091,584	33,838,116	40,929,700	39,233,736
Split interest agreements *(Note 9)*		573,369	573,369	559,151
TOTAL NET ASSETS	**$ 11,981,702**	**$ 37,294,784**	**$ 49,276,486**	**$ 46,964,184**

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

STATEMENTS OF CHANGES IN NET ASSETS WITH GENERAL OPERATING ACCOUNT DETAIL

with summarized financial information for the year ended June 30, 2018

In thousands of dollars	Without Donor Restrictions	With Donor Restrictions	For the year ended June 30 2019	2018
OPERATING REVENUE:				
Student income *(Notes 2 and 12)*	$ 1,200,838		**$ 1,200,838**	$ 1,122,065
Sponsored support *(Note 13)*				
Federal government – direct costs	448,832		**448,832**	453,084
Federal government – indirect costs	181,948		**181,948**	172,223
Non-federal sponsors – direct costs	88,620	$ 178,637	**267,257**	251,997
Non-federal sponsors – indirect costs	21,532	17,821	**39,353**	36,932
Total sponsored support	740,932	196,458	**937,390**	**914,236**
Gifts for current use *(Note 14)*	190,610	281,503	**472,113**	**466,546**
Investment income:				
Endowment returns made available for operations *(Note 8)*	339,007	1,569,416	**1,908,423**	1,821,645
GOA returns made available for operations	180,634		**180,634**	176,230
Other investment income	34,289	4,845	**39,134**	25,873
Total investment income	553,930	1,574,261	**2,128,191**	**2,023,748**
Other revenue *(Note 15)*	772,038		**772,038**	688,724
Net assets released from restriction	1,987,573	(1,987,573)	**0**	0
TOTAL OPERATING REVENUE	**5,445,921**	**64,649**	**5,510,570**	**5,215,319**
OPERATING EXPENSES:				
Salaries and wages	2,038,478		**2,038,478**	1,943,836
Employee benefits *(Note 11)*	565,505		**565,505**	569,223
Services purchased	680,691		**680,691**	617,210
Space and occupancy	379,290		**379,290**	410,441
Depreciation *(Note 7)*	382,775		**382,775**	357,965
Supplies and equipment	270,623		**270,623**	268,200
Interest *(Note 10)*	181,633		**181,633**	187,883
Scholarships and other student awards *(Note 12)*	155,874		**155,874**	152,421
Other expenses *(Note 16)*	557,801		**557,801**	511,778
TOTAL OPERATING EXPENSES	**5,212,670**	**0**	**5,212,670**	**5,018,957**
NET OPERATING SURPLUS	**233,251**	**64,649**	**297,900**	**196,362**
NON-OPERATING ACTIVITIES:				
Income from GOA Investments	5,112		**5,112**	8,751
GOA realized and change in unrealized appreciation, net *(Note 3)*	261,944		**261,944**	475,207
GOA returns made available for operations	(180,634)		**(180,634)**	(176,230)
Change in pledge balances *(Note 6)*		352,553	**352,553**	28,562
Change in interests in trusts held by others		1,656	**1,656**	(740)
Gifts for facilities and loan funds *(Note 14)*		86,372	**86,372**	109,227
Change in retirement obligations *(Note 11)*	(126,744)		**(126,744)**	143,110
Other changes	(17,505)		**(17,505)**	1,871
Transfers between GOA and endowment *(Note 8)*	(103,802)	11,382	**(92,420)**	(83,207)
Transfers between GOA and split interest agreements *(Note 9)*		13,886	**13,886**	12,661
Non-operating net assets released from restrictions	226,112	(226,112)	**0**	0
TOTAL NON-OPERATING ACTIVITIES	**64,483**	**239,737**	**304,220**	**519,212**
GENERAL OPERATING ACCOUNT NET CHANGE DURING THE YEAR	**297,734**	**304,386**	**602,120**	**715,574**
Endowment net change during the year	331,683	1,364,281	**1,695,964**	2,137,262
Split interest agreements net change during the year *(Note 9)*		14,218	**14,218**	25,269
NET CHANGE DURING THE YEAR	**629,417**	**1,682,885**	**2,312,302**	**2,878,105**
Net assets, beginning of year	11,352,285	35,611,899	**46,964,184**	**44,086,079**
NET ASSETS, END OF YEAR	**$ 11,981,702**	**$ 37,294,784**	**$ 49,276,486**	**$ 46,964,184**

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

STATEMENTS OF CHANGES IN NET ASSETS OF THE ENDOWMENT

with summarized financial information for the year ended June 30, 2018

In thousands of dollars	Without Donor Restrictions	With Donor Restrictions	For the year ended June 30 2019	2018
Investment return *(Note 3):*				
Income from general investments	$ 6,672	$ 30,517	**$ 37,189**	$ 47,775
Realized and change in unrealized appreciation/(depreciation), net	413,975	1,875,524	**2,289,499**	3,284,706
Total investment return	420,647	1,906,041	**2,326,688**	**3,332,481**
Endowment returns made available for operations	(339,007)	(1,569,416)	**(1,908,423)**	(1,821,645)
Net investment return	81,640	336,625	**418,265**	**1,510,836**
Gifts for endowment *(Note 14)*	109,612	503,675	**613,287**	646,299
Transfers between endowment and the GOA *(Note 8)*	103,802	(11,382)	**92,420**	83,207
Capitalization of split interest agreements *(Note 9)*		15,213	**15,213**	25,707
Change in pledge balances *(Note 6)*		575,155	**575,155**	(139,309)
Change in interests in trusts held by others *(Note 8)*		9,747	**9,747**	12,547
Other changes	(3,947)	(24,176)	**(28,123)**	(2,025)
Net assets released from restrictions	40,576	(40,576)	**0**	0
NET CHANGE DURING THE YEAR	**331,683**	**1,364,281**	**1,695,964**	**2,137,262**
Net assets of the endowment, beginning of year	6,759,901	32,473,835	**39,233,736**	37,096,474
NET ASSETS OF THE ENDOWMENT, END OF YEAR	**$ 7,091,584**	**$ 33,838,116**	**$ 40,929,700**	**$ 39,233,736**

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

STATEMENTS OF CASH FLOWS

with summarized financial information for the year ended June 30, 2018

In thousands of dollars	For the year ended June 30 2019	2018
CASH FLOWS FROM OPERATING ACTIVITIES:		
Change in net assets	**$ 2,312,302**	$ 2,878,105
Adjustments to reconcile change in net assets to net cash (used in) operating activities:		
Depreciation	**382,775**	357,965
Amortization of premium and discount related to bonds and notes payable	**(27,272)**	(27,265)
Realized and change in unrealized (appreciation), net	**(2,611,556)**	(3,829,446)
Change in fair value of interest rate exchange agreements	**11,928**	(6,463)
Change in interests in trusts held by others	**(11,403)**	(11,807)
Change in liabilities due under split interest agreements	**30,786**	46,753
Gifts of donated securities	**(92,158)**	(179,131)
Proceeds from the sale of donated securities restricted for long term purposes	**14,198**	14,422
Gifts for restricted purposes	**(518,827)**	(528,138)
Loss on disposal of assets	**41,239**	8,281
Loss on sale of property		1,644
Change in accrued retirement obligations	**136,992**	(108,723)
Changes in operating assets and liabilities:		
Receivables,net	**4,937**	(39,417)
Prepayments and deferred charges	**(135,794)**	(224)
Pledges receivable, net	**(928,035)**	110,234
Accounts payable	**77,182**	(30,544)
Deferred revenue and other liabilities	**189,568**	397,015
NET CASH (USED IN) OPERATING ACTIVITIES	**(1,123,138)**	**(946,739)**
CASH FLOWS FROM INVESTING ACTIVITIES:		
Loans made to students, faculty, and staff	**(41,938)**	(48,451)
Payments received on student, faculty, and staff loans	**49,720**	47,521
Change in other notes receivable	**390**	2,198
Proceeds from the sales and maturities of investments	**15,001,898**	15,309,908
Purchase of investments	**(13,750,298)**	(14,671,506)
Change associated with repurchase agreements	**374,719**	700,881
Additions to fixed assets	**(994,830)**	(937,744)
Proceeds from sale of property		1,293
NET CASH PROVIDED BY INVESTING ACTIVITIES	**639,661**	**404,100**
CASH FLOWS FROM FINANCING ACTIVITIES:		
Change in overdrafts included in accounts payable	**(7,618)**	6,356
Change in split interest liability from new contributions, income and payments to annuitants	**(33,455)**	(25,076)
Proceeds from issuance of debt	**480,900**	453,767
Debt repayments	**(541,200)**	(556,671)
Proceeds from the sales of gifts of restricted securities	**77,960**	164,709
Contributions restricted for long term investment	**518,827**	528,138
Affiliated entity contributions and distributions, net	**397**	(16,343)
Change in government loan advances	**1,324**	(7,155)
NET CASH PROVIDED BY FINANCING ACTIVITIES	**497,135**	**547,725**
NET CHANGE IN CASH	**13,658**	**5,086**
Cash, beginning of year	**144,982**	**139,896**
CASH, END OF YEAR	**$ 158,640**	**$ 144,982**
Supplemental disclosure of cash flow information:		
Accounts payable related to fixed asset additions	$ 77,904	$ 109,181
Cash paid for interest	$ 209,923	$ 215,166

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

1. UNIVERSITY ORGANIZATION

Harvard University (the "University") is a private, not-for-profit institution of higher education with approximately 6,700 undergraduate and 13,400 graduate students. Established in 1636, the University includes the Faculty of Arts and Sciences, the John A. Paulson School of Engineering and Applied Sciences, the Division of Continuing Education, ten graduate and professional Schools, the Radcliffe Institute for Advanced Study, a variety of research museums and institutes, and an extensive library system to support the teaching and research activities of the Harvard community. The President and Fellows of Harvard College (the "Corporation"), a governing board of the University, has oversight responsibility for all of the University's financial affairs. The Corporation delegates substantial authority to the Schools and departments for the management of their resources and operations.

The University includes Harvard Management Company (HMC), a wholly owned subsidiary founded in 1974 to manage the University's investment assets. HMC is governed by a Board of Directors that is appointed by the Corporation.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of presentation

The accompanying consolidated financial statements have been prepared on the accrual basis of accounting and include the accounts of the University and affiliated organizations controlled by the University. Significant inter-affiliate accounts and transactions have been eliminated.

Funds transferred to the University on behalf of specific beneficiaries (agency funds) are recorded as assets and liabilities in the *Balance Sheets* and are not included in the *Statement of Changes in Net Assets with General Operating Account Detail*.

The financial statements include certain prior year summarized comparative information in total, not by net asset classification. This information is not presented in sufficient detail to conform to generally accepted accounting principles (GAAP). Accordingly, such information should be read in conjunction with the University's financial statements for the year ended June 30, 2018, from which the summarized information is derived. Certain prior year amounts have been reclassified to conform to current year presentation.

Net asset classifications

For the purposes of financial reporting, the University classifies resources into two net asset categories pursuant to any donor-imposed restrictions and applicable law. Accordingly, the net assets of the University are classified in the accompanying financial statements in the categories that follow:

WITHOUT DONOR RESTRICTIONS—Net assets not subject to donor-imposed restrictions. Funds invested in fixed assets and unrestricted endowment funds comprise 94% of the University's net assets without donor-imposed restrictions as of June 30, 2019. In addition, this category includes gifts and endowment income balances where the donor restriction has been met, University-designated loan funds, and other current funds.

WITH DONOR RESTRICTIONS—Net assets subject to legal or donor-imposed restrictions that will be satisfied either by actions of the University, the passage of time, or both. These net assets include net assets subject to donor-imposed restrictions that are invested to provide a perpetual source of income to the University. Generally, donors of these assets require the University to maintain and invest the original contribution in perpetuity, but permit the use of some or all investment returns for general or specific purposes. The appreciation on these perpetual contributions must be reported as net assets with donor restrictions until appropriated for spending in accordance with Massachusetts law. Also included in this category are gifts donated for a particular purpose and amounts subject to time restrictions such as funds pledged for future payment.

Revenues from sources other than contributions are generally reported as increases in net assets without donor restrictions. Expenses are reported as decreases 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 donor stipulations or by law. Investment returns earned by restricted donor funds are initially classified as net assets with donor restrictions and then reclassified to net assets without donor restrictions when expenses are appropriated or incurred for their intended purpose. Expirations of donor restrictions on net assets are reported as reclassifications from net assets with donor restrictions to net assets without donor restrictions and appear as "Net assets released from restrictions" and "Non-operating net assets released from restrictions" in the *Statements of Changes in Net Assets*.

Liquidity and availability

As part of the University's liquidity management, it has a policy to structure its financial assets to be available as its general expenditures, liabilities and other obligations come due. A significant portion of the University's annual expenditures are funded by operating revenues in the current year including student income, sponsored support, endowment returns made available for operations, gifts for current use and other revenues.

The University's financial assets available within one year of the balance sheet date for general expenditure, such as operating expenses, scheduled principal payments on debt, and capital construction costs not financed with debt, are as follows (in thousands):

	June 30, 2019
FINANCIAL ASSETS	
Cash	$ 158,640
Receivables, net	296,321
Pledges receivables due in one year	221,587
Cash and short-term investments held separately by General Operating Account (GOA)[1,2]	1,013,861
Investment returns made available for operations in the following year[3]	2,175,806
TOTAL FINANCIAL ASSETS AVAILABLE WITHIN ONE YEAR	**$ 3,866,215**
LIQUIDITY RESOURCES	
Credit facility, undrawn balance	1,500,000
Taxable commercial paper, undrawn balance	2,000,000
TOTAL FINANCIAL ASSETS AND RESOURCES AVAILABLE WITHIN ONE YEAR	**$ 7,366,215**

1 *The University has a policy of maintaining a cash reserve floor outside of the General Investment Account (GIA) of $800 million.*
2 *This is net of collateral on US government securities of $22,166.*
3 *Within its investment pools as of June 30, 2019, the University holds $2.1 billion in cash and cash equivalents and $2.2 billion of unencumbered US government securities that could be liquidated in one day that could be used to fund this amount.*

Endowment and GOA returns liquidated from investments and made available for operations over the course of the fiscal year are distributed to University department and program budgets to spend, subject to donor restrictions where applicable.

While the University has no intention of doing so, there are additional investments held by the University and the endowment that could be liquidated in the event of an unexpected disruption. While a portion of the endowment is subject to donor restrictions, there is $7.1 billion in endowment funds without donor restrictions and $3.7 billion of General Operating Account investments (GOA) that could be accessed with the approval of the Corporation and subject to the redemption provisions described in *Note 3*.

Revenue recognition

Revenue is recognized when control of promised goods or services is transferred to customers, in an amount that reflects the consideration the University expects to be entitled to in exchange for those goods or services.

Student income is derived from degree programs as well as executive and continuing education programs and includes tuition, fees, and board and lodging. Student income is recognized ratably over the academic period of the course or program offered based on time elapsed and scholarships awarded to students reduce the amount of revenue recognized. The University's individual schools have various billing and academic cycles and the majority of our programs are completed within the fiscal year. Student income received in advance of services to be rendered are recorded as deferred revenue which totaled $213.7 million and $209.5 million, respectively, for the periods ended June 30, 2019 and 2018, which are primarily recognized in the subsequent fiscal year.

Total student income of $1.2 billion and $1.1 billion was recorded during the years ended June 30, 2019 and 2018, respectively. Student tuition, fees, board and lodging at published rates is summarized as follows for the years ended June 30, 2019 and 2018 (in thousands of dollars):

	2019	2018
Undergraduate program	**$ 339,475**	$ 327,171
Graduate and professional degree programs	**605,833**	585,797
Continuing education and executive programs	**516,077**	458,047
Board and lodging	**196,822**	190,495

Scholarships applied to student charges were $457,369 and $439,445 for the years ended June 30, 2019 and 2018, respectively.

Unconditional contributions including pledges are recognized immediately and classified as either net assets with donor restrictions or net assets without donor restrictions. Conditional contributions for which cash is received are accounted for as a liability within deferred revenue.

Sponsored support of $937 million includes support from governmental and private sources. Certain sponsored arrangements are considered exchange arrangements, and revenue under these agreements is recognized based on the University's fulfillment of the contract, which is typically based on costs incurred or the achievement of milestones. Other sponsored support is considered contribution revenue, which is recognized when any donor-imposed conditions have been met, if applicable. Sponsored conditional contributions received, where the barrier to entitlement is not yet overcome are recorded as deferred revenues of $51.2 million and $52.2 million as of June 30, 2019 and 2018, respectively. As of June 30, 2019, the University also had $1.3 billion awarded but not yet expended contributions related to sponsored programs where the condition had not yet been met. This is subject to federal appropriations. Funding received in advance of recognition is recorded as deferred revenue.

Other revenue of $772.0 million includes several revenue streams considered exchange contracts with customers totalling $648.7 million for fiscal year 2019. These revenues are recognized at the point in time goods or services are provided. Deferred revenues related to other income of $109.0 million and $111.6 million were recorded as of June 30, 2019 and 2018, which are primarily recognized in the subsequent fiscal year.

Measure of operations

Revenues earned, expenses incurred, and returns made available for operations for the purpose of teaching, conducting research, and the other programs and services of the University are the components of "Net operating surplus" in the *Statement of Changes in Net Assets with General Operating Account Detail*. The University's non-operating activity within the *Statement of Changes in Net Assets with General Operating Account Detail* includes contributions to the University's building construction and renovation funds, investment returns (net of amounts made available for operations), change in pledge balances, long-term benefit plan obligation funding changes, and other infrequent transactions.

Collections

The University's vast array of museums and libraries contains priceless works of art, historical treasures, literary works, and artifacts. These collections are protected and preserved for public exhibition, education, research, and the furtherance of public service. They are neither disposed of for financial gain nor encumbered in any manner. Accordingly, such collections are not recorded for financial statement purposes.

Insurance programs

The University, together with the Harvard-affiliated teaching hospitals, has formed a captive insurance company, Controlled Risk Insurance Company (CRICO), to provide limited professional liability, general liability, and medical malpractice insurance for its shareholders. The University self-insures a portion of its professional liability and general liability programs and maintains a reserve for incurred claims, including those related to Harvard Medical School activities not occurring in the affiliated teaching hospitals. CRICO provided malpractice coverage applies with no deductible for medical professionals practicing within Harvard's University Health Services department, the School of Dental Medicine, and the T.H. Chan School of Public Health. The University also maintains reserves for the self-insured portion of claims related to automobile liability, property damage, and workers' compensation; these programs are supplemented with commercial excess insurance above the University's self-insured limit. In addition, the University is self-insured for unemployment, the primary retiree health plan, and all health and dental plans for active employees. The University's claims liabilities are recognized as incurred, including claims that have been incurred but not reported, and are included in operating expenses.

Tax

The University is a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted. The Act impacts the University in several ways, including the addition of excise taxes on executive compensation and net investment income, as well as new rules for calculating unrelated business taxable income. The University recorded an estimated $49.8 million of related tax expense based on reasonable estimates under the currently available regulatory guidance of the Act. Of the total tax expense, $37.7 million reflects the estimated net investment income tax related to investments and $12.1 million relates to estimated net investment income tax on operational revenues, changes to unrelated business taxable income and excise taxes on executive compensation. The University continues to evaluate the impact of the Act on current and future tax positions.

Use of estimates

The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect reported amounts and disclosures. Actual results could differ from those estimates.

