UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the Quarterly Period Ended: March 31, 2020

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
Commission File Number 001-34506

TWO HARBORS INVESTMENT CORP.

(Exact Name of Registrant as Specified in Its Charter)

Maryland	**27-0312904**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
575 Lexington Avenue, Suite 2930	
New York, New York	**10022**
(Address of Principal Executive Offices)	(Zip Code)

(612) 629-2500
(Registrant's Telephone Number, Including Area Code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of Each Class:	Trading Symbol(s)	Name of Exchange on Which Registered:
Common Stock, par value $0.01 per share	TWO	New York Stock Exchange
8.125% Series A Cumulative Redeemable Preferred Stock	TWO PRA	New York Stock Exchange
7.625% Series B Cumulative Redeemable Preferred Stock	TWO PRB	New York Stock Exchange
7.25% Series C Cumulative Redeemable Preferred Stock	TWO PRC	New York Stock Exchange
7.75% Series D Cumulative Redeemable Preferred Stock	TWO PRD	New York Stock Exchange
7.50% Series E Cumulative Redeemable Preferred Stock	TWO PRE	New York Stock Exchange

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

As of May 5, 2020, there were 273,531,853 shares of outstanding common stock, par value $.01 per share, issued and outstanding.

TWO HARBORS INVESTMENT CORP.

INDEX

		Page
	PART I - FINANCIAL INFORMATION	
Item 1.	Financial Statements (unaudited)	1
	Condensed Consolidated Balance Sheets at March 31, 2020 and December 31, 2019	1
	Condensed Consolidated Statements of Comprehensive (Loss) Income for the Three Months Ended March 31, 2020 and 2019	2
	Condensed Consolidated Statements of Stockholders' Equity for the Three Months Ended March 31, 2020 and 2019	4
	Condensed Consolidated Statements of Cash Flows for the Three Months Ended March 31, 2020 and 2019	5
	Notes to the Condensed Consolidated Financial Statements	7
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations	44
Item 3.	Quantitative and Qualitative Disclosures About Market Risk	68
Item 4.	Controls and Procedures	73
	PART II - OTHER INFORMATION	
Item 1.	Legal Proceedings	74
Item 1A.	Risk Factors	74
Item 2.	Unregistered Sales of Equity Securities and Use of Proceeds	75
Item 3.	Defaults Upon Senior Securities	76
Item 4.	Mine Safety Disclosures	76
Item 5.	Other Information	76
Item 6.	Exhibits	76
Index of Exhibits		77
Signatures		78

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	March 31, 2020	December 31, 2019
ASSETS	(unaudited)	
Available-for-sale securities, at fair value (amortized cost $17,279,572; allowance for credit losses $41,390)	$ 17,733,059	$ 31,406,328
Mortgage servicing rights, at fair value	1,505,163	1,909,444
Cash and cash equivalents	1,206,889	558,136
Restricted cash	680,395	1,058,690
Accrued interest receivable	57,854	92,634
Due from counterparties	581,355	318,963
Derivative assets, at fair value	117,368	188,051
Reverse repurchase agreements	147,651	220,000
Other assets	172,914	169,376
Total Assets (1)	$ 22,202,648	$ 35,921,622
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities		
Repurchase agreements	$ 17,795,516	$ 29,147,463
Federal Home Loan Bank advances	50,000	210,000
Revolving credit facilities	252,143	300,000
Term notes payable	394,772	394,502
Convertible senior notes	285,238	284,954
Derivative liabilities, at fair value	176,156	6,740
Due to counterparties	200,729	259,447
Dividends payable	—	128,125
Accrued interest payable	79,543	149,626
Other liabilities	64,418	70,299
Total Liabilities (1)	19,298,515	30,951,156
Stockholders' Equity		
Preferred stock, par value $0.01 per share; 50,000,000 shares authorized and 40,050,000 and 40,050,000 shares issued and outstanding, respectively ($1,001,250 and $1,001,250 liquidation preference, respectively)	977,501	977,501
Common stock, par value $0.01 per share; 450,000,000 shares authorized and 273,528,243 and 272,935,731 shares issued and outstanding, respectively	2,735	2,729
Additional paid-in capital	5,156,151	5,154,764
Accumulated other comprehensive income	491,330	689,400
Cumulative earnings	786,235	2,655,891
Cumulative distributions to stockholders	(4,509,819)	(4,509,819)
Total Stockholders' Equity	2,904,133	4,970,466
Total Liabilities and Stockholders' Equity	$ 22,202,648	$ 35,921,622

(1) The condensed consolidated balance sheets include assets and liabilities of consolidated variable interest entities, or VIEs. At March 31, 2020 and December 31, 2019, assets of the VIEs totaled $395,316 and $395,008, and liabilities of the VIEs totaled $395,316 and $395,008, respectively. See Note 3 - *Variable Interest Entities* for additional information.

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME (unaudited)
(in thousands, except share data)

	Three Months Ended March 31,	
	2020	**2019**
Interest income:		
Available-for-sale securities	$ 248,684	$ 235,886
Other	6,823	9,597
Total interest income	255,507	245,483
Interest expense:		
Repurchase agreements	152,605	147,560
Federal Home Loan Bank advances	1,592	6,074
Revolving credit facilities	3,531	5,156
Term notes payable	4,804	—
Convertible senior notes	4,776	4,735
Total interest expense	167,308	163,525
Net interest income	88,199	81,958
Other-than-temporary impairments:		
Total other-than-temporary impairment losses	—	(206)
Other income (loss):		
Loss on investment securities	(1,081,607)	(19,292)
Servicing income	130,797	116,948
Loss on servicing asset	(586,665)	(188,974)
Loss on interest rate swap, cap and swaption agreements	(250,596)	(83,259)
(Loss) gain on other derivative instruments	(133,468)	104,278
Other income	798	123
Total other loss	(1,920,741)	(70,176)
Expenses:		
Management fees	14,550	12,082
Servicing expenses	19,905	19,912
Other operating expenses	15,797	15,556
Total expenses	50,252	47,550
Loss before income taxes	(1,882,794)	(35,974)
Benefit from income taxes	(13,138)	(10,039)
Net loss	(1,869,656)	(25,935)
Dividends on preferred stock	18,950	18,950
Net loss attributable to common stockholders	$ (1,888,606)	$ (44,885)
Basic loss per weighted average common share	$ (6.91)	$ (0.18)
Diluted loss per weighted average common share	$ (6.91)	$ (0.18)
Dividends declared per common share	$ —	$ 0.47
Weighted average number of shares of common stock:		
Basic	273,392,615	252,357,878
Diluted	273,392,615	252,357,878

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME (unaudited), continued
(in thousands, except share data)

	Three Months Ended March 31,	
	2020	**2019**
Comprehensive (loss) income:		
Net loss	$ (1,869,656)	$ (25,935)
Other comprehensive (loss) income, net of tax:		
Unrealized (loss) gain on available-for-sale securities	(198,070)	356,152
Other comprehensive (loss) income	(198,070)	356,152
Comprehensive (loss) income	(2,067,726)	330,217
Dividends on preferred stock	18,950	18,950
Comprehensive (loss) income attributable to common stockholders	$ (2,086,676)	$ 311,267

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (unaudited)
(in thousands)

	Preferred Stock	Common Stock Par Value	Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Cumulative Earnings	Cumulative Distributions to Stockholders	Total Stockholders' Equity
Balance, December 31, 2018	$ 977,501	$ 2,481	$ 4,809,616	$ 110,817	$ 2,332,371	$ (3,978,297)	$ 4,254,489
Cumulative effect of adoption of new accounting principle	—	—	—	—	(442)	—	(442)
Adjusted balance, January 1, 2019	977,501	2,481	4,809,616	110,817	2,331,929	(3,978,297)	4,254,047
Net loss	—	—	—	—	(25,935)	—	(25,935)
Other comprehensive income before reclassifications, net of tax	—	—	—	327,840	—	—	327,840
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	28,312	—	—	28,312
Other comprehensive income, net of tax	—	—	—	356,152	—	—	356,152
Issuance of common stock, net of offering costs	—	243	335,035	—	—	—	335,278
Preferred dividends declared	—	—	—	—	—	(18,950)	(18,950)
Common dividends declared	—	—	—	—	—	(128,229)	(128,229)
Non-cash equity award compensation	—	4	1,857	—	—	—	1,861
Balance, March 31, 2019	977,501	2,728	5,146,508	466,969	2,305,994	(4,125,476)	4,774,224
Balance, December 31, 2019	$ 977,501	$ 2,729	$ 5,154,764	$ 689,400	$ 2,655,891	$ (4,509,819)	$ 4,970,466
Net loss	—	—	—	—	(1,869,656)	—	(1,869,656)
Other comprehensive income before reclassifications, net of tax	—	—	—	193,536	—	—	193,536
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	(391,606)	—	—	(391,606)
Other comprehensive loss, net of tax	—	—	—	(198,070)	—	—	(198,070)
Issuance of common stock, net of offering costs	—	—	142	—	—	—	142
Repurchase of common stock	—	(1)	(1,063)	—	—	—	(1,064)
Preferred dividends declared	—	—	—	—	—	—	—
Common dividends declared	—	—	—	—	—	—	—
Non-cash equity award compensation	—	7	2,308	—	—	—	2,315
Balance, March 31, 2020	$ 977,501	$ 2,735	$ 5,156,151	$ 491,330	$ 786,235	$ (4,509,819)	$ 2,904,133

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (unaudited)
(in thousands)

	Three Months Ended March 31,	
	2020	**2019**
Cash Flows From Operating Activities:		
Net loss	$ (1,869,656)	$ (25,935)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Amortization of premiums and discounts on investment securities, net	41,387	22,052
Amortization of deferred debt issuance costs on term notes payable and convertible senior notes	554	243
Other-than-temporary impairment losses	—	206
Provision for credit losses on investment securities	45,638	—
Realized and unrealized losses on investment securities	1,035,969	19,292
Loss on servicing asset	586,665	188,974
Realized and unrealized loss on interest rate swaps, caps and swaptions	237,980	106,967
Unrealized loss (gain) on other derivative instruments	64,589	(90,184)
Equity based compensation	2,315	1,861
Net change in assets and liabilities:		
Decrease in accrued interest receivable	34,780	8,655
Increase in deferred income taxes, net	(44,090)	(10,037)
Decrease in accrued interest payable	(70,083)	(50,692)
Change in other operating assets and liabilities, net	34,158	(5,588)
Net cash provided by operating activities	100,206	165,814
Cash Flows From Investing Activities:		
Purchases of available-for-sale securities	(4,354,636)	(4,551,312)
Proceeds from sales of available-for-sale securities	15,586,752	4,853,189
Principal payments on available-for-sale securities	1,119,117	487,649
Purchases of trading securities	(1,052,500)	—
Proceeds from sales of trading securities	1,053,477	—
Purchases of mortgage servicing rights, net of purchase price adjustments	(180,951)	(210,193)
(Payments for) proceeds from sales of mortgage servicing rights	(1,433)	289
(Purchases) short sales of derivative instruments, net	(3,630)	(17,344)
(Payments for termination and settlement) proceeds from sales and settlement of derivative instruments, net	(58,840)	(835,929)
Payments for reverse repurchase agreements	(1,591,621)	(901,375)
Proceeds from reverse repurchase agreements	614,756	1,663,190
(Decrease) increase in due to counterparties, net	(321,110)	2,163,821
Change in other investing assets and liabilities, net	508	2,136
Net cash provided by investing activities	$ 10,809,889	$ 2,654,121

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (unaudited), continued
(in thousands)

	Three Months Ended March 31,	
	2020	**2019**
Cash Flows From Financing Activities:		
Proceeds from repurchase agreements	$ 35,793,417	$ 58,853,279
Principal payments on repurchase agreements	(46,096,150)	(62,257,064)
Proceeds from Federal Home Loan Bank advances	585,000	—
Principal payments on Federal Home Loan Bank advances	(745,000)	—
Proceeds from revolving credit facilities	25,000	75,000
Principal payments on revolving credit facilities	(72,857)	(9,706)
Proceeds from issuance of common stock, net of offering costs	142	335,278
Repurchase of common stock	(1,064)	—
Dividends paid on preferred stock	(18,950)	(18,950)
Dividends paid on common stock	(109,175)	(116,601)
Net cash used in financing activities	(10,639,637)	(3,138,764)
Net increase (decrease) in cash, cash equivalents and restricted cash	270,458	(318,829)
Cash, cash equivalents and restricted cash at beginning of period	1,616,826	1,097,764
Cash, cash equivalents and restricted cash at end of period	$ 1,887,284	$ 778,935
Supplemental Disclosure of Cash Flow Information:		
Cash paid for interest	$ 236,043	$ 214,217
Cash paid for taxes, net	$ 119	$ 15
Noncash Activities:		
Cumulative-effect adjustment to equity for adoption of new accounting principle	$ —	$ 442
Dividends declared but not paid at end of period	$ —	$ 147,179

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

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 1. Organization and Operations

Two Harbors Investment Corp., or the Company, is a Maryland corporation investing in and managing Agency residential mortgage-backed securities, or Agency RMBS, non-Agency securities, mortgage servicing rights, or MSR, and other financial assets. The investment portfolio as a whole is managed by the Company's Co-Chief Investment Officers and resources are allocated and financial performance is assessed on a consolidated basis. The Company is externally managed and advised by PRCM Advisers LLC, or PRCM Advisers, which is a subsidiary of Pine River Capital Management L.P., or Pine River. The Company's common stock is listed on the NYSE under the symbol "TWO".

The Company was incorporated on May 21, 2009, and commenced operations as a publicly traded company on October 28, 2009, upon completion of a merger with Capitol Acquisition Corp., or Capitol, which became a wholly owned indirect subsidiary of the Company as a result of the merger.

The Company has elected to be treated as a real estate investment trust, or REIT, as defined under the Internal Revenue Code of 1986, as amended, or the Code, for U.S. federal income tax purposes. As long as the Company continues to comply with a number of requirements under federal tax law and maintains its qualification as a REIT, the Company generally will not be subject to U.S. federal income taxes to the extent that the Company distributes its taxable income to its stockholders on an annual basis and does not engage in prohibited transactions. However, certain activities that the Company may perform may cause it to earn income which will not be qualifying income for REIT purposes. The Company has designated certain of its subsidiaries as taxable REIT subsidiaries, or TRSs, as defined in the Code, to engage in such activities.

As a result of the global COVID-19 pandemic, the Company experienced unprecedented market conditions during quarter ended March 31, 2020, including unusually significant spread widening in both Agency RMBS and non-Agency securities. In response, the Company focused its efforts on raising excess liquidity and de-risking its portfolio. On March 25, 2020, the Company sold substantially all of its non-Agency securities in order to eliminate the risks posed by continued outsized margin calls and ongoing funding concerns associated with the significant spread widening on these assets. The Company also sold approximately one-third of its Agency RMBS in order to reduce risk and raise cash to establish a strong defensive liquidity position to weather potential ongoing economic and market instability.

Note 2. Basis of Presentation and Significant Accounting Policies

Consolidation and Basis of Presentation

The interim unaudited condensed consolidated financial statements of the Company have been prepared in accordance with the rules and regulations of the Securities and Exchange Commission, or SEC. Certain information and note disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP, have been condensed or omitted according to such SEC rules and regulations. However, management believes that the disclosures included in these interim condensed consolidated financial statements are adequate to make the information presented not misleading.

The condensed consolidated financial statements of the Company include the accounts of all subsidiaries; inter-company accounts and transactions have been eliminated. All trust entities in which the Company holds investments that are considered variable interest entities, or VIEs, for financial reporting purposes were reviewed for consolidation under the applicable consolidation guidance. Whenever the Company has both the power to direct the activities of a trust that most significantly impact the entities' performance, and the obligation to absorb losses or the right to receive benefits of the entities that could be significant, the Company consolidates the trust. Certain prior period amounts have been reclassified to conform to the current period presentation. The accompanying condensed consolidated financial statements should be read in conjunction with the financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019. In the opinion of management, all normal and recurring adjustments necessary to present fairly the financial condition of the Company at March 31, 2020 and results of operations for all periods presented have been made. The results of operations for the three months ended March 31, 2020 should not be construed as indicative of the results to be expected for future periods or the full year.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make a number of significant estimates. These include estimates of fair value of certain assets and liabilities, amount and timing of credit losses, prepayment rates, the period of time during which the Company anticipates an increase in the fair values of real estate securities sufficient to recover unrealized losses in those securities, and other estimates that affect the reported amounts of certain assets and liabilities as of the date of the consolidated financial statements and the reported amounts of certain revenues and expenses during the reported period. It is likely that changes in these estimates (*e.g.*, valuation changes due to supply and demand in the market, credit performance, prepayments, interest rates, or other reasons) will occur in the near term. The Company's estimates are inherently subjective in nature and actual results could differ from its estimates and the differences may be material.

Significant Accounting Policies

Included in Note 2 to the Consolidated Financial Statements of the Company's 2019 Annual Report on Form 10-K is a summary of the Company's significant accounting policies. Provided below is a summary of additional accounting policies that are significant to the Company's consolidated financial condition and results of operations for the three months ended March 31, 2020.

Recently Issued and/or Adopted Accounting Standards

Measurement of Credit Losses on Financial Instruments

On January 1, 2020, the Company adopted Accounting Standards Update (ASU) No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which changed the impairment model for most financial assets and certain other instruments. Allowances for credit losses on available-for-sale, or AFS, debt securities are recognized, rather than direct reductions in the amortized cost of the investments, regardless of whether the impairment is considered to be other-than-temporary. The new model also requires the estimation of lifetime expected credit losses and corresponding recognition of allowance for losses on trade and other receivables, held-to-maturity debt securities, loans, and other instruments held at amortized cost. The ASU requires certain recurring disclosures.

The Company uses a discounted cash flow method to estimate and recognize an allowance for credit losses on AFS securities. The estimated allowance for credit losses is equal to the difference between the prepayment adjusted contractual cash flows with no credit losses and the prepayment adjusted expected cash flows with credit losses, discounted at the effective interest rate on the AFS security that was in effect upon adoption of the standard. The contractual cash flows and expected cash flows are based on management's best estimate and take into consideration current prepayment assumptions, lifetime expected losses based on past loss experience, current market conditions, and reasonable and supportable forecasts of future conditions. The allowance for credit losses causes an increase in the AFS security amortized cost and recognizes an allowance for credit losses in the same amount. The allowance for credit losses recognized in connection with adopting the guidance in Topic 326 on January 1, 2020 was equal to the present value of the credit reserve in place on December 31, 2019. As a result, no cumulative effect adjustment to opening cumulative earnings was required.

The adoption of this ASU impacts the Company's accounting for the purchase of certain beneficial interests with purchased credit deterioration or when there is a "significant" difference between contractual cash flows and expected cash flows. For these securities, the Company records an allowance for credit losses with an increase in amortized cost above the purchase price of the same amount. Subsequent adverse or favorable changes in expected cash flows are recognized immediately in earnings as a provision for or reduction in credit losses, respectively. Adverse changes are reflected as an increase to the allowance for credit losses and favorable changes are reflected as a decrease to the allowance for credit losses. The allowance for credit losses is limited to the difference between the beneficial interest's fair value and its amortized cost, and any remaining adverse changes in these circumstances are reflected as a prospective adjustment to accretable yield. If the allowance for credit losses has been reduced to zero, the remaining favorable changes are reflected as a prospective adjustment to accretable yield. The Company does not adjust the effective interest rate in subsequent periods for prepayment assumption changes or variable-rate changes. Any changes in the allowance for credit losses due to the time-value-of-money are accounted for in the condensed consolidated statements of comprehensive (loss) income as provision for credit losses rather than a reduction to interest income.

The standard applies to Agency and non-Agency securities that are accounted for as beneficial interests under Accounting Standards Codification (ASC) 325-40, *Investments-Other: Beneficial Interests in Securitized Financial Assets*, or ASC 325-40, and ASC 310-30, *Receivables: Loans and Debt Securities Acquired with Deteriorated Credit Quality*, or ASC 310-30. Only beneficial interests that were previously accounted for as purchased credit impaired under ASC 310-30 were accounted for as purchased credit deteriorated under Topic 326 on the transition date.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Upon adoption of this ASU, the Company established an allowance for credit losses on AFS securities accounted for as purchased credit-impaired assets under ASC 310-30 in an unrealized loss position and with no other-than-temporary impairments, or OTTI, recognized in periods prior to transition. The effective interest rates on these debt securities remained unchanged. On January 1, 2020, the $30.7 billion net amortized cost basis of AFS securities was inclusive of a $244.9 million allowance for credit loss.

The Company used a prospective transition approach for debt securities for which OTTI had been recognized prior to January 1, 2020. As a result, the amortized cost basis remained the same before and after the effective date. The effective interest rate on these debt securities also remained unchanged. Amounts previously recognized in accumulated other comprehensive income as of January 1, 2020 relating to improvements in cash flows expected to be collected are accreted into income over the remaining life of the asset. Recoveries of amounts previously written off relating to improvements in cash flows after January 1, 2020 are recorded in earnings when received.

Note 3. Variable Interest Entities

During the second quarter of 2019, the Company formed a new trust entity, or the Issuer Trust, for the purpose of financing MSR through securitization. On June 27, 2019, the Company, through the Issuer Trust, completed an MSR securitization transaction pursuant to which, through two of the Company's wholly owned subsidiaries, MSR is pledged to the Issuer Trust and in return, the Issuer Trust issued (a) an aggregate principal amount of $400.0 million in term notes to qualified institutional buyers and (b) a variable funding note, or VFN, with a maximum principal balance of $1.0 billion to one of the subsidiaries, in each case secured on a pari passu basis. The term notes bear interest at a rate equal to one-month LIBOR plus 2.80% per annum. The term notes will mature on June 25, 2024 or, if extended pursuant to the terms of the related indenture supplement, June 25, 2026 (unless earlier redeemed in accordance with their terms).

The Issuer Trust is considered a VIE for financial reporting purposes and, thus, was reviewed for consolidation under the applicable consolidation guidance. As the Company has both the power to direct the activities of the Issuer Trust that most significantly impact the entity's performance, and the obligation to absorb losses or the right to receive benefits of the entity that could be significant, the Company consolidates the trust. Additionally, in accordance with arrangements entered into in connection with the securitization transaction, the Company has direct financial obligations payable to the Issuer Trust, which, in turn, support the Issuer Trust's obligations to noteholders under the securitization transaction.

The following table presents a summary of the assets and liabilities of all consolidated trusts as reported on the condensed consolidated balance sheets as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020	December 31, 2019
Note receivable [(1)]	$ 394,772	$ 394,502
Cash and cash equivalents	200	200
Accrued interest receivable [(1)]	344	306
Total Assets	$ 395,316	$ 395,008
Term notes payable	$ 394,772	$ 394,502
Accrued interest payable	344	306
Other liabilities	200	200
Total Liabilities	$ 395,316	$ 395,008

(1) Receivables due from a wholly owned subsidiary of the Company to the Issuer Trust are eliminated in consolidation in accordance with U.S. GAAP.

Note 4. Available-for-Sale Securities, at Fair Value

The Company holds both Agency and non-Agency AFS investment securities which are carried at fair value on the condensed consolidated balance sheets. As a result of the global COVID-19 pandemic, the Company experienced unprecedented market conditions during the quarter ended March 31, 2020, including unusually significant spread widening in both Agency RMBS and non-Agency securities. In response, the Company focused its efforts on raising excess liquidity and de-risking its portfolio. On March 25, 2020, the Company sold substantially all of its non-Agency securities in order to eliminate the risks posed by continued outsized margin calls and ongoing funding concerns associated with the significant spread widening on these assets. The Company also sold approximately one-third of its Agency RMBS in order to reduce risk and raise cash to establish a strong defensive liquidity position to weather potential ongoing economic and market instability.

The following table presents the Company's AFS investment securities by collateral type as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020	December 31, 2019
Agency		
Federal National Mortgage Association	$ 14,362,782	$ 21,252,575
Federal Home Loan Mortgage Corporation	2,907,220	6,070,500
Government National Mortgage Association	436,657	454,980
Non-Agency	26,400	3,628,273
Total available-for-sale securities	$ 17,733,059	$ 31,406,328

At March 31, 2020 and December 31, 2019, the Company pledged AFS securities with a carrying value of $17.7 billion and $29.8 billion, respectively, as collateral for repurchase agreements and advances from the Federal Home Loan Bank of Des Moines, or the FHLB. See Note 11 - *Repurchase Agreements* and Note 12 - *Federal Home Loan Bank of Des Moines Advances*.

At March 31, 2020 and December 31, 2019, the Company did not have any securities purchased from and financed with the same counterparty that did not meet the conditions of ASC 860, to be considered linked transactions and, therefore, classified as derivatives.

The Company is not required to consolidate variable interest entities, or VIEs, for which it has concluded it does not have both the power to direct the activities of the VIEs that most significantly impact the entities' performance, and the obligation to absorb losses or the right to receive benefits of the entities that could be significant. The Company's investments in these unconsolidated VIEs include all non-Agency securities, which are classified within available-for-sale securities, at fair value on the condensed consolidated balance sheets. As of March 31, 2020 and December 31, 2019, the carrying value, which also represents the maximum exposure to loss, of all non-Agency securities in unconsolidated VIEs was $26.4 million and $3.6 billion, respectively.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following tables present the amortized cost and carrying value of AFS securities by collateral type as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020							
	Principal/ Current Face	**Un-amortized Premium**	**Accretable Purchase Discount**	**Amortized Cost**	**Allowance for Credit Losses**	**Unrealized Gain**	**Unrealized Loss**	**Carrying Value**
Agency								
Principal and interest	$ 16,316,075	$ 764,966	$ (17)	$ 17,081,024	$ —	$ 505,055	$ (1,091)	$ 17,584,988
Interest-only	2,461,579	158,209	—	158,209	(32,786)	14,194	(17,946)	121,671
Total Agency	18,777,654	923,175	(17)	17,239,233	(32,786)	519,249	(19,037)	17,706,659
Non-Agency								
Principal and interest	2,591	8	(41)	2,558	—	44	(9)	2,593
Interest-only	3,770,437	37,781	—	37,781	(8,604)	279	(5,649)	23,807
Total Non-Agency	3,773,028	37,789	(41)	40,339	(8,604)	323	(5,658)	26,400
Total	$ 22,550,682	$ 960,964	$ (58)	$ 17,279,572	$ (41,390)	$ 519,572	$ (24,695)	$ 17,733,059

(in thousands)	December 31, 2019							
	Principal/ Current Face	**Un-amortized Premium**	**Accretable Purchase Discount**	**Credit Reserve Purchase Discount**	**Amortized Cost**	**Unrealized Gain**	**Unrealized Loss**	**Carrying Value**
Agency								
Principal and interest	$ 26,239,544	$ 986,343	$ (19)	$ —	$ 27,225,868	$ 424,818	$ (8,815)	$ 27,641,871
Interest-only	2,601,693	169,811	—	—	169,811	13,724	(47,351)	136,184
Total Agency	28,841,237	1,156,154	(19)	—	27,395,679	438,542	(56,166)	27,778,055
Non-Agency								
Principal and interest	5,498,654	8,980	(560,140)	(1,711,951)	3,235,543	341,583	(23,263)	3,553,863
Interest-only	4,356,603	79,935	—	—	79,935	3,039	(8,564)	74,410
Total Non-Agency	9,855,257	88,915	(560,140)	(1,711,951)	3,315,478	344,622	(31,827)	3,628,273
Total	$ 38,696,494	$ 1,245,069	$ (560,159)	$ (1,711,951)	$ 30,711,157	$ 783,164	$ (87,993)	$ 31,406,328

The following tables present the carrying value of the Company's AFS securities by rate type as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020		
	Agency	**Non-Agency**	**Total**
Adjustable Rate	$ 13,820	$ 23,297	$ 37,117
Fixed Rate	17,692,839	3,103	17,695,942
Total	$ 17,706,659	$ 26,400	$ 17,733,059

	December 31, 2019		
(in thousands)	Agency	Non-Agency	Total
Adjustable Rate	$ 14,584	$ 3,344,287	$ 3,358,871
Fixed Rate	27,763,471	283,986	28,047,457
Total	$ 27,778,055	$ 3,628,273	$ 31,406,328

The following table presents the Company's AFS securities according to their estimated weighted average life classifications as of March 31, 2020:

	March 31, 2020		
(in thousands)	Agency	Non-Agency	Total
< 1 year	$ 718	$ 85	$ 803
≥ 1 and < 3 years	51,049	10,134	61,183
≥ 3 and < 5 years	3,793,934	9,313	3,803,247
≥ 5 and < 10 years	13,859,832	6,868	13,866,700
≥ 10 years	1,126	—	1,126
Total	$ 17,706,659	$ 26,400	$ 17,733,059

Measurement of Allowances for Credit Losses on AFS Securities (Subsequent to the Adoption of Topic 326)

Subsequent to the adoption of Topic 326 on January 1, 2020, the Company uses a discounted cash flow method to estimate and recognize an allowance for credit losses on AFS securities. The estimated allowance for credit losses is equal to the difference between the prepayment adjusted contractual cash flows with no credit losses and the prepayment adjusted expected cash flows with credit losses, discounted at the effective interest rate on the AFS security that was in effect upon adoption of the standard. The contractual cash flows and expected cash flows are based on management's best estimate and take into consideration current prepayment assumptions, lifetime expected losses based on past loss experience, current market conditions, and reasonable and supportable forecasts of future conditions. The allowance for credit losses causes an increase in the AFS security amortized cost and recognizes an allowance for credit losses in the same amount, with the provision for credit losses recognized in earnings (within loss on investment securities) and the balance of the unrealized loss recognized in either other comprehensive (loss) income, net of tax, or loss on investment securities, depending on the accounting treatment.

The following table presents the changes for the three months ended March 31, 2020 in the allowance for credit losses on Agency and non-Agency AFS securities.

	Three Months Ended March 31, 2020		
(in thousands)	Agency	Non-Agency	Total
Allowance for credit losses at beginning of period	$ —	$ (244,876)	$ (244,876)
Additions:			
On securities for which credit losses were not previously recorded	(32,786)	(11,109)	(43,895)
Arising from purchases of securities accounted for as purchased credit deteriorated	—	—	—
Reductions:			
For securities sold	—	246,792	246,792
Due to the intent to sell or more likely than not will be required to sell the security before recovery of its amortized cost	—	—	—
Increase (decrease) on securities with previously recorded credit losses	—	(1,743)	(1,743)
Writeoffs	—	4,867	4,867
Recoveries of amounts previously written off	—	(2,535)	(2,535)
Allowance for credit losses at end of period	$ (32,786)	$ (8,604)	$ (41,390)

The following table presents the components comprising the carrying value of AFS securities for which an allowance for credit losses has not been recorded by length of time that the securities had an unrealized loss position as of March 31, 2020 (subsequent to the adoption of Topic 326). At March 31, 2020, the Company held 875 AFS securities; of the securities for which an allowance for credit losses has not been recorded, 20 were in an unrealized loss position for less than twelve consecutive months and 18 were in an unrealized loss position for more than twelve consecutive months.

	March 31, 2020					
	Unrealized Loss Position for					
	Less than 12 Months		12 Months or More		Total	
(in thousands)	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Agency	$ 249,040	$ (5,425)	$ 16,057	$ (807)	$ 265,097	$ (6,232)
Non-Agency	2,094	(1,176)	307	(10)	2,401	(1,186)
Total	$ 251,134	$ (6,601)	$ 16,364	$ (817)	$ 267,498	$ (7,418)

Evaluating AFS Securities for Other-Than-Temporary Impairments (Prior to the Adoption of Topic 326)

In evaluating AFS securities for OTTI prior to the adoption of Topic 326, the Company determined whether there had been a significant adverse quarterly change in the cash flow expectations for a security. The Company compared the amortized cost of each security in an unrealized loss position against the present value of expected future cash flows of the security. The Company also considered whether there had been a significant adverse change in the regulatory and/or economic environment as part of this analysis. If the amortized cost of the security was greater than the present value of expected future cash flows using the original yield as the discount rate, an other-than-temporary credit impairment had occurred. If the Company did not intend to sell and would not be more likely than not required to sell the security, the credit loss was recognized in earnings and the balance of the unrealized loss was recognized in either other comprehensive (loss) income, net of tax, or loss on investment securities, depending on the accounting treatment. If the Company intended to sell the security or would be more likely than not required to sell the security, the full unrealized loss was recognized in earnings.

During the three months ended March 31, 2019, the Company recorded $0.2 million in other-than-temporary credit impairments on a total of two non-Agency securities where the future expected cash flows for each security were less than its amortized cost. At March 31, 2019, the Company did not intend to sell the securities and determined that it was not more likely than not that the Company would be required to sell the securities; therefore, only the projected credit loss was recognized in earnings. As of March 31, 2020, the Company no longer held any of the securities for which OTTI had been recognized prior to January 1, 2020.

The following table presents the changes in cumulative credit losses related to OTTI for the three months ended March 31, 2020 and 2019:

(in thousands)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Cumulative other-than-temporary credit losses at beginning of period	$ (17,021)	$ (6,865)
Additions:		
Other-than-temporary impairments not previously recognized	—	(99)
Increases related to other-than-temporary impairments on securities with previously recognized other-than-temporary impairments	—	(107)
Reductions:		
Decreases related to other-than-temporary impairments on securities paid down	—	1,703
Decreases related to other-than-temporary impairments on securities sold	17,021	840
Cumulative other-than-temporary credit losses at end of period	$ —	$ (4,528)

Cumulative credit losses related to OTTI are reduced for securities sold as well as for securities that mature, are paid down, or are prepaid such that the outstanding principal balance is reduced to zero. Additionally, increases in cash flows expected to be collected over the remaining life of the security cause a reduction in the cumulative credit loss.

Prior to the adoption of Topic 326 on January 1, 2020, when the Company purchased a credit-sensitive AFS security at a significant discount to its face value, the Company did not amortize into income a significant portion of this discount that the Company was entitled to earn because the Company did not expect to collect the entire discount due to the inherent credit risk of the security. The Company may have also recorded an OTTI for a portion of its investment in the security in an unrealized loss position to the extent the Company believed that the amortized cost would exceed the present value of expected future cash flows. The amount of principal that the Company did not amortize into income was designated as a credit reserve on the security, with unamortized net discounts or premiums amortized into income over time to the extent realizable.

The following table presents the changes for the three months ended March 31, 2019 in the net unamortized discount/premium and designated credit reserve on non-Agency AFS securities.

	Three Months Ended March 31, 2019		
(in thousands)	Designated Credit Reserve	Net Unamortized Discount/Premium	Total
Beginning balance at January 1	$ (1,322,762)	$ (603,591)	$ (1,926,353)
Acquisitions	(80,128)	16,434	(63,694)
Accretion of net discount	—	14,225	14,225
Realized credit losses	4,827	—	4,827
Reclassification adjustment for other-than-temporary impairments	2,337	—	2,337
Transfers from (to)	3,732	(3,732)	—
Sales, calls, other	(1,741)	90,669	88,928
Ending balance at March 31	$ (1,393,735)	$ (485,995)	$ (1,879,730)

The following table presents the components comprising the carrying value of AFS securities not deemed to be other-than-temporarily impaired by length of time that the securities had an unrealized loss position as of December 31, 2019 (prior to the adoption of Topic 326). At December 31, 2019, the Company held 1,237 AFS securities, of which 122 were in an unrealized loss position for less than twelve consecutive months and 151 were in an unrealized loss position for more than twelve consecutive months.

	December 31, 2019					
	Unrealized Loss Position for					
	Less than 12 Months		12 Months or More		Total	
(in thousands)	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Agency	$ 3,322,894	$ (6,645)	$ 524,739	$ (49,521)	$ 3,847,633	$ (56,166)
Non-Agency	647,849	(18,416)	210,988	(13,411)	858,837	(31,827)
Total	$ 3,970,743	$ (25,061)	$ 735,727	$ (62,932)	$ 4,706,470	$ (87,993)

Gross Realized Gains and Losses

Gains and losses from the sale of AFS securities are recorded as realized gains (losses) within loss on investment securities in the Company's condensed consolidated statements of comprehensive (loss) income. The following table presents details around sales of AFS securities during the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	2020	2019
Proceeds from sales of available-for-sale securities	$ 15,586,752	$ 4,853,189
Amortized cost of available-for-sale securities sold	(16,622,767)	(4,870,646)
Total realized losses on sales, net	$ (1,036,015)	$ (17,457)
Gross realized gains	$ 223,471	$ 101,298
Gross realized losses	(1,259,486)	(118,755)
Total realized losses on sales, net	$ (1,036,015)	$ (17,457)

Note 5. Servicing Activities

Mortgage Servicing Rights, at Fair Value

One of the Company's wholly owned subsidiaries has approvals from Fannie Mae and Freddie Mac to own and manage MSR, which represent the right to control the servicing of mortgage loans. The Company and its subsidiaries do not originate or directly service mortgage loans, and instead contract with appropriately licensed subservicers to handle substantially all servicing functions in the name of the subservicer for the loans underlying the Company's MSR.

The following table summarizes activity related to MSR for the three months ended March 31, 2020 and 2019.

(in thousands)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Balance at beginning of period	$ 1,909,444	$ 1,993,440
Purchases of mortgage servicing rights	183,783	220,812
Sales of mortgage servicing rights	1,433	—
Changes in fair value due to:		
Changes in valuation inputs or assumptions used in the valuation model	(500,763)	(151,614)
Other changes in fair value [(1)]	(85,902)	(37,649)
Other changes [(2)]	(2,832)	(10,619)
Balance at end of period	$ 1,505,163	$ 2,014,370

(1) Other changes in fair value primarily represents changes due to the realization of expected cash flows.
(2) Other changes includes purchase price adjustments, contractual prepayment protection, and changes due to the Company's purchase of the underlying collateral.

At March 31, 2020 and December 31, 2019, the Company pledged MSR with a carrying value of $1.3 billion and $1.6 billion, respectively, as collateral for repurchase agreements, revolving credit facilities and term notes payable. See Note 11 - *Repurchase Agreements*, Note 13 - *Revolving Credit Facilities* and Note 14 - *Term Notes Payable*.

As of March 31, 2020 and December 31, 2019, the key economic assumptions and sensitivity of the fair value of MSR to immediate 10% and 20% adverse changes in these assumptions were as follows:

(dollars in thousands, except per loan data)	March 31, 2020	December 31, 2019
Weighted average prepayment speed:	18.1%	14.8%
Impact on fair value of 10% adverse change	$ (96,004)	(88,459)
Impact on fair value of 20% adverse change	$ (217,491)	(188,209)
Weighted average delinquency:	0.8%	0.9%
Impact on fair value of 10% adverse change	$ (1,553)	(7,470)
Impact on fair value of 20% adverse change	$ (3,735)	(15,020)
Weighted average discount rate:	6.0%	7.2%
Impact on fair value of 10% adverse change	$ (29,420)	(49,274)
Impact on fair value of 20% adverse change	$ (57,603)	(95,963)
Weighted average per loan annual cost to service:	$ 68.56	$ 66.62
Impact on fair value of 10% adverse change	$ (15,960)	$ (23,932)
Impact on fair value of 20% adverse change	$ (31,558)	$ (48,054)

These assumptions and sensitivities are hypothetical and should be considered with caution. Changes in fair value based on 10% and 20% variations in assumptions generally cannot be extrapolated because the relationship of the change in assumptions to the change in fair value may not be linear. Also, the effect of a variation in a particular assumption on the fair value of MSR is calculated without changing any other assumptions. In reality, changes in one factor may result in changes in another (*e.g.*, increased market interest rates may result in lower prepayments and increased credit losses) that could magnify or counteract the sensitivities. Further, these sensitivities show only the change in the asset balances and do not show any expected change in the fair value of the instruments used to manage the interest rates and prepayment risks associated with these assets.

Risk Mitigation Activities

The primary risk associated with the Company's MSR is interest rate risk and the resulting impact on prepayments. A significant decline in interest rates could lead to higher-than-expected prepayments that could reduce the value of the MSR. The Company economically hedges the impact of these risks with its Agency RMBS portfolio.

Mortgage Servicing Income

The following table presents the components of servicing income recorded on the Company's condensed consolidated statements of comprehensive (loss) income for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	**2020**	**2019**
Servicing fee income	$ 117,891	$ 105,936
Ancillary and other fee income	521	310
Float income	12,385	10,702
Total	$ 130,797	$ 116,948

Mortgage Servicing Advances

As the servicer of record for the MSR assets, the Company may be required to advance principal and interest payments to security holders, and intermittent tax and insurance payments to local authorities and insurance companies on mortgage loans that are in forbearance, delinquency or default. The Company is responsible for funding these advances, potentially for an extended period of time, before receiving reimbursement from Fannie Mae and Freddie Mac. Servicing advances are priority cash flows in the event of a loan principal reduction or foreclosure and ultimate liquidation of the real estate-owned property, thus making their collection reasonably assured. These servicing advances totaled $34.1 million and $45.6 million and were included in other assets on the condensed consolidated balance sheets as of March 31, 2020 and December 31, 2019, respectively.

Serviced Mortgage Assets

The Company's total serviced mortgage assets consist of residential mortgage loans underlying MSR, residential mortgage loans owned by other entities that are serviced by the Company and other assets. The following table presents the number of loans and unpaid principal balance of the mortgage assets for which the Company manages the servicing as of March 31, 2020 and December 31, 2019:

	March 31, 2020		December 31, 2019	
(dollars in thousands)	**Number of Loans**	**Unpaid Principal Balance**	**Number of Loans**	**Unpaid Principal Balance**
Mortgage servicing rights	807,975	$ 179,714,087	793,470	$ 175,882,142
Residential mortgage loans [(1)]	3,040	1,911,591	3,157	2,033,951
Other assets	1	11	71	12,511
Total serviced mortgage assets	811,016	$ 181,625,689	796,698	$ 177,928,604

(1) Off-balance sheet residential mortgage loans owned by other entities but serviced by the Company.

Note 6. Cash, Cash Equivalents and Restricted Cash

Cash and cash equivalents include cash held in bank accounts and cash held in money market funds on an overnight basis.

The Company is required to maintain certain cash balances with counterparties for securities and derivatives trading activity and collateral for the Company's repurchase agreements and FHLB advances in restricted accounts. The Company has also placed cash in a restricted account pursuant to a letter of credit on an office space lease.

The following table presents the Company's restricted cash balances as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020	December 31, 2019
Restricted cash balances held by trading counterparties:		
For securities and loan trading activity	$ 45,050	$ 45,050
For derivatives trading activity	332,506	94,570
As restricted collateral for repurchase agreements and Federal Home Loan Bank advances	302,779	919,010
Total restricted cash balances held by trading counterparties	680,335	1,058,630
Restricted cash balance pursuant to letter of credit on office lease	60	60
Total	$ 680,395	$ 1,058,690

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported on the Company's condensed consolidated balance sheets as of March 31, 2020 and December 31, 2019 that sum to the total of the same such amounts shown in the statements of cash flows:

(in thousands)	March 31, 2020	December 31, 2019
Cash and cash equivalents	$ 1,206,889	$ 558,136
Restricted cash	680,395	1,058,690
Total cash, cash equivalents and restricted cash	$ 1,887,284	$ 1,616,826

Note 7. Derivative Instruments and Hedging Activities

The Company enters into a variety of derivative and non-derivative instruments in connection with its risk management activities. The primary objective for executing these derivative and non-derivative instruments is to mitigate the Company's economic exposure to future events that are outside its control, principally market risk and cash flow volatility associated with interest rate risk (including associated prepayment risk). Specifically, the Company enters into derivative and non-derivative instruments to economically hedge interest rate risk or "duration mismatch (or gap)" by adjusting the duration of its floating-rate borrowings into fixed-rate borrowings to more closely match the duration of its assets. This particularly applies to floating-rate borrowing agreements with maturities or interest rate resets of less than six months. Typically, the interest receivable terms (*e.g.*, LIBOR) of certain derivatives match the terms of the underlying debt, resulting in an effective conversion of the rate of the related borrowing agreement from floating to fixed. The objective is to manage the cash flows associated with current and anticipated interest payments on borrowings, as well as the ability to roll or refinance borrowings at the desired amount by adjusting the duration.

To help manage the adverse impact of interest rate changes on the value of the Company's portfolio as well as its cash flows, the Company may, at times, enter into various forward contracts, including short securities, Agency to-be-announced securities, or TBAs, options, futures, swaps, caps and total return swaps. In executing on the Company's current risk management strategy, the Company has entered into interest rate swap and swaption agreements, TBAs and U.S. Treasury futures. The Company has also entered into a number of non-derivative instruments to manage interest rate risk, principally MSR and Agency interest-only securities (see discussion below).

The following summarizes the Company's significant asset and liability classes, the risk exposure for these classes, and the Company's risk management activities used to mitigate these risks. The discussion includes both derivative and non-derivative instruments used as part of these risk management activities. Any of the Company's derivative and non-derivative instruments may be entered into in conjunction with one another in order to mitigate risks. As a result, the following discussions of each type of instrument should be read as a collective representation of the Company's risk mitigation efforts and should not be considered independent of one another. While the Company uses derivative and non-derivative instruments to achieve the Company's risk management activities, it is possible that these instruments will not effectively mitigate all or a substantial portion of the Company's market rate risk. In addition, the Company might elect, at times, not to enter into certain hedging arrangements in order to maintain compliance with REIT requirements.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Balance Sheet Presentation

In accordance with ASC 815, *Derivatives and Hedging*, or ASC 815, the Company records derivative financial instruments on its condensed consolidated balance sheets as assets or liabilities at fair value. Changes in fair value are accounted for depending on the use of the derivative instruments and whether they are designated or qualifying as hedge instruments. Due to the volatility of the interest rate and credit markets and difficulty in effectively matching pricing or cash flows, the Company has not designated any current derivatives as hedging instruments.

The following tables present the gross fair value and notional amounts of the Company's derivative financial instruments treated as trading derivatives as of March 31, 2020 and December 31, 2019.

	March 31, 2020			
	Derivative Assets		Derivative Liabilities	
(in thousands)	Fair Value	Notional	Fair Value	Notional
Inverse interest-only securities	$ 73,904	$ 379,239	$ —	$ —
Interest rate swap agreements	—	—	—	56,158,068
Swaptions, net	—	—	(62,713)	1,376,000
TBAs	43,464	3,565,000	(109,426)	(1,804,000)
U.S. Treasury futures	—	—	(4,017)	875,000
Total	$ 117,368	$ 3,944,239	$ (176,156)	$ 56,605,068

	December 31, 2019			
	Derivative Assets		Derivative Liabilities	
(in thousands)	Fair Value	Notional	Fair Value	Notional
Inverse interest-only securities	$ 69,469	$ 397,137	$ —	$ —
Interest rate swap agreements	102,268	2,725,000	—	36,977,470
Swaptions, net	7,801	1,257,000	—	—
TBAs	8,011	9,584,000	(6,711)	(2,157,000)
U.S. Treasury futures	502	380,000	—	—
Markit IOS total return swaps	—	—	(29)	41,890
Total	$ 188,051	$ 14,343,137	$ (6,740)	$ 34,862,360

Comprehensive (Loss) Income Statement Presentation

The Company has not applied hedge accounting to its current derivative portfolio held to mitigate interest rate risk and credit risk. As a result, the Company is subject to volatility in its earnings due to movement in the unrealized gains and losses associated with its derivative instruments.

The following table summarizes the location and amount of gains and losses on derivative instruments reported in the condensed consolidated statements of comprehensive (loss) income:

Derivative Instruments	Location of Gain (Loss) Recognized in Income	Amount of Gain (Loss) Recognized in Income	
		Three Months Ended March 31,	
(in thousands)		2020	2019
Interest rate risk management			
TBAs	(Loss) gain on other derivative instruments	$ (166,058)	$ 109,511
Short U.S. Treasuries	(Loss) gain on other derivative instruments	—	(6,801)
U.S. Treasury futures	(Loss) gain on other derivative instruments	25,972	3,727
Put and call options for TBAs	(Loss) gain on other derivative instruments	—	(7,666)
Interest rate swaps - Payers	Loss on interest rate swap, cap and swaption agreements	(1,037,335)	(238,968)
Interest rate swaps - Receivers	Loss on interest rate swap, cap and swaption agreements	899,953	163,601
Swaptions	Loss on interest rate swap, cap and swaption agreements	(113,214)	(4,532)
Interest rate caps	Loss on interest rate swap, cap and swaption agreements	—	(3,360)
Markit IOS total return swaps	(Loss) gain on other derivative instruments	(2,430)	(580)
Non-risk management			
Inverse interest-only securities	(Loss) gain on other derivative instruments	9,048	6,087
Total		$ (384,064)	$ 21,019

For the three months ended March 31, 2020 and 2019, the Company recognized $12.6 million of expenses and $23.7 million of income, respectively, for the accrual and/or settlement of the net interest expense associated with its interest rate swaps and caps. The income/expenses result from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on an average $42.7 billion and $37.6 billion, respectively.

The following tables present information with respect to the volume of activity in the Company's derivative instruments during the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31, 2020					
(in thousands)	Beginning of Period Notional Amount	Additions	Settlement, Termination, Expiration or Exercise	End of Period Notional Amount	Average Notional Amount	Realized Gain (Loss), net [1]
Inverse interest-only securities	$ 397,137	$ —	$ (17,898)	$ 379,239	$ 388,891	$ —
Interest rate swap agreements	39,702,470	24,383,111	(7,927,513)	56,158,068	42,667,316	408,053
Swaptions, net	1,257,000	430,000	(311,000)	1,376,000	2,055,484	(46,200)
TBAs, net	7,427,000	12,491,000	(18,157,000)	1,761,000	4,939,769	(98,795)
U.S. Treasury futures	(380,000)	8,230,000	(6,975,000)	875,000	923,571	30,499
Markit IOS total return swaps	41,890	—	(41,890)	—	40,788	(2,077)
Total	$ 48,445,497	$ 45,534,111	$ (33,430,301)	$ 60,549,307	$ 51,015,819	$ 291,480

	Three Months Ended March 31, 2019					
(in thousands)	Beginning of Period Notional Amount	Additions	Settlement, Termination, Expiration or Exercise	End of Period Notional Amount	Average Notional Amount	Realized Gain (Loss), net [(1)]
Inverse interest-only securities	$ 476,299	$ —	$ (19,866)	$ 456,433	$ 466,911	$ —
Interest rate swap agreements	29,523,605	10,594,633	(1,721,961)	38,396,277	35,057,414	(10,183)
Interest rate cap contracts	2,500,000	—	—	2,500,000	2,500,000	—
Swaptions, net	63,000	5,900,000	(63,000)	5,900,000	1,152,511	(24,315)
TBAs, net	6,484,000	42,733,000	(39,049,000)	10,168,000	8,814,300	70,915
Short U.S. Treasuries	(800,000)	—	800,000	—	(185,327)	(23,172)
U.S. Treasury futures	—	1,310,000	—	1,310,000	143,889	—
Put and call options for TBAs, net	(1,767,000)	—	1,767,000	—	(447,739)	(32,962)
Markit IOS total return swaps	48,265	—	(1,192)	47,073	47,456	—
Total	$ 36,528,169	$ 60,537,633	$ (38,288,019)	$ 58,777,783	$ 47,549,415	$ (19,717)

(1) Excludes net interest paid or received in full settlement of the net interest spread liability.