New accounting pronouncements

In 2019, the University adopted ASU 2016-14, *Presentation of Financial Statements for Not-for-Profit Entities*. This guidance is intended to improve the net asset classification requirements and the information presented in the financial statements and notes. The standard requires the University to reclassify its net assets (i.e., unrestricted, temporarily restricted, and permanently restricted) into two categories: net assets without donor restrictions and net assets with donor restrictions. In addition, underwater endowment funds are to be recognized as a reduction in net assets with donor restrictions and enhanced disclosures are required for board-designated amounts *(Note 8)*, liquidity and availability of financial assets *(Note 2)*, and expenses by both their natural and functional classification *(Note 17)*.

As a result of adopting this standard, certain amounts as of June 30, 2018 were reclassified to conform to the presentation requirements as follows:

	ASU 2016-14 Classifications		
	Without donor restrictions	With donor restrictions	Total Net Assets
NET ASSETS CLASSIFICATIONS			
As previously presented:			
Unrestricted	$11,349,637		$11,349,637
Temporarily Restricted		$26,660,015	26,660,015
Permanently Restricted		8,954,532	8,954,532
Net assets	$ 11,349,637	$35,614,547	$46,964,184
Reclassifications to implement ASU 2016-14:			
Underwater endowments	2,648	(2,648)	0
Net assets, as restated	$11,352,285	$35,611,899	$46,964,184

In May 2014, the Financial Accounting Standards Board (FASB) issued ASU 2014-09, *Revenue from Contracts with Customers (ASC 606)* which outlines a single comprehensive revenue model for entities to use in accounting for revenue arising from contracts with customers. The guidance supersedes most current revenue recognition guidance, including industry-specific guidance, and 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 that revenue as performance obligations are satisfied. The University adopted ASC 606 as of July 1, 2018 using the modified retrospective transition method—i.e., by recognizing the cumulative effect of initially applying ASC 606 as an adjustment to the opening balance of net assets at July 1, 2018. The University elected to apply the standard only to contracts that are not completed as of that date therefore, the comparative information has not been adjusted and continues to be reported under the prior guidance. The guidance did not have a significant impact on the University's consolidated financial statements.

In June 2018, the FASB issued ASU 2018-08, *Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made*. The new guidance clarifies the definition of an exchange transaction and the criteria for evaluating whether contributions are unconditional or conditional. Effective July 1, 2018, the University adopted ASU 2018-08 simultaneously with adoption of the new revenue standard, using the modified prospective transition method. The guidance did not have a significant impact on the University's consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *ASC 820 Fair Value Measurement*. The new guidance simplifies fair value measurement disclosures through the removal and modification of a number of investment related disclosure requirements. Certain disclosures are no longer required including amount of and reasons for transfers between Levels 1 and 2; policy for timing of transfers between levels and valuation processes for Level 3 investments. The ASU is effective for fiscal year 2021 for the University. The University early adopted the standard in fiscal year 2019.

In January 2016, the FASB issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities,* which address certain aspects of recognition, measurement, presentation and disclosure of financial instruments. This guidance allows an entity to choose, investment-by-investment, to report an equity investment that neither has a readily determinable fair value, nor qualifies for the practical expedient for fair value estimation using net asset value (NAV), at its cost minus impairment (if any), plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issue. Impairment of such investments must be assessed qualitatively at each reporting period. Entities must disclose their financial assets and liabilities by measurement category and form of asset either on the face of the statement of financial position or in the accompanying notes. The ASU is effective for fiscal year 2020 for the University. The provision to eliminate the requirement to disclose the fair value of financial instruments measured at cost (such as the fair value of debt) was early adopted by the University in fiscal year 2016. The University is currently evaluating the impact of the remaining new guidance on the consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases,* which requires a lessee to recognize a right-of-use asset and a lease liability, initially measured at the present value of the lease payments, in its balance sheet. The guidance also expands the required quantitative and qualitative disclosures surrounding leases. The ASU is effective for fiscal year 2020 for the University. The University is evaluating the impact of the new guidance on the consolidated financial statements.

In November 2016, the FASB issued clarifying guidance on ASU 2016-18, *Restricted Cash (Topic 230): Statement of Cash Flows*. The amendments in the update require that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. The amendments in the update do not provide a definition of restricted cash or restricted cash equivalents. The ASU is effective for fiscal year 2020 for the University. The University is evaluating the impact of the new guidance on the consolidated financial statements.

In March 2017, the FASB issued final guidance on ASU 2017-07, *Compensation — Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost*. Presently, net benefit cost is reported as an employee cost within operating income (or capitalized into assets where appropriate). The amendment requires the bifurcation of net benefit cost. The service cost component will be presented with other employee costs in operating income (or capitalized in assets). The other components will be reported separately outside of operations, and will not be eligible for capitalization. The ASU is effective for fiscal year 2020 for the University. The University is evaluating the impact of the new guidance on the consolidated financial statements.

3. INVESTMENTS

Investments are presented at fair value in accordance with GAAP and under the guidelines prescribed by the HMC investment valuation policy, which is reviewed and approved by the HMC Board of Directors on an annual basis.

The majority of the University's investments are managed by HMC in the GIA, a pooled investment account that consists primarily of endowment assets. Certain other investments such as cash, short-term investments, split interest agreements, and other assets, are managed separately from the GIA.

The University's investment holdings as reported on the *Balance Sheets* are summarized in the following table (in thousands of dollars):

	2019	2018
Investment portfolio assets		
Pooled general investment account assets	**$ 44,875,461**	$ 44,113,615
Other investments	**1,848,509**	1,533,984
Investment portfolio, at fair value	**46,723,970**	**45,647,599**
Securities pledged to counterparties, at fair value	**49,971**	162,790
TOTAL INVESTMENT ASSETS	**46,773,941**	**45,810,389**
Pooled general investment account liabilities	**847,732**	869,020
Interest rate exchange agreement	**27,409**	15,481
TOTAL OTHER LIABILITIES ASSOCIATED WITH THE INVESTMENT PORTFOLIO	**875,141**	**884,501**
TOTAL INVESTMENTS, NET	**$ 45,898,800**	**$ 44,925,888**

As of June 30, 2019 and 2018, University's net investments were comprised of the following components (in thousands of dollars):

	2019	2018
POOLED GENERAL INVESTMENT ACCOUNT		
Endowment[1]	**$ 38,843,726**	$ 37,731,389
General operating account	**3,716,277**	4,154,494
Split interest agreements	**780,737**	820,725
Other internally designated funds	**736,960**	700,777
TOTAL POOLED GENERAL INVESTMENT ACCOUNT NET ASSETS	**$ 44,077,700**	**$ 43,407,385**
OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT		
General operating and other investments[2]	**1,168,724**	917,664
Split interest agreements	**652,376**	600,839
TOTAL OTHER INVESTMENTS OUTSIDE THE GENERAL INVESTMENT ACCOUNT	**$ 1,821,100**	**$ 1,518,503**
TOTAL INVESTMENTS, NET	**$ 45,898,800**	**$ 44,925,888**

[1] *Includes only the portion of the endowment invested in the GIA and excludes pledges, interests in trusts held by others, other non-GIA investments, and GIA interest and dividends net of all internal and external management fees and expenses.*
[2] *Consists primarily of repurchase agreements, US government securities, and money markets of $1,036,080 and $754,940 as of June 30, 2019 and 2018, respectively.*

Investment return

A summary of the University's total return on investments for fiscal years 2019 and 2018 is presented below (in thousands of dollars):

	2019	2018
Return on pooled general investment account:		
Realized and change in unrealized appreciation, net	**$ 2,612,986**	$ 3,833,460
Interest, dividends, fees, and expenses, net	**42,631**	55,199
Total return on pooled general investment account[1]	**2,655,617**	**3,888,659**
Return on other investments:		
Realized and change in unrealized (depreciation), net	**(1,430)**	(4,014)
Interest, dividends, fees, and expenses, net	**52,619**	38,585
Total return on other investments	**$ 51,189**	**$ 34,571**
Realized and change in unrealized (depreciation)/appreciation on interest rate exchange agreement, net	**(13,880)**	4,010
TOTAL RETURN ON INVESTMENTS[2]	**$ 2,692,926**	**$ 3,927,240**

[1] *Net of all internal and external management fees and expenses.*
[2] *Total return on investments is comprised of returns on the endowment, GOA, Split Interest Agreements and other.*

Fair value hierarchy

The University's investments have been categorized based upon the fair value hierarchy in accordance with ASC 820, which prioritizes the inputs to valuation techniques used to measure fair value of investment assets and liabilities into three levels:

LEVEL 1 Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;

LEVEL 2 Quoted prices in markets that are not considered to be active or financial instruments for which all significant inputs are observable, either directly or indirectly;

LEVEL 3 Prices or valuations that require inputs that are significant to the fair value measurement, unobservable, and/or require the University to develop its own assumptions.

Investments in externally managed funds where the University utilizes net asset values (as reported by external managers) as a practical expedient for fair value measurements are excluded from the fair value hierarchy.

The level of an asset or liability within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. The University endeavors to utilize all relevant and available information in measuring fair value.

The following is a summary of the levels within the fair value hierarchy for those investment assets and liabilities subject to fair value measurement as of June 30, 2019 and 2018 (in thousands of dollars):

	2019					2018
	Level 1	Level 2	Level 3	NAV as Practical Expedient	Total	Total
ASSETS:[1]						
Cash and short-term investments	$ 1,335,905				**$ 1,335,905**	**$ 1,407,841**
Repurchase agreements		$ 774,644			**774,644**	**1,149,363**
Domestic equity	526,046			$ 3,067,435	**3,593,481**	**4,990,487**
Foreign equity	939,428			1,353,879	**2,293,307**	**2,401,770**
Global equity				1,660,465	**1,660,465**	**2,008,253**
Domestic fixed income	1,505,039				**1,505,039**	**1,505,967**
Foreign fixed income	25,597				**25,597**	**25,141**
Emerging market equity and debt	634,107			2,593,954	**3,228,061**	**2,562,035**
High yield	2,898		$ 234,110		**237,008**	**145,132**
Hedge funds				14,592,876	**14,592,876**	**12,814,216**
Private equity			227,244	10,028,510	**10,255,754**	**8,527,921**
Natural resources	12,878		1,878,205	22,972	**1,914,055**	**2,254,809**
Real estate			48,644	3,561,775	**3,610,419**	**4,005,056**
Inflation-indexed bonds	871,832				**871,832**	**847,163**
Due from brokers	91	44,350	4,638		**49,079**	**5,824**
Other investments	6,558	3,626	7,609		**17,793**	**12,022**
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 5,860,379**	**$ 822,620**	**$ 2,400,450**	**$ 36,881,866**	**$ 45,965,315**	**$ 44,663,000**
Other investment assets not subject to fair value[2]					**808,626**	**1,147,389**
TOTAL INVESTMENT ASSETS[6]					**$ 46,773,941**	**$ 45,810,389**
Interests in trusts held by others[3]			420,371		**420,371**	**408,968**
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING			**$ 420,371**		**$ 420,371**	**$ 408,968**
TOTAL ASSETS					**$ 47,194,312**	**$ 46,219,357**
LIABILITIES:[1]						
Due to brokers[4]		$ 33,912			**$ 33,912**	**$ 115,386**
Other liabilities subject to fair value			$ 288,372		**288,372**	**223,601**
INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING		**$ 33,912**	**$ 288,372**		**$ 322,284**	**$ 338,987**
Other investment liabilities not subject to fair value[5]					**552,857**	**545,514**
TOTAL INVESTMENT LIABILITIES[6]					**$ 875,141**	**$ 884,501**
Liabilities due under split interest agreements[3]		$ 859,744			**859,744**	**862,413**
NON-INVESTMENT LIABILITIES SUBJECT TO FAIR VALUE LEVELING		**$ 859,744**			**$ 859,744**	**$ 862,413**
TOTAL LIABILITIES					**$ 1,734,885**	**$ 1,746,914**

1 *Certain prior year amounts have been reclassified to conform to current year presentation.*

2 *As of June 30, 2019, other assets not subject to fair value consists primarily of receivables for transactions that settled subsequent to the balance sheet date of $599,651, before eliminating inter-company balances, and consolidated assets of $159,745. As of June 30, 2018, other assets not subject to fair value consist primarily of receivables for transactions that settled subsequent to the balance sheet date of $922,438, before eliminating inter-company balances, and consolidated assets of $162,922.*

3 *Amounts excluded from investments and included separately on the University's* Balance Sheets.

4 *Includes fair value of an interest rate exchange agreement on the University's debt portfolio of $27,409 and $15,481 as of June 30, 2019 and 2018, respectively.*

5 *As of June 30, 2019 and 2018, other liabilities not subject to fair value include consolidated liabilities of $199,693 and $200,631, respectively.*

6 *As of June 30, 2019 and 2018, total investment assets, net equal $45,898,800 and $44,925,888, respectively.*

The following is a rollforward of Level 3 investments for the year ended June 30, 2019 and the condensed June 30, 2018 rollforward of Level 3 investments (in thousands of dollars):

	Beginning balance as of July 1, 2018	Net realized gains/(losses)	Net change in unrealized appreciation (depreciation)[1]	Purchases/ contributions	Sales/ distributions	Transfers out of Level 3	Ending balance as of June 30, 2019
INVESTMENT ASSETS:							
High yield	$ 133,027	$ 1,368	$ (642)	$ 165,240	$ (64,883)		**$ 234,110**
Private equity	158,070	2,562	(3,187)	69,799			**227,244**
Natural resources	2,183,270	(78,604)	(141,475)	83,190	(168,176)		**1,878,205**
Real estate	230,214	2,848	(989)	86	(11,481)	$ (172,034)	**48,644**
Due from brokers	4,640		(2)				**4,638**
Other investments	1,662		(53)	7,125	(1,125)		**7,609**
INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 2,710,883**	**$ (71,826)**	**$ (146,348)**	**$ 325,440**	**$ (245,665)**	**$ (172,034)**	**$ 2,400,450**
Interests in trusts held by others	408,968		11,403				**420,371**
NON-INVESTMENT ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 408,968**		**$ 11,403**				**$ 420,371**
TOTAL ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 3,119,851**	**$ (71,826)**	**$ (134,945)**	**$ 325,440**	**$ (245,665)**	**$ (172,034)**	**$ 2,820,821**
INVESTMENT LIABILITIES:							
Other liabilities subject to fair value	$ 223,601		$ (11,190)	$ 82,854	$ (6,893)		**$ 288,372**
TOTAL LIABILITIES SUBJECT TO FAIR VALUE LEVELING	**$ 223,601**	**$ 0**	**$ (11,190)**	**$ 82,854**	**$ (6,893)**	**$ 0**	**$ 288,372**
NET ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 2,896,250**	**$ (71,826)**	**$ (123,755)**	**$ 242,586**	**$ (238,772)**	**$ (172,034)**	**$ 2,532,449**

[1] *Total change in unrealized appreciation/(depreciation) relating to Level 3 investment assets and investment liabilities still held by the University at June 30, 2019 is $(221,663) and is reflected in "Realized and change in unrealized appreciation/(depreciation), net" in the* Statements of Changes in Net Assets.

	Beginning balance as of July 1, 2017	Net realized gains/(losses)	Net change in unrealized appreciation (depreciation)[1]	Purchases/ contributions	Sales/ distributions	Transfers into Level 3	Transfers out of Level 3	Ending balance as of June 30, 2018
PRIOR YEAR NET ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 8,267,471**	**$ (945,127)**	**$ 789,301**	**$ 513,420**	**$ (2,519,985)**	**$ 0**	**$ (3,208,830)**	**$ 2,896,250**

[1] *Total change in unrealized appreciation/(depreciation) relating to Level 3 investment assets and investment liabilities still held by the University at June 30, 2018 is $(183,672) and is reflected in "Realized and change in unrealized appreciation/(depreciation), net" in the* Statements of Changes in Net Assets.

During fiscal year 2018, the University unwound its direct real estate investing platform and engaged an external investment manager to manage these assets in an investment vehicle, resulting in a transfer out of Level 3 of $3.2 billion of investment assets.

Investment strategy and risk

The University utilizes a number of wholly-owned subsidiary entities to support its investment activities. The consolidated financial statements include all assets, liabilities, income, and expenses associated with these entities and intercompany accounts and transactions have been eliminated during consolidation.

The University's investment strategy incorporates a diversified asset allocation approach and maintains, within defined limits, exposure to the movements of the global public and private equity, fixed income, real estate, and commodities markets. Exposure to these markets is achieved through direct investments in individual securities, investments in special purpose vehicles and/or through investments in vehicles advised by external managers.

Investments in global markets involve a multitude of risks such as price, interest rate, market, sovereign, currency, liquidity, and credit risks, amongst many others. Additionally, the University's direct investments in natural resources expose it to a unique set of risks, namely environmental, social, and geopolitical risks in some of the jurisdictions where these direct investments reside. The University manages exposure to these risks through established policies and procedures related to its ongoing investment diligence and operational due diligence programs. The University also considers manager concentration risk. As of June 30, 2019, 22% of the GIA NAV was invested across 5 diversified fund managers. The University anticipates that the value and composition of its investments may, from time to time, fluctuate substantially in response to any or all of the risks described herein.

Liquidity

Cash and short-term investments are recorded at cost, which approximates fair value, and includes cash in bank accounts, institutional money market funds, and other temporary investments held for working capital purposes with original maturities of three months or less. Cash and short-term investments do not include cash balances held as collateral by the University. Cash and short-term investment balances designated for investment purposes are included in the "Investment portfolio, at fair value" in the *Balance Sheets*.

The University has various sources of liquidity at its disposal within its investment pools, including approximately $2.1 billion in cash and cash equivalents (including money markets of $1.3 billion and repurchase agreements of $0.8 billion) at June 30, 2019. In addition, the University estimates that as of the balance sheet date, it could have liquidated additional unencumbered US government securities of $2.2 billion within one business day (assuming typical settlement terms) to meet any immediate short-term needs of the University (unaudited).

Repurchase agreements

The University *Balance Sheets* display the assets generated by repurchase transactions. The University enters into these transactions under agreements containing master netting arrangements. The University requires the fair value of the collateral exchanged under these agreements to be equal to or in excess of the total amount of the agreement, including interest where applicable. At June 30, 2019 and 2018, the University had gross asset repurchase agreements of $0.8 billion and $1.1 billion, respectively, which were fully collateralized. The University does not offset repurchase agreements that are subject to master netting arrangements or similar arrangements on the University's *Balance Sheets*.

Dividend and interest income

Dividend income is recognized net of applicable withholding taxes on the ex-dividend date. Non-cash dividends are recorded at the fair value of the securities received. Interest income and expense is recorded net of applicable withholding taxes, on an accrual basis. The University amortizes bond premiums and accretes bond discounts using the effective yield method and when cash collection is expected.

Traded securities

Instruments listed or traded on a securities exchange are valued at the last quoted price on the primary exchange where the security is traded. Where there is no readily available closing price on the valuation date, long positions are valued at the bid price and short positions are valued at the ask price. Restrictions that are attached to a security are factored into the valuation of that security, reflective of the estimated impact of those restrictions. Investments in non-exchange traded debt and equity instruments are primarily valued using inputs provided by independent pricing services or by broker/dealers who actively make markets in these securities.

Derivatives

The University uses a variety of financial instruments with off-balance sheet risk involving contractual or optional commitments for future settlement, which are exchange traded or executed over the counter (OTC). These instruments are used to (1) manage exposure to certain asset classes and/or various market risks, (2) arbitrage mispricings of related securities and (3) to manage the interest, cost and risk associated with its outstanding and/or future debt. These instruments are classified as due to/from brokers and may include option, swap, credit default, interest rate, and forward contracts. These types of instruments are primarily valued using industry standard models with independent market inputs, or by broker quotes. Inputs such as prices, spreads, curves, and/or broker quotes are evaluated for source reliability and consistency with industry standards. Counterparty marks obtained and utilized to determine daily collateral requirements are also used to corroborate input reasonability. The University considers current market conditions including interest rate and credit risks in its evaluation of inputs, pricing methodologies, and models utilized to determine fair values.