Cash flow activity related to derivative instruments is reflected within the operating activities and investing activities sections of the condensed consolidated statements of cash flows. Realized gains and losses and derivative fair value adjustments are reflected within the realized and unrealized loss on interest rate swaps, caps and swaptions and unrealized loss (gain) on other derivative instruments line items within the operating activities section of the condensed consolidated statements of cash flows. The remaining cash flow activity related to derivative instruments is reflected within the (purchases) short sales of other derivative instruments, (payments for termination and settlement) proceeds from sales and settlements of derivative instruments, net and (decrease) increase in due to counterparties, net line items within the investing activities section of the condensed consolidated statements of cash flows.

Interest Rate Sensitive Assets/Liabilities

The Company's Agency RMBS portfolio is generally subject to change in value when mortgage rates decline or increase, depending on the type of investment. Rising mortgage rates generally result in a decline in the value of the Company's fixed-rate Agency P&I RMBS. To mitigate the impact of this risk on the Company's fixed-rate Agency P&I RMBS portfolio, the Company maintains a portfolio of fixed-rate interest-only securities and MSR, which increase in value when interest rates increase. As of March 31, 2020 and December 31, 2019, the Company had $65.1 million and $122.2 million, respectively, of interest-only securities, and $1.5 billion and $1.9 billion, respectively, of MSR in place to economically hedge its Agency RMBS. Interest-only securities are included in AFS securities, at fair value, in the condensed consolidated balance sheets.

The Company monitors its borrowings under repurchase agreements, FHLB advances and revolving credit facilities, which are generally floating-rate debt, in relation to the rate profile of its portfolio. In connection with its risk management activities, the Company enters into a variety of derivative and non-derivative instruments to economically hedge interest rate risk or "duration mismatch (or gap)" by adjusting the duration of its floating-rate borrowings into fixed-rate borrowings to more closely match the duration of its assets. This particularly applies to borrowing agreements with maturities or interest rate resets of less than six months. Typically, the interest receivable terms (*e.g.*, LIBOR) of certain derivatives match the terms of the underlying debt, resulting in an effective conversion of the rate of the related borrowing agreement from floating to fixed. The objective is to manage the cash flows associated with current and anticipated interest payments on borrowings, as well as the ability to roll or refinance borrowings at the desired amount by adjusting the duration. To help manage the adverse impact of interest rate changes on the value of the Company's portfolio as well as its cash flows, the Company may, at times, enter into various forward contracts, including short securities, TBAs, options, futures, swaps, caps, credit default swaps and total return swaps. In executing on the Company's current interest rate risk management strategy, the Company has entered into TBAs, interest rate swap and swaption agreements and U.S. Treasury futures.

TBAs. At times, the Company may use TBAs as a means of deploying capital until targeted investments are available or to take advantage of temporary displacements, funding advantages or valuation differentials in the marketplace. Additionally, the Company may use TBAs independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. TBAs are forward contracts for the purchase (long notional positions) or sale (short notional positions) of Agency RMBS. The issuer, coupon and stated maturity of the Agency RMBS are predetermined as well as the trade price, face amount and future settle date (published each month by the Securities Industry and Financial Markets Association). However, the specific Agency RMBS to be delivered upon settlement is not known at the time of the TBA transaction. As a result, and because physical delivery of the Agency RMBS upon settlement cannot be assured, the Company accounts for TBAs as derivative instruments.

The Company may hold both long and short notional TBA positions, which are disclosed on a gross basis according to the unrealized gain or loss position of each TBA contract regardless of long or short notional position. The following tables present the notional amount, cost basis, market value and carrying value (which approximates fair value) of the Company's TBA positions as of March 31, 2020 and December 31, 2019:

	March 31, 2020				
				Net Carrying Value [4]	
(in thousands)	Notional Amount [1]	Cost Basis [2]	Market Value [3]	Derivative Assets	Derivative Liabilities
Purchase contracts	$ 5,264,000	$ 5,535,851	$ 5,568,520	$ 43,464	$ (10,795)
Sale contracts	(3,503,000)	(3,623,018)	(3,721,649)	—	(98,631)
TBAs, net	$ 1,761,000	$ 1,912,833	$ 1,846,871	$ 43,464	$ (109,426)

	December 31, 2019				
				Net Carrying Value [4]	
(in thousands)	Notional Amount [1]	Cost Basis [2]	Market Value [3]	Derivative Assets	Derivative Liabilities
Purchase contracts	$ 10,223,000	$ 10,557,745	$ 10,565,556	$ 8,011	$ (200)
Sale contracts	(2,796,000)	(2,902,858)	(2,909,369)	—	(6,511)
TBAs, net	$ 7,427,000	$ 7,654,887	$ 7,656,187	$ 8,011	$ (6,711)

(1) Notional amount represents the face amount of the underlying Agency RMBS.
(2) Cost basis represents the forward price to be paid (received) for the underlying Agency RMBS.
(3) Market value represents the current market value of the TBA (or of the underlying Agency RMBS) as of period-end.
(4) Net carrying value represents the difference between the market value of the TBA as of period-end and its cost basis, and is reported in derivative assets / (liabilities), at fair value, in the condensed consolidated balance sheets.

U.S. Treasury Futures. The Company may use U.S. Treasury futures independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of March 31, 2020 and December 31, 2019, the Company had purchased U.S. Treasury futures with a notional amount of $875.0 million and $380.0 million and a fair market value of $4.0 million included in derivative liabilities and $0.5 million included in derivative assets, at fair value, on the condensed consolidated balance sheet as of March 31, 2020 and December 31, 2019, respectively.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Interest Rate Swap Agreements. The Company may use interest rate swaps independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of March 31, 2020 and December 31, 2019, the Company held the following interest rate swaps that were utilized as economic hedges of interest rate exposure (or duration) whereby the Company receives interest at a three-month LIBOR rate:

(notional in thousands)

March 31, 2020				
Swaps Maturities	**Notional Amount**	**Weighted Average Fixed Pay Rate**	**Weighted Average Receive Rate**	**Weighted Average Maturity (Years)**
2020	$ 3,640,000	1.806%	1.352%	0.58
2021	15,740,977	1.681%	1.685%	1.22
2022	2,578,640	1.911%	1.176%	2.49
2023	215,000	3.057%	1.683%	3.65
2024 and Thereafter	8,739,092	2.224%	1.555%	6.95
Total	$ 30,913,709	1.878%	1.580%	2.89

(notional in thousands)

December 31, 2019				
Swaps Maturities	**Notional Amount**	**Weighted Average Fixed Pay Rate**	**Weighted Average Receive Rate**	**Weighted Average Maturity (Years)**
2020	$ 3,640,000	1.806%	1.937%	0.83
2021	15,740,977	1.681%	1.910%	1.47
2022	2,578,640	1.911%	1.901%	2.74
2023	215,000	3.057%	1.910%	3.90
2024 and Thereafter	8,739,092	2.224%	1.935%	7.20
Total	$ 30,913,709	1.878%	1.921%	3.14

Additionally, as of March 31, 2020 and December 31, 2019, the Company held the following interest rate swaps in order to mitigate mortgage interest rate exposure (or duration) risk whereby the Company pays interest at a three-month LIBOR rate:

(notional in thousands)

March 31, 2020				
Swaps Maturities	**Notional Amounts**	**Weighted Average Pay Rate**	**Weighted Average Fixed Receive Rate**	**Weighted Average Maturity (Years)**
2020	$ —	—%	—%	0.00
2021	9,247,416	1.188%	0.799%	0.96
2022	6,139,622	1.152%	0.527%	1.98
2023	—	—%	—%	0.00
2024 and Thereafter	9,857,321	1.319%	1.418%	8.36
Total	$ 25,244,359	1.255%	0.943%	3.05

(notional in thousands)

December 31, 2019				
Swaps Maturities	Notional Amounts	Weighted Average Pay Rate	Weighted Average Fixed Receive Rate	Weighted Average Maturity (Years)
2020	$ 250,000	1.953%	2.258%	0.06
2021	915,000	1.894%	2.516%	1.10
2022	—	—%	—%	0.00
2023	—	—%	—%	0.00
2024 and Thereafter	7,623,761	1.937%	2.232%	8.64
Total	$ 8,788,761	1.933%	2.262%	7.61

Interest Rate Swaptions. The Company may use interest rate swaptions (agreements to enter into interest rate swaps in the future for which the Company would either pay or receive a fixed rate) independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of March 31, 2020 and December 31, 2019, the Company had the following outstanding interest rate swaptions that were utilized as macro-economic hedges:

(notional and dollars in thousands)	March 31, 2020							
	Option				Underlying Swap			
Swaption	Expiration	Cost Basis	Fair Value	Average Months to Expiration	Notional Amount	Average Pay Rate	Average Receive Rate	Average Term (Years)
Purchase contracts:								
Payer	< 6 Months	$ 9,000	$ 2	0.93	$ 2,550,000	2.27%	3M Libor	10.0
Sale contracts:								
Receiver	< 6 Months	$ (4,500)	$ (62,715)	0.93	$ (1,174,000)	3M Libor	1.26%	10.0

(notional and dollars in thousands)	December 31, 2019							
	Option				Underlying Swap			
Swaption	Expiration	Cost	Fair Value	Average Months to Expiration	Notional Amount	Average Fixed Pay Rate	Average Receive Rate	Average Term (Years)
Purchase contracts:								
Payer	< 6 Months	$ 24,700	$ 16,095	3.20	$ 7,525,000	2.27%	3M Libor	10.0
Receiver	< 6 Months	$ 4,100	$ 342	1.10	$ 500,000	3M Libor	1.55%	10.0
Sale contracts:								
Receiver	< 6 Months	$ (20,800)	$ (8,636)	3.24	$ (6,768,000)	3M Libor	1.28%	10.0

Markit IOS Total Return Swaps. The Company may use total return swaps (agreements whereby the Company receives or makes payments based on the total return of an underlying instrument or index, such as the Markit IOS Index, in exchange for fixed or floating rate interest payments) independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. The Company enters into total return swaps to help mitigate the potential impact of larger increases or decreases in interest rates on the performance of our portfolio (referred to as “convexity risk”). Total return swaps based on the Markit IOS Index are intended to synthetically replicate the performance of interest-only securities. The Company did not hold any total return swaps as of March 31, 2020. As of December 31, 2019, the Company had the following total return swap agreements in place:

(notional and dollars in thousands)

	December 31, 2019			
Maturity Date	**Current Notional Amount**	**Fair Value**	**Cost Basis**	**Unrealized Gain (Loss)**
January 12, 2043	$ (18,625)	$ 5	$ (30)	$ 35
January 12, 2044	(23,265)	(34)	(29)	(5)
Total	$ (41,890)	$ (29)	$ (59)	$ 30

Credit Risk

The Company’s exposure to credit losses on its Agency RMBS portfolio is limited due to implicit or explicit backing from the GSEs. The payment of principal and interest on the Freddie Mac and Fannie Mae mortgage-backed securities are guaranteed by those respective agencies, and the payment of principal and interest on the Ginnie Mae mortgage-backed securities are backed by the full faith and credit of the U.S. government.

For non-Agency securities, the Company may enter into credit default swaps to hedge credit risk. In future periods, the Company could enhance its credit risk protection, enter into further paired derivative positions, including both long and short credit default swaps, and/or seek opportunistic trades in the event of a market disruption (see discussion under “*Non-Risk Management Activities*” below). The Company also has processes and controls in place to monitor, analyze, manage and mitigate its credit risk with respect to non-Agency securities.

Derivative financial instruments contain an element of credit risk if counterparties are unable to meet the terms of the agreements. Credit risk associated with derivative financial instruments is measured as the net replacement cost should the counterparties that owe the Company under such contracts completely fail to perform under the terms of these contracts, assuming there are no recoveries of underlying collateral, as measured by the market value of the derivative financial instruments. As of March 31, 2020, the fair value of derivative financial instruments as an asset and liability position was $117.4 million and $176.2 million, respectively.

The Company attempts to mitigate its credit risk exposure on derivative financial instruments by limiting its counterparties to banks and financial institutions that meet established internal credit guidelines. The Company also seeks to spread its credit risk exposure across multiple counterparties in order to reduce its exposure to any single counterparty. Additionally, the Company reduces credit risk on the majority of its derivative instruments by entering into agreements that permit the closeout and netting of transactions with the same counterparty or clearing agency, in the case of centrally cleared interest rate swaps, upon the occurrence of certain events. To further mitigate the risk of counterparty default, the Company maintains collateral agreements with certain of its counterparties and clearing agencies, which require both parties to maintain cash deposits in the event the fair values of the derivative financial instruments exceed established thresholds. The Company’s centrally cleared interest rate swaps require that the Company posts an “initial margin” amount determined by the clearing exchange, which is generally intended to be set at a level sufficient to protect the exchange from the interest rate swap’s maximum estimated single-day price movement. The Company also exchanges “variation margin” based upon daily changes in fair value, as measured by the exchange. The exchange of variation margin is considered a settlement of the interest rate swap, as opposed to pledged collateral. Accordingly, the Company accounts for the receipt or payment of variation margin as a direct reduction to the carrying value of the interest rate swap asset or liability.

Note 8. Reverse Repurchase Agreements

As of March 31, 2020 and December 31, 2019, the Company had $145.6 million and $215.6 million in amounts due to counterparties as collateral for reverse repurchase agreements that could be pledged, delivered or otherwise used, with a fair value of $147.7 million and $220.0 million, respectively.

Note 9. Offsetting Assets and Liabilities

Certain of the Company’s repurchase agreements are governed by underlying agreements that provide for a right of setoff in the event of default by either party to the agreement. The Company also has netting arrangements in place with all derivative counterparties pursuant to standard documentation developed by the International Swap and Derivatives Association, or ISDA, or central clearing exchange agreements, in the case of centrally cleared interest rate swaps. The Company and the counterparty or clearing agency are required to post cash collateral based upon the net underlying market value of the Company’s open positions with the counterparty. Additionally, the Company’s centrally cleared interest rate swaps require that the Company posts an “initial margin” amount determined by the clearing exchange, which is generally intended to be set at a level sufficient to protect the exchange from the interest rate swap’s maximum estimated single-day price movement. The Company also exchanges “variation margin” based upon daily changes in fair value, as measured by the exchange.

Under U.S. GAAP, if the Company has a valid right of setoff, it may offset the related asset and liability and report the net amount. As a result of amendments to rules governing certain central clearing activities, the exchange of variation margin is considered a settlement of the interest rate swap, as opposed to pledged collateral. Accordingly, beginning in the first quarter of 2018, the Company began accounting for the receipt or payment of variation margin on CME and LCH cleared positions as a direct reduction to the carrying value of the interest rate swap asset or liability. The receipt or payment of initial margin will continue to be accounted for separate from the interest rate swap asset or liability.

Reverse repurchase agreements and repurchase agreements with the same counterparty and the same maturity are presented net in the Company’s condensed consolidated balance sheets when the terms of the agreements meet the criteria to permit netting. The Company reports cash flows on repurchase agreements as financing activities and cash flows on reverse repurchase agreements as investing activities in the condensed consolidated statements of cash flows. The Company presents derivative assets and liabilities (other than centrally cleared interest rate swaps) subject to master netting arrangements or similar agreements on a net basis, based on derivative type and counterparty, in its condensed consolidated balance sheets. Separately, the Company presents cash collateral subject to such arrangements (other than variation margin on centrally cleared interest rate swaps) on a net basis, based on counterparty, in its condensed consolidated balance sheets. However, the Company does not offset repurchase agreements, reverse repurchase agreements or derivative assets and liabilities (other than centrally cleared interest rate swaps) with the associated cash collateral on its condensed consolidated balance sheets.

The following tables present information about the Company’s assets and liabilities that are subject to master netting arrangements or similar agreements and can potentially be offset on the Company’s condensed consolidated balance sheets as of March 31, 2020 and December 31, 2019:

	March 31, 2020					
				Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets [(1)]		
(in thousands)	Gross Amounts of Recognized Assets (Liabilities)	Gross Amounts Offset in the Balance Sheets	Net Amounts of Assets (Liabilities) Presented in the Balance Sheets	Financial Instruments	Cash Collateral (Received) Pledged	Net Amount
Assets						
Derivative assets	$ 837,021	$ (719,653)	$ 117,368	$ (117,368)	$ —	$ —
Reverse repurchase agreements	1,196,865	(1,049,214)	147,651	—	(145,580)	2,071
Total Assets	$ 2,033,886	$ (1,768,867)	$ 265,019	$ (117,368)	$ (145,580)	$ 2,071
Liabilities						
Repurchase agreements	$ (18,844,730)	$ 1,049,214	$ (17,795,516)	$ 17,795,516	$ —	$ —
Derivative liabilities	(895,809)	719,653	(176,156)	117,368	—	(58,788)
Total Liabilities	$ (19,740,539)	$ 1,768,867	$ (17,971,672)	$ 17,912,884	$ —	$ (58,788)

	December 31, 2019					
				Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets [(1)]		
(in thousands)	Gross Amounts of Recognized Assets (Liabilities)	Gross Amounts Offset in the Balance Sheets	Net Amounts of Assets (Liabilities) Presented in the Balance Sheets	Financial Instruments	Cash Collateral (Received) Pledged	Net Amount
Assets						
Derivative assets	$ 494,822	$ (306,771)	$ 188,051	$ (6,740)	$ —	$ 181,311
Reverse repurchase agreements	220,000	—	220,000	—	(215,565)	4,435
Total Assets	$ 714,822	$ (306,771)	$ 408,051	$ (6,740)	$ (215,565)	$ 185,746
Liabilities						
Repurchase agreements	$ (29,147,463)	$ —	$ (29,147,463)	$ 29,147,463	$ —	$ —
Derivative liabilities	(313,511)	306,771	(6,740)	6,740	—	—
Total Liabilities	$ (29,460,974)	$ 306,771	$ (29,154,203)	$ 29,154,203	$ —	$ —

(1) Amounts presented are limited in total to the net amount of assets or liabilities presented in the condensed consolidated balance sheets by instrument. Excess cash collateral or financial assets that are pledged to counterparties may exceed the financial liabilities subject to a master netting arrangement or similar agreement, or counterparties may have pledged excess cash collateral to the Company that exceed the corresponding financial assets. These excess amounts are excluded from the table above, although separately reported within restricted cash, due from counterparties, or due to counterparties in the Company's condensed consolidated balance sheets.

Note 10. Fair Value

Fair Value Measurements

ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. ASC 820 clarifies that fair value should be based on the assumptions market participants would use when pricing an asset or liability and establishes a fair value hierarchy that prioritizes the information used to develop those assumptions. The fair value hierarchy gives the highest priority to quoted prices available in active markets (*i.e.*, observable inputs) and the lowest priority to data lacking transparency (*i.e.*, unobservable inputs). Additionally, ASC 820 requires an entity to consider all aspects of nonperformance risk, including the entity's own credit standing, when measuring fair value of a liability.

ASC 820 establishes a three-level hierarchy to be used when measuring and disclosing fair value. An instrument's categorization within the fair value hierarchy is based on the lowest level of significant input to its valuation. Following is a description of the three levels:

Level 1 Inputs are quoted prices in active markets for identical assets or liabilities as of the measurement date under current market conditions. Additionally, the entity must have the ability to access the active market and the quoted prices cannot be adjusted by the entity.

Level 2 Inputs include quoted prices in active markets for similar assets or liabilities; quoted prices in inactive markets for identical or similar assets or liabilities; or inputs that are observable or can be corroborated by observable market data by correlation or other means for substantially the full-term of the assets or liabilities.

Level 3 Unobservable inputs are supported by little or no market activity. The unobservable inputs represent the assumptions that market participants would use to price the assets and liabilities, including risk. Generally, Level 3 assets and liabilities are valued using pricing models, discounted cash flow methodologies, or similar techniques that require significant judgment or estimation.

The following are descriptions of the valuation methodologies used to measure material assets and liabilities at fair value and details of the valuation models, key inputs to those models and significant assumptions utilized.

Available-for-sale securities. The Company holds a portfolio of AFS securities that are carried at fair value in the condensed consolidated balance sheets and primarily comprised of Agency RMBS and non-Agency securities. The Company determines the fair value of its Agency RMBS based upon prices obtained from third-party brokers and pricing vendors received using bid price, which are deemed indicative of market activity. The third-party pricing vendors use pricing models that generally incorporate such factors as coupons, primary and secondary mortgage rates, rate reset period, issuer, prepayment speeds, credit enhancements and expected life of the security. In determining the fair value of its non-Agency securities, management judgment may be used to arrive at fair value that considers prices obtained from third-party pricing vendors and other applicable market data. If observable market prices are not available or insufficient to determine fair value due principally to illiquidity in the marketplace, then fair value is based upon models that are primarily based on observable market-based inputs but also include unobservable market data inputs (including prepayment speeds, delinquency levels, and credit losses).

The Company classified 100.0% of its AFS securities as Level 2 fair value assets at March 31, 2020. AFS securities account for 91.6% of all assets reported at fair value at March 31, 2020.

Mortgage servicing rights. The Company holds a portfolio of MSR that are carried at fair value on the condensed consolidated balance sheets. The Company determines fair value of its MSR based on prices obtained from third-party pricing vendors. Although MSR transactions are observable in the marketplace, the details of those transactions are not necessarily reflective of the value of the Company's MSR portfolio. Third-party vendors use both observable market data and unobservable market data (including prepayment speeds, delinquency levels, discount rates and cost to service) as inputs into models, which help to inform their best estimates of fair value market price. As a result, the Company classified 100% of its MSR as Level 3 fair value assets at March 31, 2020.

Derivative instruments. The Company may enter into a variety of derivative financial instruments as part of its hedging strategies. The Company principally executes over-the-counter, or OTC, derivative contracts, such as interest rate swaps, caps, swaptions, put and call options for TBAs and Markit IOS total return swaps. The Company utilizes third-party brokers to value its financial derivative instruments. The Company classified 100% of the interest rate swaps and swaptions reported at fair value as Level 2 at March 31, 2020. The Company did not hold any interest rate caps, put and call options for TBAs or Markit IOS total return swaps at March 31, 2020.

The Company may also enter into certain other derivative financial instruments, such as TBAs, short U.S. Treasuries, U.S. Treasury futures and inverse interest-only securities. These instruments are similar in form to the Company's AFS securities and the Company utilizes third-party vendors to value TBAs, short U.S. Treasuries, U.S. Treasury futures and inverse interest-only securities. The Company classified 100% of its inverse interest-only securities at fair value as Level 2 at March 31, 2020. The Company reported 100% of its TBAs and U.S. Treasury futures as Level 1 as of March 31, 2020. The Company did not hold any short U.S. Treasuries at March 31, 2020.

The Company's risk management committee governs trading activity relating to derivative instruments. The Company's policy is to minimize credit exposure related to financial derivatives used for hedging by limiting the hedge counterparties to major banks, financial institutions, exchanges, and private investors who meet established capital and credit guidelines as well as by limiting the amount of exposure to any individual counterparty.

The Company has netting arrangements in place with all derivative counterparties pursuant to standard documentation developed by ISDA, or central clearing exchange agreements, in the case of centrally cleared interest rate swaps. Additionally, both the Company and the counterparty or clearing agency are required to post cash collateral based upon the net underlying market value of the Company's open positions with the counterparty. Posting of cash collateral typically occurs daily, subject to certain dollar thresholds. Due to the existence of netting arrangements, as well as frequent cash collateral posting at low posting thresholds, credit exposure to the Company and/or to the counterparty or clearing agency is considered materially mitigated. Based on the Company's assessment, there is no requirement for any additional adjustment to derivative valuations specifically for credit.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following tables display the Company's assets and liabilities measured at fair value on a recurring basis. The Company often economically hedges the fair value change of its assets or liabilities with derivatives and other financial instruments. The tables below display the hedges separately from the hedged items, and therefore do not directly display the impact of the Company's risk management activities.