In connection with its derivative activities, the University generally maintains master netting agreements and collateral agreements with its counterparties. These agreements provide the University the right, in the event of default by the counterparty (such as bankruptcy or a failure to pay or perform), to net a counterparty's rights and obligations under the agreement and to liquidate and offset collateral against any net amount owed by the counterparty. Collateral, generally in the form of debt obligations issued by the US Treasury, is exchanged on a daily basis as required by fluctuations in the market.

Specific credit limits are established for counterparties based on their individual credit ratings. Credit limits are monitored daily by the University and are adjusted according to policy, as necessary. Some of the financial instruments entered into by the University contain credit-risk-related contingency features that allow the parties to the agreement to demand immediate payment for outstanding contracts and/or collateral.

The following table presents information about the University's derivatives by primary risk exposure for the years ended June 30, 2019 and 2018 (in thousands of dollars):

	As of June 30, 2019			For the year ended June 30, 2019	As of June 30, 2018			For the year ended June 30, 2018
Primary risk exposure	Average Quarterly Notional	Gross derivative assets	Gross derivative liabilities	Net profit/ (loss)[4]	Average Quarterly Notional	Gross derivative assets	Gross derivative liabilities	Net profit/ (loss)[4]
Equity instruments	$ 1,686,686	$ 63,618	$ 25,824	$ 10,413	$ 3,623,341	$ 37,826	$ 123,157	$ 351,485
Fixed income instruments[1]	117,000		27,409	(13,880)	117,000		15,481	4,010
Currency instruments	1,151,191	527	468	(1,408)	2,450,565	87,538	101,058	(91,194)
Credit instruments	4,726	4,723		12	4,792	4,770		(9)
SUBTOTAL		**$ 68,868**	**$ 53,701**	**$ (4,863)**		**$ 130,134**	**$ 239,696**	**$ 264,292**
TOTAL COUNTERPARTY NETTING		**(19,789)**	**(19,789)**			**(124,310)**	**(124,310)**	
NET AMOUNTS INCLUDED IN THE BALANCE SHEETS[3]		**49,079**	**33,912**			**5,824**	**115,386**	
Collateral								
Cash collateral received/posted						871		
Securities collateral received/ posted[5]		52,579	26,690			4,032	135,934	
TOTAL COLLATERAL		**52,579**	**26,690**			**4,903**	**135,934**	
NET AMOUNT		**(3,500)**	**7,222**			**921**	**(20,548)**	
NET AMOUNT IN ACCORDANCE WITH ASC 210[6]		**$ 0**	**$ 7,222**			**$ 921**	**$ 0**	

[1] *For the year ended June 30, 2019, balances include a gross derivative liability of $27,409 and a net realized and change in unrealized loss of $(13,880), related to an interest rate exchange agreement on the University's debt portfolio. For the year ended June 30, 2018, balances include a gross derivative liability of $15,481 and a net realized and change in unrealized gain of $4,010 related to an interest rate exchange agreement on the University's debt portfolio. These positions are further discussed in* Note 10.

[2] *GAAP permits the netting of derivative assets and liabilities and the related cash collateral received and paid when a legally enforceable master netting agreement exists between the University and a derivative counterparty.*

[3] *Included within the "Investment portfolio, at fair value" and "Other liabilities associated with the investment portfolio" line items of the* Balance Sheets.

[4] *Included within "Realized and change in unrealized appreciation/(depreciation), net" within the* Statements of Changes in Net Assets.

[5] *Includes securities posted to meet initial margin requirements on exchange traded futures.*

[6] *Excludes any over-collateralized amounts in accordance with ASC 210.*

External advisors

Investments managed by external advisors include investments in private equity, real estate, natural resources, hedge funds, and other externally managed funds. The majority of these investments are not readily marketable and are reported at NAV utilizing the most current information provided by the external advisor, subject to assessments that the information is representative of fair value and in consideration of any additional factors deemed pertinent to the fair value measurement. The University evaluates these external advisors through ongoing due diligence and operational oversight, which includes an analysis of an advisor's use of and adherence to fair value principles.

The University generally utilizes its capital account balance as a practical expedient to fair value measurements for funds managed by external advisors. To evaluate the adequacy of these fair value measurements, the University has assessed factors including, but not limited to, the external advisor's adherence to fair value principles in calculating the capital account balance, the existence of transactions at NAV at the measurement date and the existence or absence of certain restrictions at the measurement date.

The University, as an investor, has commitments to make periodic contributions in future periods to the investments managed by external advisors. The amounts of these expected disbursements as of June 30, 2019 and 2018 are disclosed below (in thousands of dollars):

	As of June 30, 2019			As of June 30, 2018		
	Fair value[1]	Remaining unfunded commitments	Estimated remaining life[2]	Fair value[1]	Remaining unfunded commitments	Estimated remaining life[2]
Private equity funds	$ 8,351,163	$ 6,885,617	4 – 10	$ 6,848,285	$ 6,475,884	4 – 10
Real estate funds	3,556,511	1,702,201	4 – 10	3,900,327	1,542,336	4 – 10
Other externally managed funds[3]	3,253,362	2,112,165	2 – 8	2,421,899	2,868,214	2 – 8
TOTAL	**$ 15,161,036**	**$ 10,699,983**		**$ 13,170,511**	**$ 10,886,434**	

[1] *Represents the fair value of the funded portion of investments with remaining unfunded commitments.*
[2] *The estimated remaining lives of these funds, expressed in years, are forward-looking projections based on the University's estimates and could vary significantly depending on the investment decisions of external managers, changes in the University's investment portfolio, and other circumstances.*
[3] *Investments in externally managed funds primarily include exposures to hedge funds and natural resources.*

Investments in externally managed funds generally have limited redemption options for investors and, subsequent to final closing, may or may not permit subscriptions by new or existing investors. These entities may also have the ability to impose gates, lockups, and other restrictions on an investor's ability to readily redeem out of their investment interest in the fund.

Direct investments

Direct investments in natural resources and private equity are primarily valued using a combination of independent appraisals and/or one or more industry standard valuation techniques (e.g., income approach, market approach, or cost approach). The income approach is primarily based on the investment's anticipated future income using one of two principal methods: the discounted cash flow method or the capitalization method. Inputs and estimates developed and utilized with these techniques may be subjective, unobservable, and require judgment regarding significant matters such as estimating the amount and timing of future cash flows, forward pricing assumptions, and the selection of discount and capitalization rates that appropriately reflect market and credit risks. The market approach derives investment value through comparison to recent and relevant market transactions with similar investment characteristics. The cost approach is utilized when the cost of the investment is determined to be the best representation of fair value. This method is typically used for newly purchased or undeveloped assets. When applicable, the University examines market data and collaborates closely with independent appraisers to arrive at the best estimation of fair value for each respective asset. The HMC Board of Directors discusses the valuation process and results with HMC management, and makes determinations on significant matters impacting valuation that may arise from time to time.

The following table presents the ranges of significant unobservable inputs used to value the University's Level 3 assets. While the inputs described below represent the range of inputs utilized as of the measurement date, these inputs may change over time, which may have a material effect on the valuation of these types of investments in the future.

	As of June 30, 2019			As of June 30, 2018	
Significant unobservable input by asset class[1,3,4]	Level 3 investments subject to fair value (in thousands of dollars)[2]	Range of inputs utilized in valuation model[3]	Weighted average of inputs utilized in valuation model	Level 3 investments subject to fair value (in thousands of dollars)[2]	Range of inputs utilized in valuation model[3]
Natural resources:	$ 1,878,205			$ 2,183,270	
Income approach discount rate		6.0% – 16.0%	10.2%		5.0% – 16.0%
Price per planted hectare		$1,073 – $164,937	$43,431		$1,386 – $158,900
Price per gross hectare		$168 – $57,422	$15,231		$118 – $51,559
Discount for lack of marketability		2.0% – 20.0%	9.0%		
High yield:	233,681			106,481	
Income approach discount rate					8.6%
Shadow rating discount rate		6.8% – 8.9%	8.0%		8.4% – 9.9%
Collateral coverage market risk factor		100%	100%		100%
EBITDA multiple		11.3x – 13.5x	11.9x		
Weighted average cost of capital					7.1% – 10.9%
Real estate:	32,661			40,669	
Income approach discount rate		11.5% – 13.5%	12.5%		13.0% – 13.5%
Income approach growth rate		3.0%	3.0%		3.0%
Discount for lack of marketability		15.0%	15.0%		15.0%
Private equity:	69,430			87,236	
Income approach discount rate		6.0% – 8.0%	7.0%		6.0% – 8.0%
Book value multiplier		0.6x	0.6x		0.8x
Net income multiple					5.0x
Other liabilities subject to fair value	(288,372)			(158,008)	
Loan to value		8.7% – 43.5%	22.4%		8.5% – 44.0%
Market interest rate		2.5% – 10.5%	5.1%		2.5% – 15.0%
NET AMOUNT	**$ 1,925,605**			**$ 2,259,648**	

[1] *The fair value of investments may be determined using multiple valuation techniques.*
[2] *Included within Level 3 investments is $606,844 and $636,602 as of June 30, 2019 and 2018, respectively, which were valued using other inputs including, but not limited to, single source broker quotations, third party pricing, and transactions.*
[3] *The range of inputs encompasses a variety of investment types within each asset class.*
[4] *Certain prior year amounts have been reclassified to conform to current year presentation.*

4. RECEIVABLES

The major components of receivables, net of reserves for doubtful accounts of $12.2 million and $12.9 million as of June 30, 2019 and 2018, respectively, were as follows (in thousands of dollars):

	2019	2018
Federal sponsored support	**$ 71,425**	$ 72,148
Publications	**62,872**	60,424
Executive education	**62,842**	66,837
Tuition and fees	**19,146**	20,479
Non-federal sponsored support	**10,821**	14,030
Gift receipts	**4,430**	22,510
Other	**64,785**	44,830
TOTAL RECEIVABLES, NET	**$ 296,321**	**$ 301,258**

5. NOTES RECEIVABLE

Notes receivable are recorded initially at face value plus accrued interest, which approximates fair value. Notes receivable, and related allowance for doubtful accounts, were as follows (in thousands of dollars):

	2019			2018		
	Receivable	Allowance	Net	Receivable	Allowance	Net
Student Loans:						
Government revolving	$ 49,213	$ 1,266	**$ 47,947**	$ 59,941	$ 1,433	**$ 58,508**
Institutional	86,467	2,481	**83,986**	87,206	2,372	**84,834**
Federally insured	344	159	**185**	371		**371**
Total student loans	136,024	3,906	**132,118**	147,518	3,805	**143,713**
Faculty and staff loans	234,148	179	**233,969**	230,335	179	**230,156**
Other loans	29,475	21,939	**7,536**	30,989	23,063	**7,926**
TOTAL	**$ 399,647**	**$ 26,024**	**$ 373,623**	**$ 408,842**	**$ 27,047**	**$ 381,795**

Government revolving loans are funded principally with federal advances to the University under the Perkins Loan Program and certain other programs. These advances totaled $66.7 million and $65.4 million as of June 30, 2019 and 2018, respectively, and are classified as liabilities in the *Balance Sheets*. During fiscal year 2018, the Perkins Loan Program ended and as a result the University made the first of its annual required repayments to the government. In fiscal year 2019 an annual repayment was not due while the Department of Education calculates the reimbursement owed to the University for public service cancellations since fiscal year 2010, as required by law. Interest earned on the revolving and institutional loan programs is reinvested to support additional loans. The repayment and interest rate terms of the institutional loans vary considerably.

Faculty and staff notes receivable primarily consists of mortgage and educational loans. Mortgages include shared appreciation loans, loans that bear interest at the applicable federal rate and interest-free loans. In addition, certain mortgages that bear interest at the current market rate or applicable federal rate may be subsidized for an initial period. The educational loans are primarily zero-interest loans.

The University assesses the adequacy of the allowance for doubtful accounts by evaluating the loan portfolio, including such factors as the differing economic risks associated with each loan category, the financial condition of specific borrowers, the economic environment in which the borrowers operate, the level of delinquent loans, the value of any collateral, and, where applicable, the existence of any guarantees or indemnifications. In addition to these factors, the University reviews the aging of the loans receivable and the default rate in comparison to prior years. The allowance is adjusted based on these reviews. The University considers the allowance at June 30, 2019 and 2018 to be reasonable and adequate to absorb potential credit losses inherent in the loan portfolio.

6. PLEDGES RECEIVABLE

Unconditional promises to donate to the University in the future are initially recorded at fair value (pledge net of discount) and subsequently amortized over the expected payment period, net of an allowance for uncollectible pledges. The University's indicative 1- to 5-year taxable unsecured borrowing rate is used to discount pledges receivable at the end of the fiscal year they are received. Discounts of $149.6 million and $91.8 million for the years ended June 30, 2019 and 2018, respectively, were calculated using rates ranging from 1.3% to 3.1%.

Pledges receivable included in the financial statements as of June 30, 2019 and 2018 are expected to be realized as follows (in thousands of dollars):

	2019	2018
Within one year	**$ 408,858**	$ 276,074
Between one and five years	**1,635,428**	1,104,294
More than five years	**992,743**	632,340
Less: discount and allowance for uncollectible pledges	**(271,202)**	(174,916)
TOTAL PLEDGES RECEIVABLE, NET	**$ 2,765,827**	**$ 1,837,792**

Pledges receivable as of June 30, 2019 and 2018 have been designated for the following purposes (in thousands of dollars):

	2019	2018
General Operating Account balances:		
Gifts for current use	**$ 744,871**	$ 552,268
Non-federal sponsored awards	**215,972**	127,140
Construction and life income	**294,180**	222,735
Total General Operating Account balances	**1,255,023**	**902,143**
Endowment	**1,510,804**	935,649
TOTAL PLEDGES RECEIVABLE, NET	**$ 2,765,827**	**$ 1,837,792**

Because of uncertainties with regard to realizability and valuation, conditional promises are only recognized if and when the specified conditions are met. Conditional pledges totaled $49.8 million and $59.5 million as of June 30, 2019 and 2018, respectively.

7. FIXED ASSETS

Fixed assets are reported at cost or, if a gift, at fair value as of the date of the gift, net of accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets.

The major categories of fixed assets as of June 30, 2019 and 2018 are summarized as follows (in thousands of dollars):

	2019	2018	Estimated useful life (in years)
Research facilities	**$ 2,432,190**	$ 2,376,412	*
Classroom and office facilities	**2,291,410**	2,046,484	35
Housing facilities	**2,241,939**	2,010,649	35
Other facilities	**448,844**	427,397	35
Service facilities	**778,149**	751,236	35
Libraries	**479,741**	487,598	35
Museums and assembly facilities	**959,455**	788,587	35
Athletic facilities	**235,910**	223,072	35
Land	**1,023,726**	968,922	N/A
Construction in progress	**1,297,194**	1,337,279	N/A
Equipment	**1,281,259**	1,289,975	**
SUBTOTAL AT COST	**13,469,817**	**12,707,611**	
Less: accumulated depreciation	**(5,198,106)**	(4,975,439)	
FIXED ASSETS, NET	**$ 8,271,711**	**$ 7,732,172**	

* *Estimated useful lives of components range from 10 to 45 years.*
** *Estimated useful lives of equipment range from 3 to 8 years.*

Certain University facilities are subject to restrictions as to use, structural modifications, and ownership transfer. Included in the fixed asset balances are restricted facilities with a net book value of $303.0 million and $292.8 million as of June 30, 2019 and 2018, respectively.

The costs of research facilities are separated into the shell, roof, finishes, fixed equipment, and services. These components are separately depreciated.

Equipment includes general and scientific equipment, computers, software, furniture, and vehicles.

The University has asset retirement obligations of $176.8 million and $174.4 million, which are included in "Deferred revenue and other liabilities" in the *Balance Sheets* as of June 30, 2019 and 2018, respectively.

8. ENDOWMENT AND GENERAL OPERATING ACCOUNT NET ASSETS

The University's net assets consisted of the following as of June 30, 2019 and 2018 (in thousands of dollars):

	2019			2018		
	Without donor restrictions	With donor restrictions	Total	Without donor restrictions	With donor restrictions	Total
NATURE OF SPECIFIC NET ASSETS						
Perpetual endowment funds		$ 7,848,495	**$ 7,848,495**		$ 7,378,054	**$ 7,378,054**
Endowment funds and appreciation, subject to distribution policy and appropriation		24,092,097	**24,092,097**		23,783,159	**23,783,159**
Endowment funds without restriction, board designated and subject to distribution policy	$ 7,091,584		**7,091,584**	$ 6,759,901		**6,759,901**
Pledge balances		1,510,804	**1,510,804**		935,649	**935,649**
Interests in trusts held by others		386,720	**386,720**		376,973	**376,973**
TOTAL ENDOWMENT	**7,091,584**	**33,838,116**	**40,929,700**	**6,759,901**	**32,473,835**	**39,233,736**
Operating	4,890,118		**4,890,118**	4,592,384		4,592,384
Unexpended contributions and endowment distributions		2,784,170	**2,784,170**		2,480,144	2,480,144
Student loan funds		99,129	**99,129**		98,769	98,769
TOTAL GENERAL OPERATING ACCOUNT	**4,890,118**	**2,883,299**	**7,773,417**	**4,592,384**	**2,578,913**	**7,171,297**
Split interest agreements *(Note 9)*		**573,369**	**573,369**		559,151	**559,151**
TOTAL NET ASSETS	**$ 11,981,702**	**$ 37,294,784**	**$ 49,276,486**	**$ 11,352,285**	**$ 35,611,899**	**$ 46,964,184**

Endowment

The University's endowment consists of 13,891 separate funds established over many years for a wide variety of purposes. Endowment fund balances are classified and reported in accordance with donor specifications and state law. The endowment includes both donor-restricted endowment funds and funds functioning as endowment which are not subject to donor-imposed restrictions, however decisions to spend their principal require the approval of the Corporation and therefore are classified as Board-designated endowment funds. The majority of the endowment is invested in the GIA *(Note 3)*.

The University is also the beneficiary of certain irrevocable trusts held and administered by others. The estimated fair values of trust assets, which include the present values of expected future cash flows from outside trusts and the fair value of the underlying assets of perpetual trusts, are recognized as assets and increases in net assets when the required trust documentation is provided to the University.

The fair values of these trusts are provided by the external trustees and are adjusted annually by the University. These are included as Level 3 investments in the fair value hierarchy table in *Note 3*.

The University's endowment distribution policies are designed to preserve the value of the endowment in real terms (after inflation) and generate a predictable stream of available income. Each fall, the Corporation approves the endowment distribution for the following fiscal year. Distribution from an underwater endowment fund (a fund below its historic dollar value) could continue in limited and defined circumstances under the University's endowment distribution policy. To the extent that the fair value of a donor restricted endowment fund falls below its historic dollar value it would be reported as a reduction of net assets with donor restrictions.

At June 30, 2019 and 2018, funds in a deficit position were reported in net assets with donor restrictions and are comprised as follows (in thousands):

		2019		2018
Fair value of underwater endowment funds	**$**	**27,240**	$	30,703
Historic dollar value		**32,672**		33,351
TOTAL DEFICIT OF UNDERWATER ENDOWMENT FUNDS	**$**	**(5,432)**	**$**	**(2,648)**

The endowment distribution is based in part on presumptive guidance from a formula that is intended to provide budgetary stability by smoothing the impact of annual investment gains and losses. The formula's inputs reflect expectations about long-term returns and inflation rates. For fiscal year 2019, the endowment distribution approved by the Corporation (prior to decapitalizations) was equal to 5.1% of the fair value of the endowment invested in the GIA as of the beginning of the fiscal year. The total endowment distribution made available for operations was $1.9 billion and $1.8 billion in fiscal year 2019 and 2018, respectively.

Each year the Corporation also approves certain decapitalizations from the endowment to support strategic, mission-critical activities or objectives that are typically one-time or time-limited and therefore, are excluded from net operating surplus. These decapitalizations totaled $32.2 million and $46.0 million in fiscal year 2019 and 2018, respectively. These additional decapitalizations, in combination with the endowment distribution, resulted in an aggregate payout rate of 5.1% and 5.3% in fiscal year 2019 and 2018, respectively. The aggregate payout rate does not include the impact of new tax charges related to the endowment, if included, the total payout rate would be 5.2% for fiscal year 2019.

General operating account

The GOA consists of the general or current funds of the University as well as the assets and liabilities related to student and faculty loans and facilities. The GOA accepts, manages, and pays interest on deposits made by University departments; invests surplus working capital; makes loans; and arranges external financing for major capital projects. It is used to manage, control, and execute all University financial transactions, except for those related to investment activities conducted by HMC.

9. SPLIT INTEREST AGREEMENTS

Under split interest agreements, donors enter into trust or other arrangements with the University in which the University receives benefits that are shared with other beneficiaries and institutions. Split interest agreement (SIA) investment assets are invested primarily in the GIA and publicly-traded securities, a small segment is managed by an external advisor, and all are recorded in the "Investment portfolio, at fair value" in the University's *Balance Sheets*. Additional disclosures are included in *Note 3*. Associated liabilities are recorded at the present value of estimated future payments due to beneficiaries and other institutions.

These liabilities are calculated using the University's current taxable unsecured borrowing rate of 2.1% and 3.1% as of June 30, 2019 and 2018, respectively. All split interest agreement net assets and the respective activity are reported within net assets with donor restrictions. Upon termination of a split interest agreement, the net assets are transferred to the GOA or endowment accordingly.

The changes in split interest agreement net assets for fiscal years 2019 and 2018 were as follows (in thousands of dollars):

	2019	2018
Investment return:		
Investment income	**$ 13,807**	$ 11,365
Realized and change in unrealized appreciation, net	**45,694**	72,780
Total investment return	**59,501**	84,145
Gifts *(Note 14)**	**8,437**	12,166
Payments to annuitants	**(65,770)**	(65,728)
Transfers to endowment	**(15,213)**	(25,707)
Transfers between SIA and the GOA	**(13,886)**	(12,661)
Change in liabilities and other adjustments	**41,149**	33,054
NET CHANGE DURING THE YEAR	**14,218**	**25,269**
Total split interest agreement net assets, beginning of year	**559,151**	533,882
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	**$ 573,369**	**$ 559,151**

* *Shown at net present value. The undiscounted value of these gifts was $18,508 and $29,287 for the years ended June 30, 2019 and 2018, respectively.*

Split interest agreement net assets as of June 30, 2019 and 2018 consisted of the following (in thousands of dollars):

	2019	2018
Split interest agreement investments *(Note 3)*		
Charitable remainder trusts	**$ 930,742**	$ 924,576
Charitable lead trusts	**125,040**	125,341
Charitable gift annuities	**249,917**	250,473
Pooled income funds	**127,414**	121,174
Total split interest agreement investments[1]	**1,433,113**	**1,421,564**
Liabilities due under split interest agreements:		
Amounts due to beneficiaries	**(792,558)**	(801,355)
Amounts due to other institutions	**(67,186)**	(61,058)
Total liabilities due under split interest agreements	**(859,744)**	**(862,413)**
TOTAL SPLIT INTEREST AGREEMENT NET ASSETS, END OF YEAR	**$ 573,369**	**$ 559,151**

[1] *For the year ended June 30, 2019, $780,737 of SIA investments are held in the pooled general investment account and $652,376 of SIA investments are held in the other investments outside the general investment account. For the year ended June 30, 2018, $820,725 of SIA investments are held in the pooled general investment account and $600,839 of SIA investments are held in the other investments outside the general investment account. Refer to* Note 3.

10. BONDS AND NOTES PAYABLE

Bonds and notes payable as of June 30, 2019 and 2018 were as follows (in thousands of dollars):

	Fiscal year of issue	Years to final maturity[1]	One-year yield[2]	Outstanding principal 2019[3]	2018[3]
TAX-EXEMPT BONDS AND NOTES PAYABLE:					
Variable-rate demand bonds and commercial paper:					
Series R – daily	2000-2006	13	1.3%	$ 131,200	$ 131,200
Series Y – weekly	2000	16	1.5%	117,905	117,905
Commercial paper	2019	< 1	1.8%	350,000	0
Total variable-rate bonds and notes payable			1.6%	599,105	249,105
Fixed-rate bonds:					
Series N (par value, $80,000)	1992	1	6.3%	79,916	79,815
Series 2009A (par value, $0)	2009	0	4.8%	0	22,692
Series 2010A (par value, $49,590)	2010	2	4.7%	51,407	52,134
Series 2010B (par value, $110,235)	2011	5	4.8%	113,844	115,891
Series 2016A (par value, $1,539,720)	2017	21	3.9%	1,860,731	1,886,801
Total fixed-rate bonds			4.1%	2,105,898	2,157,333
TOTAL TAX-EXEMPT BONDS AND NOTES PAYABLE			**3.6%**	**2,705,003**	**2,406,438**
TAXABLE BONDS AND NOTES PAYABLE:					
Variable-rate bonds and notes payable:					
Commercial paper	2012	0	2.4%	0	262,798
Total variable-rate bonds and notes payable			2.4%	0	262,798
Fixed-rate bonds:					
Series 2008A (par value, $243,000)	2008	19	5.6%	242,881	242,875
Series 2008C (par value, $0)	2008	0	5.3%	0	125,205
Series 2008D (par value, $500,000)	2009	20	6.5%	498,812	498,751
Series 2010C (par value, $300,000)	2011	21	4.9%	298,573	298,506
Series 2013A (par value, $402,000)	2013	18	3.4%	402,000	402,000
Series 2016B (par value, $1,000,000)	2017	37	3.3%	995,765	995,643
Total fixed-rate bonds			4.4%	2,438,031	2,562,980
TOTAL TAXABLE BONDS AND NOTES PAYABLE			**4.3%**	**2,438,031**	**2,825,778**
Other notes payable	Various	Various	Various	87,405	87,057
Unamortized bond issuance costs				(17,090)	(18,352)
TOTAL BONDS AND NOTES PAYABLE			**4.0%**	**$ 5,213,349**	**$ 5,300,921**

[1] *The weighted average maturity of the portfolio on June 30, 2019 was 17.5 years.*
[2] *Exclusive of interest rate exchange agreement. Inclusive of this agreement, the overall portfolio rate was 0.05% higher (4.06% vs. 4.01%).*
[3] *Balances include original issuance premiums/discounts.*

Interest expense related to bonds and notes payable was $183.7 million and $187.5 million for fiscal 2019 and 2018, respectively. The interest expense in the *Statement of Changes in Net Assets with General Operating Account Detail* includes additional components related to capital leases. Excluding maturity of commercial paper and unamortized discounts and premiums, unamortized underwriter's discount and unamortized cost of issuance, scheduled principal payments are (in thousands of dollars):

Fiscal year	Principal payments
2020	$ 467,999
2021	88,186
2022	109,619
2023	54,891
2024	101,853
Thereafter	4,088,507
TOTAL PRINCIPAL PAYMENTS	**$ 4,911,055**

The University is rated Aaa by Moody's Investors Service and AAA by Standard & Poor's Global Ratings. The Standard & Poor's rating was re-affirmed in December 2018 and the Moody's Investors Service rating was re-affirmed in January 2019.

The University has one unsecured, revolving credit facility totaling $1.5 billion, which expires in March 2022. There was no outstanding drawn balance on the credit facility at June 30, 2019.

The University has taxable commercial paper line available totalling $2 billion. There was no outstanding drawn balance on the taxable commercial paper line at June 30, 2019.

As of June 30, 2019, the University had $249.1 million of variable-rate demand bonds outstanding (excluding commercial paper) with either a daily or weekly interest rate reset, as noted in the bonds and notes payable table. In the event that the University receives notice of any optional tender on its variable-rate demand bonds, or if the bonds become subject to mandatory tender, the purchase price of the bonds will be paid from the remarketing of such bonds. However, if the remarketing proceeds are insufficient, the University will have a general obligation to purchase the bonds tendered with cash on hand.

Interest rate exchange agreements

In fiscal 2019, the University had in place one interest rate exchange agreement, used to manage the interest cost and risk associated with a portion of its outstanding debt.

The fair value of the interest rate exchange agreement was $(27.4) million and $(15.5) million as of June 30, 2019 and 2018, respectively and is recorded in "Other liabilities associated with the investment portfolio" on the University's *Balance Sheets*.

11. EMPLOYEE BENEFITS

The University offers current employees a choice of health plans, a dental plan, short-term and long-term disability plans, life insurance, tuition assistance, and a variety of other benefits such as subsidized passes for public transportation and for Harvard athletic facilities. In addition, the University has retirement plans covering substantially all employees.

The University uses a measurement date of June 30 for its pension and postretirement health plans.

457(b) deferred compensation plan

The University offers a non-qualified deferred compensation plan under Internal Revenue Code 457(b) to a select group of employees. There is no University contribution related to the plan. The University has recorded both an asset and a liability related to the plan of $151.2 million as of June 30, 2019; the assets are included in "Prepayments and deferred charges" and the liabilities are included in "Deferred revenue and other liabilities" on the University's *Balance Sheets*.

Pension benefits

All eligible faculty members and staff are covered by retirement programs that include a defined benefit component, a defined contribution component, or a combination of the two.

In accordance with the Employee Retirement Income Security Act (ERISA) requirements, the University has established a trust to hold plan assets for its defined benefit pension plans. The fair value of the trust's assets was $863.5 million and $828.1 million as of June 30, 2019 and 2018, respectively. During fiscal years 2019 and 2018, the University made cash contributions to the defined benefit pension plan of $14.9 million and $15.5 million, respectively. The University recorded expenses for its defined contribution plans of $148.5 million and $141.5 million for fiscal year 2019 and 2018, respectively.

Postretirement health benefits

The University provides postretirement health coverage and life insurance to substantially all of its employees. As of June 30, 2019, the University had internally designated and invested $727.9 million in the GIA to fund the postretirement health benefit accrued liability of $854.6 million. As of June 30, 2018, the University had internally designated and invested $692.2 million to fund the postretirement health benefit accrued liability of $806.7 million.

The following table sets forth the pension and postretirement plans' funded status that is reported in the *Balance Sheets* as of June 30, 2019 and 2018 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2019	2018	2019	2018
Change in projected benefit obligation:				
Projected benefit obligation, beginning of year	**$ 1,004,962**	$ 1,075,728	**$ 806,714**	$ 853,003
Service cost	**9,675**	11,233	**30,474**	34,645
Interest cost	**42,455**	42,418	**34,719**	35,522
Plan participants contributions			**3,761**	3,377
Plan change			**71**	(193)
Gross benefits paid	**(51,817)**	(44,157)	**(28,509)**	(23,555)
Actuarial (gain)/loss	**124,122**	(80,260)	**7,409**	(96,085)
PROJECTED BENEFIT OBLIGATION, END OF YEAR[1]	**1,129,397**	**1,004,962**	**854,639**	**806,714**
Change in plan assets:				
Fair value of plan assets, beginning of year	**828,124**	836,456		
Actual return on plan assets	**72,320**	20,302		
Employer contributions	**14,865**	15,523		
Gross benefits paid	**(51,817)**	(44,157)		
FAIR VALUE OF PLAN ASSETS, END OF YEAR	**863,492**	**828,124**	**0**	**0**
ACCRUED RETIREMENT OBLIGATIONS/UNFUNDED STATUS[2]	**$ (265,905)**	**$ (176,838)**	**$ (854,639)**	**$ (806,714)**

[1] *Measurement of the University's pension benefit obligation including assumed salary increases (required by GAAP).*
[2] *These amounts totaling $1,120,544 as of June 30, 2019 and $983,552 as of June 30, 2018 are included in the "Accrued Retirement Obligations" line in the* Balance Sheets.

The accumulated pension benefit obligation (ABO) is a measurement of the University's pension benefit obligation, based on past and present compensation levels and does not include assumed salary increases. The ABO was $968.9 million and $860.8 million at June 30, 2019 and 2018, respectively. The funded status disclosed above has been prepared in accordance with pension accounting rules. When measured on an IRS funding basis, which informs the University's required cash contribution amount, the plan was overfunded at January 1, 2019.

Net periodic benefit cost

Components of net periodic benefit cost recognized in operating activity and other amounts recognized in non-operating activity in net assets without donor restrictions in the *Statements of Changes in Net Assets with General Operating Account Detail* are summarized as follows for the years ended June 30, 2019 and 2018 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2019	2018	2019	2018
Components of net periodic benefit cost:				
Service cost	**$ 9,675**	$ 11,233	**$ 30,474**	$ 34,645
Interest cost	**42,455**	42,418	**34,719**	35,522
Expected return on plan assets	**(50,469)**	(50,426)		
Amortization of:				
Actuarial loss/(gain)	**3,320**	10,088	**(13,469)**	(6,564)
Prior service cost/(credit)	**288**	288	**(7,132)**	(7,116)
Total net periodic benefit cost recognized in operating activity	**5,269**	**13,601**	**44,592**	**56,487**
Other amounts recognized in non-operating activity in net assets without donor restrictions:				
Current year net actuarial loss/(gain)	**102,271**	(50,136)	**7,409**	(96,085)
Current year net prior service cost			**71**	(193)
Amortization of:				
Prior service (cost)/credit	**(288)**	(288)	**7,132**	7,116
Actuarial (loss)/gain	**(3,320)**	(10,088)	**13,469**	6,564
Total other amounts recognized in non-operating activity[1]	**98,663**	**(60,512)**	**28,081**	**(82,598)**
TOTAL RECOGNIZED IN *STATEMENTS OF CHANGES IN NET ASSETS WITH GENERAL OPERATING ACCOUNT DETAIL*	**$ 103,932**	**$ (46,911)**	**$ 72,673**	**$ (26,111)**

[1] *These amounts totaling $126,744 in fiscal year 2019 and $(143,110) in fiscal year 2018 include gains and losses and other changes in the actuarially determined benefit obligations arising in the current period but that have not yet been reflected within net periodic benefit cost/(income) and are included in the "Change in Retirement Obligations" line in the* Statements of Changes in Net Assets with General Operating Account Detail.

Cumulative amounts recognized as non-operating changes in net assets without donor restrictions are summarized as follows for the years ended June 30, 2019 and 2018 (in thousands of dollars):

	Pension benefits		Postretirement health benefits	
	2019	2018	2019	2018
Net actuarial loss/(gain)	**$ 196,647**	$ 97,697	**$ (245,254)**	$ (266,133)
Prior service cost/(credit)	**1,181**	1,469	**(46,386)**	(53,589)
CUMULATIVE AMOUNTS RECOGNIZED IN NET ASSETS WITHOUT DONOR RESTRICTIONS	**$ 197,828**	**$ 99,166**	**$ (291,640)**	**$ (319,722)**

The estimated net actuarial loss and prior service cost for the defined benefit plan that will be amortized from net assets without donor restrictions into net periodic benefit (income)/ cost in fiscal year 2020 are $15.7 million and $0.3 million, respectively. The estimated net actuarial gain and estimated prior service credit for the postretirement health benefit that will be amortized from net assets without donor restrictions into net periodic benefit (income)/cost in fiscal year 2020 are ($11.2) million and ($7.1) million, respectively.

Other assumptions and health care cost trend rates used in determining the year end obligation as well as the net periodic benefit (income)/cost of the pension and postretirement health plans are summarized as follows for fiscal years 2019 and 2018:

	Pension benefits		Postretirement health benefits	
	2019	2018	2019	2018
Weighted-average assumptions used to determine benefit obligation as of June 30:				
Discount rate	**3.65%**	4.30%	**3.60%**	4.20%
Compensation increase trend:				
Initial rate	**3.50%**	3.00%	**3.50%**	3.00%
Ultimate rate	N/A	4.00%	**4.00%**	4.00%
Year of ultimate	N/A	2021	**2021**	2021
Health care cost trend rate:				
Initial rate	N/A	N/A	**5.00%**	5.00%
Ultimate rate	N/A	N/A	**4.75%**	4.75%
Year of ultimate	N/A	N/A	**2023**	2023
Weighted-average assumptions used to determine net periodic benefit (income)/cost:				
Discount rate	**4.30%**	4.00%	**4.20%**	4.05%
Expected long-term rate of return on plan assets	**6.50%**	6.50%	N/A	N/A
Compensation increase trend:				
Initial rate	**3.00%**	3.00%	**3.00%**	3.00%
Ultimate rate	**4.00%**	4.00%	**4.00%**	4.00%
Year of ultimate	**2021**	2021	**2021**	2021
Health care cost trend rate:				
Initial rate	N/A	N/A	**5.00%**	5.50%
Ultimate rate	N/A	N/A	**4.75%**	4.75%
Year of ultimate	N/A	N/A	**2023**	2023

As an indicator of sensitivity, a one percentage point change in assumed health care cost trend rate would affect 2019 as shown in the following table (in thousands of dollars):

	1% point increase	1% point decrease
Effect on 2019 postretirement health benefits service and interest cost	$ 17,277	$ (11,152)
Effect on postretirement health benefits obligation as of June 30, 2019	189,576	(133,497)

The expected return on pension plan assets is determined by utilizing an independent advisor's capital markets model, which takes into account the expected real return, before inflation, for each of the pension portfolio's asset classes, as well as the correlation of any one asset class to every other asset class. This model calculates the real returns and correlations and derives an expected real return for the entire portfolio, given the percentage weighting allocated to each asset class. After calculating the expected real return, an assessment is made to accommodate the expected inflation rate for the forthcoming period. The final expected return on assets is the aggregate of the expected real return plus the expected inflation rate.

Plan assets

The actual asset allocation of the investment portfolio for the pension plan at June 30, 2019 and 2018, along with target allocations for June 30, 2020, is as follows:

	2020 Target	June 30, 2019	June 30, 2018
Asset allocation by category for pension plan:			
Equity securities	30-55%	38.7%	38.8%
Fixed income securities	30-50	47.1	48.9
Hedge funds	10-30	12.5	10.9
Cash	0-5	1.7	1.4
TOTAL OF ASSET ALLOCATION CATEGORIES		**100.0%**	**100.0%**

The University's investment strategy for the pension portfolio is to manage the assets across a broad and diversified range of investment categories, both domestic and international. The objective is to achieve a risk-adjusted return that is in line with the long-term obligations that the University has to the pension plan beneficiaries. During fiscal year 2018, the University maintained its allocation to fixed income securities to manage the interest rate volatility associated with its pension obligations. The University expects to continue this strategy in future years. The investment program is also managed to comply with all ERISA regulations.