	Recurring Fair Value Measurements March 31, 2020			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Available-for-sale securities	$ —	$ 17,733,059	$ —	$ 17,733,059
Mortgage servicing rights	—	—	1,505,163	1,505,163
Derivative assets	43,464	73,904	—	117,368
Total assets	$ 43,464	$ 17,806,963	$ 1,505,163	$ 19,355,590
Liabilities				
Derivative liabilities	$ 113,443	$ 62,713	$ —	$ 176,156
Total liabilities	$ 113,443	$ 62,713	$ —	$ 176,156

	Recurring Fair Value Measurements December 31, 2019			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Available-for-sale securities	$ —	$ 31,157,154	$ 249,174	$ 31,406,328
Mortgage servicing rights	—	—	1,909,444	1,909,444
Derivative assets	8,513	179,538	—	188,051
Total assets	$ 8,513	$ 31,336,692	$ 2,158,618	$ 33,503,823
Liabilities				
Derivative liabilities	$ 6,711	$ 29	$ —	$ 6,740
Total liabilities	$ 6,711	$ 29	$ —	$ 6,740

The Company may be required to measure certain assets or liabilities at fair value from time to time. These periodic fair value measures typically result from application of certain impairment measures under U.S. GAAP. These items would constitute nonrecurring fair value measures under ASC 820. As of March 31, 2020, the Company did not have any assets or liabilities measured at fair value on a nonrecurring basis in the periods presented.

The valuation of Level 3 instruments requires significant judgment by the third-party pricing vendors and/or management. The third-party pricing vendors and/or management rely on inputs such as market price quotations from market makers (either market or indicative levels), original transaction price, recent transactions in the same or similar instruments, and changes in financial ratios or cash flows to determine fair value. Level 3 instruments may also be discounted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the third-party pricing vendors in the absence of market information. Assumptions used by the third-party pricing vendors due to lack of observable inputs may significantly impact the resulting fair value and therefore the Company's condensed consolidated financial statements.

The Company's valuation committee reviews all valuations that are based on pricing information received from third-party pricing vendors. As part of this review, prices are compared against other pricing or input data points in the marketplace, along with internal valuation expertise, to ensure the pricing is reasonable. In addition, the Company performs back-testing of pricing information to validate price information and identify any pricing trends of a third-party pricing vendors.

In determining fair value, third-party pricing vendors use various valuation approaches, including market and income approaches. Inputs that are used in determining fair value of an instrument may include pricing information, credit data, volatility statistics, and other factors. In addition, inputs can be either observable or unobservable.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The availability of observable inputs can vary by instrument and is affected by a wide variety of factors, including the type of instrument, whether the instrument is new and not yet established in the marketplace and other characteristics particular to the instrument. The third-party pricing vendor uses prices and inputs that are current as of the measurement date, including during periods of market dislocations. In periods of market dislocation, the availability of prices and inputs may be reduced for many instruments. This condition could cause an instrument to be reclassified to or from various levels within the fair value hierarchy.

Securities that are priced using third-party broker quotations are valued at the bid price (in the case of long positions) or the ask price (in the case of short positions) at the close of trading on the date as of which value is determined. Exchange-traded securities for which no bid or ask price is available are valued at the last traded price. OTC derivative contracts, including interest rate swaps, caps and swaption agreements, put and call options for TBAs and U.S. Treasuries, constant maturity swaps, credit default swaps, U.S. Treasury futures and Markit IOS total return swaps, are valued by the Company using observable inputs, specifically quotations received from third-party brokers.

The following tables present the reconciliation for the Company's Level 3 assets measured at fair value on a recurring basis:

	Three Months Ended March 31, 2020	
(in thousands)	**Available-For-Sale Securities**	**Mortgage Servicing Rights**
Beginning of period level 3 fair value	$ 249,174	$ 1,909,444
Gains (losses) included in net loss:		
Realized (losses) gains, net	(4,099)	(89,634)
Unrealized (losses) gains, net	—	(497,031) [1]
Net gains (losses) included in net loss	(4,099)	(586,665)
Other comprehensive (loss) income	(24,921)	—
Purchases	—	183,783
Sales	(214,673)	1,433
Settlements	—	(2,832)
Gross transfers into level 3	—	—
Gross transfers out of level 3	(5,481)	—
End of period level 3 fair value	$ —	$ 1,505,163
Change in unrealized gains or losses for the period included in earnings for assets held at the end of the reporting period	$ —	$ (490,506) [2]
Change in unrealized gains or losses for the period included in other comprehensive (loss) income for assets held at the end of the reporting period	$ —	$ —

(1) The change in unrealized gains or losses on MSR was recorded in loss on servicing asset on the condensed consolidated statements of comprehensive (loss) income.
(2) The change in unrealized gains or losses on MSR that were held at the end of the reporting period was recorded in loss on servicing asset on the condensed consolidated statements of comprehensive (loss) income.

The Company transferred certain AFS securities from Level 3 to Level 2 based the observability of inputs during the three months ended March 31, 2020. No additional AFS securities transfers between Level 1, Level 2 or Level 3 were made during the three months ended March 31, 2020. Transfers between Levels are deemed to take place on the first day of the reporting period in which the transfer has taken place.

The Company used multiple third-party pricing vendors in the fair value measurement of its Level 3 AFS securities. The significant unobservable inputs used by the third-party pricing vendors included expected default, severity and discount rate. Significant increases (decreases) in any of the inputs in isolation may result in significantly lower (higher) fair value measurement.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The Company also used multiple third-party pricing vendors in the fair value measurement of its Level 3 MSR. The tables below present information about the significant unobservable market data used by the third-party pricing vendors as inputs into models utilized to inform their best estimates of the fair value measurement of the Company's MSR classified as Level 3 fair value assets at March 31, 2020 and December 31, 2019:

March 31, 2020

Valuation Technique	Unobservable Input [(1)]	Range				Weighted Average [(2)]
Discounted cash flow	Constant prepayment speed	12.7	-	22.1	%	18.1%
	Delinquency	0.6	-	0.8	%	0.8%
	Discount rate	5.5	-	7.5	%	6.0%
	Per loan annual cost to service	$64.93	-	$80.33		$68.56

December 31, 2019

Valuation Technique	Unobservable Input [(1)]	Range				Weighted Average [(2)]
Discounted cash flow	Constant prepayment speed	12.6	-	16.4	%	14.8%
	Delinquency	0.7	-	1.0	%	0.9%
	Discount rate	6.4	-	7.8	%	7.2%
	Per loan annual cost to service	$63.38	-	$78.04		$66.62

(1) Significant increases (decreases) in any of the inputs in isolation may result in significantly lower (higher) fair value measurement. A change in the assumption used for discount rates may be accompanied by a directionally similar change in the assumption used for the probability of delinquency and a directionally opposite change in the assumption used for prepayment rates.
(2) Calculated by averaging the weighted average significant unobservable inputs used by the multiple third-party pricing vendors in the fair value measurement of MSR.

Fair Value of Financial Instruments

In accordance with ASC 820, the Company is required to disclose the fair value of financial instruments, both assets and liabilities recognized and not recognized in the condensed consolidated balance sheets, for which fair value can be estimated.

The following describes the Company's methods for estimating the fair value for financial instruments.

- AFS securities, MSR, and derivative assets and liabilities are recurring fair value measurements; carrying value equals fair value. See discussion of valuation methods and assumptions within the *Fair Value Measurements* section of this Note 10.
- Cash and cash equivalents and restricted cash have a carrying value which approximates fair value because of the short maturities of these instruments. The Company categorizes the fair value measurement of these assets as Level 1.
- Reverse repurchase agreements have a carrying value which approximates fair value due to their short-term nature. The Company categorizes the fair value measurement of these assets as Level 2.
- The carrying value of repurchase agreements, FHLB advances and revolving credit facilities that mature in less than one year generally approximates fair value due to the short maturities. As of March 31, 2020, the Company held $50.0 million of FHLB advances that are considered long-term. The Company's long-term FHLB advances have floating rates based on an index plus a spread and, for members of the FHLB, the credit spread is typically consistent with those demanded in the market. Accordingly, the interest rates on these borrowings are at market and thus carrying value approximates fair value. The Company categorizes the fair value measurement of these liabilities as Level 2.
- Term notes payable are recorded at outstanding principal balance, net of any unamortized deferred debt issuance costs. In determining the fair value of term notes payable, management judgment may be used to arrive at fair value that considers prices obtained from third-party pricing vendors, broker quotes received and other applicable market data. If observable market prices are not available or insufficient to determine fair value due principally to illiquidity in the marketplace, then fair value is based upon internally developed models that are primarily based on observable market-based inputs but also include unobservable market data inputs (including prepayment speeds, delinquency levels, and credit losses). The Company categorizes the fair value measurement of these liabilities as Level 2.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

- Convertible senior notes are carried at their unpaid principal balance, net of any unamortized deferred issuance costs. The Company estimates the fair value of its convertible senior notes using the market transaction price nearest to March 31, 2020. The Company categorizes the fair value measurement of these assets as Level 2.

The following table presents the carrying values and estimated fair values of assets and liabilities that are required to be recorded or disclosed at fair value at March 31, 2020 and December 31, 2019.

(in thousands)	March 31, 2020		December 31, 2019	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Available-for-sale securities	$ 17,733,059	$ 17,733,059	$ 31,406,328	$ 31,406,328
Mortgage servicing rights	$ 1,505,163	$ 1,505,163	$ 1,909,444	$ 1,909,444
Cash and cash equivalents	$ 1,206,889	$ 1,206,889	$ 558,136	$ 558,136
Restricted cash	$ 680,395	$ 680,395	$ 1,058,690	$ 1,058,690
Derivative assets	$ 117,368	$ 117,368	$ 188,051	$ 188,051
Reverse repurchase agreements	$ 147,651	$ 147,651	$ 220,000	$ 220,000
Other assets	$ 15,292	$ 15,292	24,352	24,352
Liabilities				
Repurchase agreements	$ 17,795,516	$ 17,795,516	$ 29,147,463	$ 29,147,463
Federal Home Loan Bank advances	$ 50,000	$ 50,000	$ 210,000	$ 210,000
Revolving credit facilities	$ 252,143	$ 252,143	$ 300,000	$ 300,000
Term notes payable	$ 394,772	$ 300,000	$ 394,502	$ 400,000
Convertible senior notes	$ 285,238	$ 256,824	$ 284,954	$ 299,147
Derivative liabilities	$ 176,156	$ 176,156	$ 6,740	$ 6,740

Note 11. Repurchase Agreements

As of March 31, 2020 and December 31, 2019, the Company had outstanding $17.8 billion and $29.1 billion, respectively, of repurchase agreements. Excluding the effect of the Company's interest rate swaps and caps, the repurchase agreements had a weighted average borrowing rate of 1.86% and 2.14% and weighted average remaining maturities of 53 and 77 days as of March 31, 2020 and December 31, 2019, respectively.

At March 31, 2020 and December 31, 2019, the repurchase agreement balances were as follows:

(in thousands)	March 31, 2020	December 31, 2019
Short-term	$ 17,795,516	$ 29,147,463
Long-term	—	—
Total	$ 17,795,516	$ 29,147,463

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

At March 31, 2020 and December 31, 2019, the repurchase agreements had the following characteristics and remaining maturities:

	March 31, 2020				
	Collateral Type				
(in thousands)	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	Total Amount Outstanding
Within 30 days	$ 6,109,701	$ 5,241	$ 23,276	$ —	$ 6,138,218
30 to 59 days	6,019,847	2,297	12,310	—	6,034,454
60 to 89 days	2,046,509	—	—	—	2,046,509
90 to 119 days	1,722,924	—	—	—	1,722,924
120 to 364 days	1,839,255	—	14,156	—	1,853,411
Total	$ 17,738,236	$ 7,538	$ 49,742	$ —	$ 17,795,516
Weighted average borrowing rate	1.86%	2.79%	2.60%	—%	1.86%

	December 31, 2019				
	Collateral Type				
(in thousands)	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	Total Amount Outstanding
Within 30 days	$ 5,112,681	$ 193,235	$ —	$ —	$ 5,305,916
30 to 59 days	6,074,151	212,998	13,223	—	6,300,372
60 to 89 days	6,355,887	329,493	1,905	—	6,687,285
90 to 119 days	4,227,589	489,352	23,276	—	4,740,217
120 to 364 days	5,532,219	306,529	12,310	262,615	6,113,673
Total	$ 27,302,527	$ 1,531,607	$ 50,714	$ 262,615	$ 29,147,463
Weighted average borrowing rate	2.08%	2.90%	2.70%	3.51%	2.14%

The following table summarizes assets at carrying values that are pledged or restricted as collateral for the future payment obligations of repurchase agreements:

(in thousands)	March 31, 2020	December 31, 2019
Available-for-sale securities, at fair value	$ 17,661,378	$ 29,575,948
Mortgage servicing rights, at fair value	368,779	530,222
Restricted cash	299,579	919,010
Due from counterparties	43,794	102,365
Derivative assets, at fair value	73,221	68,874
Total	$ 18,446,751	$ 31,196,419

Although the transactions under repurchase agreements represent committed borrowings until maturity, the respective lender retains the right to mark the underlying collateral to fair value. A reduction in the value of pledged assets would require the Company to provide additional collateral or fund margin calls. Additionally, certain repurchase facilities secured by MSR may be over-collateralized due to operational considerations.

As of both March 31, 2020 and December 31, 2019, the net carrying value of assets sold under agreements to repurchase, including accrued interest plus any cash or assets on deposit to secure the repurchase obligation, less the amount of the repurchase liability, including accrued interest, with any individual counterparty or group of related counterparties did not exceed 10% of total stockholders' equity. The Company does not anticipate any defaults by its repurchase agreement counterparties. There can be no assurance, however, that any such default or defaults will not occur.

Note 12. Federal Home Loan Bank of Des Moines Advances

The Company's wholly owned subsidiary, TH Insurance Holdings Company LLC, or TH Insurance, is a member of the FHLB. As a member of the FHLB, TH Insurance has access to a variety of products and services offered by the FHLB, including secured advances. As of March 31, 2020 and December 31, 2019, TH Insurance had $50.0 million and $210.0 million in outstanding secured advances with a weighted average borrowing rate of 2.39% and 2.00%, respectively.

The ability to borrow from the FHLB is subject to the Company's continued creditworthiness, pledging of sufficient eligible collateral to secure advances, and compliance with certain agreements with the FHLB. Each advance requires approval by the FHLB and is secured by collateral in accordance with the FHLB's credit and collateral guidelines, as may be revised from time to time by the FHLB. Eligible collateral may include Agency RMBS and certain non-Agency securities with a rating of A and above.

On January 11, 2016, the Federal Housing Finance Agency, or FHFA, released a final rule regarding membership in the Federal Home Loan Bank system. Among other effects, the final rule excludes captive insurers from membership eligibility, including the Company's subsidiary member, TH Insurance. Since TH Insurance was admitted as a member in 2013, it is eligible for a membership grace period that runs through February 19, 2021, during which new advances or renewals that mature beyond the grace period will be prohibited; however, any existing advances that mature beyond this grace period will be permitted to remain in place subject to their terms insofar as the Company maintains good standing with the FHLB. If any new advances or renewals occur, TH Insurance's outstanding advances will be limited to 40% of its total assets.

On April 15, 2020, the Company received notification from the FHLB that TH Insurance's credit limit for new advances had been reduced to zero pending the FHLB's review of the Company's updated financial information as of March 31, 2020.

At March 31, 2020 and December 31, 2019, FHLB advances had the following remaining maturities:

(in thousands)	March 31, 2020	December 31, 2019
≤ 1 year	$ —	$ 160,000
> 1 and ≤ 3 years	—	—
> 3 and ≤ 5 years	—	—
> 5 and ≤ 10 years	—	—
> 10 years	50,000	50,000
Total	$ 50,000	$ 210,000

The following table summarizes assets at carrying values that are pledged or restricted as collateral for the future payment obligations of FHLB advances:

(in thousands)	March 31, 2020	December 31, 2019
Available-for-sale securities, at fair value	$ 52,219	$ 226,508
Restricted cash	3,200	—
Total	$ 55,419	$ 226,508

The FHLB retains the right to mark the underlying collateral for FHLB advances to fair value. A reduction in the value of pledged assets would require the Company to provide additional collateral. In addition, as a condition to membership in the FHLB, the Company is required to purchase and hold a certain amount of FHLB stock, which is based, in part, upon the outstanding principal balance of advances from the FHLB. At March 31, 2020 and December 31, 2019, the Company had stock in the FHLB totaling $12.0 million and $12.5 million, respectively, which is included in other assets on the condensed consolidated balance sheets. FHLB stock is considered a non-marketable, long-term investment, is carried at cost and is subject to recoverability testing under applicable accounting standards. This stock can only be redeemed or sold at its par value, and only to the FHLB. Accordingly, when evaluating FHLB stock for impairment, the Company considers the ultimate recoverability of the par value rather than recognizing temporary declines in value. As of March 31, 2020 and December 31, 2019, the Company had not recognized an impairment charge related to its FHLB stock.

Note 13. Revolving Credit Facilities

To finance MSR, the Company has entered into revolving credit facilities collateralized by the value of the MSR pledged. As of March 31, 2020 and December 31, 2019, the Company had outstanding short- and long-term borrowings under revolving credit facilities of $252.1 million and $300.0 million with a weighted average borrowing rate of 3.49% and 4.26% and weighted average remaining maturities of 0.95 and 1.20 years, respectively.

At March 31, 2020 and December 31, 2019, borrowings under revolving credit facilities had the following remaining maturities:

(in thousands)	March 31, 2020	December 31, 2019
Within 30 days	$ —	$ —
30 to 59 days	—	—
60 to 89 days	—	—
90 to 119 days	—	—
120 to 364 days	252,143	—
One year and over	—	300,000
Total	$ 252,143	$ 300,000

Although the transactions under revolving credit facilities represent committed borrowings from the time of funding until maturity, the respective lender retains the right to mark the underlying collateral to fair value. A reduction in the value of pledged assets below a designated threshold would require the Company to provide additional collateral or pay down the facility. As of March 31, 2020 and December 31, 2019, MSR with a carrying value of $372.4 million and $449.5 million, respectively, was pledged as collateral for the Company's future payment obligations under its revolving credit facilities. The Company does not anticipate any defaults by its revolving credit facility counterparties, although there can be no assurance that any such default or defaults will not occur.

Note 14. Term Notes Payable

The debt issued in connection with the Company's on-balance sheet securitization is classified as term notes payable and carried at outstanding principal balance, net of any unamortized deferred debt issuance costs, on the Company's condensed consolidated balance sheets. As of March 31, 2020 and December 31, 2019, the outstanding amount due on term notes payable was $394.8 million and $394.5 million, net of deferred debt issuance costs, with a weighted average interest rate of 3.72% and 4.59% and weighted average remaining maturities of 4.2 years and 4.5 years. At March 31, 2020 and December 31, 2019, the Company pledged MSR with a carrying value of $566.8 million and $575.1 million and weighted average underlying loan coupon of 4.16% and 4.25%, respectively, as collateral for term notes payable.

Note 15. Convertible Senior Notes

In January 2017, the Company closed an underwritten public offering of $287.5 million aggregate principal amount of convertible senior notes due 2022. The net proceeds from the offering were approximately $282.2 million after deducting underwriting discounts and estimated offering expenses payable by the Company. The notes are unsecured, pay interest semiannually at a rate of 6.25% per annum and are convertible at the option of the holder into shares of the Company’s common stock. The notes will mature in January 2022, unless earlier converted or repurchased in accordance with their terms. The Company does not have the right to redeem the notes prior to maturity, but may be required to repurchase the notes from holders under certain circumstances. As of both March 31, 2020 and December 31, 2019, the notes had a conversion rate of 63.1793 shares of common stock per $1,000 principal amount of the notes, respectively. The outstanding amount due on the convertible senior notes as of March 31, 2020 and December 31, 2019 was $285.2 million and $285.0 million, respectively, net of deferred issuance costs.

Note 16. Stockholders’ Equity

Redeemable Preferred Stock

The following is a summary of the Company’s series of cumulative redeemable preferred stock issued and outstanding as of March 31, 2020. In the event of a voluntary or involuntary liquidation, dissolution or winding up of the Company, each series of preferred stock will rank on parity with one another and rank senior to the Company's common stock with respect to the payment of the dividends and the distribution of assets.

As of March 31, 2020

(in thousands)

Class of Stock	Issuance Date	Shares Issued and Outstanding	Carrying Value	Contractual Rate	Redemption Date [1]	Fixed to Floating Rate Conversion Date [2]	Floating Annual Rate [3]
Fixed-to-Floating Rate							
Series A	March 14, 2017	5,750	$ 138,872	8.125%	April 27, 2027	April 27, 2027	3M LIBOR + 5.660%
Series B	July 19, 2017	11,500	278,094	7.625%	July 27, 2027	July 27, 2027	3M LIBOR + 5.352%
Series C	November 27, 2017	11,800	285,585	7.250%	January 27, 2025	January 27, 2025	3M LIBOR + 5.011%
Fixed Rate							
Series D	July 31, 2018	3,000	74,964	7.750%	July 31, 2018	N/A	N/A
Series E	July 31, 2018	8,000	199,986	7.500%	July 31, 2018	N/A	N/A
Total		40,050	$ 977,501				

(1) Subject to the Company’s right under limited circumstances to redeem the preferred stock earlier than the redemption date disclosed in order to preserve its qualification as a REIT or following a change in control of the Company.
(2) For the fixed-to-floating rate redeemable preferred stock, the dividend rate will remain at an annual fixed rate of the $25.00 per share liquidation preference from the issuance date up to but not including the transition date disclosed within. Effective the conversion date and onward, dividends will accumulate on a floating rate basis according to the terms disclosed within (3) below.
(3) On and after the fixed to floating rate conversion date, the dividend will accumulate and be payable quarterly at a percentage of the $25.00 per share liquidation preference equal to an annual floating rate of three-month LIBOR plus the spread indicated within each preferred class.

For each series of preferred stock, the Company may redeem the stock on or after the redemption date in whole or in part, at any time or from time to time. Each series of preferred stock has a par value of $0.01 per share and a liquidation and redemption price of $25.00, plus any accumulated and unpaid dividends thereon up to, but excluding, the redemption date. Through December 31, 2019, the Company had declared and paid all required quarterly dividends on the Company’s preferred stock.

Distributions to Preferred Stockholders

On March 24, 2020, as a result of the volatile market conditions related to the COVID-19 pandemic, the Company announced that it had suspended its first quarter 2020 preferred stock dividends in order to preserve liquidity and long-term stockholder value. Subsequently, on April 6, 2020, the Company's board of directors declared its first quarter 2020 preferred stock dividends, which were paid on April 29, 2020 to stockholders of record as of April 16, 2020. Pursuant to their terms, all unpaid dividends on the Company's preferred stock accrue without interest.

The following table details the aggregate and per-share amounts of arrearages in cumulative preferred dividends as of March 31, 2020:

(in thousands)

Class of Stock	Dividend Per Preferred Share in Arrears	Amount of Preferred Dividends in Arrears
Series A	$ 0.507810	$ 2,920
Series B	$ 0.476560	5,480
Series C	$ 0.453130	5,347
Series D	$ 0.484375	1,453
Series E	$ 0.468750	3,750
		$ 18,950

The following table presents cash dividends declared by the Company on its preferred stock stock from December 31, 2018 through March 31, 2020:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series A Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.507810
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.507810
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.507810
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.507810
Series B Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.476560
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.476560
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.476560
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.476560
Series C Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.453130
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.453130
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.453130
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.453130

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series D Preferred Stock:			
December 17, 2019	January 1, 2020	January 15, 2020	$ 0.484375
September 19, 2019	October 1, 2019	October 15, 2019	$ 0.484375
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.484375
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.484375
Series E Preferred Stock:			
December 17, 2019	January 1, 2020	January 15, 2020	$ 0.468750
September 19, 2019	October 1, 2019	October 15, 2019	$ 0.468750
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.468750
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.468750

Common Stock

Public Offering

On March 21, 2019, the Company completed a public offering of 18,000,000 shares of its common stock at a price of $13.76 per share. On March 22, 2019, an additional 2,700,000 shares were sold by the Company to the underwriters of the offering pursuant to an overallotment option. The net proceeds to the Company were approximately $284.5 million, after deducting offering expenses of approximately $0.3 million.

As of March 31, 2020, the Company had 273,528,243 shares of common stock outstanding. The following table presents a reconciliation of the common shares outstanding for the three months ended March 31, 2020 and 2019:

	Number of common shares
Common shares outstanding, December 31, 2018	248,085,721
Issuance of common stock	24,377,530
Issuance of restricted stock [(1)]	363,353
Common shares outstanding, March 31, 2019	272,826,604
Common shares outstanding, December 31, 2019	272,935,731
Issuance of common stock	16,498
Issuance of restricted stock [(1)]	681,314
Repurchase of common stock	(105,300)
Common shares outstanding, March 31, 2020	273,528,243

(1) Represents shares of restricted stock granted under the Second Restated 2009 Equity Incentive Plan, net of forfeitures, of which 1,242,812 restricted shares remained subject to vesting requirements at March 31, 2020.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Distributions to Common Stockholders

On March 24, 2020, as a result of the volatile market conditions related to the COVID-19 pandemic, the Company announced that it had suspended its first quarter 2020 common stock dividend in order to preserve liquidity and long-term stockholder value. Subsequently, on April 6, 2020, the Company's board of directors declared an interim common stock dividend of $0.05 per share. The interim dividend was paid on April 29, 2020 to common stockholders of record as of April 16, 2020. The following table presents cash dividends declared by the Company on its common stock from December 31, 2018 through March 31, 2020:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Common Share
December 17, 2019	December 31, 2019	January 24, 2020	$ 0.400000
September 19, 2019	September 30, 2019	October 28, 2019	$ 0.400000
June 19, 2019	July 1, 2019	July 29, 2019	$ 0.400000
March 19, 2019	March 29, 2019	April 29, 2019	$ 0.470000

Dividend Reinvestment and Direct Stock Purchase Plan

The Company sponsors a dividend reinvestment and direct stock purchase plan through which stockholders may purchase additional shares of the Company's common stock by reinvesting some or all of the cash dividends received on shares of the Company's common stock. Stockholders may also make optional cash purchases of shares of the Company's common stock subject to certain limitations detailed in the plan prospectus. The plan allows for the issuance of up to an aggregate of 3,750,000 shares of the Company's common stock. As of March 31, 2020, 286,486 shares have been issued under the plan for total proceeds of approximately $5.1 million, of which 16,498 and 12,230 shares were issued for total proceeds of $0.1 million and $0.2 million during the three months ended March 31, 2020 and 2019, respectively.