The following is a summary of the levels within the fair value hierarchy for the pension plan assets subject to fair value measurement as of June 30, 2019 and 2018 (in thousands of dollars):

	2019					2018
	Level 1	Level 2	Level 3	NAV as practical expedient	Total	Total
PLAN ASSETS:						
Cash and short-term investments	$ 26,135				**$ 26,135**	$ 21,951
Domestic equity				$ 163,500	**163,500**	145,989
Foreign equity	73,246			34,311	**107,557**	107,101
Domestic fixed income	88,869	$ 279,469			**368,338**	358,626
Foreign fixed income		22,555			**22,555**	21,110
Emerging market equity and debt	32,388	2,561		26,836	**61,785**	70,190
Hedge funds				108,398	**108,398**	89,505
Due from brokers	4				**4**	330
Buy-sell backs		33,343			**33,343**	25,962
Private equity				4,234	**4,234**	8,994
Real estate				27	**27**	34
PLAN ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 220,642**	**$ 337,928**	**$ 0**	**$ 337,306**	**$ 895,876**	**$ 849,792**
Other assets not subject to fair value					**1,086**	3,007
TOTAL PLAN ASSETS					**$ 896,962**	**$ 852,799**
PLAN LIABILITIES:						
Due to brokers	$ 49				**$ 49**	$ 22
Forward sale commitment		$ 19,806			**19,806**	20,022
PLAN LIABILITIES SUBJECT TO FAIR VALUE LEVELING	**$ 49**	**$ 19,806**			**$ 19,855**	**$ 20,044**
Other liabilities not subject to fair value					**13,614**	4,631
TOTAL PLAN LIABILITIES					**$ 33,469**	**$ 24,675**

The following is a rollforward of Level 3 investments for the year ended June 30, 2018 (in thousands of dollars):

	Beginning balance as of July 1, 2017	Net realized gains/ (losses)	Net change in unrealized appreciation (depreciation)	Purchases/ contributions	Sales/ distributions	Transfers into Level 3	Transfers out of Level 3	Ending balance as of June 30, 2018
PRIOR YEAR NET ASSETS SUBJECT TO FAIR VALUE LEVELING	**$ 23,709**	**$ (27,161)**	**$ 21,137**	**$ 7**	**$(17,692)**	**$ 0**	**$ 0**	**$ 0**

Expected future benefit payments

Employer contributions of $52.0 million are expected for fiscal year 2020 to fund the pension benefit plan.

The following table summarizes expected benefit payments and subsidies for pension and other postretirement benefits for the University (in thousands of dollars):

	Expected benefit payments	
Fiscal year	Pension	Postretirement health
2020	$ 57,123	$ 21,622
2021	58,351	23,601
2022	60,714	25,334
2023	63,019	27,253
2024	65,111	29,264
Thereafter	350,724	178,749

12. STUDENT FINANCIAL AID

Financial aid granted to students in fiscal 2019 and 2018 is summarized as follows (in thousands of dollars):

	2019	2018
Scholarships and other student awards:		
Scholarships applied to student income[1]	**$ 457,369**	$ 439,445
Scholarships and other student awards paid directly to students	**155,874**	152,421
Total scholarships and other student awards	**613,243**	**591,866**
Student employment	**81,287**	76,133
Student loans	**14,639**	15,943
Agency financial aid[2]	**20,326**	19,564
TOTAL STUDENT FINANCIAL AID	**$ 729,495**	**$ 703,506**

[1] *Includes $192,712 of undergraduate scholarships applied to student income.*
[2] *Represents aid from sponsors for which the University acts as an agent for the recipient.*

13. SPONSORED SUPPORT

Total expenditures funded by US government sponsors or by institutions that subcontract federally-sponsored projects to the University were $630.8 million and $625.3 million in fiscal year 2019 and 2018, respectively. The University's principal source of federally-sponsored funds is the Department of Health and Human Services. The University also has many non-federal sources of sponsored awards and grants, including corporations, foundations, state and local governments, foreign governments, and research institutes.

Sponsored grants and contracts normally provide for the recovery of direct and indirect costs. Recovery of related indirect costs is generally recorded at fixed or predetermined rates negotiated with the federal government and other sponsors. Predetermined federal indirect cost rates have been established for the University Area and the Medical School (including the School of Dental Medicine) through fiscal year 2019 and for T.H. Chan School of Public Health through fiscal year 2023. Funds received for federally-sponsored activity are subject to audit.

14. GIFTS

Gifts are classified as net assets with or without restrictions in accordance with donor specifications.

Additionally gifts are categorized by purpose as "Current use", "Non-federal sponsored grants", "Endowment funds", "Split interest agreements", or "Loan funds and facilities".

Gifts received for the year ended June 30, 2019 are summarized as follows (in thousands of dollars):

	2019		
	Gifts received	Donor redesignations/ other changes	Total
Current use	$ 472,432	$ (319)	**$ 472,113**
Non-federal sponsored grants	197,236	(778)	**196,458**
Endowment funds[1]	614,561	(1,274)	**613,287**
Split interest agreements[2]	8,437		**8,437**
Loan funds and facilities[1]	85,744	628	**86,372**
TOTAL GIFTS	**$ 1,378,410**	**$ (1,743)**	**$ 1,376,667**

[1] *Gift receipts include non-cash gifts of $2.5 million for the year ended June 30, 2019.*
[2] *Shown at net present value. The undiscounted value of these gifts was $18,508 for the year ended June 30, 2019.*

Gifts received for the year ended June 30, 2018 are summarized as follows (in thousands of dollars):

	2018		
	Gifts received	Donor redesignations/ other changes	Total
Current use	$ 466,991	$ (445)	**$ 466,546**
Non-federal sponsored grants	183,331	(2,258)	**181,073**
Endowment funds[1]	646,340	(41)	**646,299**
Split interest agreements[2]	12,166		**12,166**
Loan funds and facilities	109,410	(183)	**109,227**
TOTAL GIFTS	**$ 1,418,238**	**$ (2,927)**	**$ 1,415,311**

[1] *Gift receipts include non-cash gifts of $10 million for the year ended June 30, 2018.*
[2] *Shown at net present value. The undiscounted value of these gifts was $29,287 for the year ended June 30, 2018.*

15. OTHER REVENUE

The major components of other revenue for the years ended June 30, 2019 and 2018 were as follows (in thousands of dollars):

	2019	2018
Publications and royalties from copyrights	**$ 238,385**	$ 226,757
Rental and parking[1]	**141,375**	135,529
Services income	**136,288**	120,309
Royalties from the commercialization of intellectual property[2]	**97,568**	54,573
Health and clinic fees	**64,780**	61,211
Sales income	**29,888**	29,665
Interest income	**10,961**	10,699
Other student income	**5,112**	5,421
Other	**47,681**	44,560
TOTAL OTHER REVENUE	**$ 772,038**	**$ 688,724**

[1] *The University is the lessor of space and facilities under operating leases, the income from which is included in rental and parking.*
[2] *Excludes distributions to external parties.*

16. OTHER EXPENSES

The major components of other expenses for the years ended June 30, 2019 and 2018 were as follows (in thousands of dollars):

	2019	2018
Subcontract expenses under sponsored projects	**$ 158,543**	$ 165,445
Travel	**103,697**	99,555
Publishing	**46,951**	46,223
Taxes and Fees	**43,199**	35,278
Advertising	**38,568**	36,113
Insurance	**18,617**	17,182
Postage	**17,398**	18,073
Telephone	**14,663**	14,398
Other	**116,165**	79,511
TOTAL OTHER EXPENSES	**$ 557,801**	**$ 511,778**

17. FUNCTIONAL AND NATURAL CLASSIFICATION OF OPERATING EXPENSES

Operating expenses are allocated functionally on a direct basis. Operations and maintenance expenses are allocated based on square footage.

Operating expenses by functional and natural classification for the years ended June 30, 2019 and 2018 were as follows (in thousands of dollars):

2019	Instruction and academic support	Research[1]	Student services and scholarships	Institutional support and auxiliary services	Total
Salaries and wages	$ 1,043,852	$ 294,285	$ 141,588	$ 558,753	**$ 2,038,478**
Employee benefits	273,353	74,868	50,451	166,833	**565,505**
Services purchased	363,109	85,599	60,311	171,672	**680,691**
Space and occupancy	113,374	59,349	30,083	176,484	**379,290**
Depreciation	43,817	119,333	19,985	199,640	**382,775**
Supplies and equipment	84,587	57,428	43,222	85,386	**270,623**
Interest	15,201	33,081	11,890	121,461	**181,633**
Scholarships and other student awards			155,874		**155,874**
Other expenses	36,229	414,717	35,030	71,825	**557,801**
TOTAL EXPENSES	**$ 1,973,522**	**$ 1,138,660**	**$ 548,434**	**$ 1,552,054**	**$ 5,212,670**

[1] *The methodology used to allocate expenses for financial statement purposes is different than methodologies used for other purposes, such as governmental surveys.*

2018	Instruction and academic support	Research[1]	Student services and scholarships	Institutional support and auxiliary services	Total
Salaries and wages	$ 994,293	$ 279,236	$ 136,716	$ 533,591	$ 1,943,836
Employee benefits	273,849	74,813	49,759	170,802	569,223
Services purchased	331,480	82,977	56,394	146,359	617,210
Space and occupancy	117,482	67,185	30,587	195,187	410,441
Depreciation	36,376	115,941	22,169	183,479	357,965
Supplies and equipment	91,447	55,027	42,160	79,566	268,200
Interest	15,417	36,838	11,634	123,994	187,883
Scholarships and other student awards			152,421		152,421
Other expenses	34,045	397,744	33,980	46,009	511,778
TOTAL EXPENSES	**$ 1,894,389**	**$ 1,109,761**	**$ 535,820**	**$ 1,478,987**	**$ 5,018,957**

[1] *The methodology used to allocate expenses for financial statement purposes is different than methodologies used for other purposes, such as governmental surveys.*

18. COMMITMENTS AND CONTINGENCIES

Lease commitments

The University is the lessee of equipment and space under operating (rental) and capital leases. Rent expense related to leases was $105.4 million and $86.0 million in fiscal year 2019 and 2018, respectively.

Future minimum lease payments under these operating and capital leases (in thousands of dollars):

	Operating	Capital
2020	$ 79,551	$ 11,664
2021	73,511	10,943
2022	68,031	11,215
2023	63,325	11,276
2024	52,038	11,406
Thereafter	289,570	151,240
TOTAL FUTURE MINIMUM PAYMENTS	**$ 626,026**	**$ 207,744**

Fixed asset-related commitments

The University has various commitments for capital projects involving construction and renovation of certain facilities, real estate acquisitions, and equipment purchases, for which the outstanding commitments as of June 30, 2019 totaled approximately $367.3 million.

Environmental remediation

The University is subject to laws and regulations concerning environmental remediation and has established reserves for potential obligations that management considers to be probable and for which reasonable estimates can be made. These estimates may change substantially depending on new information regarding the nature and extent of contamination, appropriate remediation technologies, and regulatory approvals. Costs of future environmental remediation have been discounted to their net present value. Management is not aware of any existing conditions that it believes are likely to have a material adverse effect on the University's financial position, changes in net assets, or cash flows.

Utilities purchase commitments

The University has entered into Power Purchase Agreements (PPAs) with a series of utilities providers to purchase natural gas and electricity for various quantities and time periods. As of June 30, 2019, future obligations under the PPAs are as follows (in thousands of dollars):

2020	$ 18,836
2021	12,439
2022	10,433
2023	9,552
2024	8,569
Thereafter	12,105
TOTAL UTILITY FUTURE PURCHASE OBLIGATIONS	**$ 71,934**

General

The University is a defendant in various legal actions arising from the normal course of its operations. While it is not possible to predict accurately or determine the eventual outcome of such actions, management believes that the outcome of these proceedings will not have a material adverse effect on the University's financial position, changes in net assets, or cash flows.

The University has evaluated subsequent events through October 24, 2019, the date the financial statements were issued. The University has concluded that no material events have occurred that are not accounted for in the accompanying financial statements or disclosed in the accompanying notes.

(unaudited)

The outbreak of COVID-19 has caused domestic and global disruption in operations for institutions of higher education. In addition, COVID-19 has negatively impacted the financial markets and may continue to materially affect the returns on and value of the University's investments and/or endowment. Other adverse consequences of COVID-19 or any other similar outbreaks in the future may include, but are not limited to, decline in enrollment, decline in demand for campus housing, decline in demand for programs that involve travel or that have international connections and decline in philanthropic donations. The full impact of COVID-19 and the scope of any adverse impact on the University's finances and operations cannot be fully determined at this time.

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APPENDIX C

SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE

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APPENDIX C

SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE

The following is a summary of certain provisions of the Indenture that are not described elsewhere in this Offering Memorandum. The Bonds are issued and secured pursuant to the Indenture. References to the Indenture or a fund or account refer to the related document, fund or account with respect to the Bonds, as described in the Offering Memorandum. Unless otherwise specified to the contrary in this Appendix C, all definitions and provisions summarized refer to the Indenture. This summary does not purport to be comprehensive and reference should be made to the Indenture for a full and complete statement of its provisions.

Definitions

Unless the context otherwise requires, the following terms shall have the meanings specified below.

"*Authorized Denomination*" means $1,000 or any multiple integral thereof.

"*Authorized Representative*" means the Institution's Vice President for Finance, Treasurer, Assistant Treasurer, or any other Person designated as an Authorized Representative of the Institution by a Certificate of the Institution signed by the Institution's Vice President for Finance or Assistant Treasurer, updated as necessary, and filed with the Trustee.

"*Beneficial Owner*" means any Person which has or shares the power, directly or indirectly, to make investment decisions concerning ownership of any of the Bonds (including any Person holding Bonds through nominees, depositories or other intermediaries) established to the reasonable satisfaction of the Trustee or the Institution .

"*Bonds*" means the President and Fellows of Harvard College, Taxable Bonds, Series 2020B authorized by, and at any time Outstanding pursuant to, the Indenture.

"*Book-Entry Form*" or "*Book-Entry System*" means a form or system, as applicable, under which physical bond certificates in fully registered form are registered only in the name of a Securities Depository or its nominee as Bondholder, with the physical bond certificates held by and "immobilized" in the custody of the Securities Depository and the book-entry system maintained by and the responsibility of others than the Institution or the Trustee is the record that identifies and records the transfer of the interests of the owners of book-entry interests in those Bonds.

"*Business Day*" means any day other than (A) a Saturday or Sunday or legal holiday or a day on which banking institutions in the city or cities in which the Designated Office of the Trustee is located are authorized by law or executive order to close or (B) a day on which the New York Stock Exchange is closed.

"'*Certificate*', '*Statement*', '*Request*' or '*Requisition*' *of the Institution*" mean, respectively, a written certificate, statement, request or requisition signed in the name of the Institution by an Authorized Representative. Any such instrument and supporting opinions or representations, if any, may, but need not, be combined in a single instrument with any other instrument, opinion or representation, and the two or more so combined shall be read and construed as a single instrument. If and to the extent required by the Indenture, each such instrument shall include the statements provided for in the Indenture.

"*Code*" means the Internal Revenue Code of 1986, as amended, or any successor statute thereto and any regulations promulgated thereunder.

"*Commonwealth*" means The Commonwealth of Massachusetts.

"*Comparable Treasury Issue*" means the United States Treasury security or securities selected by a Designated Investment Banker as having an actual or interpolated maturity comparable to the remaining term of the

Bonds to be redeemed that would be utilized, at the time of selection and in accordance with customary financial practice, in pricing new issues of corporate debt securities of a comparable maturity to the remaining term of such Bonds.

"*Comparable Treasury Price*" means, with respect to any redemption date, the average of the Primary Treasury Dealer Quotations for such redemption date or, if the Designated Investment Banker obtains only one Primary Treasury Dealer Quotation, such Primary Treasury Dealer Quotation.

"*Default*" means any event which is or after notice or lapse of time or both would become an Event of Default.

''*Designated Investment Banker*'' means a Primary Treasury Dealer appointed by the Institution.

"*Designated Office*" means the Designated Office of the Trustee, which as of the date of the Indenture is located at 500 Ross Street, 12th Floor, Pittsburgh, Pennsylvania 15262, Attention: Corporate Trust, and such other offices as the Trustee may designate from time to time by written notice to the Institution and the Holders.

"*Event of Default*" means any of the events specified as such in the Indenture.

"*Holder*" or "*Bondholder*", whenever used in the Indenture with respect to a Bond, means the Person in whose name such Bond is registered.

"*Indenture*" means the Indenture of Trust, by and between the Institution and the Trustee, as originally executed or as it may from time to time be supplemented, modified or amended by any Supplemental Indenture.

"*Indenture Fund*" means the fund by that name established pursuant to the Indenture.

"*Institution*" means President and Fellows of Harvard College, an educational corporation existing under the laws of the Commonwealth, or said educational corporation's successor or successors.

"*Interest Payment Date*" means April 15 and October 15 of each year, commencing October 15, 2020.

"*Investment Securities*" means either of the following: (1) direct nonprepayable, noncallable obligations of the United States of America (including obligations issued or held in book-entry form on the books of the Department of the Treasury of the United States of America) or direct nonprepayable, noncallable obligations, the timely payment of the principal of and interest on which are fully guaranteed by the United States of America, including instruments evidencing a direct ownership interest in securities described in this clause such as CATS, TIGRs, and Stripped Treasury Coupons rated or assessed in the two highest Rating Categories by S&P and Moody's and held by a custodian for safekeeping on behalf of holders of such securities and (2) money market funds registered under the Investment Company Act of 1940, the shares in which are registered under the Securities Act of 1933 and that have a rating by S&P or Moody's in such Rating Agency's two highest Rating Categories, including such funds for which the Trustee or its affiliates provide investment advisory or other management services.

"*Make-Whole Redemption Price*" means the greater of:

(1) 100% of the principal amount of a Bond to be redeemed; and

(2) the sum of the present value of the remaining scheduled payments of principal and interest to the maturity date of such Bond, not including any portion of those payments of interest accrued and unpaid as of the date on which such Bond is to be redeemed, discounted to the date on which such Bond is to be redeemed on a semi-annual basis assuming a 360-day year consisting of twelve 30-day months at the adjusted Treasury Rate plus twenty (20) basis points, plus, in each case, accrued and unpaid interest on such Bond to the redemption date.

"*Moody's*" means Moody's Investors Service, a corporation organized and existing under the laws of the State of Delaware, its successors and their assigns, or, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, any other nationally recognized securities rating agency designated by the Institution upon written notice to the Trustee.

"*Offering Memorandum*" means the final offering memorandum dated April 14, 2020, relating to the Bonds.

"*Opinion of Counsel*" means a written opinion of counsel (who may be counsel for the Institution, but not an employee thereof) not unsatisfactory to the Trustee.

"*Outstanding*" when used as of any particular time with reference to Bonds, means (subject to the provisions of the Indenture) all Bonds theretofore, or thereupon being, authenticated and delivered by the Trustee under the Indenture except (1) Bonds theretofore cancelled by the Trustee or surrendered to the Trustee for cancellation; (2) Bonds with respect to which all liability of the Institution shall have been discharged in accordance with the Indenture; and (3) Bonds for the transfer or exchange of or in lieu of or in substitution for which other Bonds shall have been authenticated and delivered by the Trustee pursuant to the Indenture.

"*Par Call Date*" means April 15, 2050.

"*Payment Date*" means an Interest Payment Date or a Principal Payment Date.

"*Person*" means an individual, corporation, firm, association, partnership, trust, limited liability company or other legal entity or group of entities, including a governmental entity or any agency or political subdivision thereof.

"*Primary Treasury Dealer*" means one or more entities appointed by the Institution, which, in each case, is a primary U.S. Government securities dealer in The City of New York, New York, and its successors.

"*Primary Treasury Dealer Quotations*" means, with respect to each Primary Treasury Dealer and any redemption date, the average, as determined by the Designated Investment Banker, of the bid and asked prices for the Comparable Treasury Issue (expressed in each case as a percentage of its principal amount) quoted in writing to the Designated Investment Banker by such Primary Treasury Dealer at 3:30 p.m. New York time on the third Business Day preceding such redemption date.

"*Principal Payment Date*" means the date of final maturity of each of the Bonds.

"*Rating Agency*" means Moody's and S&P.

"*Rating Category*" means a generic securities rating category, without regard to any refinement or gradation of such rating category by a numerical modifier or otherwise.

"*Record Date*" means the first (1st) day (whether or not a Business Day) of the month of each Interest Payment Date.

"*Redemption Price*" means 100% of the principal amount of a Bond to be redeemed plus accrued and unpaid interest on such Bond to the redemption date.

"*Responsible Officer*" means any officer of the Trustee assigned to administer its duties under the Indenture.

"*S&P*" means Standard & Poor's, a division of The McGraw-Hill Companies, a corporation organized and existing under the laws of the State of New York, its successors and their assigns, or, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, any other nationally recognized securities rating agency designated by the Institution upon written notice to the Trustee.

"*Securities Depository*" means The Depository Trust Company and its successors and assigns, or any other securities depository selected as set forth in the Indenture, which agrees to follow the procedures required to be followed by such securities depository in connection with the Bonds.

"*Series 2020B Bond Fund*" means the fund by that name established pursuant to the Indenture.

"Series 2020B Expense Fund" means the fund by that name established pursuant to the Indenture.

"*Series 2020B Interest Account*" means the account by that name in the Series 2020B Bond Fund established pursuant to the Indenture.

"*Series 2020B Principal Account*" means the account by that name in the Series 2020B Bond Fund established pursuant to the Indenture.

"*Series 2020B Redemption Fund*" means the fund by that name established pursuant to the Indenture.

"*Special Record Date*" means the date established by the Trustee pursuant to the Indenture as the record date for the payment of defaulted interest on the Bonds.

"*Supplemental Indenture*" means any indenture hereafter duly authorized and entered into between the Institution and the Trustee, supplementing, modifying or amending the Indenture; but only if and to the extent that such Supplemental Indenture is specifically authorized under the Indenture.

"*Treasury Rate*" means, with respect to any redemption date, the rate per annum equal to the semiannual equivalent yield to maturity or interpolated (on a day count basis) of the Comparable Treasury Issue, assuming a price for the Comparable Treasury Issue (expressed as a percentage of its principal amount) equal to the Comparable Treasury Price for such redemption date.

"*Trustee*" means The Bank of New York Mellon Trust Company, N.A., a national banking association duly organized and existing under and by-virtue of the laws of the United States of America, or its successor or successors, as Trustee under the Indenture as provided in the Indenture.

"*Underwriters*" means Goldman Sachs & Co. LLC, J.P. Morgan Securities LLC, Wells Fargo Securities, LLC, Barclays Capital Inc., BofA Securities, Inc., Citigroup Global Markets Inc., Morgan Stanley & Co. LLC, and TD Securities (USA) LLC.

"*Uniform Commercial Code*" means the Uniform Commercial Code as in effect in the Commonwealth from time to time.

Establishment and Pledge of Indenture Fund

Subject only to the provisions of the Indenture permitting or requiring the application thereof for the purposes and on the terms and conditions set forth therein, the Indenture Fund and all amounts held therein are pledged, assigned and transferred by the Institution to the Trustee for the benefit of the Bondholders to secure the full payment of the principal, Redemption Price or Make-Whole Redemption Price of and interest on the Bonds in accordance with their terms and the provisions of the Indenture. The Institution grants to the Trustee a security interest in and acknowledges and agrees that the Indenture Fund and all amounts on deposit therein shall constitute collateral security to secure the full payment of the principal, Redemption Price or Make-Whole Redemption Price of and interest on the Bonds in accordance with their terms and the provisions of the Indenture. For purposes of creating, perfecting and maintaining the security interest of the Trustee on behalf of the Bondholders in and to the Indenture Fund and all amounts on deposit therein, the parties to the Indenture agree as follows: (1) the Indenture shall constitute a "security agreement" for purposes of the Uniform Commercial Code and the Institution shall prepare and file or cause to be prepared and filed the initial Uniform Commercial Code filings if necessary; (2) the Trustee shall maintain on its books records reflecting the interest, as set forth in the Indenture, of the Bondholders in the Indenture Fund and/or the amounts on deposit therein; and (3) the Indenture Fund and the amounts on deposit therein and any proceeds thereof shall be held by the Trustee acting in its capacity as an agent of the Bondholders, and the holding of such items by the Trustee (including the transfer of any items among the funds and accounts in the Indenture Fund) is deemed possession of such items on behalf of the Bondholders.

Nothing in the Indenture or in the Bonds, expressed or implied, shall be construed to constitute a security interest under the Uniform Commercial Code or otherwise in the assets of the Institution other than in any interest of the Institution in the Indenture Fund and/or the amounts on deposit therein. No recourse for the payment of the principal, Redemption Price or Make-Whole Redemption Price of or interest on any Bond, or for any claim based thereon or otherwise in respect thereof, and no recourse under or upon any obligation, covenant or agreement of the Institution in the Indenture or in any Supplemental Indenture or in any Bond, or because of the creation of any indebtedness represented thereby, shall be had against any employee, agent, or officer, as such, past, present or future, of the Institution or of any successor entity, either directly or through any successor entity, whether by virtue of any constitution, statute or rule of law, or by the enforcement of any assessment or penalty or otherwise, it being expressly understood that all such liability is expressly waived and released as a condition of, and as a consideration for, the execution of the Indenture and the issue of the Bonds. No officer or agent of the Institution, nor any Person executing the Bonds, shall in any event be subject to any personal liability or accountability by reason of the issuance of the Bonds.

Redemption

The Bonds are redeemable in whole or in part (in Authorized Denominations), at the Institution's option on any Business Day, prior to the applicable Par Call Date, at the Make-Whole Redemption Price, and on or after the applicable Par Call Date, at the Redemption Price. At the request of the Trustee to the Institution, the Institution shall retain an independent accounting firm or an independent financial advisor to determine the Make-Whole Redemption Price and perform all actions and make all calculations required to determine such Make-Whole Redemption Price.

Selection of the Bonds for Redemption. If less than all of the Bonds are called for optional redemption, the Institution shall select the maturity or maturities from which the Bonds are to be redeemed. If the Bonds are registered in Book-Entry Form and for so long as the Securities Depository or a successor securities depository is the sole registered owner of the Bonds, if less than all of the Bonds of a maturity are called for prior redemption, the particular Bonds or portions thereof to be redeemed shall be selected on a pro rata pass-through distribution of principal basis in accordance with the Securities Depository procedures, provided that, so long as the Bonds are held in Book-Entry Form, the selection for redemption of such Bonds shall be made in accordance with the operational arrangements of the Securities Depository then in effect.

Notice of Redemption. Notice of redemption shall be mailed by the Trustee by first class mail, or sent by electronic means, not less than twenty (20) days, nor more than sixty (60) days prior to the redemption date, to the respective Holders of any Bonds designated for redemption at their addresses appearing on the bond registration books of the Trustee. If the Bonds are no longer held by the Securities Depository or its successor or substitute, the Trustee shall also give notice of redemption by electronic means to such securities depositories and/or securities information services as shall be designated in a Certificate of the Institution. Each notice of redemption shall state the date of such notice, the date of issue of the Bonds, the redemption date, the Redemption Price or method of determining the Make-Whole Redemption Price (as applicable), the place or places of redemption (including the name and appropriate address or addresses of the Trustee), the maturity (including CUSIP number, if any), and, in the case of Bonds to be redeemed in part only, the portion of the principal amount thereof to be redeemed. Each such notice shall also state that on said date there will become due and payable on each of said Bonds the Redemption Price or Make-Whole Redemption Price thereof (as applicable) or of said specified portion of the principal amount thereof in the case of a Bond to be redeemed in part only and that from and after such redemption date interest thereon shall cease to accrue, and shall require that such Bonds be then surrendered.

Failure by the Trustee to give notice pursuant to the Indenture to any one or more of the securities information services or depositories designated by the Institution, or the insufficiency of any such notice shall not affect the sufficiency of the proceedings for redemption. Failure by the Trustee to mail notice of redemption pursuant to the Indenture to any one or more of the respective Holders of any Bonds designated for redemption shall not affect the sufficiency of the proceedings for redemption with respect to the Holders to whom such notice was mailed.

The Institution may instruct the Trustee to provide conditional notice of redemption, which may be conditioned upon the receipt of moneys or any other event. Additionally, any notice given pursuant to the Indenture may be rescinded by written notice given to the Trustee by the Institution no later than five (5) Business Days prior to the date specified for redemption. The Trustee shall give notice of such rescission, as soon thereafter as practicable, in the same manner, to the same Persons, as notice of such redemption was given pursuant to the Indenture.

Partial Redemption of Bonds. Upon surrender of any Bond redeemed in part only, the Institution shall execute (but need not prepare) and the Trustee shall prepare or cause to be prepared, authenticate and deliver to the Holder thereof, at the expense of the Institution, a new Bond or Bonds of Authorized Denominations, equal in aggregate principal amount to the unredeemed portion of the Bond surrendered.

Effect of Redemption. Notice of redemption having been duly given as provided in the Indenture, and moneys for payment of the Redemption Price or Make-Whole Redemption Price of the Bonds (or portion thereof) so called for redemption being held by the Trustee, on the date fixed for redemption designated in such notice, the Bonds (or portion thereof) so called for redemption shall become due and payable at the Redemption Price or Make-Whole Redemption Price specified in such notice, interest on the Bonds so called for redemption shall cease to accrue, said Bonds (or portion thereof) shall cease to be entitled to any benefit or security under the Indenture, and the Holders of said Bonds shall have no rights in respect thereof except to receive payment of said Redemption Price or Make-Whole Redemption Price from funds held by the Trustee for such payment.

Funds and Accounts

The Indenture creates an Indenture Fund, a Series 2020B Bond Fund, a Series 2010B Redemption Fund, and a Series 2020B Expense Fund thereunder. The Indenture also creates a Series 2020B Interest Account and Series 2020B Principal Account under the Series 2020B Bond Fund. All of the funds and accounts are to be held by the Trustee.

Application of Proceeds of Bonds. The proceeds from the sale of the Bonds (net of underwriter's discount and original issue discount, if any) shall be transferred by the Underwriters pursuant to the instructions of the Institution.

Indenture Fund. The Trustee establishes for the sole benefit of the Bondholders, a master fund referred to in the Indenture as the "Indenture Fund" containing the Series 2020B Bond Fund, the Series 2020B Expense Fund, and the Series 2020B Redemption Fund and each of the accounts contained therein. The Indenture Fund and each of the funds and accounts in the Indenture Fund shall be identified on the books of the Trustee with reference hereto and shall be maintained by the Trustee and held in trust apart from all other moneys and securities held under the Indenture or otherwise, and the Trustee shall have the exclusive and sole right of withdrawal therefrom in accordance with the terms of the Indenture. All amounts deposited with the Trustee pursuant to the Indenture shall be held, disbursed, allocated and applied by the Trustee only as provided in the Indenture.

Series 2020B Bond Fund. Upon the receipt thereof, the Trustee shall deposit all payments received from the Institution (other than proceeds from the sale of the Bonds received by the Trustee, if any, amounts which are to be deposited in the Series 2020B Redemption Fund or the Series 2020B Expense Fund or income or profit from investments which are to be applied pursuant to the Indenture) in a special fund designated the "Series 2020B Bond Fund" which the Trustee shall establish and maintain and hold in trust and which shall be disbursed and applied only as authorized in the Indenture.

At the times specified below, the Trustee shall allocate within the Series 2020B Bond Fund in the following order of priority the following amounts to the following accounts or funds, each of which the Trustee shall establish and maintain and hold in trust and each of which shall be disbursed and applied only as hereinafter authorized: (1) On each Interest Payment Date, the Trustee shall deposit in the "Series 2020B Interest Account" the aggregate amount of interest becoming due and payable on such Interest Payment Date on all Bonds then Outstanding, until the balance in said account is equal to said aggregate amount of interest; and (2) On each Principal Payment Date, the Trustee shall deposit in the "Series 2020B Principal Account" the aggregate amount of principal becoming due and payable on such Principal Payment Date, until the balance in said account is equal to said aggregate amount of such principal.

Series 2020B Interest Account. All amounts in the Series 2020B Interest Account shall be used and withdrawn by the Trustee solely for the purpose of paying interest on the Bonds as it shall become due and payable (including accrued interest on any Bonds redeemed prior to maturity pursuant to the Indenture).

Series 2020B Principal Account. All amounts in the Series 2020B Principal Account shall be used and withdrawn by the Trustee solely to pay at maturity the Bonds.

Series 2020B Redemption Fund. Upon the receipt thereof, the Trustee shall deposit the following amounts in a special fund designated the "Series 2020B Redemption Fund" which the Trustee shall establish and maintain and hold in trust: (1) all moneys deposited by the Institution with the Trustee directed to be deposited in the Series 2020B Redemption Fund; and (2) all interest, profits and other income received from the investment of moneys in the Series 2020B Redemption Fund.

All amounts deposited in the Series 2020B Redemption Fund shall be used and withdrawn by the Trustee solely for the purpose of redeeming Bonds, in the manner and upon the terms and conditions specified in the Indenture, at the next succeeding date of redemption for which notice has been given; provided that, at any time prior to the selection of Bonds for such redemption, the Trustee shall, upon written direction of the Institution, apply such amounts to the purchase of Bonds at public or private sale, as and when and at such prices (including brokerage and other charges, but excluding accrued interest, which is payable from the Series 2020B Interest Account) as the Institution may direct, except that the purchase price (exclusive of accrued interest) may not exceed the Redemption Price or Make-Whole Redemption Price then applicable to such Bonds; and provided further that in lieu of redemption at such next succeeding date of redemption, or in combination therewith, amounts in such account may be transferred to the Series 2020B Principal Account as set forth in a Request of the Institution.

Series 2020B Expense Fund. The amount estimated to be needed to pay the costs of issuing the Bonds shall be deposited in the Series 2020B Expense Fund. The moneys in the Series 2020B Expense Fund shall be held in trust and, except as otherwise provided in the Indenture, shall be applied by the Trustee solely to the payment or reimbursement of the costs of issuing the Bonds. After all costs of issuing the Bonds have been paid, any amounts remaining in the Series 2020B Expense Fund shall be transferred to the Series 2020B Bond Fund. To the extent the Expense Fund is insufficient to pay any of the above costs, the Institution shall be liable for the deficiency and shall pay an amount equal to such deficiency as directed by the Trustee.

Payments by the Institution; Allocation of Funds. On or before each Payment Date, until the principal of and interest on, the Bonds shall have been fully paid or provision for such payment shall have been made as provided in the Indenture, the Institution shall pay to the Trustee a sum equal to the amount payable on such Payment Date as principal of and interest on the Bonds, less the amount, if any, in the Series 2020B Bond Fund and available therefor. Each payment made pursuant to this paragraph shall at all times be sufficient to pay the total amount of interest and principal (whether at maturity or upon acceleration) becoming due and payable on the Bonds on such Payment Date. If on any Payment Date the amounts held by the Trustee in the accounts within the Series 2020B Bond Fund are insufficient to make any required payments of principal of (whether at maturity or upon acceleration) and interest on the Bonds as such payments become due, the Institution shall forthwith pay such deficiency to the Trustee.

The obligations of the Institution to make the payments required by the immediately preceding paragraph and to perform and observe the other agreements on its part contained in the Indenture shall be a general obligation of the Institution, absolute and unconditional, irrespective of any defense or any rights of set-off, recoupment or counterclaim it might otherwise have against the Trustee, and during the term of the Indenture, the Institution shall pay all payments required to be made by the immediately preceding paragraph (which payments shall be net of any other obligations of the Institution) as prescribed therein and all other payments required under the Indenture, free of any deductions and without abatement, diminution or set-off. Until such time as the principal of and interest on, the

Bonds shall have been fully paid, or provision for the payment thereof shall have been made as required by the Indenture, the Institution (i) will not suspend or discontinue any payments provided for in the immediately preceding paragraph; (ii) will perform and observe all of its other covenants contained in the Indenture; and (iii) except as otherwise provided in the Indenture, will not terminate the Indenture for any cause, including, without limitation, the occurrence of any act or circumstances that may constitute failure of consideration, destruction of or damage to all or a portion of the projects financed with the proceeds of the Bonds, commercial frustration of purpose, any change in the tax or other laws of the United States of America or of the Commonwealth or any political subdivision of either of these, or any failure of the Trustee to perform and observe any covenant, whether express or implied, or any duty, liability or obligation arising out of or connected with the Indenture, except to the extent permitted by the Indenture.

Validity of Bonds

The recital contained in the Bonds that the same are issued pursuant to the Indenture shall be conclusive evidence of their validity and of compliance with the provisions of the Indenture in their issuance.

Additional Bonds

The Institution may, from time to time, without the consent of the Bondholders, issue additional bonds under the Indenture in addition to the Bonds ("Additional Bonds"). If issued, the Additional Bonds will become part of the same series as the Bonds and will have the same interest rate, redemption provisions, maturity date and CUSIP number as one or more of the Bonds.

Use of Securities Depository

Notwithstanding any provision of the Indenture to the contrary:

The Bonds shall be initially issued as fully registered Bonds, registered in the name of "Cede & Co.," as nominee of the Securities Depository and shall be evidenced by one Bond in the total aggregate principal amount of the Bonds. Registered ownership of the Bonds, or any portion thereof, may not thereafter be transferred except: (1) to any successor of the Securities Depository or its nominee, or to any substitute depository designated pursuant to clause (2) of this paragraph ("substitute depository"); provided that any successor of the Securities Depository or substitute depository shall be qualified under any applicable laws to provide the service proposed to be provided by it; (2) to any substitute depository designated by the Institution and not objected to by the Trustee, upon (i) the resignation of the Securities Depository or its successor (or any substitute depository or its successor) from its functions as depository or (ii) a determination by the Institution that the Securities Depository or its successor (or any substitute depository or its successor) is no longer able to carry out its functions as depository; provided that any such substitute depository shall be qualified under any applicable laws to provide the services proposed to be provided by it; or (3) to any Person as provided below, upon (i) the resignation of the Securities Depository or its successor (or substitute depository or its successor) from its functions as depository; provided that no substitute depository which is not objected to by the Trustee can be obtained or (ii) a determination by the Institution that it is in the best interests of the Institution to remove the Securities Depository or its successor (or any substitute depository or its successor) from its functions as depository.

In the case of any transfer pursuant to clause (1) or clause (2) of the immediately preceding paragraph, upon receipt of the Outstanding Bonds by the Trustee, together with a Certificate of the Institution to the Trustee, a single new Bond shall be executed and delivered in the aggregate principal amount of the Bonds then Outstanding, registered in the name of such successor or such substitute depository, or their nominees, as the case may be, all as specified in such Certificate of the Institution. In the case of any transfer pursuant to clause (3) of the immediately preceding paragraph, upon receipt of the Outstanding Bonds by the Trustee together with a Certificate of the Institution to the Trustee, new Bonds shall be executed and delivered in such denominations and registered in the names of such persons as are requested in such a Certificate of the Institution, subject to the limitations of the Indenture, provided the Trustee shall not be required to deliver such new Bonds within a period less than 60 days from the date of receipt of such a Certificate of the Institution.