Share Repurchase Program

The Company's share repurchase program allows for the repurchase of up to an aggregate of 37,500,000 shares of the Company's common stock. Shares may be repurchased from time to time through privately negotiated transactions or open market transactions, pursuant to a trading plan in accordance with Rules 10b5-1 and 10b-18 under the Securities Exchange Act of 1934, as amended, or the Exchange Act, or by any combination of such methods. The manner, price, number and timing of share repurchases are subject to a variety of factors, including market conditions and applicable SEC rules. The share repurchase program does not require the purchase of any minimum number of shares, and, subject to SEC rules, purchases may be commenced or suspended at any time without prior notice. The share repurchase program does not have an expiration date. As of March 31, 2020, a total of 12,174,300 shares had been repurchased by the Company under the program at an aggregate cost of $201.5 million; of these, 105,300 shares were repurchased at a total cost of $1.1 million during the three months ended March 31, 2020. No shares were repurchased during the three months ended March 31, 2019.

At-the-Market Offerings

The Company is party to an equity distribution agreement under which the Company is authorized to sell up to an aggregate of 35,000,000 shares of its common stock from time to time in any method permitted by law deemed to be an "at the market" offering as defined in Rule 415 under the Securities Act of 1933, as amended, or the Securities Act. As of March 31, 2020, 7,490,235 shares of common stock had been sold under the equity distribution agreements for total accumulated net proceeds of approximately $128.6 million, of which 3,665,300 shares were sold for net proceeds of $50.6 million during the three months ended March 31, 2019. No shares were sold during the three months ended March 31, 2020.

Accumulated Other Comprehensive Income

Accumulated other comprehensive income at March 31, 2020 and December 31, 2019 was as follows:

(in thousands)	March 31, 2020	December 31, 2019
Available-for-sale securities		
Unrealized gains	$ 505,389	$ 730,043
Unrealized losses	(14,059)	(40,643)
Accumulated other comprehensive income	$ 491,330	$ 689,400

Reclassifications out of Accumulated Other Comprehensive Income

The Company reclassifies unrealized gains and losses on AFS securities in accumulated other comprehensive income to net loss upon the recognition of any other-than-temporary impairments, realized gains and losses on sales and provision for credit losses, net of income tax effects, as individual securities are impaired, sold or their allowance for credit losses is increased or decreased. The following table summarizes reclassifications out of accumulated other comprehensive income for the three months ended March 31, 2020 and 2019:

(in thousands)	Affected Line Item in the Statements of Comprehensive (Loss) Income	Amount Reclassified out of Accumulated Other Comprehensive Income — Three Months Ended March 31,	
		2020	2019
Other-than-temporary impairments on AFS securities	Total other-than-temporary impairment losses	$ —	$ 206
Realized (gains) losses on sales of certain AFS securities, net of tax	Loss on investment securities	(432,996)	28,106
Provision for credit losses on AFS securities	Loss on investment securities	41,390	—
Total		$ (391,606)	$ 28,312

Note 17. Equity Incentive Plan

The Company's Second Restated 2009 Equity Incentive Plan, or the Plan, provides incentive compensation to attract and retain qualified directors, officers, advisors, consultants and other personnel, including PRCM Advisers and affiliates and employees of PRCM Advisers and its affiliates, and any joint venture affiliates of the Company. The Plan is administered by the compensation committee of the Company's board of directors. The compensation committee has the full authority to administer and interpret the Plan, to authorize the granting of awards, to determine the eligibility of potential recipients to receive an award, to determine the number of shares of common stock to be covered by each award (subject to the individual participant limitations provided in the Plan), to determine the terms, provisions and conditions of each award (which may not be inconsistent with the terms of the Plan), to prescribe the form of instruments evidencing awards and to take any other actions and make all other determinations that it deems necessary or appropriate in connection with the Plan or the administration or interpretation thereof. In connection with this authority, the compensation committee may, among other things, establish performance goals that must be met in order for awards to be granted or to vest, or for the restrictions on any such awards to lapse.

The Company's Plan provides for grants of restricted common stock, phantom shares, dividend equivalent rights and other equity-based awards, subject to a ceiling of 6,500,000 shares available for issuance under the Plan. The Plan allows for the Company's board of directors to expand the types of awards available under the Plan to include long-term incentive plan units in the future. If an award granted under the Plan expires or terminates, the shares subject to any portion of the award that expires or terminates without having been exercised or paid, as the case may be, will again become available for the issuance of additional awards. Unless earlier terminated by the Company's board of directors, no new award may be granted under the Plan after the tenth anniversary of the date that the Plan was approved by the Company's board of directors. No award may be granted under the Plan to any person who, assuming payment of all awards held by such person, would own or be deemed to own more than 9.8% of the outstanding shares of the Company's common stock.

During the three months ended March 31, 2020 and 2019, the Company granted 686,770 and 455,174 shares of restricted common stock, respectively, to the Company's executive officers and key employees of PRCM Advisers who provide services to the Company, pursuant to the terms of the Plan and the associated award agreements. The estimated fair value of these awards was $15.23 and $14.40 per share on grant date, based on the adjusted closing market price of the Company's common stock on the NYSE on such date. The shares underlying the grants vest in three equal annual installments commencing on the first anniversary of the grant date, as long as such grantee complies with the terms and conditions of his or her applicable restricted stock award agreement.

The following table summarizes the activity related to restricted common stock for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,			
	2020		2019	
	Shares	Weighted Average Grant Date Fair Market Value	Shares	Weighted Average Grant Date Fair Market Value
Outstanding at Beginning of Period	1,062,901	$ 16.14	1,593,701	$ 15.81
Granted	686,770	15.23	455,174	14.40
Vested	(501,403)	(15.20)	(770,385)	(14.50)
Forfeited	(5,456)	(14.97)	(91,821)	(15.61)
Outstanding at End of Period	1,242,812	$ 16.02	1,186,669	$ 16.14

For the three months ended March 31, 2020 and 2019, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of $2.3 million and $1.9 million, respectively.

Note 18. Income Taxes

For the three months ended March 31, 2020 and 2019, the Company qualified to be taxed as a REIT under the Code for U.S. federal income tax purposes. As long as the Company qualifies as a REIT, the Company generally will not be subject to U.S. federal income taxes on its taxable income to the extent it annually distributes its net taxable income to stockholders, and does not engage in prohibited transactions. The Company intends to distribute 100% of its REIT taxable income and comply with all requirements to continue to qualify as a REIT. The majority of states also recognize the Company's REIT status. The Company's TRSs file separate tax returns and are fully taxed as standalone U.S. C corporations. It is assumed that the Company will retain its REIT status and will incur no REIT level taxation as it intends to comply with the REIT regulations and annual distribution requirements.

During the three months ended March 31, 2020 and 2019, the Company's TRSs recognized a benefit from income taxes of $13.1 million and $10.0 million, respectively, which for both periods was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in the Company's TRSs.

Based on the Company's evaluation, it has been concluded that there are no significant uncertain tax positions requiring recognition in the Company's condensed consolidated financial statements of a contingent tax liability for uncertain tax positions. Additionally, there were no amounts accrued for penalties or interest as of or during the periods presented in these condensed consolidated financial statements.

Note 19. Earnings Per Share

The following table presents a reconciliation of the loss and shares used in calculating basic and diluted loss per share for the three months ended March 31, 2020 and 2019:

(in thousands, except share data)	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Numerator:		
Net loss	$ (1,869,656)	$ (25,935)
Dividends on preferred stock	18,950	18,950
Net loss attributable to common stockholders - basic	(1,888,606)	(44,885)
Interest expense attributable to convertible notes [(1)]	—	—
Net loss attributable to common stockholders - diluted	$ (1,888,606)	$ (44,885)
Denominator:		
Weighted average common shares outstanding	272,210,744	251,047,727
Weighted average restricted stock shares	1,181,871	1,310,151
Basic weighted average shares outstanding	273,392,615	252,357,878
Effect of dilutive shares issued in an assumed conversion	—	—
Diluted weighted average shares outstanding	273,392,615	252,357,878
Loss Per Share		
Basic	$ (6.91)	$ (0.18)
Diluted	$ (6.91)	$ (0.18)

(1) If applicable, includes a nondiscretionary adjustment for the assumed change in the management fee calculation.

For the three months ended March 31, 2020 and 2019, excluded from the calculation of diluted earnings per share is the effect of adding back $4.8 million and $4.7 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 18,171,150 and 18,045,599 weighted average common share equivalents related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

Note 20. Related Party Transactions

The following summary provides disclosure of the material transactions with affiliates of the Company.

In accordance with the Management Agreement between the Company and PRCM Advisers dated as of October 28, 2009 and subsequently amended, the Company incurred $14.6 million and $12.1 million as a management fee to PRCM Advisers for the three months ended March 31, 2020 and 2019, which represents approximately 1.5% of stockholders' equity on an annualized basis as defined by the Management Agreement. For purposes of calculating the management fee, stockholders' equity is adjusted as discussed below, and to exclude the consolidated stockholders' equity of Granite Point and its subsidiaries previously included in the Company's condensed consolidated balance sheet and any common stock repurchases, as well as any unrealized gains, losses or other items that do not affect realized net loss, among other adjustments, in accordance with the Management Agreement. In connection with the acquisition of CYS on July 31, 2018, the Management Agreement was amended to reduce PRCM Advisers' base management fee with respect to the additional equity under management resulting from the merger to 0.75% from the effective time through the first anniversary of the effective time. Effective July 31, 2019, the management fee reduction on the equity acquired in the CYS transaction expired.

In addition, the Company reimbursed PRCM Advisers for direct and allocated costs incurred by PRCM Advisers on behalf of the Company. These direct and allocated costs totaled approximately $11.7 million and $13.2 million for the three months ended March 31, 2020 and 2019, respectively. The Company will continue to have certain costs allocated to it by PRCM Advisers for compensation, data services, technology and certain office lease payments, however, the Company has direct relationships with most of its third party vendors and pays those expenses directly.

The Company recognized $2.3 million and $1.9 million of compensation during the three months ended March 31, 2020 and 2019 respectively, related to restricted common stock issued to employees of PRCM Advisers and the Company's independent directors pursuant to the Plan. See Note 17 - *Equity Incentive Plan* for additional information.

Note 21. Subsequent Events

On April 6, 2020, the Company announced that its board of directors declared an interim common stock dividend of $0.05 per share. The interim dividend was paid on April 29, 2020 to common stockholders of record as of April 16, 2020. On the same date, the Company's board of directors also declared the following first quarter 2020 preferred stock dividends:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series A Preferred Stock:			
April 6, 2020	April 16, 2020	April 29, 2020	$ 0.507810
Series B Preferred Stock:			
April 6, 2020	April 16, 2020	April 29, 2020	$ 0.476560
Series C Preferred Stock:			
April 6, 2020	April 16, 2020	April 29, 2020	$ 0.453130
Series D Preferred Stock:			
April 6, 2020	April 16, 2020	April 29, 2020	$ 0.484375
Series E Preferred Stock:			
April 6, 2020	April 16, 2020	April 29, 2020	$ 0.468750

On April 13, 2020, the Company announced that it had elected to not renew the Management Agreement by and among the Company, Two Harbors Operating Company LLC, and PRCM Advisers on the basis of unfair compensation payable to the manager. Notice of non-renewal was provided pursuant to Section 13(a)(ii) of the Management Agreement. As a result, the Management Agreement will terminate and the Company will be required to pay a termination fee, to be calculated pursuant to the terms of the Management Agreement, on September 19, 2020. Following the termination of the Management Agreement, the Company will become a self-managed company. The Company expects to continue to be managed by its current senior management team, along with the other personnel currently providing services to the Company.

Events subsequent to March 31, 2020 were evaluated through the date these condensed consolidated financial statements were issued and no other additional events were identified requiring further disclosure in these condensed consolidated financial statements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with the consolidated financial statements and accompanying notes included elsewhere in this Quarterly Report on Form 10-Q as well as our Annual Report on Form 10-K for the year ended December 31, 2019.

General

We are a Maryland corporation focused on investing in and managing Agency residential mortgage-backed securities, or Agency RMBS, non-Agency securities, mortgage servicing rights, or MSR, and other financial assets, which we collectively refer to as our target assets. We operate as a real estate investment trust, or REIT, as defined under the Internal Revenue Code of 1986, as amended, or the Code. We are externally managed by PRCM Advisers LLC, or PRCM Advisers, which is a wholly owned subsidiary of Pine River Capital Management L.P., or Pine River.

Our objective is to provide attractive risk-adjusted total return to our stockholders over the long term, primarily through dividends and secondarily through capital appreciation. We acquire and manage an investment portfolio of our target assets, which include the following:

- Agency RMBS (which includes inverse interest-only Agency securities classified as "Agency Derivatives" for purposes of U.S. generally accepted accounting principles, or U.S. GAAP), meaning RMBS whose principal and interest payments are guaranteed by the Government National Mortgage Association (or Ginnie Mae), the Federal National Mortgage Association (or Fannie Mae), or the Federal Home Loan Mortgage Corporation (or Freddie Mac), or collectively, the government sponsored entities, or GSEs;
- Non-Agency securities, meaning securities that are not issued or guaranteed by Ginnie Mae, Fannie Mae or Freddie Mac;
- MSR; and
- Other financial assets comprising approximately 5% to 10% of the portfolio.

We have historically viewed our target assets in two strategies that are based on our core competencies of understanding and managing prepayment and credit risk. Our rates strategy includes assets that are primarily sensitive to changes in interest rates and prepayment speeds, specifically Agency RMBS and MSR. Our credit strategy includes assets that are primarily sensitive to changes in inherent credit risk, including non-Agency securities. Other assets include financial and mortgage-related assets other than the target assets in our rates and credit strategies, including certain non-hedging transactions that may produce non-qualifying income for purposes of the REIT gross income tests. As a result of the global COVID-19 pandemic, we experienced unprecedented market conditions during the quarter ended March 31, 2020, including unusually significant spread widening in both Agency RMBS and non-Agency securities. In response, we focused our efforts on raising excess liquidity and de-risking our portfolio. On March 25, 2020, we sold substantially all of our non-Agency securities in order to eliminate the risks posed by continued outsized margin calls and ongoing funding concerns associated with the significant spread widening on these assets. We also sold approximately one-third of our Agency RMBS in order to reduce risk and raise cash to establish a strong defensive liquidity position to weather potential ongoing economic and market instability.

Within our MSR business, we acquire MSR assets, which represent the right to control the servicing of residential mortgage loans and the obligation to service the loans in accordance with relevant standards, from high-quality originators. We do not directly service the mortgage loans underlying the MSR we acquire; rather, we contract with appropriately licensed third-party subservicers to handle substantially all servicing functions in the name of the subservicer. As the servicer of record, however, we remain accountable to the GSEs for all servicing matters and, accordingly, provide substantial oversight of each of our subservicers.

In making our capital allocation decisions, we take into consideration a number of factors, including the opportunities available in the marketplace, the cost and availability of financing, and the cost of hedging interest rate, prepayment, credit and other portfolio risks. Capital allocation reflects management's flexible approach to investing in the marketplace. The following table provides our capital allocation in each of our investment strategies as of March 31, 2020 and the four immediately preceding quarter-ends:

	Capital Allocations(1) as of				
	March 31, 2020	**December 31, 2019**	**September 30, 2019**	**June 30, 2019**	**March 31, 2019**
Rates strategy	100%	78%	79%	76%	77%
Credit strategy	—%	22%	21%	24%	23%

(1) Capital allocation percentages reflect management's assessment regarding the extent to which each asset class contributes to total portfolio risk. Does not represent funding allocation or balance sheet financing of such assets.

As our capital allocation shifts, our annualized yields and cost of financing will also shift. At March 31, 2020, our capital allocation was 100% to our rates strategy and 0% to our credit strategy. We have expertise in mortgage credit, and may choose to invest again in those assets should the opportunity arise; however, in the near term we expect our capital to be fully allocated to the rates strategy. Overall, our intention is to allocate capital to the most attractive investment opportunities in our target asset classes. We do not have an allocation target between our rates and credit strategies. Our investment decisions are not driven solely by annualized yields, but rather a multitude of macroeconomic drivers, including market environments and their respective impacts (e.g., uncertainty of prepayment speeds, extension risk and credit events).

For the three months ended March 31, 2020, our net yield realized on the portfolio was slightly lower than the prior quarter and recent periods due to purchases of lower coupon/sales of higher coupon Agency RMBS and higher prepays on Agency RMBS, as well as an increase in our cost of financing as a result of higher swap spread, offset by decreases in LIBOR. The following table provides the average annualized yield on our assets, including Agency RMBS, non-Agency securities and MSR for the three months ended March 31, 2020, and the four immediately preceding quarters:

	Three Months Ended				
	March 31, 2020	**December 31, 2019**	**September 30, 2019**	**June 30, 2019**	**March 31, 2019**
Average annualized portfolio yield (1)	3.52%	3.54%	3.67%	3.93%	4.25%
Cost of financing (2)	2.39%	2.35%	2.51%	2.55%	2.47%
Net portfolio yield	1.13%	1.19%	1.16%	1.38%	1.78%

(1) Average annualized yield includes interest income on Agency RMBS and non-Agency securities and servicing income, net of amortization and servicing expenses on MSR and incorporates future prepayment, credit loss and other assumptions, all of which are estimates and subject to change.
(2) Cost of financing includes swap and cap interest rate spread.

We seek to deploy moderate leverage as part of our investment strategy. We generally finance our Agency RMBS and non-Agency securities through short- and long-term borrowings structured as repurchase agreements and advances from the Federal Home Loan Bank of Des Moines, or the FHLB. We also finance our MSR through repurchase agreements, revolving credit facilities, term notes payable and convertible senior notes.

Our Agency RMBS, given their liquidity and high credit quality, are eligible for higher levels of leverage, while non-Agency securities and MSR, with less liquidity and/or more exposure to credit risk and prepayment, utilize lower levels of leverage. As a result, our debt-to-equity ratio is determined by our portfolio mix as well as many additional factors, including the liquidity of our portfolio, the availability and price of our financing, the diversification of our counterparties and their available capacity to finance our assets, and anticipated regulatory developments. Over the past several quarters, we have generally maintained a debt-to-equity ratio range of 5.0 to 7.0 times to finance our securities portfolio and MSR, on a fully deployed capital basis. Our debt-to-equity ratio is directly correlated to the composition of our portfolio; specifically, the higher percentage of Agency RMBS we hold, the higher our debt-to-equity ratio is, while the higher percentage of non-Agency securities and MSR we hold, the lower our debt-to-equity ratio is. We may alter the percentage allocation of our portfolio among our target assets depending on the relative value of the assets that are available to purchase from time to time, including at times when we are deploying proceeds from offerings we conduct. See Item 7, "*Management's Discussion and Analysis of Financial Condition and Results of Operations - Financial Condition - Repurchase Agreements*" for further discussion.

We recognize that investing in our target assets is competitive and we compete with other entities for attractive investment opportunities. We rely on our management team and our dedicated team of investment professionals to identify investment opportunities. We believe that our significant focus in the residential market, the extensive mortgage market expertise of our

investment team, our strong analytics and our disciplined relative value investment approach give us a competitive advantage versus our peers.

We have elected to be treated as a REIT for U.S. federal income tax purposes. To qualify as a REIT we are required to meet certain investment and operating tests and annual distribution requirements. We generally will not be subject to U.S. federal income taxes on our taxable income to the extent that we annually distribute all of our net taxable income to stockholders, do not participate in prohibited transactions and maintain our intended qualification as a REIT. However, certain activities that we may perform may cause us to earn income which will not be qualifying income for REIT purposes. We have designated certain of our subsidiaries as taxable REIT subsidiaries, or TRSs, as defined in the Code, to engage in such activities. We also operate our business in a manner that will permit us to maintain our exemption from registration under the Investment Company Act of 1940, as amended, or the 1940 Act. While we do not currently originate or service residential mortgage loans, certain of our subsidiaries have obtained the requisite licenses and approvals to own and manage MSR.

Forward-Looking Statements

This Quarterly Report on Form 10-Q contains, or incorporates by reference, not only historical information, but also forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, or the Exchange Act, and that are subject to the safe harbors created by such sections. Forward-looking statements involve numerous risks and uncertainties. Our actual results may differ from our beliefs, expectations, estimates, and projections and, consequently, you should not rely on these forward-looking statements as predictions of future events. Forward-looking statements are not historical in nature and can be identified by words such as “anticipate,” “estimate,” “will,” “should,” “expect,” “target,” “believe,” “intend,” “seek,” “plan,” “goals,” “future,” “likely,” “may” and similar expressions or their negative forms, or by references to strategy, plans, or intentions. These forward-looking statements are subject to risks and uncertainties, including, among other things, those described in our Annual Report on Form 10-K for the year ended December 31, 2019, under the caption “Risk Factors.” Other risks, uncertainties and factors that could cause actual results to differ materially from those projected are described below and may be described from time to time in reports we file with the Securities and Exchange Commission, or SEC, including our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to update or revise any such forward-looking statements, whether as a result of new information, future events, or otherwise.

Important factors, among others, that may affect our actual results include:

- changes in interest rates and the market value of our target assets;
- changes in prepayment rates of mortgages underlying our target assets;
- the occurrence, extent and timing of credit losses within our portfolio;
- our exposure to adjustable-rate and negative amortization mortgage loans underlying our target assets;
- the state of the credit markets and other general economic conditions, particularly as they affect the price of earning assets, the credit status of borrowers and home prices;
- the ongoing impact of the COVID-19 pandemic, and the actions taken by federal and state governmental authorities and GSEs in response, on the U.S. economy, financial markets and our target assets;
- the concentration of the credit risks to which we are exposed;
- legislative and regulatory actions affecting our business;
- the availability and cost of our target assets;
- the availability and cost of financing for our target assets, including repurchase agreement financing, revolving credit facilities, term notes, convertible notes and financing through the FHLB;
- increases in payment delinquencies and defaults on the mortgages comprising and underlying our target assets;
- changes in liquidity in the market for real estate securities, the re-pricing of credit risk in the capital markets, inaccurate ratings of securities by rating agencies, rating agency downgrades of securities, and increases in the supply of real estate securities available-for-sale;
- changes in the values of securities we own and the impact of adjustments reflecting those changes on our condensed consolidated statements of comprehensive (loss) income and balance sheets, including our stockholders’ equity;
- our ability to generate cash flow from our target assets;
- our ability to effectively execute and realize the benefits of strategic transactions and initiatives we have pursued or may in the future pursue;
- our decision not to renew our management agreement with PRCM Advisers and our ability to successfully transition to a self-managed company;

- changes in the competitive landscape within our industry, including changes that may affect our ability to attract and retain personnel;
- our exposure to legal and regulatory claims, penalties or enforcement activities, including those arising from our ownership and management of MSR and prior securitization transactions;
- our exposure to counterparties involved in our MSR business and prior securitization transactions and our ability to enforce representations and warranties made by them;
- our ability to acquire MSR and successfully operate our seller-servicer subsidiary and oversee the activities of our subservicers;
- our ability to manage various operational and regulatory risks associated with our business;
- interruptions in or impairments to our communications and information technology systems;
- our ability to maintain appropriate internal controls over financial reporting;
- our ability to establish, adjust and maintain appropriate hedges for the risks in our portfolio;
- our ability to maintain our REIT qualification for U.S. federal income tax purposes; and
- limitations imposed on our business due to our REIT status and our status as exempt from registration under the 1940 Act.

This Quarterly Report on Form 10-Q may contain statistics and other data that, in some cases, have been obtained or compiled from information made available by mortgage loan servicers and other third-party service providers.

Factors Affecting our Operating Results

Our net interest income includes income from our securities portfolio, including the amortization of purchase premiums and accretion of purchase discounts. Net interest income, as well as our servicing income, net of subservicing expenses, will fluctuate primarily as a result of changes in market interest rates, our financing costs and prepayment speeds on our assets. Interest rates, financing costs and prepayment rates vary according to the type of investment, conditions in the financial markets, competition and other factors, none of which can be predicted with any certainty. Our operating results will also be affected by default rates and credit losses with respect to the mortgage loans underlying our non-Agency securities.

On January 1, 2020 we adopted Accounting Standards Update (ASU) No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, which changed the impairment model for most financial assets and certain other instruments. Valuation allowances for credit losses on available-for-sale, or AFS, debt securities are recognized, rather than direct reductions in the amortized cost of the investments, regardless of whether the impairment is considered to be other-than-temporary. We use a discounted cash flow method to estimate and recognize an allowance for credit losses on AFS securities. The estimated allowance for credit losses is equal to the difference between the prepayment adjusted contractual cash flows with no credit losses and the prepayment adjusted expected cash flows with credit losses, discounted at the effective interest rate on the AFS security that was in effect upon adoption of the standard. The contractual cash flows and expected cash flows are based on management's best estimate and take into consideration current prepayment assumptions, lifetime expected losses based on past loss experience, current market conditions, and reasonable and supportable forecasts of future conditions. The allowance for credit losses causes an increase in the AFS security amortized cost and recognizes an allowance for credit losses in the same amount.