In the case of partial redemption or an advance refunding of the Bonds evidencing all or a portion of the principal amount Outstanding, the Securities Depository shall make an appropriate notation on the Bonds indicating the date and amounts of such reduction in principal, in form acceptable to the Trustee.

The Institution and the Trustee shall be entitled to treat the person in whose name any Bond is registered as the Bondholder thereof for all purposes of the Indenture and any applicable laws, notwithstanding any notice to the contrary received by the Institution or the Trustee. With respect to Bonds registered in the registry books kept by the Trustee in the name of Cede & Co., as nominee of the Securities Depository, the Institution and the Trustee shall have no responsibility or obligation with respect to the payment to any Beneficial Owner or any other person, other than the Securities Depository, of any amount with respect to the principal of and premium, if any, and interest on the Bonds only to or upon the order of the Securities Depository, and all such payments shall be valid and effective fully to satisfy and discharge the Institution's obligations with respect to the principal of and premium, if any, and interest on the Bonds to the extent of the sum or sums so paid.

Particular Covenants

Punctual Payment. The Trustee shall, through funds provided by the Institution, punctually pay the principal, Redemption Price or Make-Whole Redemption Price and interest to become due in respect of all the Bonds, in strict conformity with the terms of the Bonds and of the Indenture, according to the true intent and meaning thereof, from funds made available by the Institution. When and as paid in full, all Bonds shall be delivered to the Trustee and shall forthwith be cancelled by the Trustee and delivered to, or upon the order of, the Institution.

Compliance with Indenture. The Institution covenants not to issue, or permit to be issued, any Bonds in any manner other than in accordance with the provisions of the Indenture, and shall not suffer or permit any Default (within its power to prevent) to occur under the Indenture, but shall faithfully observe and perform all the covenants, conditions and requirements of the Indenture.

Against Encumbrances. The Institution shall not create or suffer to be created any pledge, lien, charge or other encumbrance upon all or any part of the Indenture Fund or any of the amounts held therein pledged or assigned under the Indenture while any of the Bonds are Outstanding, except the pledge and assignment created by the Indenture and any statutory liens or other liens arising by operation of law. The Institution will assist the Trustee in contesting any pledge, lien, charge or other encumbrance that does not comply with the provisions of the Indenture.

Power to Issue Bonds and Make Pledge and Assignment. The Institution is duly authorized to issue the Bonds and to enter into the Indenture and to pledge and assign the funds and accounts purported to be pledged and assigned under the Indenture in the manner and to the extent provided in the Indenture. The Bonds are and will be legal, valid and binding obligations of the Institution in accordance with their terms, and the Institution and the Trustee shall at all times, to the extent permitted by law, defend, preserve and protect said pledge and assignment of funds and accounts and all the rights of the Bondholders under the Indenture against all claims and demands of all Persons whomsoever, subject to the limitations set forth in the Indenture relating to the Trustee.

Accounting Records and Financial Statements. With respect to each fund or account established and maintained by the Trustee pursuant to the Indenture, the Trustee shall at all times keep, or cause to be kept, proper books of record and account prepared in accordance with corporate trust accounting standards, in which complete and accurate entries shall be made of all transactions relating to the receipt, investment, disbursement, allocation and application of payments received from the Institution and the proceeds of the Bonds. Such books of record and account shall be available for inspection by the Institution and any Bondholder, or his or her agent or representative duly authorized in writing, at reasonable hours and under reasonable circumstances.

The Trustee shall furnish to the Institution within 30 days after the end of each month, a complete financial statement (which need not be audited and may be its regular account statements) covering receipts, disbursements, allocation and application of any moneys (including proceeds of Bonds) in any of the funds and accounts established pursuant to the Indenture for such month; provided that the Trustee shall not be obligated to deliver an accounting for any fund or account that has a balance of $0.00 and has not had any activity since the last reporting.

Continuing Disclosure. The Institution has entered into continuing disclosure undertakings (the "Continuing Disclosure Undertakings") in connection with revenue bonds issued for the benefit of the Institution. Holders and prospective purchasers of the Bonds may obtain copies of the information provided by the Institution under those Continuing Disclosure Undertakings on the Municipal Securities Rulemaking Board's Electronic Municipal Market Access system ("EMMA"). Each Continuing Disclosure Undertaking terminates when the related revenue bonds are paid or deemed paid in full.

Events of Default and Remedies of Bondholders

Events of Default. The following events shall be "Events of Default": (a) default in the due and punctual payment of the principal, Redemption Price or Make-Whole Redemption Price of any Bond when and as the same shall become due and payable, whether at maturity as therein expressed, by proceedings for redemption, by acceleration or otherwise; (b) default in the due and punctual payment of any interest on any Bond when and as such interest shall become due and payable; (c) default by the Institution in the performance or observance of any of the other covenants, agreements or conditions on its part contained in the Indenture or in the Bonds, if such default shall have continued for a period of 60 days after written notice thereof, specifying such default and requiring the same to be remedied and stating that such notice is a "Notice of Default" under the Indenture, shall have been given to the Institution by the Trustee, or to the Institution and the Trustee by the Holders of not less than a majority in aggregate principal amount of the Bonds at the time Outstanding; (d) the commencement by the Institution of a voluntary case under the federal bankruptcy laws, or if the Institution shall become insolvent or unable to pay its debts as they become due, or shall make an assignment for the benefit of creditors, or shall apply for, consent to or acquiesce in the appointment of, or taking possession by, a trustee, receiver, custodian or similar official or agent for itself or any substantial part of its property; (e) the appointment of a trustee, receiver, custodian or similar official or agent for the Institution or for any substantial part of its property and such trustee or receiver shall not be discharged within 60 days; or (f) an order or decree for relief in an involuntary case under the federal bankruptcy laws shall be entered against the Institution, or a petition seeking reorganization, readjustment, arrangement, composition, or other similar relief as to it under the federal bankruptcy laws or any similar law for the relief of debtors shall be brought against it and shall be consented to by it or shall remain undismissed for 60 days.

Acceleration of Maturity. If an Event of Default shall occur, then, and in each and every such case during the continuance of such Event of Default, the Trustee may, upon notice in writing to the Institution, declare the principal of all the Bonds then Outstanding, and the interest accrued thereon, to be due and payable immediately, and upon any such declaration by the Trustee the same shall become and shall be immediately due and payable, anything in the Indenture or in the Bonds contained to the contrary notwithstanding.

Any such declaration, however, is subject to the condition that if, at any time after such declaration and before any judgment or decree for the payment of the moneys due shall have been obtained or entered, there shall be deposited with the Trustee a sum sufficient to pay all the principal, Redemption Price or Make-Whole Redemption Price of and interest on the Bonds payment of which is overdue, with interest on such overdue principal at the rate borne by the Bonds, and the reasonable charges and expenses of the Trustee, and any and all other Defaults known to the Trustee (other than in the payment of principal of and interest on the Bonds due and payable solely by reason of such declaration) shall have been made good or cured to the satisfaction of the Trustee or provision deemed by the Trustee to be adequate shall have been made therefor, then, and in every such case, the Trustee shall, on behalf of the Holders of all of the Bonds by written notice to the Institution, rescind and annul such declaration and its consequences and waive such Default; but no such rescission and annulment shall extend to or shall affect any subsequent Default, or shall impair or exhaust any right or power consequent thereon.

Rights as a Secured Party. The Trustee, as appropriate, may exercise all of the rights and remedies of a secured party under the Uniform Commercial Code with respect to securities in the Indenture Fund, including without limitation the Series 2020B Bond Fund and the Series 2020B Redemption Fund, including the right to sell or redeem such securities and the right to retain the securities in satisfaction of the obligation of the Institution hereunder. Notice sent by registered or certified mail, postage prepaid, or delivered during business hours, to the Institution at least seven (7) days before an event under Uniform Commercial Code Sections 9-610 and 9-611, or any successor provision of law shall constitute reasonable notification of such event.

Application of Moneys Collected by the Trustee. If an Event of Default shall occur and be continuing, all moneys then held or thereafter received by the Trustee under any of the provisions of the Indenture (subject to provisions of the Indenture requiring moneys to be held for payment of particular Bonds) shall be applied by the Trustee as follows and in the following order:

(A) To the payment of reasonable fees and expenses of the Trustee (including reasonable fees and disbursements of its counsel) incurred in and about the performance of its powers and duties under the Indenture;

(B) To the payment of any expenses necessary in the opinion of the Trustee to protect the interests of the Holders of the Bonds; and

(C) To the payment of the principal, Redemption Price or Make-Whole Redemption Price of and interest then due on the Bonds (upon presentation of the Bonds to be paid, and stamping thereon of the payment if only partially paid, or surrender thereof if fully paid) subject to the provisions of the Indenture, as follows:

(1) Unless the principal of all of the Bonds shall have become or have been declared due and payable,

First: To the payment to the Persons entitled thereto of all installments of interest then due in the order of the maturity of such installments, and, if the amount available shall not be sufficient to pay in full any installment or installments due on the same date, then to the payment thereof ratably, according to the amounts due thereon, to the Persons entitled thereto, without any discrimination or preference; and

Second: To the payment to the Persons entitled thereto of the unpaid principal, Redemption Price or Make-Whole Redemption Price of any Bonds which shall have become due, whether at maturity or by call for redemption, in the order of their due dates, with interest on the overdue principal at the rate borne by the Bonds, and, if the amount available shall not be sufficient to pay in full all the Bonds due on any date, together with such interest, then to the payment thereof ratably, according to the amounts of principal, Redemption Price or Make-Whole Redemption Price due on such date to the Persons entitled thereto, without any discrimination or preference.

(2) If the principal of all of the Bonds shall have become or have been declared due and payable, to the payment of the principal and interest then due and unpaid upon the Bonds, with interest on the overdue principal at the rate borne by the Bonds, and, if the amount available shall not be sufficient to pay in full the whole amount so due and unpaid, then to the payment thereof ratably, without preference or priority of principal over interest, or of interest over principal, or of any installment of interest over any other installment of interest, or of any Bond over any other Bond, according to the amounts due respectively for principal and interest, to the Persons entitled thereto without any discrimination or preference.

Trustee to Represent Bondholders. The Trustee is irrevocably appointed (and the successive respective Holders of the Bonds, by taking and holding the same, shall be conclusively deemed to have so appointed the Trustee) as trustee and true and lawful attorney-in-fact of the Holders of the Bonds for the purpose of exercising and prosecuting on their behalf such rights and remedies as may be available to such Holders under the provisions of the Bonds, the Indenture and applicable provisions of any law. Upon the occurrence and continuance of an Event of Default or other occasion giving rise to a right in the Trustee to represent the Bondholders, the Trustee in its discretion may, and upon the written request of the Holders of not less than a majority in aggregate principal amount of the Bonds then Outstanding, and upon being indemnified to its satisfaction therefor, shall, proceed to protect or enforce its rights or the rights of such Holders by such appropriate action, suit, mandamus or other proceedings as it shall deem most effectual to protect and enforce any such right, at law or in equity, either for the specific performance of any covenant or agreement contained in the Indenture, or in aid of the execution of any power granted in the Indenture, or for the enforcement of any other appropriate legal or equitable right or remedy vested in the Trustee, or in such Holders under the Bonds, the Indenture or any applicable law; and upon instituting such proceeding, the Trustee shall be entitled, as a matter of right, to the appointment of a receiver of the amounts pledged under the Indenture, pending such proceedings. If more than one such request is received by the Trustee from the Holders, the Trustee shall follow the written request executed by the Holders of the greatest percentage (which percentage shall be, in any case, not less than a majority in aggregate principal amount) of the Bonds then Outstanding. All rights of action under the Indenture or the Bonds or otherwise may be prosecuted and enforced by the Trustee without the possession of any of the Bonds or the production thereof in any proceeding relating thereto, and any such suit, action or proceeding instituted by the Trustee shall be brought in the name of the Trustee for the benefit and protection of all the Holders of such Bonds, subject to the provisions of the Indenture.

Bondholders' Direction of Proceedings. The Holders of a majority in aggregate principal amount of the Bonds then Outstanding shall have the right, by an instrument or concurrent instruments in writing executed and delivered to the Trustee, and upon indemnifying the Trustee to its satisfaction therefor, to direct the time, method and place of conducting all remedial proceedings taken by the Trustee under the Indenture, provided that such direction shall not be otherwise than in accordance with law and the provisions of the Indenture, and that the Trustee shall have the right to decline to follow any such direction which in the opinion of the Trustee would be unjustly prejudicial to Bondholders not parties to such direction.

Limitation on Bondholder's Right to Sue. No Holder of any Bond shall have the right to institute any suit, action or proceeding at law or in equity, for the protection or enforcement of any right or remedy under the Indenture or any applicable law with respect to such Bond, unless (1) such Holder shall have given to the Trustee written notice of the occurrence of an Event of Default; (2) the Holders of not less than a majority in aggregate principal amount of the Bonds then Outstanding shall have made written request upon the Trustee to exercise the powers granted in the Indenture or to institute such suit, action or proceeding in its own name; (3) such Holder or said Holders shall have tendered to the Trustee indemnity satisfactory to it against the costs, expenses and liabilities to be incurred in compliance with such request; and (4) the Trustee shall have refused or omitted to comply with such request for a period of 60 days after such written request shall have been received by, and said tender of indemnity shall have been made to, the Trustee.

Such notification, request, tender of indemnity and refusal or omission are declared by the Indenture, in every case, to be conditions precedent to the exercise by any Holder of Bonds of any remedy under the Indenture or under law; it being understood and intended that no one or more Holders of Bonds shall have any right in any manner whatever by his or their action to affect, disturb or prejudice the security of the Indenture or the rights of any other Holders of Bonds, or to enforce any right under the Indenture or applicable law with respect to the Bonds, except in the manner provided in the Indenture, and that all proceedings at law or in equity to enforce any such right shall be instituted, had and maintained in the manner provided in the Indenture and for the benefit and protection of all Holders of the Outstanding Bonds, subject to the provisions of the Indenture.

Absolute Obligation of Institution. Notwithstanding any other provision of the Indenture, or in the Bonds, nothing shall affect or impair the obligation of the Institution, which is absolute and unconditional, to pay the principal, Redemption Price or Make-Whole Redemption Price of and interest on the Bonds to the respective Holders of the Bonds at their respective dates of maturity, or upon call for redemption, as provided in the Indenture, or, subject to the provisions of the Indenture regarding limitation on Bondholders' right to sue, affect or impair the right of such Holders to enforce such payment by virtue of the contract embodied in the Bonds.

Termination of Proceedings. In case any proceedings taken by the Trustee or any one or more Bondholders on account of any Event of Default shall have been discontinued or abandoned for any reason or shall have been determined adversely to the Trustee or the Bondholders, then in every such case the Institution, the Trustee and the Bondholders, subject to any determination in such proceedings, shall be restored to their former positions and rights under the Indenture, severally and respectively, and all rights, remedies, powers and duties of the Institution, the Trustee and the Bondholders shall continue as though no such proceedings had been taken.

Remedies Not Exclusive. No remedy conferred in the Indenture upon or reserved to the Trustee or to the Holders of the Bonds is in to be exclusive of any other remedy or remedies, and each and every such remedy, to the extent permitted by law, shall be cumulative and in addition to any other remedy given under the Indenture or now or hereafter existing at law or in equity or otherwise.

Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of the Bonds to exercise any right or power arising upon the occurrence of any Default shall impair any such right or power or shall be construed to be a waiver of any such Default or an acquiescence therein; and every power and remedy given by the Indenture to the Trustee or to the Holders of the Bonds may be exercised from time to time and as often as may be deemed expedient.

Waiver of Past Defaults. The Trustee may, and upon request of the Holders of not less than a majority in aggregate principal amount of the Outstanding Bonds shall, on behalf of the Holders of all the Bonds waive any past Default under the Indenture and its consequences, except a Default: (A) In the payment of the principal, Redemption Price or Make-Whole Redemption Price of or interest on any Bond, or (B) in respect of a covenant or other provision of the Indenture which, pursuant to the Indenture, cannot be modified or amended without the consent of the Holder of each Outstanding Bond affected. Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of the Indenture, but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Undertaking for Costs. Subject to the provisions of the Indenture regarding the Trustee's rights to compensation and indemnification, the parties to the Indenture agree, and each Holder of any Bond by such Person's acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under the Indenture, or in any suit against the Trustee for any action taken or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this paragraph shall not apply to any suit instituted by the Trustee or to any suit instituted by any Bondholder or group of Bondholders holding in the aggregate more than a majority in aggregate principal amount of the Outstanding Bonds.

Notice of Default. Upon a Responsible Officer's actual knowledge of the existence of any Default under the Indenture, the Trustee shall notify the Institution in writing as soon as practicable but in any event within 5 Business Days.

Upon a Responsible Officer's actual knowledge of the existence of any Default under the Indenture, the Trustee shall transmit by mail to all Bondholders, as their names and addresses appear in the bond register, notice of such Default under the Indenture within 90 days, unless such Default shall have been cured or waived; provided, however, that, except in the case of a Default in the payment of the principal, Redemption Price or Make-Whole Redemption Price of or interest on any Bond, the Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee or a trust committee of directors or Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interest of the Bondholders; and provided, further, that in the case of any Default of the character specified in (c) under "Events of Default" above, no such notice to Bondholders shall be given until at least 30 days after the occurrence thereof.

Trustee May File Proofs of Claim. In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Institution or any other obligor upon the Bonds or the property of the Institution or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Bonds shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Institution for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise: (1) To file and prove a claim for the whole amount of principal (or Redemption Price or Make-Whole Redemption Price, as applicable) and interest owing and unpaid in respect of the Bonds and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel including expenses and fees of outside counsel and allocated costs of internal legal counsel) and of the Bondholders allowed in such judicial proceeding; and (2) To collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same; and any receiver, assignee, trustee, liquidator or sequestrator (or other similar official) in any such judicial proceeding is, by the Indenture, authorized by each Bondholder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Bondholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel including expenses and fees of outside counsel and allocated costs of internal legal counsel, and any other amounts due the Trustee under the Indenture.

Nothing contained in the Indenture shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Bondholder any plan of reorganization, arrangement, adjustment or composition affecting the Bonds or the rights of any Holder thereof, or to authorize the Trustee to vote in respect of the claim of any Bondholder in any such proceeding.

The Trustee

Duties, Immunities and Liabilities of Trustee. The Trustee shall, prior to an Event of Default, and after the curing or waiver of all Events of Default which may have occurred, perform such duties and only such duties as are specifically set forth in the Indenture, and, except to the extent required by law, no implied covenants or obligations shall be read into the Indenture against the Trustee. The Trustee shall, during the existence of any Event of Default (which has not been cured or waived), exercise such of the rights and powers vested in it by the Indenture, and use the same degree of care and skill in their exercise, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs.

The Institution may, upon thirty (30) days written notice, remove the Trustee at any time unless an Event of Default shall have occurred and then be continuing, and shall remove the Trustee if at any time requested to do so by an instrument or concurrent instruments in writing signed by the Holders of not less than a majority in aggregate principal amount of the Bonds then Outstanding (or their attorneys duly authorized in writing) or if at any time the Trustee shall cease to be eligible in accordance with the Indenture, or shall become incapable of acting, or shall be adjudged a bankrupt or insolvent, or a receiver of the Trustee or its property shall be appointed, or any public officer shall take control or charge of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation, in each case by giving written notice of such removal to the Trustee, and thereupon shall appoint a successor Trustee by an instrument in writing.