Fair Value Measurement

A significant portion of our assets and liabilities are reported at fair value and, therefore, our condensed consolidated balance sheets and statements of comprehensive (loss) income are significantly affected by fluctuations in market prices. At March 31, 2020, approximately 87.2% of our total assets, or $19.4 billion, consisted of financial instruments recorded at fair value. See Note 10 - *Fair Value* to the condensed consolidated financial statements, included in this Quarterly Report on Form 10-Q, for descriptions of valuation methodologies used to measure material assets and liabilities at fair value and details of the valuation models, key inputs to those models and significant assumptions utilized. Although we execute various hedging strategies to mitigate our exposure to changes in fair value, we cannot fully eliminate our exposure to volatility caused by fluctuations in market prices.

Any temporary change in the fair value of our AFS securities, excluding certain Agency interest-only mortgage-backed securities, is recorded as a component of accumulated other comprehensive income and does not impact our earnings. However, beginning on January 1, 2020 (as discussed above), changes in the provision for credit losses on AFS securities are recognized immediately in earnings. Our reported income (loss) for U.S. GAAP purposes, or GAAP net income (loss), is also affected by fluctuations in market prices on the remainder of our financial assets and liabilities recorded at fair value, including interest rate swap, cap and swaption agreements and certain other derivative instruments (*i.e.*, TBAs, put and call options for TBAs, U.S. Treasury futures, Markit IOS total return swaps and inverse interest-only securities), which are accounted for as derivative trading instruments under U.S. GAAP, Agency interest-only mortgage-backed securities and MSR.

We have numerous internal controls in place to help ensure the appropriateness of fair value measurements. Significant fair value measures are subject to detailed analytics and management review and approval. Our entire investment portfolio reported at fair value is priced by third-party brokers and/or by independent pricing vendors. We generally receive three or more broker and vendor quotes on pass-through principal and interest (P&I) Agency RMBS, and generally receive multiple broker or vendor quotes on all other securities, including interest-only Agency RMBS, inverse interest-only Agency RMBS, and non-Agency securities. We also receive three vendor quotes for the MSR in our investment portfolio. For Agency RMBS, the third-party pricing vendors and brokers use pricing models that commonly incorporate such factors as coupons, primary and secondary mortgage rates, rate reset periods, issuer, prepayment speeds, credit enhancements and expected life of the security. For non-Agency securities, the third-party pricing vendors utilize both observable and unobservable inputs such as pool-specific characteristics (*e.g.*, loan age, loan size, credit quality of borrowers, vintage, servicer quality), floating rate indices, prepayment and default assumptions, and recent trading of the same or similar securities. For MSR, vendors use pricing models that generally incorporate observable inputs such as principal balance, note rate, geographical location, loan-to-value (LTV) ratios, FICO, appraised value and other loan characteristics, along with observed market yields and trading levels. Pricing vendors will customarily incorporate loan servicing cost, servicing fee, ancillary income, and earnings rate on escrow as observable inputs. Unobservable or model-driven inputs include forecast cumulative defaults, default curve, forecast loss severity and forecast voluntary prepayment.

We evaluate the prices we receive from both third-party brokers and pricing vendors by comparing those prices to actual purchase and sale transactions, our internally modeled prices calculated based on market observable rates and credit spreads, and to each other both in current and prior periods. We review and may challenge valuations from third-party brokers and pricing vendors to ensure that such quotes and valuations are indicative of fair value as a result of this analysis. We then estimate the fair value of each security based upon the median of the final broker quotes received, and we estimate the fair value of MSR based upon the average of prices received from third-party vendors, subject to internally-established hierarchy and override procedures.

We utilize "bid side" pricing for our Agency RMBS and non-Agency securities and, as a result, certain assets, especially the most recent purchases, may realize a markdown due to the "bid-offer" spread. To the extent that this occurs, any economic effect of this would be reflected in accumulated other comprehensive income.

Considerable judgment is used in forming conclusions and estimating inputs to our Level 3 fair value measurements. Level 3 inputs such as interest rate movements, prepayments speeds, credit losses and discount rates are inherently difficult to estimate. Changes to these inputs can have a significant effect on fair value measurements. Accordingly, there is no assurance that our estimates of fair value are indicative of the amounts that would be realized on the ultimate sale or exchange of these assets. The Company classified 6.8% of its total assets as Level 3 fair value assets at March 31, 2020.

Market Conditions and Outlook

The first quarter of 2020 was an extremely volatile quarter for mortgage-related assets. By the end of March, interest rates in the U.S. were quite low, with all U.S. Treasuries yielding less than 150 basis points, and all maturities out to 5 years yielding less than 50 basis points.After a series of "insurance" cuts in 2019, the U.S. Federal Reserve, or Fed, responded to the COVID-19 pandemic with a series of large-scale actions, including cutting the Fed Funds target rate by 150 basis points, back to the zero bound. The Fed also committed in March to unlimited purchases of U.S. Treasuries and Agency RMBS, in a round of quantitative easing known as QE4. The repo markets for high-quality assets like Treasuries and Agency RMBS continued to be supported by large Fed action, in the form of upsized open market operations, both in the overnight and term markets. These facilities were established in the third and fourth quarters of 2019, and were significantly increased in the first quarter of 2020. Additionally, the Fed has established (or re-established) a number of other credit facilities. Broadly, they are intended to provide liquidity backstops to help stabilize the financial markets. These include the Commercial Paper Funding Facility (CPFF), a Primary Dealer Credit Facility (PDCF), and the Term Asset-Backed Securities Loan Facility (TALF), amongst others.

The Coronavirus Aid, Relief, and Economic Security Act (CARES Act) was passed in March to address the economic fallout of the COVID-19 pandemic. One provision of the Act provides up to 360 days of forbearance relief from mortgage loan payments for borrowers with federally backed (e.g. Fannie Mae or Freddie Mac) mortgages who experience financial hardship related to the pandemic. Combined with expected widespread unemployment stemming from the economic slowdown caused by the pandemic, residential mortgage assets came under extreme spread pressure. The CARES Act also prohibits foreclosures for 60 days and evictions by landlords for 120 days after its enactment. Much uncertainty has arisen around the ultimate effect on delinquencies, defaults, prepayment speeds, low interest rates and home price appreciation. These provisions of the CARES Act also impact MSR owners, like us, that are required for certain of the MSR assets that we own to advance principal, interest, taxes and insurance payments during the time when borrowers are in forbearance or while foreclosure moratorium is in effect. Depending on the ultimate participation rate in the forbearance program, this could have an adverse impact to our liquidity and financial condition.

We believe our current portfolio allocation and our investing expertise, as well as our operational capabilities to invest in MSR, will allow us to better navigate the dynamic mortgage market while future regulatory and policy activities take shape. Our portfolio, consisting as it does of Agency RMBS and MSR, with offsetting risk characteristics, allows us to mitigate a variety of risks, including interest rate and RMBS spread volatility.

The following table provides the carrying value of our investment portfolio by product type:

(dollars in thousands)	March 31, 2020		December 31, 2019	
Agency				
Fixed Rate	$ 17,692,839	91.6%	$ 27,763,471	83.2%
Hybrid ARM	13,820	0.1%	14,584	—%
Total Agency	17,706,659	91.7%	27,778,055	83.2%
Agency Derivatives	73,276	0.4%	68,925	0.2%
Non-Agency				
Senior	2,593	—%	3,073,098	9.2%
Mezzanine	—	—%	480,765	1.4%
Interest-only securities	23,807	0.1%	74,410	0.2%
Total Non-Agency	26,400	0.1%	3,628,273	10.8%
Mortgage servicing rights	1,505,163	7.8%	1,909,444	5.7%
Total	$ 19,311,498		$ 33,384,697	

Prepayment speeds and volatility due to interest rates

Our Agency RMBS portfolio is subject to inherent prepayment risk. We seek to offset a portion of our Agency pool exposure to prepayment speeds through our MSR and interest-only Agency RMBS portfolios. Generally, a decline in interest rates that leads to rising prepayment speeds will cause the market value of our RMBS purchased at a discount (including interest-only securities) and MSR to deteriorate, and our RMBS purchased at a premium to increase. The inverse relationship occurs when interest rates increase and prepayments slow. The low interest rate environment is expected to persist in the near term. However, changes in home price performance, key employment metrics and government programs, among other macroeconomic factors, could cause prepayment speeds to increase on many RMBS, which could lead to less attractive reinvestment opportunities. Nonetheless, we believe our portfolio management approach, including our asset selection process, positions us to respond to a variety of market scenarios, including an overall faster prepayment environment.

The following table provides the three-month average constant prepayment rate, or CPR, experienced by Agency RMBS and MSR owned by us as of March 31, 2020, and the four immediately preceding quarter-ends:

Weighted Average CPR	March 31, 2020	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019
Agency RMBS	12.3%	14.3%	13.4%	10.1%	6.5%
Mortgage servicing rights	19.9%	20.8%	20.5%	13.7%	7.7%

Although we are unable to predict the movement in interest rates in 2020 and beyond, our diversified portfolio management strategy is intended to generate attractive yields with a low level of sensitivity to changes in the yield curve, prepayments and interest rate cycles.

Our Agency RMBS are collateralized by pools of fixed-rate mortgage loans and hybrid adjustable-rate mortgage loans, or hybrid ARMs, which are mortgage loans that have interest rates that are fixed for an initial period and adjustable thereafter. Our Agency portfolio also includes securities with implicit or explicit prepayment protection, including lower loan balances (securities collateralized by loans of less than $200,000 in initial principal balance), higher LTVs (securities collateralized by loans with LTVs greater than or equal to 80%), certain geographic concentrations and lower FICO scores. Our overall allocation of Agency RMBS and holdings of pools with specific characteristics are viewed in the context of our aggregate rates strategy, including MSR and related derivative hedging instruments. Additionally, the selection of securities with certain attributes is driven by the perceived relative value of the securities, which factors in the opportunities in the marketplace, the cost of financing and the cost of hedging interest rate, prepayment, credit and other portfolio risks. As a result, Agency RMBS capital allocation reflects management’s flexible approach to investing in the marketplace.

The following tables provide the carrying value of our Agency RMBS portfolio by underlying mortgage loan rate type:

	March 31, 2020							
(dollars in thousands)	**Principal/ Current Face**	**Carrying Value**	**Weighted Average CPR**	**% Prepayment Protected**	**Gross Weighted Average Coupon Rate**	**Amortized Cost**	**Allowance for Credit Losses**	**Weighted Average Loan Age (months)**
Agency RMBS AFS:								
30-Year Fixed								
3.0%	$ 2,636,091	$ 2,778,221	3.0%	100.0%	3.7%	$ 2,720,306	$ —	5
3.5%	3,990,961	4,266,747	6.7%	100.0%	4.2%	4,184,013	—	8
4.0%	5,857,293	6,350,933	15.8%	100.0%	4.5%	6,123,747	—	33
4.5%	3,030,175	3,302,414	17.9%	100.0%	5.0%	3,196,003	—	26
≥ 5%	687,112	754,400	23.4%	98.6%	5.8%	729,236	—	52
	16,201,632	17,452,715	12.4%	99.9%	4.5%	16,953,305	—	22
Other P&I	114,443	132,273	7.8%	—%	6.7%	127,719	—	216
Interest-only	2,461,579	121,671	10.0%	—%	4.3%	158,209	(32,786)	109
Agency Derivatives	379,239	73,276	11.3%	—%	6.7%	54,159	—	187
Total Agency RMBS	$ 19,156,893	$ 17,779,935		98.1%		$ 17,293,392	$ (32,786)	

	December 31, 2019						
(dollars in thousands)	**Principal/ Current Face**	**Carrying Value**	**Weighted Average CPR**	**% Prepayment Protected**	**Gross Weighted Average Coupon Rate**	**Amortized Cost**	**Weighted Average Loan Age (months)**
Agency RMBS AFS:							
30-Year Fixed							
3.0%	$ 6,034,075	$ 6,168,095	3.3%	98.3%	3.8%	$ 6,169,224	3
3.5%	6,174,872	6,451,660	7.0%	100.0%	4.3%	6,386,051	7
4.0%	8,455,585	8,993,011	19.4%	100.0%	4.6%	8,808,458	25
4.5%	4,714,844	5,082,166	25.2%	100.0%	5.0%	4,942,234	20
≥ 5%	741,000	813,503	23.5%	100.0%	5.8%	786,727	48
	26,120,376	27,508,435	14.4%	99.6%	4.5%	27,092,694	16
Other P&I	119,168	133,436	7.3%	0.3%	6.7%	133,174	210
Interest-only	2,601,693	136,184	10.9%	—%	4.4%	169,811	104
Agency Derivatives	397,137	68,925	12.3%	—%	6.7%	56,959	184
Total Agency RMBS	$ 29,238,374	$ 27,846,980		98.4%		$ 27,452,638	

The following tables provide net unamortized discount/premium information on our non-Agency securities portfolio:

	March 31, 2020				
(in thousands)	Principal/ Current Face	Un-amortized Premium	Accretable Purchase Discount	Amortized Cost	Allowance for Credit Losses
Principal and interest securities					
Senior	$ 2,591	$ 8	$ (41)	$ 2,558	$ —
Mezzanine	—	—	—	—	—
Total P&I securities	2,591	8	(41)	2,558	—
Interest-only	3,770,437	37,781	—	37,781	(8,604)
Total Non-Agency	$ 3,773,028	$ 37,789	$ (41)	$ 40,339	$ (8,604)

	December 31, 2019				
(in thousands)	Principal/ Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost
Principal and interest securities					
Senior	$ 4,861,854	$ 8,966	$ (445,566)	$ (1,594,480)	$ 2,830,774
Mezzanine	636,800	14	(114,574)	(117,471)	404,769
Total P&I securities	5,498,654	8,980	(560,140)	(1,711,951)	3,235,543
Interest-only	4,356,603	79,935	—	—	79,935
Total Non-Agency	$ 9,855,257	$ 88,915	$ (560,140)	$ (1,711,951)	$ 3,315,478

Counterparty exposure and leverage ratio

We monitor counterparty exposure in our broker, banking and lending counterparties on a daily basis. We believe our broker and banking counterparties are well-capitalized organizations and we attempt to manage our cash balances across these organizations to reduce our exposure to any single counterparty.

As of March 31, 2020, we had entered into repurchase agreements with 47 counterparties, 22 of which had outstanding balances at March 31, 2020. In addition, we held long-term secured advances from the FHLB, short- and long-term borrowings under revolving credit facilities, long-term term notes payable and long-term unsecured convertible senior notes. As of March 31, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 6.5:1.0.

As of March 31, 2020, we held $1.2 billion in cash and cash equivalents, approximately $1.2 million of unpledged Agency securities and derivatives and $18.3 million of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on our unpledged securities of approximately $14.4 million. As of March 31, 2020, we held approximately $197.1 million of unpledged MSR. Overall, we had unused borrowing capacity on MSR financing facilities of $1.5 billion. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. If borrowing rates and collateral requirements change in the near term, we believe we are subject to less earnings volatility than if we carried higher leverage.

We also monitor exposure to our MSR counterparties. We may be required to make representations and warranties to investors in the loans underlying the MSR we own; however, some of our MSR were purchased on a bifurcated basis, meaning the representation and warranty obligations remain with the seller. If the representations and warranties we make prove to be inaccurate, we may be obligated to repurchase certain mortgage loans, which may impact the profitability of our portfolio. Although we obtain similar representations and warranties from the counterparty from which we acquired the relevant asset, if those representations and warranties do not directly mirror those we make to the investor, or if we are unable to enforce the representations and warranties against the counterparty for a variety of reasons, including the financial condition or insolvency of the counterparty, we may not be able to seek indemnification from our counterparties for any losses attributable to the breach.

Proposed changes to LIBOR

LIBOR is used extensively in the U.S. and globally as a "benchmark" or "reference rate" for various commercial and financial contracts, including corporate and municipal bonds and loans, floating rate mortgages, asset-backed securities, consumer loans, and interest rate swaps and other derivatives. It is expected that a number of private-sector banks currently reporting information used to set LIBOR will stop doing so after 2021 when their current reporting commitment ends, which could either cause LIBOR to stop publication immediately or cause LIBOR's regulator to determine that its quality has degraded to the degree that it is no longer representative of its underlying market. The U.S. and other countries are currently working to replace LIBOR with alternative reference rates. In the U.S., the Alternative Reference Rates Committee, or ARRC, has identified the Secured Overnight Financing Rate, or SOFR, as its preferred alternative rate for U.S. dollar-based LIBOR. SOFR is a measure of the cost of borrowing cash overnight, collateralized by U.S. Treasury securities, and is based on directly observable U.S. Treasury-backed repurchase transactions. Some market participants may continue to explore whether other U.S. dollar-based reference rates would be more appropriate for certain types of instruments. The ARRC has proposed a paced market transition plan to SOFR, and various organizations are currently working on industry wide and company-specific transition plans as it relates to derivatives and cash markets exposed to LIBOR. We have material contracts that are indexed to USD-LIBOR and are monitoring this activity, evaluating the related risks and our exposure.

Summary of Results of Operations and Financial Condition

As a result of the global COVID-19 pandemic, we experienced unprecedented market conditions during the quarter ended March 31, 2020, including unusually significant spread widening in both Agency RMBS and non-Agency securities. In response, we focused our efforts on raising excess liquidity and de-risking our portfolio. On March 25, 2020, we sold substantially all of our non-Agency securities, in order to eliminate the risks posed by continued outsized margin calls and ongoing funding concerns associated with the significant spread widening on these assets. We also sold approximately one-third of our Agency RMBS portfolio in order to reduce risk and raise cash to establish a strong defensive liquidity position to weather potential ongoing economic and market instability. These actions, occurring at a time of wide spreads and low prices, resulted in large realized losses in the quarter and a corresponding decline in book value.

Our GAAP net loss attributable to common stockholders was $1.9 billion ($6.91 per diluted weighted average share) for the three months ended March 31, 2020, as compared to GAAP net loss attributable to common stockholders of $44.9 million ($0.18 per diluted weighted average share) for the three months ended March 31, 2019.

With our accounting treatment for AFS securities, unrealized fluctuations in the market values of AFS securities, excluding Agency interest-only securities, do not impact our GAAP net income (loss) or taxable income but are recognized on our condensed consolidated balance sheets as a change in stockholders' equity under "accumulated other comprehensive income." As a result of this fair value accounting through stockholders' equity, we expect our net income (loss) to have less significant fluctuations and result in less U.S. GAAP to taxable income timing differences, than if the portfolio were accounted for as trading instruments. However, beginning on January 1, 2020, changes in the provision for credit losses on AFS securities are recognized immediately in earnings. Our GAAP net income (loss) is also affected by fluctuations in market prices on the remainder of our financial assets and liabilities recorded at fair value, including derivative instruments, Agency interest-only mortgage-backed securities and MSR. For the three months ended March 31, 2020, net unrealized losses on AFS securities recognized as other comprehensive loss, net of tax, were $198.1 million. This, combined with GAAP net loss attributable to common stockholders of $1.9 billion, resulted in comprehensive loss attributable to common stockholders of $2.1 billion for the three months ended March 31, 2020. For the three months ended March 31, 2019, net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were $356.2 million. This, combined with GAAP net loss attributable to common stockholders of $44.9 million, resulted in comprehensive income attributable to common stockholders of $311.3 million for the three months ended March 31, 2019.

Our book value per common share for U.S. GAAP purposes was $6.96 at March 31, 2020, a decrease from $14.54 per common share at December 31, 2019. For the quarter, we recognized comprehensive loss attributable to common stockholders of $2.1 billion, which drove the overall decrease in book value.

The COVID-19 pandemic and its impacts continue and future effects remain uncertain. Our liquidity position is strong, with $1.2 billion in unrestricted cash as of March 31, 2020. We have also substantially de-risked our portfolio. We continue in our efforts to be prudent risk managers and are confident we will be in a position to meet margin calls in the ordinary course of our business. Our portfolio now consists primarily of Agency RMBS and Agency MSR. The actions taken by the Fed to purchase Agency RMBS have been successful in stabilizing this market. In addition, repurchase agreement financing markets for Agency RMBS continue to function well and we have experienced no issues in accessing this source of funding.

Certain mortgage loan forbearance programs were announced in connection with the CARES Act. As the servicer of record for the MSR assets in our portfolio, we may be responsible for continuing to advance principal, interest, taxes and insurance on mortgage loans that are in forbearance, delinquency or default. Although the potential aggregate size of the servicing advance obligation is not known, at this time we believe we will be well positioned from a liquidity standpoint to continue to make servicing advances in the future. This is a situation we are monitoring closely and are focused on evaluating additional funding options for servicing advances.

Although there is no certainty as to the future effects of the COVID-19 pandemic, we expect our financial results will be negatively impacted in the near term. These impacts will be primarily due to maintaining significant excess liquidity resulting in sub-optimal portfolio construction and increased delinquency on mortgage loans underlying our MSR resulting in higher servicing expenses and increased servicing advance balances and related funding costs.

The following tables present the components of our comprehensive (loss) income for the three months ended March 31, 2020 and 2019:

(in thousands, except share data) **Income Statement Data:**	**Three Months Ended March 31,**	
	2020	**2019**
	(unaudited)	
Interest income:		
Available-for-sale securities	$ 248,684	$ 235,886
Other	6,823	9,597
Total interest income	255,507	245,483
Interest expense:		
Repurchase agreements	152,605	147,560
Federal Home Loan Bank advances	1,592	6,074
Revolving credit facilities	3,531	5,156
Term notes payable	4,804	—
Convertible senior notes	4,776	4,735
Total interest expense	167,308	163,525
Net interest income	88,199	81,958
Other-than-temporary impairment losses	—	(206)
Other income (loss):		
Loss on investment securities	(1,081,607)	(19,292)
Servicing income	130,797	116,948
Loss on servicing asset	(586,665)	(188,974)
Loss on interest rate swap, cap and swaption agreements	(250,596)	(83,259)
(Loss) gain on other derivative instruments	(133,468)	104,278
Other income	798	123
Total other loss	(1,920,741)	(70,176)
Expenses:		
Management fees	14,550	12,082
Servicing expenses	19,905	19,912
Other operating expenses	15,797	15,556
Total expenses	50,252	47,550
Loss before income taxes	(1,882,794)	(35,974)
Benefit from income taxes	(13,138)	(10,039)
Net loss	(1,869,656)	(25,935)
Dividends on preferred stock	18,950	18,950
Net loss attributable to common stockholders	$ (1,888,606)	$ (44,885)
Basic loss per weighted average common share	$ (6.91)	$ (0.18)
Diluted loss per weighted average common share	$ (6.91)	$ (0.18)
Dividends declared per common share	$ —	$ 0.47
Weighted average number of shares of common stock:		
Basic	273,392,615	252,357,878
Diluted	273,392,615	252,357,878

(in thousands) **Income Statement Data:**	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
	(unaudited)	
Comprehensive (loss) income:		
Net loss	$ (1,869,656)	$ (25,935)
Other comprehensive (loss) income, net of tax:		
Unrealized (loss) gain on available-for-sale securities	(198,070)	356,152
Other comprehensive (loss) income	(198,070)	356,152
Comprehensive (loss) income	(2,067,726)	330,217
Dividends on preferred stock	18,950	18,950
Comprehensive (loss) income attributable to common stockholders	$ (2,086,676)	$ 311,267

(in thousands) **Balance Sheet Data:**	March 31, 2020	December 31, 2019
	(unaudited)	
Available-for-sale securities	$ 17,733,059	$ 31,406,328
Mortgage servicing rights	$ 1,505,163	$ 1,909,444
Total assets	$ 22,202,648	$ 35,921,622
Repurchase agreements	$ 17,795,516	$ 29,147,463
Federal Home Loan Bank advances	$ 50,000	$ 210,000
Revolving credit facilities	$ 252,143	$ 300,000
Term notes payable	$ 394,772	$ 394,502
Convertible senior notes	$ 285,238	$ 284,954
Total stockholders' equity	$ 2,904,133	$ 4,970,466

Results of Operations

The following analysis focuses on financial results during the three months ended March 31, 2020 and 2019.

Interest Income

Interest income increased from $245.5 million for the three months ended March 31, 2019 to $255.5 million for the same period in 2020 due to the growth of our AFS portfolio prior to the sales of both Agency RMBS and non-Agency securities that occurred late in the quarter.

Interest Expense

Interest expense increased from $163.5 million for the three months ended March 31, 2019 to $167.3 million for the same period in 2020 due increased financing on AFS securities and on MSR due to portfolio growth prior to the sales of both Agency RMBS and non-Agency securities that occurred late in the quarter, as well as the MSR securitization completed in the second quarter of 2019, offset by lower cost of funds due to lower rate environment.

Net Interest Income

The following table presents the components of interest income and average annualized net asset yield earned by asset type, the components of interest expense and average annualized cost of funds on borrowings incurred by liability and/or collateral type, and net interest income and average annualized net interest rate spread for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31, 2020			Three Months Ended March 31, 2019		
(dollars in thousands)	**Average Balance (1)**	**Interest Income/Expense**	**Net Yield/Cost of Funds (2)**	**Average Balance (1)**	**Interest Income/Expense**	**Net Yield/Cost of Funds (2)**
Interest-earning assets						
Agency available-for-sale securities	$ 27,112,303	$ 195,296	2.9%	$ 20,293,227	$ 181,515	3.6%
Non-Agency available-for-sale securities	3,158,502	53,388	6.8%	3,235,660	54,371	6.7%
Other	8,259	6,823	3.8%	28,163	9,597	4.3%
Total interest income/net asset yield	$ 30,279,064	$ 255,507	3.4%	$ 23,557,050	$ 245,483	4.2%
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	$ 27,173,316	$ 138,724	2.0%	$ 19,211,709	$ 126,627	2.6%
Non-Agency available-for-sale securities	1,728,420	12,874	3.0%	2,503,462	23,296	3.7%
Agency derivatives (3)	50,147	336	2.7%	46,492	400	3.4%
Mortgage servicing rights (4)	905,250	10,598	4.7%	615,971	8,467	5.5%
Other unassignable						
Convertible senior notes	285,146	4,776	6.7%	284,022	4,735	6.7%
Total interest expense/cost of funds	$ 30,142,279	167,308	2.2%	$ 22,661,656	163,525	2.9%
Net interest income/spread (5)		$ 88,199	1.2%		$ 81,958	1.3%

(1) Average asset balance represents average amortized cost on AFS securities and Agency Derivatives and average unpaid principal balance, adjusted for purchase price changes, on other assets.
(2) Cost of funds does not include the accrual and settlement of interest associated with interest rate swaps. In accordance with U.S. GAAP, those costs are included in loss on interest rate swap, cap and swaption agreements in the condensed consolidated statements of comprehensive (loss) income. For the three months ended March 31, 2020, our total average cost of funds on the assets assigned as collateral for borrowings shown in the table above, including interest spread expense associated with interest rate swaps, was 2.5%, compared to 2.5% for the same period in 2019.
(3) Yields on Agency Derivatives not shown as interest income is included in (loss) gain on other derivative instruments in the condensed consolidated statements of comprehensive (loss) income.
(4) Yields on mortgage servicing rights not shown as these assets do not earn interest.
(5) Net interest spread does not include the accrual and settlement of interest associated with interest rate swaps. In accordance with U.S. GAAP, those costs are included in loss on interest rate swap, cap and swaption agreements in the condensed consolidated statements of comprehensive (loss) income. For the three months ended March 31, 2020, our total average net interest rate spread on the assets and liabilities shown in the table above, including interest spread expense associated with interest rate swaps, was 0.8%, compared to 1.6% for the same period in 2019.

The decrease in yields on Agency AFS securities for the three months ended March 31, 2020, as compared to the same period in 2019, was predominantly driven by purchases of pools with lower yields and sales of pools with higher yields. The decrease in cost of funds associated with the financing of Agency AFS securities for the three months ended March 31, 2020, as compared to the same period in 2019, was the result of decreases in the borrowing rates offered by financing counterparties.

The yields on non-Agency securities for the three months ended March 31, 2020, were relatively consistent with those for the same in 2019. The decrease in cost of funds associated with the financing of non-Agency AFS securities for the three months ended March 31, 2020, as compared to the same period in 2019, was the result of decreases in the borrowing rates offered by counterparties.

The decrease in cost of funds associated with the financing of Agency Derivatives for the three months ended March 31, 2020, as compared to the same period in 2019, was the result of decreases in the borrowing rates offered by counterparties.

The decrease in cost of funds associated with the financing of MSR for the three months ended March 31, 2020, as compared to the same period in 2019, was the result of the issuance of term notes payable in June 2019, which incur lower amortization of deferred debt issuance costs due to their longer term maturity and generally better financing terms offered by counterparties.

Our convertible senior notes were issued in January 2017, are unsecured and pay interest semiannually at a rate of 6.25% per annum. The cost of funds associated with our convertible senior notes for the three months ended March 31, 2020, as compared to the same period in 2019, was consistent.

The following table presents the components of the yield earned by investment type on our AFS securities portfolio as a percentage of our average amortized cost of securities for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31, 2020			Three Months Ended March 31, 2019		
	Agency [1]	Non-Agency	Total	Agency [1]	Non-Agency	Total
Gross yield/stated coupon	3.8 %	4.4%	3.8 %	4.3 %	4.8%	4.4 %
Net (premium amortization) discount accretion	(0.9)%	2.4%	(0.5)%	(0.7)%	1.9%	(0.4)%
Net yield [2]	2.9 %	6.8%	3.3 %	3.6 %	6.7%	4.0 %

(1) Excludes Agency Derivatives. For the three months ended March 31, 2020, the average annualized net yield on total Agency RMBS, including Agency Derivatives, was 2.9%, compared to 3.6% for the same period in 2019.
(2) These yields have not been adjusted for cost of delay and cost to carry purchase premiums.

Other-Than-Temporary Impairments

Prior to the adoption of Topic 326 on January 1, 2020, we reviewed each of our securities on a quarterly basis to determine if an OTTI charge was necessary. During the three months ended March 31, 2019, we recorded $0.2 million in other-than-temporary credit impairments on a total of two non-Agency securities where the future expected cash flows for each security were less than its amortized cost. For further information about evaluating AFS securities for OTTI prior to January 1, 2020, refer to Note 4 - *Available-for-Sale Securities, at Fair Value* of the notes to the condensed consolidated financial statements.

Loss on Investment Securities

The following tables present the components of loss on investment securities for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31, 2020			Three Months Ended March 31, 2019		
(in thousands)	Available-For-Sale Securities	Trading Securities	Total	Available-For-Sale Securities	Trading Securities	Total
Proceeds from sales	$ 15,586,752	$ 1,053,477	$ 16,640,229	$ 4,853,189	$ —	$ 4,853,189
Amortized cost of securities sold	(16,622,767)	(1,052,500)	(17,675,267)	(4,870,646)	—	(4,870,646)
Total realized losses	(1,036,015)	977	(1,035,038)	(17,457)	—	(17,457)
Change in unrealized losses [1]	(931)	—	(931)	(1,835)	—	(1,835)
Provision for credit losses	(45,638)	—	(45,638)	—	—	—
Loss on investment securities	$ (1,082,584)	$ 977	$ (1,081,607)	$ (19,292)	$ —	$ (19,292)

(1) On July 1, 2015, we elected the fair value option for Agency interest-only mortgage-backed securities acquired on or after such date. All Agency interest-only mortgage-backed securities acquired on or after July 1, 2015 are carried at estimated fair value with changes in fair value recorded as a component of loss on investment securities in the condensed consolidated statements of comprehensive (loss) income.

Due to the unprecedented market conditions experienced during the three months ended March 31, 2020 as a result of the global COVID-19 pandemic, we sold substantially all of our portfolio of non-Agency securities. We do not expect to sell assets on a frequent basis, but may sell assets to reallocate capital into new assets that we believe have higher risk-adjusted returns.

The decrease in change in unrealized losses on Agency interest-only mortgage-backed securities for the three months ended March 31, 2020, as compared to the same period in 2019, was due to lower prepayment expectations relative to prepayment expectations in the previous quarter.

Subsequent to the adoption of Topic 326 on January 1, 2020, the Company uses a discounted cash flow method to estimate and recognize an allowance for credit losses on AFS securities. The estimated allowance for credit losses is equal to the difference between the prepayment adjusted contractual cash flows with no credit losses and the prepayment adjusted expected cash flows with credit losses, discounted at the effective interest rate on the AFS security that was in effect upon adoption of the standard. The contractual cash flows and expected cash flows are based on management's best estimate and take into consideration current prepayment assumptions, lifetime expected losses based on past loss experience, current market conditions, and reasonable and supportable forecasts of future conditions. The allowance for credit losses causes an increase in the AFS security amortized cost and recognizes an allowance for credit losses in the same amount, with the provision for credit losses recognized in earnings (within loss on investment securities) and the balance of the unrealized loss recognized in either other comprehensive (loss) income, net of tax, or loss on investment securities, depending on the accounting treatment.

Servicing Income

The following table presents the components of servicing income for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	**2020**	**2019**
Servicing fee income	$ 117,891	$ 105,936
Ancillary and other fee income	521	310
Float income	12,385	10,702
Total	$ 130,797	$ 116,948

The increase in servicing income for the three months ended March 31, 2020, as compared to the same periods in 2019, was the result of an increase in the size of our MSR portfolio. Additionally, the increase in float income was the result of both the increased size of our MSR portfolio and increased float earning rates.

Loss on Servicing Asset

The following table presents the components of loss on servicing asset for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	**2020**	**2019**
Changes in fair value due to changes in valuation inputs or assumptions used in the valuation model	$ (500,763)	$ (151,614)
Changes in fair value due to realization of cash flows (runoff)	(85,902)	(37,649)
Gains on sales	—	289
Loss on servicing asset	$ (586,665)	$ (188,974)

The increase in loss on servicing asset for the three months ended March 31, 2020, as compared to the same period in 2019, was driven by decreases in interest rates, an increase in prepayment speed assumptions used in the fair valuation of MSR, and higher portfolio runoff on a larger MSR portfolio during the three months ended March 31, 2020.

Loss on Interest Rate Swap, Cap and Swaption Agreements

The following table summarizes the net interest spread and gains and losses associated with our interest rate swap, cap and swaption positions recognized during the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	**2020**	**2019**
Net interest spread	$ (12,615)	$ 23,709
Early termination, agreement maturation and option expiration gains (losses)	361,853	(34,499)
Change in unrealized loss on interest rate swap, cap and swaption agreements, at fair value	(599,834)	(72,469)
Loss on interest rate swap, cap and swaption agreements	$ (250,596)	$ (83,259)

Net interest spread recognized for the accrual and/or settlement of the net interest expense associated with our interest rate swaps and caps results from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on positions held to economically hedge/mitigate portfolio interest rate exposure (or duration) risk. We may elect to terminate certain swaps, caps and swaptions to align with our investment portfolio, agreements may mature or options may expire resulting in full settlement of our net interest spread asset/liability and the recognition of realized gains and losses, including early termination penalties. The change in fair value of interest rate swaps, caps and swaptions during the three months ended March 31, 2020 and 2019 was a result of changes to LIBOR, the swap curve and corresponding counterparty borrowing rates. Since swaps, caps and swaptions are used for purposes of hedging our interest rate exposure, their unrealized valuation gains and losses are generally offset by unrealized losses and gains in our Agency RMBS AFS portfolio, which are recorded either directly to stockholders' equity through other comprehensive (loss) income, net of tax, or to loss on investment securities, in the case of Agency interest-only mortgage-backed securities.

(Loss) Gain on Other Derivative Instruments

The following table provides a summary of the total (loss) gain recognized on other derivative instruments we hold for purposes of both hedging and non-hedging activities, principally TBAs, put and call options for TBAs, Markit IOS total return swaps, short U.S. treasuries, U.S. Treasury futures and inverse interest-only securities during the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands)	**2020**	**2019**
Interest income, net of accretion, on inverse interest-only securities	$ 1,897	$ 1,362
Interest expense on short U.S. treasuries	—	(1,315)
Realized and unrealized net (losses) gains on other derivative instruments [(1)]	(135,365)	104,231
(Loss) gain on other derivative instruments	$ (133,468)	$ 104,278

(1) As these derivative instruments are considered trading instruments, our financial results include both realized and unrealized gains (losses) associated with these instruments.

For further details regarding our use of derivative instruments and related activity, refer to Note 7 - *Derivative Instruments and Hedging Activities* to the condensed consolidated financial statements, included in this Quarterly Report on Form 10-Q.

Other Income

For the three months ended March 31, 2020 and 2019, we recorded other income of $0.8 million and $0.1 million, respectively. The increase in other income for the three months ended March 31, 2020, as compared to the same period in 2019, was driven by gains recognized on sales of other assets, offset by lower dividend income on our FHLB stock due to a decrease in the average balance held.

Expenses

The following table presents the components of expenses, excluding nonrecurring transaction expenses, for the three months ended March 31, 2020 and 2019:

	Three Months Ended March 31,	
(in thousands, except share data)	**2020**	**2019**
Management fees	$ 14,550	$ 12,082
Servicing expenses	$ 19,905	$ 19,912
Other operating expenses:		
Officers' compensation incurred by PRCM Advisers on our behalf and reimbursed by us [1]	$ 1,055	$ 2,629
Other direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us	10,665	10,568
Non-cash equity compensation expenses		
Amortization of executive officers' restricted stock [2]	993	481
Amortization of other restricted stock	1,322	1,380
Total non-cash equity compensation expenses	2,315	1,861
All other operating expenses	1,762	498
Total other operating expenses	$ 15,797	$ 15,556
Annualized other operating expense ratio	1.3%	1.4%
Annualized other operating expense ratio, excluding non-cash equity compensation expenses	1.1%	1.2%

(1) Officers include our principal financial officer and general counsel. We do not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or co-chief investment officers.
(2) Equity based compensation expense related to the amortization of restricted stock awarded to our executive officers, including our chief executive officer, co-chief investment officers, principal financial officer and general counsel.

Management fees are payable to PRCM Advisers, our external manager, under our management agreement. The management fee is calculated based on our stockholders' equity with certain adjustments outlined in the management agreement. In connection with the acquisition of CYS effective July 31, 2018, the management agreement was amended to reduce PRCM Advisers' base management fee with respect to the additional equity under management resulting from the merger to 0.75% from the effective time through the first anniversary of the effective time. Effective July 31, 2019, the management fee reduction on the equity acquired in the CYS transaction expired.

We also incur servicing expenses generally related to the subservicing of MSR and other operating expenses. Servicing expenses during the three months ended March 31, 2020 were relatively consistent with those for the same period in 2019 as a result of lower volume of MSR acquisitions during the three months ended March 31, 2020, offset by an overall larger portfolio during the three months ended March 31, 2020. Included in other operating expenses are direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us, including compensation paid to employees of Pine River serving as our principal financial officer and general counsel. The allocation of compensation paid to employees of Pine River serving as our principal financial officer and general counsel is based on time spent overseeing our activities in accordance with the management agreement; we do not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or co-chief investment officers.

We have direct relationships with the majority of our third-party vendors. We will continue to have certain costs allocated to us by PRCM Advisers for compensation, data services, technology and certain office lease payments, but most of our expenses with third-party vendors are paid directly by us.

Income Taxes

We currently intend to distribute 100% of our REIT taxable income and comply with all requirements to continue to qualify as a REIT. During the three months ended March 31, 2020 and 2019, our TRSs recognized a benefit from income taxes of $13.1 million and $10.0 million, which for both periods was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in our TRSs. We currently intend to distribute 100% of our REIT taxable income and comply with all requirements to continue to qualify as a REIT.

Financial Condition

Available-for-Sale Securities, at Fair Value

Agency RMBS

Our Agency RMBS AFS portfolio is comprised of adjustable rate and fixed rate mortgage-backed securities backed by single-family and multi-family mortgage loans. All of our principal and interest Agency RMBS AFS were Fannie Mae or Freddie Mac mortgage pass-through certificates or collateralized mortgage obligations that carry an implied rating of "AAA," or Ginnie Mae mortgage pass-through certificates, which are backed by the guarantee of the U.S. government. The majority of these securities consist of whole pools in which we own all of the investment interests in the securities.

The tables below summarize certain characteristics of our Agency RMBS AFS at March 31, 2020:

	March 31, 2020								
(dollars in thousands, except purchase price)	Principal/ Current Face	Net (Discount) Premium	Amortized Cost	Allowance for Credit Losses	Unrealized Gain	Unrealized Loss	Carrying Value	Weighted Average Coupon Rate	Weighted Average Purchase Price
P&I securities									
Fixed	$ 16,303,260	$ 764,368	$ 17,067,628	$ —	$ 504,593	$ (1,053)	$ 17,571,168	3.88%	$ 104.97
Hybrid ARM	12,815	581	13,396	—	462	(38)	13,820	6.11%	$ 107.75
Total P&I securities	16,316,075	764,949	17,081,024	—	505,055	(1,091)	17,584,988	3.88%	$ 104.97
Interest-only securities									
Fixed	570,976	42,323	42,323	(187)	4,136	(4,931)	41,341	2.89%	$ 40.01
Fixed Other (1)	1,890,603	115,886	115,886	(32,599)	10,058	(13,015)	80,330	1.67%	$ 8.59
Total	$ 18,777,654	$ 923,158	$ 17,239,233	$ (32,786)	$ 519,249	$ (19,037)	$ 17,706,659		

(1) Fixed Other represents weighted-average coupon interest-only securities that are not generally used for our interest-rate risk management purposes. These securities pay variable coupon interest based on the weighted average of the fixed rates of the underlying loans of the security, less the weighted average rates of the applicable issued P&I securities.

Our three-month average constant prepayment rate, or CPR, experienced by Agency RMBS AFS owned by us as of March 31, 2020 on an annualized basis, was 12.3%.

Non-Agency Securities

Our non-Agency securities portfolio is comprised of tranches of mortgage-backed and asset-backed P&I and interest-only securities. The following table provides investment information on our non-Agency securities as of March 31, 2020:

	March 31, 2020							
(in thousands)	Principal/Current Face	Un-amortized Premium	Accretable Purchase Discount	Amortized Cost	Allowance for Credit Losses	Unrealized Gain	Unrealized Loss	Carrying Value
Senior P&I securities	$ 2,591	$ 8	$ (41)	$ 2,558	$ —	$ 44	$ (9)	$ 2,593
Interest-only securities	3,770,437	37,781	—	37,781	(8,604)	279	(5,649)	23,807
Total	$ 3,773,028	$ 37,789	$ (41)	$ 40,339	$ (8,604)	$ 323	$ (5,658)	$ 26,400

Mortgage Servicing Rights, at Fair Value

One of our wholly owned subsidiaries has approvals from Fannie Mae and Freddie Mac to own and manage MSR, which represent the right to control the servicing of mortgage loans. We do not directly service mortgage loans, and instead contract with appropriately licensed subservicers to handle substantially all servicing functions in the name of the subservicer for the loans underlying our MSR. As of March 31, 2020, our MSR had a fair market value of $1.5 billion.

As of March 31, 2020, our MSR portfolio included MSR on 807,975 loans with an unpaid principal balance of approximately $179.7 billion. The following tables summarize certain characteristics of the loans underlying our MSR by gross weighted average coupon rate types and ranges at March 31, 2020:

	March 31, 2020										
(dollars in thousands)	Number of Loans	Unpaid Principal Balance	Fair Value	% Fannie Mae	Gross Weighted Average Coupon Rate	Weighted Average Loan Age (months)	Weighted Average Original FICO	Weighted Average Original LTV	60+ Day Delinquencies	3-Month CPR	Net Servicing Fee (bps)
30-Year Fixed											
≤ 3.75%	116,156	$ 31,109,032	$ 273,073	69.7%	3.5%	43	771	70.5%	0.1%	11.4%	26.7
> 3.75 - 4.25%	253,260	62,352,958	530,780	63.8%	3.9%	38	760	76.4%	0.2%	16.4%	27.5
> 4.25 - 4.75%	189,552	41,813,862	343,966	64.9%	4.4%	35	745	78.8%	0.3%	26.0%	26.7
> 4.75 - 5.25%	90,724	18,305,575	157,161	66.1%	4.9%	28	731	80.4%	0.5%	29.8%	28.0
> 5.25%	33,733	5,701,928	50,305	70.3%	5.5%	26	709	80.1%	1.0%	26.6%	31.0
	683,425	159,283,355	1,355,285	65.7%	4.1%	37	753	76.5%	0.3%	21.4%	27.3
15-Year Fixed											
≤ 2.75%	2,336	464,708	3,322	80.5%	2.6%	47	778	59.7%	—%	8.1%	26.1
> 2.75 - 3.25%	41,584	7,378,095	52,678	76.8%	3.0%	45	772	61.9%	—%	10.1%	25.9
> 3.25 - 3.75%	41,510	6,607,345	49,641	72.0%	3.4%	39	760	65.0%	0.1%	13.5%	27.8
> 3.75 - 4.25%	21,363	2,987,777	23,610	63.4%	3.9%	33	747	66.0%	0.3%	20.0%	29.7
> 4.25%	11,471	1,376,656	11,329	62.1%	4.5%	25	734	66.4%	0.3%	24.5%	31.4
	118,264	18,814,581	140,580	72.0%	3.4%	39	734	63.9%	0.1%	14.2%	27.6
Total ARMs	6,286	1,616,151	9,298	67.9%	3.6%	44	762	66.2%	0.3%	27.8%	25.2
Total	807,975	$ 179,714,087	$ 1,505,163	66.4%	4.1%	37	754	75.1%	0.3%	19.9%	27.3

Financing

Our borrowings consist primarily of repurchase agreements, FHLB advances, revolving credit facilities and term notes payable. These borrowings are collateralized by our pledge of AFS securities, derivative instruments, MSR and certain cash balances. Substantially all of our Agency RMBS are currently pledged as collateral, and a portion of our non-Agency securities have been pledged as collateral, either through repurchase agreements or FHLB advances.

During the second quarter of 2019, we formed a new trust entity, or the Issuer Trust, for the purpose of financing MSR through securitization. On June 27, 2019, we, through the Issuer Trust, completed an MSR securitization transaction pursuant to which, through two of our wholly owned subsidiaries, MSR is pledged to the Issuer Trust and in return, the Issuer Trust issued (a) an aggregate principal amount of $400.0 million in term notes to qualified institutional buyers and (b) a variable funding note, or VFN, with a maximum principal balance of $1.0 billion to one of the subsidiaries, in each case secured on a pari passu basis. The term notes bear interest at a rate equal to one-month LIBOR plus 2.80% per annum. The term notes will mature on June 25, 2024 or, if extended pursuant to the terms of the related indenture supplement, June 25, 2026 (unless earlier redeemed in accordance with their terms).

Additionally, on January 19, 2017, we closed an underwritten public offering of $287.5 million aggregate principal amount of 6.25% convertible senior notes due 2022. The net proceeds from the offering were approximately $282.2 million after deducting underwriting discounts and estimated offering expenses. The majority of these proceeds were used to help fund our MSR assets, which previously had largely been funded with cash.

At March 31, 2020, borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes had the following characteristics:

(dollars in thousands)	March 31, 2020		
Borrowing Type	Amount Outstanding	Weighted Average Borrowing Rate	Weighted Average Years to Maturity
Repurchase agreements	$ 17,795,516	1.86%	0.1
Federal Home Loan Bank advances	50,000	2.39%	14.6
Revolving credit facilities	252,143	3.49%	0.9
Term notes payable	394,772	3.72%	4.2
Convertible senior notes [(1)]	285,238	6.25%	1.8
Total	$ 18,777,669	1.99%	3.7

(dollars in thousands)	March 31, 2020		
Collateral Type	Amount Outstanding	Weighted Average Borrowing Rate	Weighted Average Haircut on Collateral Value
Agency RMBS	$ 17,788,236	1.86%	4.3%
Non-Agency securities	7,538	2.79%	30.1%
Agency Derivatives	49,742	2.60%	26.4%
Mortgage servicing rights	646,915	3.63%	23.9%
Other [(1)]	285,238	6.25%	NA
Total	$ 18,777,669	1.99%	5.0%

(1) Includes unsecured convertible senior notes paying interest semiannually at a rate of 6.25% per annum on the aggregate principal amount of $287.5 million.

As of March 31, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 6.5:1.0. We believe the current degree of leverage within our portfolio helps ensure that we have access to unused borrowing capacity, thus supporting our liquidity and the strength of our balance sheet.

The following table provides a summary of our borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes, our net TBA notional amounts and our debt-to-equity ratios for the three months ended March 31, 2020, and the four immediately preceding quarters:

(dollars in thousands)

For the Three Months Ended	Quarterly Average	End of Period Balance	Maximum Balance of Any Month-End	End of Period Total Borrowings to Equity Ratio	End of Period Net Long (Short) TBA Notional	End of Period Economic Debt-to-Equity Ratio [(1)]
March 31, 2020	$ 30,142,279	$ 18,777,669	$ 33,225,403	6.5:1.0	$ 1,761,000	7.0:1.0
December 31, 2019	$ 27,619,393	$ 30,336,919	$ 30,336,919	6.1:1.0	$ 7,427,000	7.5:1.0
September 30, 2019	$ 27,349,719	$ 26,596,006	$ 28,168,892	5.3:1.0	$ 9,863,000	7.2:1.0
June 30, 2019	$ 26,640,949	$ 28,896,436	$ 29,132,756	5.9:1.0	$ 9,422,000	7.8:1.0
March 31, 2019	$ 22,661,656	$ 21,254,108	$ 23,685,031	4.5:1.0	$ 10,168,000	6.5:1.0

(1) Defined as total borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes, plus implied debt on net TBA notional, divided by total equity.

Equity

The tables below provide details of our changes in stockholders' equity from December 31, 2019 to March 31, 2020 as well as a reconciliation of comprehensive income and GAAP net income to non-GAAP measures.