The Trustee may at any time resign by giving written notice of such resignation to the Institution and by giving the Bondholders notice of such resignation by mail at the addresses shown on the registration books maintained by the Trustee. Upon receiving such notice of resignation, the Institution shall promptly appoint a successor Trustee by an instrument in writing. The Trustee shall not be relieved of its duties until such successor Trustee has accepted appointment.

Any removal or resignation of the Trustee and appointment of a successor Trustee shall become effective upon acceptance of appointment by the successor Trustee. If no successor Trustee shall have been appointed and have accepted appointment within 30 days of giving notice of removal or notice of resignation as aforesaid, the resigning Trustee or any Bondholder (on behalf of itself and all other Bondholders) may petition any court of competent jurisdiction for the appointment of a successor Trustee, and such court may thereupon, after such notice (if any) as it may deem proper, appoint such successor Trustee. Any successor Trustee appointed under the Indenture, shall signify its acceptance of such appointment by executing and delivering to the Institution and to its predecessor Trustee a written acceptance thereof, and thereupon such successor Trustee, without any further act, deed or conveyance, shall become vested with all the moneys, estates, properties, rights, powers, trusts, duties and obligations of such predecessor Trustee, with like effect as if originally named Trustee in the Indenture; but, nevertheless at the request of the successor Trustee, such predecessor Trustee shall execute and deliver any and all instruments of conveyance or further assurance and do such other things as may reasonably be required for more fully and certainly vesting in and confirming to such successor Trustee all the right, title and interest of such predecessor Trustee in and to any property held by it under the Indenture and shall pay over, transfer, assign and deliver to the successor Trustee any money or other property subject to the trusts and conditions set forth in the Indenture. Upon request of the successor Trustee, the Institution shall execute and deliver any and all instruments as may be reasonably required for more fully and certainly vesting in and confirming to such successor Trustee all such moneys, estates, properties, rights, powers, trusts, duties and obligations. Upon acceptance of appointment by a successor Trustee as provided in this paragraph, the Institution shall mail or cause to be mailed (at the expense of the Institution) a notice of the succession of such Trustee to the trusts under the Indenture to the Bondholders at the addresses shown on the registration books maintained by the Trustee. If the Institution fails to mail such notice within 15 days after acceptance of appointment by the successor Trustee, the successor Trustee shall cause such notice to be mailed at the expense of the Institution.

Any successor Trustee shall be a trust company or bank having trust powers in the Commonwealth, having a combined capital and surplus of (or if such trust company or bank is a member of a bank holding system, its bank holding company shall have a combined capital and surplus of) at least fifty million dollars ($50,000,000), and subject to supervision or examination by federal or Commonwealth authority. In case at any time the Trustee shall cease to be eligible in accordance with the provisions of this paragraph, the Trustee shall resign immediately in the manner and with the effect specified in the Indenture.

Preservation and Inspection of Documents. All documents received by the Trustee under the provisions of the Indenture shall be retained in its possession and shall be subject upon prior written notice to the inspection of the Institution and any Bondholder, and their agents and representatives duly authorized in writing, at reasonable hours and under reasonable conditions.

Modification or Amendment of the Indenture

Amendments Permitted. The Indenture and the rights and obligations of the Institution and of the Holders of the Bonds and of the Trustee may be modified or amended from time to time and at any time by an indenture or indentures supplemental to the Indenture, which the Institution and the Trustee may enter into when the written consent of the Holders of a majority in aggregate principal amount of the Bonds then Outstanding shall have been filed with the Trustee. No such modification or amendment shall (1) extend the fixed maturity of any Bond, or reduce the amount of principal thereof, or reduce the rate of interest thereon, or extend the time of payment of interest thereon, or reduce any redemption price or premium payable upon the redemption thereof, without the consent of the Holder of each Bond so affected, or (2) reduce the aforesaid percentage of Bonds the consent of the Holders of which is required to effect any such modification or amendment, or permit the creation of any lien on the Indenture Fund or the amounts pledged under the Indenture prior to or on a parity with the lien created by the Indenture, or deprive the Holders of the Bonds of the lien created by the Indenture on the Indenture Fund and such amounts (except as expressly provided in the Indenture), without the consent of the Holders of all Bonds then Outstanding. It shall not be necessary for the consent of the Bondholders to approve the particular form of any Supplemental Indenture, but it shall be sufficient if such consent shall approve the substance thereof. Promptly after the execution by the Institution and the Trustee of any Supplemental Indenture pursuant to this paragraph, the Trustee shall mail a notice, setting forth in general terms the substance of such Supplemental Indenture, to the Bondholders at the addresses shown on the registration books maintained by the Trustee. Any failure to give such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such Supplemental Indenture.

The Indenture and the rights and obligations of the Institution, of the Trustee and of the Holders of the Bonds may also be modified or amended from time to time and at any time by an indenture or indentures supplemental to the Indenture, which the Institution and the Trustee may enter into without the necessity of obtaining the consent of any Bondholders, but only to the extent permitted by law and only for any one or more of the following purposes: (1) to add to the covenants and agreements of the Institution contained in the Indenture other covenants and agreements thereafter to be observed, to pledge or assign additional security for the Bonds (or any portion thereof), or to surrender any right or power reserved in the Indenture to or conferred upon the Institution, provided that such covenant, agreement, pledge, assignment or surrender shall not materially adversely affect the interests of the Holders of the Bonds; (2) to make such provisions for the purpose of curing any ambiguity, inconsistency or omission, or of curing or correcting any defective provision, contained in the Indenture, or in regard to matters or questions arising under the Indenture, as the Institution or the Trustee may deem necessary or desirable and not inconsistent with the Indenture, and which shall not materially adversely affect the interests of the Holders of the Bonds; (3) to modify, amend or supplement the Indenture or any Supplemental Indenture in such manner as to permit the qualification hereof under the Trust Indenture Act of 1939, as amended, or any similar federal statute hereafter in effect, and to add such other terms, conditions and provisions as may be permitted by said act or similar federal statute, and which shall not materially adversely affect the interests of the Holders of the Bonds (provided, however, that such modifications, amendments, supplements and additions shall be permitted under this paragraph only if qualification under said act or similar federal statute is required by applicable law now or hereafter in effect); or (4) to provide for the procedures required to permit any Bondholder, at its option, to utilize an uncertificated system of registration of its Bond or to facilitate the registration of the Bonds in the name of a nominee of the Securities Depository in accordance with the provisions of the Indenture.

The Trustee may in its discretion, but shall not be obligated to, enter into any such Supplemental Indenture authorized by either of the two preceding paragraphs which materially adversely affects the Trustee's own rights, duties or immunities under the Indenture or otherwise.

In executing any Supplemental Indenture permitted by the terms described in the preceding three paragraphs, the Trustee shall be entitled to receive, and shall be fully protected in relying upon, an opinion of counsel stating that the execution of such Supplemental Indenture is authorized or permitted by the Indenture and complies with the terms thereof.

Effect of Supplemental Indenture. Upon the execution of any Supplemental Indenture pursuant to the Indenture, the Indenture shall be deemed to be modified and amended in accordance therewith, and the respective rights, duties and obligations under the Indenture of the Institution, the Trustee and all Holders of Bonds Outstanding shall thereafter be determined, exercised and enforced under the Indenture subject in all respects to such modification and amendment, and all the terms and conditions of any such Supplemental Indenture shall be deemed to be part of the terms and conditions of the Indenture for any and all purposes.

Amendment of Particular Bonds. The provisions of the Indenture regarding modification or amendment of the Indenture shall not prevent any Bondholder from accepting any amendment as to the particular Bonds held by such Bondholder, provided that due notation thereof is made on such Bonds.

Defeasance

Discharge of Indenture. The Bonds may be paid or discharged by the Institution or the Trustee on behalf of the Institution in any of the following ways: (A) by paying or causing to be paid the principal, Redemption Price or Make-Whole Redemption Price of and interest on all Bonds Outstanding, as and when the same become due and payable; (B) by depositing with the Trustee, in trust, at or before maturity, moneys or securities in the necessary amount (as provided in the Indenture) to pay when due or redeem all Bonds then Outstanding; or (C) by delivering to the Trustee, for cancellation by it, all Bonds then Outstanding.

If the Institution shall also pay or cause to be paid all other sums payable under the Indenture by the Institution, then and in that case at the election of the Institution (evidenced by a Certificate of the Institution filed with the Trustee signifying the intention of the Institution to discharge all such indebtedness and the Indenture and upon receipt by the Trustee of an Opinion of Counsel to the effect that the obligations under the Indenture and the Bonds have been discharged), and notwithstanding that any Bonds shall not have been surrendered for payment, the Indenture and the pledge of the Indenture Fund and all amounts held therein made under the Indenture and all covenants, agreements and other obligations of the Institution under the Indenture (except as otherwise provided in the Indenture) shall cease, terminate, become void and be completely discharged and satisfied and the Bonds deemed paid.

Discharge of Liability on Bonds. Upon the deposit with the Trustee, in trust, at or before maturity, of money or securities in the necessary amount (as provided in the Indenture) to pay or redeem any Outstanding Bond (whether upon or prior to its maturity or the redemption date of such Bond), provided that, if such Bond is to be redeemed prior to maturity, notice of such redemption shall have been given as provided in the Indenture or provision satisfactory to the Trustee shall have been made for the giving of such notice, then all liability of the Institution in respect of such Bond shall cease, terminate and be completely discharged, and the Bonds shall be deemed paid, except only that thereafter the Holder thereof shall be entitled to payment of the principal, Redemption Price or Make-Whole Redemption Price of and interest on such Bond by the Institution, and the Institution shall remain liable for such payments, but only out of such money or securities deposited with the Trustee as aforesaid for their payment, subject, however, to the provisions of the Indenture regarding payment of Bonds after discharge of the Indenture.

The Institution may at any time surrender to the Trustee for cancellation by it any Bonds previously issued and delivered, which the Institution may have acquired in any manner whatsoever, and such Bonds, upon such surrender and cancellation, shall be deemed to be paid and retired.

Payment of Bonds After Discharge of Indenture. Notwithstanding any provisions of the Indenture, any moneys held by the Trustee in trust for the payment of the principal, Redemption Price or Make-Whole Redemption Price of, or interest on, any Bonds and remaining unclaimed for three years (or, if shorter, one day before such moneys would escheat to the Commonwealth under then applicable Massachusetts law) after such principal, Redemption Price or Make-Whole Redemption Price or interest, as the case may be, has become due and payable (whether at maturity or upon call for redemption), shall be repaid to the Institution free from the trusts created by the Indenture upon receipt of an indemnification agreement acceptable to the Institution and the Trustee indemnifying the Institution and the Trustee with respect to claims of Holders of Bonds which have not yet been paid, and all liability of the Trustee and the Institution with respect to such moneys shall thereupon cease; provided, however, that before the repayment of such moneys to the Institution as aforesaid, the Trustee may (at the cost of the Institution) first mail to the Holders of Bonds which have not yet been paid, at the addresses shown on the registration books maintained by the Trustee, a notice, in such form as may be deemed appropriate by the Trustee with respect to the Bonds so payable and not presented and with respect to the provisions relating to the repayment to the Institution of the moneys held for the payment thereof.

Substitute Defeasance Securities. At the written Request of the Institution, and upon compliance with the conditions set forth below, the Trustee shall redeem, sell, transfer or otherwise dispose of any Investment Securities held by the Trustee pursuant to the Indenture and purchase substitute Investment Securities, as identified by the Institution, in principal amounts and bearing interest at rates such that the principal of and interest on such substitute Investment Securities to be purchased, together with the principal of and interest on any securities then held by the Trustee pursuant to the Indenture that are not to be redeemed, sold, transferred or otherwise disposed of, shall be sufficient to pay the principal, Redemption Price or Make-Whole Redemption Price and interest as the same become due. The Trustee shall purchase such substitute Investment Securities with the proceeds derived from the redemption, sale, transfer, or other disposition on the date of such transaction. The transactions may be consummated only if the Trustee shall have received (i) a report prepared by a firm of independent, certified public accountants selected by the Institution who are recognized on a nationwide basis for skill and expertise in the preparation of such verifications confirming that the amounts of moneys and investments remaining after such payment will mature and will earn interest in such amounts and at such times so that sufficient moneys will be available to pay when due all outstanding installments of interest on and principal, Redemption Price and Make-Whole Redemption Price of the Bonds; and (ii) an Opinion of Counsel selected by the Institution to the effect that such substitution of Investment Securities is permitted under the Indenture. If, following any such substitution of Investment Securities, the funds held by the Trustee under the Indenture contain moneys that will not be required for the payment of installments of interest on and principal, Redemption Price or Make-Whole Redemption Price of the Bonds, the Institution may direct that such excess moneys be promptly paid over to the Institution.

Purchase of Bonds by Institution. The Institution may purchase the Bonds on the open market and tender them to the Trustee for cancellation at any time. If, following any such tender of Bonds by the Institution, the funds held by the Trustee under the Indenture contain moneys that will not be required for the payment of installments of interest on and principal, Redemption Price or Make-Whole Redemption Price of the Bonds, the Institution may direct that such excess moneys be promptly paid over to the Institution; provided, however, that (i) the Trustee and the Institution shall, at the expense of the Institution, confirm by a mathematical verification prepared by a firm of independent, certified public accountants selected by the Institution who are recognized on a nationwide basis for skill and expertise in the preparation of such verifications that the amounts of moneys and investments remaining after such payment will mature and will earn interest in such amounts and at such times so that sufficient moneys will be available to pay when due all outstanding installments of interest on and principal, Redemption Price and Make-Whole Redemption Price of the Bonds; and (ii) the Trustee shall have received an Opinion of Counsel selected by the Institution to the effect that such purchase, tender and cancellation is permitted under the Indenture.

Limitation of Rights to Parties and Bondholders

Nothing in the Indenture or in the Bonds expressed or implied is intended or shall be construed to give to any Person other than the Institution, the Trustee and the Holders of the Bonds, any legal or equitable right, remedy or claim under or in respect of the Indenture or any covenant, condition or provision therein contained; and all such covenants, conditions and provisions are and shall be held to be for the sole and exclusive benefit of the Institution, the Trustee and the Holders of the Bonds.

Evidence of Rights of Bondholders

Any request, consent or other instrument required or permitted by the Indenture to be signed and executed by Bondholders may be in any number of concurrent instruments of substantially similar tenor and shall be signed or executed by such Bondholders in Person or by an agent or agents duly appointed in writing.

The fact and date of the execution by any Person of any such request, consent or other instrument or writing may be proved by the certificate of any notary public or other officer of any jurisdiction, authorized by the laws thereof to take acknowledgments of deeds, certifying that the Person signing such request, consent or other instrument acknowledged to him the execution thereof, or by an affidavit of a witness of such execution duly sworn to before such notary public or other officer.

The ownership of Bonds shall be proved by the registration books for the Bonds held by the Trustee.

Any request, consent, or other instrument or writing of the Holder of any Bond shall bind every future Holder of the same Bond and the Holder of every Bond issued in exchange therefor or in lieu thereof, in respect of anything done or suffered to be done by the Trustee or the Institution in accordance therewith or reliance thereon.

Waiver of Personal Liability

No member, officer, agent or employee of the Institution shall be individually or personally liable for the payment of the principal, Redemption Price or Make-Whole Redemption Price of or interest on the Bonds or be subject to any personal liability or accountability by reason of the issuance thereof or the performance of any duty under the Indenture; but nothing contained in the Indenture shall relieve any such member, officer, agent or employee from the performance of any official duty provided by law or by the Indenture.

Governing Law; Venue

The Indenture shall be construed in accordance with and governed by the Constitution and the laws of the Commonwealth applicable to contracts made and performed in the Commonwealth. The Indenture shall be enforceable in the Commonwealth, and any action arising under the Indenture shall (unless waived by the Institution) be filed and maintained in the Commonwealth.

CUSIP Numbers

Neither the Trustee nor the Institution shall be liable for any defect or inaccuracy in the CUSIP number that appears on any Bond or in any redemption notice.

APPENDIX D

PROPOSED FORM OF OPINION OF COUNSEL TO THE INSTITUTION

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APPENDIX D
PROPOSED FORM OF OPINION OF COUNSEL TO THE INSTITUTION

April __, 2020

President and Fellows of Harvard College
440 Holyoke Center
1350 Massachusetts Avenue
Cambridge, Massachusetts 02138

Ladies and Gentlemen:

As counsel for President and Fellows of Harvard College (the "College"), we have been requested to furnish you with an opinion in connection with the proposed issue by the College of $500,000,000 principal amount of Taxable Bonds, Series 2020B (the "Bonds").

The College is an educational corporation incorporated on May 31, 1650 by act of the Colony of Massachusetts Bay confirmed, as amended, in the Constitution of 1780 of The Commonwealth of Massachusetts, constituting, together with certain acts of the General Court of The Commonwealth of Massachusetts and its predecessors and certain corporate articles of amendment, Harvard's charter (the "Charter").

We have examined executed copies of the Indenture of Trust dated as of April 1, 2020 (the "Indenture of Trust") between the College and The Bank of New York Mellon Trust Company, N.A. (the "Trustee") and a certified copy of proceedings of the College authorizing the execution of the Indenture of Trust and certain other documents.

In addition, we have examined such other documents and have made such investigation and such examination of law as we have deemed necessary for the purposes of the following opinion.

For purposes of this opinion, we have assumed that the Trustee has all requisite power and authority and has taken all necessary corporate action, consistent with all applicable laws and regulations, to execute and deliver the Indenture of Trust and to effect the transactions contemplated thereby.

Based upon the foregoing, we are of the opinion that:

1. The Indenture of Trust has been duly authorized, executed and delivered and constitutes a valid and legally binding obligation of the College and, subject to the qualifications stated in the unnumbered paragraphs at the end of this opinion, is enforceable against the College in accordance with its terms.

2. The Bonds have been duly authorized, issued and delivered against payment of the agreed upon consideration and, subject to the qualifications contained in the unnumbered

paragraphs at the end of this opinion, are valid, legally binding, general obligations of the College, enforceable against the College in accordance with their terms.

Our opinion that the Indenture of Trust delivered to you today is the legal, valid and binding obligation of the College, enforceable in accordance with its terms, is subject to (a) bankruptcy, insolvency, reorganization, moratorium, and other similar laws affecting the rights and remedies of creditors and secured parties, and (b) general principles of equity. We do not express any opinion herein as to the availability of the remedy of specific performance or injunctive relief or other relief in equity upon breach of any of the agreements, documents, or obligations referred to herein.

The opinions expressed herein are subject to the qualification that the enforceability of provisions in the Indenture of Trust providing for indemnification or contribution may be limited by public policy considerations. In addition, we express no opinion as to (i) the extent to which broadly worded waivers may be enforced, (ii) the enforceability of any provision of the Indenture of Trust that purports to grant the right of setoff, that permits the exercise of a right of setoff against amounts not then due, or that constitutes a penalty or forfeiture, or (iii) the enforceability of any provision that provides for conclusive presumptions or determinations, non-effectiveness of oral modifications, powers of attorney, waiver of or consent to service of process and venue, or waiver of offset or defenses.

In addition, certain provisions contained in the Indenture of Trust may be unenforceable in whole or in part but the inclusion of such provisions in the Indenture of Trust does not affect the validity of any of the other provisions thereof, and the remaining provisions of the Indenture of Trust are sufficient for the practical realization of the benefits intended to be provided thereby.

This opinion is solely for your benefit and the benefit of the Underwriters who purchase the Bonds, and may not be relied upon by any subsequent holders of the Bonds or by any other person.

Very truly yours,