(dollars in millions, except per share amounts)	Book Value	Common Shares Outstanding	Common Book Value Per Share
Common stockholders' equity at December 31, 2019	$ 3,969.2	272.9	$ 14.54
Core Earnings, net of tax expense of $2.6 million [(1)]	86.6		
Dividends on preferred stock	(19.0)		
Core Earnings attributable to common stockholders, net of tax expense of $2.6 million [(1)]	67.6		
Realized and unrealized gains and losses, net of tax benefit of $15.8 million	(1,956.2)		
Other comprehensive loss, net of tax	(198.1)		
Preferred stock dividends in arrears	19.0		
Other	2.3	0.7	
Repurchase of common stock	(1.1)	(0.1)	
Issuance of common stock, net of offering costs	0.1	—	
Common stockholders' equity at March 31, 2020	$ 1,902.8	273.5	$ 6.96
Total preferred stock liquidation preference	1,001.3		
Total equity at March 31, 2020	$ 2,904.1		

(in millions)	Three Months Ended March 31, 2020
Comprehensive loss attributable to common stockholders	$ (2,086.7)
Adjustment for other comprehensive loss attributable to common stockholders:	
Unrealized losses on available-for-sale securities	198.1
Net loss attributable to common stockholders	(1,888.6)
Adjustments for non-Core Earnings:	
Realized loss on investment securities	1,035.1
Unrealized loss on investment securities	0.9
Provision for credit losses on investment securities	45.6
Realized and unrealized losses on mortgage servicing rights	511.1
Realized gain on termination or expiration of interest rate swaps, caps and swaptions	(361.8)
Unrealized loss on interest rate swaps, caps and swaptions	599.8
Loss on other derivative instruments	138.8
Other income	(0.7)
Change in servicing reserves	0.2
Non-cash equity compensation expense	2.3
Other nonrecurring expenses	0.7
Net benefit from income taxes on non-Core Earnings	(15.8)
Core Earnings attributable to common stockholders [(1)]	$ 67.6

(1) Core Earnings is a non-U.S. GAAP measure that we define as comprehensive (loss) income attributable to common stockholders, excluding "realized and unrealized gains and losses" (impairment losses, provision for credit losses, realized and unrealized gains and losses on the aggregate portfolio, reserve expense for representation and warranty obligations on MSR, non-cash compensation expense related to restricted common stock and other nonrecurring expenses). As defined, Core Earnings includes net interest income, accrual and settlement of interest on derivatives, dollar roll income on TBAs, servicing income, net of estimated amortization on MSR, management fees and recurring cash related operating expenses. Dollar roll income is the economic equivalent to holding and financing Agency RMBS using short-term repurchase agreements. Core Earnings provides supplemental information to assist investors in analyzing the Company's results of operations and helps facilitate comparisons to industry peers.

Liquidity and Capital Resources

Our liquidity and capital resources are managed and forecasted on a daily basis. We believe this ensures that we have sufficient liquidity to absorb market events that could negatively impact collateral valuations and result in margin calls. We also believe that it gives us the flexibility to manage our portfolio to take advantage of market opportunities.

Our principal sources of cash consist of borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable, payments of principal and interest we receive on our target assets, cash generated from our operating results, and proceeds from capital market transactions. We typically use cash to repay principal and interest on our repurchase agreements, FHLB advances, revolving credit facilities and term notes payable to purchase our target assets, to make dividend payments on our capital stock, and to fund our operations.

On March 21, 2019, we completed a public offering of 18,000,000 shares of our common stock at a price of $13.76 per share. On March 22, 2019, an additional 2,700,000 shares were sold to the underwriters of the offering pursuant to an overallotment option. The net proceeds were approximately $284.5 million, after deducting offering expenses of approximately $0.3 million. To the extent that we raise additional equity capital through capital market transactions, we anticipate using cash proceeds from such transactions to purchase our target assets and for other general corporate purposes.

As of March 31, 2020, we held $1.2 billion in cash and cash equivalents available to support our operations; $19.4 billion of AFS securities, MSR, and derivative assets held at fair value; and $18.8 billion of outstanding debt in the form of repurchase agreements, FHLB advances, borrowings under revolving credit facilities, term notes payable and convertible senior notes. During the three months ended March 31, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, increased from 6.1:1.0 to 6.5:1.0. The increase was driven by the sale of substantially all of our portfolio of non-Agency securities, which are typically funded at much lower advance rates than Agency RMBS (approximately 60% to 80% versus 90% to 97%).

As of March 31, 2020, we held approximately $1.2 million of unpledged Agency securities and derivatives and $18.3 million of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on unpledged securities of approximately $14.4 million. As of March 31, 2020, we held approximately $197.1 million of unpledged MSR. Overall, we had unused borrowing capacity on MSR financing facilities of $1.5 billion, which includes the repurchase facility pursuant to which the Company may finance the VFN issued in connection with the MSR securitization transaction completed on June 27, 2019. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. On a daily basis, we monitor and forecast our available, or excess, liquidity. Additionally, we frequently perform shock analyses against various market events to monitor the adequacy of our excess liquidity. If borrowing rates and/or collateral requirements change in the near term, we believe we are subject to less earnings volatility than a more leveraged organization.

During the three months ended March 31, 2020, we did not experience any material issues accessing our funding sources, although the balance sheet capacity of some counterparties has tightened due to compliance with the Basel III regulatory capital reform rules as well as the management of perceived risk in the current market environment due to the COVID-19 pandemic. We expect ongoing sources of financing to be primarily repurchase agreements, revolving credit facilities, term notes payable, convertible notes and similar financing arrangements. We plan to finance our assets with a moderate amount of leverage, the level of which may vary based upon the particular characteristics of our portfolio and market conditions.

As of March 31, 2020, we had master repurchase agreements in place with 47 counterparties (lenders), the majority of which are U.S. domiciled financial institutions, and we continue to evaluate additional counterparties to manage and optimize counterparty risk. Under our repurchase agreements, we are required to pledge additional assets as collateral to our lenders when the estimated fair value of the existing pledged collateral under such agreements declines and such lenders, through a margin call, demand additional collateral. Lenders generally make margin calls because of a perceived decline in the value of our assets collateralizing the repurchase agreements. This may occur following the monthly principal reduction of assets due to scheduled amortization and prepayments on the underlying mortgages, or may be caused by changes in market interest rates, a perceived decline in the market value of the investments and other market factors. To cover a margin call, we may pledge additional assets or cash. At maturity, any cash on deposit as collateral is generally applied against the repurchase agreement balance, thereby reducing the amount borrowed. Should the value of our assets suddenly decrease, significant margin calls on our repurchase agreements could result, causing an adverse change in our liquidity position.

The following table summarizes our repurchase agreements and counterparty geographical concentration at March 31, 2020 and December 31, 2019:

(dollars in thousands)	March 31, 2020			December 31, 2019		
	Amount Outstanding	Net Counterparty Exposure[(1)]	Percent of Funding	Amount Outstanding	Net Counterparty Exposure[(1)]	Percent of Funding
North America	$ 10,709,359	$ 421,515	52.8%	$ 16,165,067	$ 1,026,474	57.6%
Europe [(2)]	3,558,353	204,083	25.5%	7,519,258	521,804	29.3%
Asia [(2)]	3,527,804	173,246	21.7%	5,463,138	234,180	13.1%
Total	$ 17,795,516	$ 798,844	100.0%	$ 29,147,463	$ 1,782,458	100.0%

(1) Represents the net carrying value of the assets sold under agreements to repurchase, including accrued interest plus any cash or assets on deposit to secure the repurchase obligation, less the amount of the repurchase liability, including accrued interest.
(2) Exposure to European and Asian domiciled banks and their U.S. subsidiaries.

In addition to our master repurchase agreements to fund our Agency and non-Agency securities, we have two repurchase facilities and one revolving credit facility that provide short- and long-term financing for our MSR portfolio. An overview of the facilities is presented in the table below:

(dollars in thousands)

March 31, 2020					
Expiration Date [(1)]	Committed	Amount Outstanding	Unused Capacity	Total Capacity	Eligible Collateral
June 21, 2021	Yes [(2)]	$ —	$ 1,000,000	$ 1,000,000	Mortgage servicing rights [(3)]
December 1, 2020	Yes [(2)]	$ —	$ 400,000	$ 400,000	Mortgage servicing rights [(4)]
March 12, 2021	Yes [(2)]	$ 252,143	$ 97,857	$ 350,000	Mortgage servicing rights

(1) The facilities are set to mature on the stated expiration date, unless extended pursuant to their terms.
(2) Commitment fee charged on unused capacity.
(3) This repurchase facility is secured by the VFN issued in connection with the MSR securitization transaction completed on June 27, 2019, which is collateralized by our MSR.
(4) This repurchase facility is secured by MSR notes, which are collateralized by our MSR.

Our wholly owned subsidiary, TH Insurance, is a member of the FHLB. As a member of the FHLB, TH Insurance has access to a variety of products and services offered by the FHLB, including secured advances. As of March 31, 2020, TH Insurance had $50.0 million in outstanding secured advances with a weighted average borrowing rate of 2.39%.

The ability to borrow from the FHLB is subject to our continued creditworthiness, pledging of sufficient eligible collateral to secure advances, and compliance with certain agreements with the FHLB. Each advance requires approval by the FHLB and is secured by collateral in accordance with the FHLB's credit and collateral guidelines, as may be revised from time to time by the FHLB. Eligible collateral may include Agency RMBS and certain non-Agency securities with a rating of A and above.

In January 2016, the FHFA released a final rule regarding membership in the Federal Home Loan Bank system. Among other effects, the final rule excludes captive insurers from membership eligibility, including our subsidiary member, TH Insurance. Since TH Insurance was admitted as a member in 2013, it is eligible for a membership grace period that runs through February 19, 2021, during which new advances or renewals that mature beyond the grace period will be prohibited; however, any existing advances that mature beyond this grace period will be permitted to remain in place subject to their terms insofar as we maintain good standing with the FHLB. If any new advances or renewals occur, TH Insurance's outstanding advances will be limited to 40% of its total assets.

On April 15, 2020, we received notification from the FHLB that TH Insurance's credit limit for new advances had been reduced to zero pending the FHLB's review of our updated financial information as of March 31, 2020.

We are subject to a variety of financial covenants under our lending agreements. The following represent the most restrictive financial covenants across the agreements as of March 31, 2020:

- Total indebtedness to tangible net worth must be less than 8.0:1.0. As of March 31, 2020, our total indebtedness to tangible net worth, as defined, was 6.6:1.0.
- Cash liquidity must be greater than $100.0 million. As of March 31, 2020, our liquidity, as defined, was $1.2 billion.
- Net worth must be greater than $1.5 billion or 50% of the highest net worth during the 24 calendar months prior, whichever is higher. As of March 31, 2020, 50% of the highest net worth during the 24 calendar months prior was $2.6 billion and our net worth, as defined, was $2.9 billion.

We are also subject to additional financial covenants in connection with various other agreements we enter into in the normal course of our business. We intend to continue to operate in a manner which complies with all of our financial covenants. The actions taken during the quarter to raise excess liquidity and de-risk our portfolio resulted in large realized losses and a corresponding decline in book value. As a result, we obtained waivers from certain counterparties for covenants that were based on a percentage decline in total stockholders' equity.

The following table summarizes assets at carrying values that were pledged or restricted as collateral for the future payment obligations of repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and derivative instruments at March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020	December 31, 2019
Available-for-sale securities, at fair value	$ 17,713,597	$ 29,802,456
Mortgage servicing rights, at fair value	1,308,017	1,554,825
Restricted cash	302,779	919,010
Due from counterparties	43,794	102,365
Derivative assets, at fair value	73,221	68,874
Total	$ 19,441,408	$ 32,447,530

Although we generally intend to hold our target assets as long-term investments, we may sell certain of our assets in order to manage our interest rate risk and liquidity needs, to meet other operating objectives and to adapt to market conditions. Our Agency RMBS and non-Agency securities are generally actively traded and thus, in most circumstances, readily liquid. However, certain of our assets, including MSR, are subject to longer trade timelines, and, as a result, market conditions could significantly and adversely affect the liquidity of our assets. Any illiquidity of our assets may make it difficult for us to sell such assets if the need or desire arises. Our ability to quickly sell certain assets, such as MSR may be limited by delays encountered while obtaining certain regulatory approvals required for such dispositions and may be further limited by delays due to the time period needed for negotiating transaction documents, conducting diligence, and complying with regulatory requirements regarding the transfer of such assets before settlement may occur. Consequently, even if we identify a buyer for our MSR, there is no assurance that we would be able to quickly sell such assets if the need or desire arises.

In addition, if we are required to liquidate all or a portion of our portfolio quickly, we may realize significantly less than the value at which we previously recorded our assets. Assets that are illiquid are more difficult to finance, and to the extent that we use leverage to finance assets that become illiquid, we may lose that leverage or have it reduced. Assets tend to become less liquid during times of financial stress, which is often the time that liquidity is most needed. As a result, our ability to sell assets or vary our portfolio in response to changes in economic and other conditions may be limited by liquidity constraints, which could adversely affect our results of operations and financial condition.

We cannot predict the timing and impact of future sales of our assets, if any. Because many of our assets are financed with repurchase agreements, FHLB advances, revolving credit facilities and term notes payable, a significant portion of the proceeds from sales of our assets (if any), prepayments and scheduled amortization are used to repay balances under these financing sources.

The following table provides the maturities of our repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes as of March 31, 2020 and December 31, 2019:

(in thousands)	March 31, 2020	December 31, 2019
Within 30 days	$ 6,138,218	$ 5,465,916
30 to 59 days	6,034,454	6,300,372
60 to 89 days	2,046,509	6,687,285
90 to 119 days	1,722,924	4,740,217
120 to 364 days	2,105,554	6,113,673
One to three years	285,238	584,954
Three to five years	394,772	394,502
Five to ten years	—	—
Ten years and over	50,000	50,000
Total	$ 18,777,669	$ 30,336,919

For the three months ended March 31, 2020, our restricted and unrestricted cash balance increased approximately $270.5 million to $1.9 billion at March 31, 2020. The cash movements can be summarized by the following:

- *Cash flows from operating activities.* For the three months ended March 31, 2020, operating activities increased our cash balances by approximately $100.2 million, primarily driven by our financial results for the quarter.
- *Cash flows from investing activities*. For the three months ended March 31, 2020, investing activities increased our cash balances by approximately $10.8 billion, primarily driven by sales, net of purchases, and principal payments received on AFS securities, offset by net payments for reverse repurchase agreements.
- *Cash flows from financing activities.* For the three months ended March 31, 2020, financing activities decreased our cash balance by approximately $10.6 billion, primarily driven by decreased repurchase agreements on AFS securities sales.

Inflation

Substantially all of our assets and liabilities are financial in nature. As a result, changes in interest rates and other factors impact our performance far more than does inflation. Our financial statements are prepared in accordance with U.S. GAAP and dividends are based upon net ordinary income and capital gains as calculated for tax purposes; in each case, our results of operations and reported assets, liabilities and equity are measured with reference to historical cost or fair value without considering inflation.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We seek to manage our risks related to the credit quality of our assets, interest rates, liquidity, prepayment speeds and market value while providing an opportunity to stockholders to realize attractive risk-adjusted total return through ownership of our capital stock. Although we do not seek to avoid risk completely, we believe that risk can be quantified from historical experience, and we seek to manage our risk levels in order to earn sufficient compensation to justify the risks we undertake and to maintain capital levels consistent with taking such risks.

To reduce the risks to our portfolio, we employ portfolio-wide and asset-specific risk measurement and management processes in our daily operations. Risk management tools include software and services licensed or purchased from third parties as well as proprietary and third-party analytical tools and models. There can be no guarantee that these tools and methods will protect us from market risks.

Interest Rate Risk

Interest rates are highly sensitive to many factors, including fiscal and monetary policies and domestic and international economic and political considerations, as well as other factors beyond our control. We are subject to interest rate risk in connection with our assets and related financing obligations. Subject to maintaining our qualification as a REIT, we engage in a variety of interest rate management techniques that seek to mitigate the influence of interest rate changes on the values of our assets.

We may enter into a variety of derivative and non-derivative instruments to economically hedge interest rate risk or "duration mismatch (or gap)" by adjusting the duration of our floating-rate borrowings into fixed-rate borrowings to more closely match the duration of our assets. This particularly applies to borrowing agreements with maturities or interest rate resets of less than six months. Typically, the interest receivable terms (*i.e.*, LIBOR) of certain derivatives match the terms of the underlying debt, resulting in an effective conversion of the rate of the related borrowing agreement from floating to fixed. The objective is to manage the cash flows associated with current and anticipated interest payments on borrowings, as well as the ability to roll or refinance borrowings at the desired amount by adjusting the duration. To help manage the adverse impact of interest rate changes on the value of our portfolio as well as our cash flows, we may, at times, enter into various forward contracts, including short securities, Agency to-be-announced securities, or TBAs, options, futures, swaps, caps, credit default swaps and total return swaps. In executing on the Company's current interest rate risk management strategy, the Company has entered into TBAs, interest rate swap and swaption agreements and U.S. Treasury futures. In addition, because MSR are negative duration assets, they provide a hedge to interest rate exposure on our Agency RMBS portfolio. In hedging interest rate risk, we seek to reduce the risk of losses on the value of our investments that may result from changes in interest rates in the broader markets, improve risk-adjusted returns and, where possible, obtain a favorable spread between the yield on our assets and the cost of our financing.

Income of a REIT arising from "clearly identified" hedging transactions that are entered into to manage the risk of interest rate or price changes with respect to borrowings, including gain from the disposition of such hedging transactions, to the extent the hedging transactions hedge indebtedness incurred, or to be incurred, by the REIT to acquire or carry real estate assets, will not be treated as gross income for purposes of either the 75% or the 95% gross income tests. In general, for a hedging transaction to be "clearly identified," (i) it must be identified as a hedging transaction before the end of the day on which it is acquired, originated, or entered into; and (ii) the items of risks being hedged must be identified "substantially contemporaneously" with entering into the hedging transaction (generally not more than 35 days after entering into the hedging transaction). We intend to structure any hedging transactions in a manner that does not jeopardize our qualification as a REIT, although this determination depends on an analysis of the facts and circumstances concerning each hedging transaction. We also implement part of our hedging strategy through our TRSs, which are subject to U.S. federal, state and, if applicable, local income tax.

We intend to treat our TBAs as qualifying assets for purposes of the 75% asset test, to the extent set forth in an opinion from Sidley Austin LLP substantially to the effect that, for purposes of the 75% asset test, our ownership of a TBA should be treated as ownership of the underlying Agency RMBS, and to treat income and gains from our TBAs as qualifying income for purposes of the 75% gross income test, to the extent set forth in an opinion from Sidley Austin LLP substantially to the effect that, for purposes of the 75% gross income test, any gain recognized by us in connection with the settlement of our TBAs should be treated as gain from the sale or disposition of the underlying Agency RMBS.

Interest Rate Effect on Net Interest Income

Our operating results depend in large part on differences between the income earned on our assets and our cost of borrowing and hedging activities. The costs associated with our borrowings are generally based on prevailing market interest rates. During a period of rising interest rates, our borrowing costs generally will increase while the coupon interest earned on our existing portfolio of leveraged fixed-rate Agency RMBS and non-Agency securities will remain static. Moreover, interest rates may rise at a faster pace than the yields earned on our leveraged adjustable-rate and hybrid securities. Both of these factors could result in a decline in our net interest spread and net interest margin. The inverse result may occur during a period of falling interest rates. The severity of any such decline or increase in our net interest spread and net interest margin would depend on our asset/liability composition at the time, as well as the magnitude and duration of the interest rate increase or decrease. Additionally, an increase in short-term interest rates could have a negative impact on the market value of our target assets, while a decrease in short-term interest rates could have a positive impact on the market value of our target assets. Any resulting negative impact to net income could adversely affect our liquidity and results of operations.

Our hedging techniques are partly based on assumed levels of prepayments of our target assets. If prepayments are slower or faster than assumed, the life of the investment will be longer or shorter, which could reduce the effectiveness of any hedging strategies we may use and may cause losses on such transactions. Hedging strategies involving the use of derivative securities are highly complex and may produce volatile returns.

We acquire adjustable-rate and hybrid Agency RMBS and non-Agency securities. These are assets in which some of the underlying mortgages are typically subject to periodic and lifetime interest rate caps and floors, which may limit the amount by which the security's interest yield may change during any given period. However, our borrowing costs pursuant to our financing agreements are not subject to similar restrictions. Therefore, in a period of increasing interest rates, interest rate costs on our borrowings could increase without limitation, while the interest-rate yields on our adjustable-rate and hybrid securities could effectively be limited by caps. This issue will be magnified to the extent we acquire adjustable-rate and hybrid securities that are not based on mortgages that are fully indexed. In addition, adjustable-rate and hybrid securities may be subject to periodic payment caps that result in some portion of the interest being deferred and added to the principal outstanding. If this happens, we could receive less cash income on such assets than we would need to pay for interest costs on our related borrowings. These factors could lower our net interest income or cause a net loss during periods of rising interest rates, which would harm our financial condition, cash flows and results of operations.

Interest Rate Mismatch Risk

We fund the majority of our adjustable-rate and hybrid Agency RMBS and non-Agency securities with borrowings that are based on LIBOR, while the interest rates on these assets may be indexed to other index rates, such as the one-year Constant Maturity Treasury index, or CMT, the Monthly Treasury Average index, or MTA, or the 11th District Cost of Funds Index, or COFI. Accordingly, any increase in LIBOR relative to these indices may result in an increase in our borrowing costs that is not matched by a corresponding increase in the interest earnings on these assets. Any such interest rate index mismatch could adversely affect our profitability, which may negatively impact distributions to our stockholders. To mitigate interest rate mismatches, we utilize the hedging strategies discussed above.

The following table provides the indices of our variable rate Agency RMBS and non-Agency securities as of March 31, 2020 and December 31, 2019, respectively, based on carrying value (dollars in thousands).

	March 31, 2020				December 31, 2019			
Index Type	**Floating**	**Hybrid (1)**	**Total**	**Index %**	**Floating**	**Hybrid (1)**	**Total**	**Index %**
CMT	$ —	$ 11,316	$ 11,316	8%	$ —	$ 11,884	$ 11,884	—%
LIBOR	109,644	1,300	110,944	71%	3,247,387	8,400	3,255,787	94%
Other (2)	14,516	18,446	32,962	21%	44,824	164,635	209,459	6%
Total	$ 124,160	$ 31,062	$ 155,222	100%	$ 3,292,211	$ 184,919	$ 3,477,130	100%

(1) "Hybrid" amounts reflect those assets with greater than twelve months to reset.
(2) "Other" includes COFI, MTA and other indices.

The following analyses of risks are based on our experience, estimates, models and assumptions. The analysis is based on models which utilize estimates of fair value and interest rate sensitivity. Actual economic conditions or implementation of decisions may produce results that differ significantly from the estimates and assumptions used in our models.

We perform interest rate sensitivity analyses on various measures of our financial results and condition by examining how our assets, financing, and hedges will perform in various interest rate "shock" scenarios. Two of these measures are presented below in more detail. The first measure is change in annualized net interest income over the next 12 months, including interest spread from our interest rate swaps and caps and float income from custodial accounts associated with our MSR. The second measure is change in value of financial position, including the value of our derivative assets and liabilities. All changes in value are measured as the change from the March 31, 2020 financial position. All projected changes in annualized net interest income are measured as the change from the projected annualized net interest income based off current performance returns.

Computation of the cash flows for the rate-sensitive assets underpinning change in annualized net interest income are based on assumptions related to, among other things, prepayment speeds, yield on future acquisitions, slope of the yield curve, and size of the portfolio. (The assumption for prepayment speeds for Agency RMBS, non-Agency securities, and MSR, for example, is that they do not change in response to changes in interest rates.) Assumptions for the interest rate sensitive liabilities relate to, among other things, collateral requirements as a percentage of borrowings and amount/term of borrowing. These assumptions may not hold in practice; realized net interest income results may therefore be significantly different from the net interest income produced in scenario analyses. We also note that the uncertainty associated with the estimate of a change in net interest income is directly related to the size of interest rate move considered.

Computation of results for portfolio value involves a two-step process. The first is the use of models to project how the value of interest rate sensitive instruments will change in the scenarios considered. The second, and equally important, step is the improvement of the model projections based on application of our experience in assessing how current market and macroeconomic conditions will affect the prices of various interest rate sensitive instruments. Judgment is best applied to localized (less than 25 basis points, or bps) interest rate moves. The more an instantaneous interest rate move exceeds 25 bps, the greater the likelihood that accompanying market events are significant enough to warrant reconsideration of interest rate sensitivities. As with net interest income, the uncertainty associated with the estimate of change in portfolio value is therefore directly related to the size of interest rate move considered.

The following interest rate sensitivity table displays the potential impact of instantaneous, parallel changes in interest rates of +/- 25 and +/- 50 bps on annualized net interest income and portfolio value, based on our interest sensitive financial instruments at March 31, 2020. The preceding discussion shows that the results for the 25 bps move scenarios are the best representation of our interest rate exposure, followed by those for the 50 bps move scenarios. This hierarchy reflects our localized approach to managing interest rate risk: monitoring rates and rebalancing our hedges on a day to day basis, where rate moves only rarely exceed 25 bps in either direction.

	Changes in Interest Rates			
(dollars in thousands)	**-50 bps**	**-25 bps**	**+25 bps**	**+50 bps**
Change in annualized net interest income [(1)]:	$ 39,819	$ 19,883	$ (19,900)	$ (39,800)
% change in net interest income [(1)]	*13.7 %*	*6.8 %*	*(6.9)%*	*(13.7)%*
Change in value of financial position:				
Available-for-sale securities	$ 142,569	$ 76,238	$ (87,132)	$ (186,502)
As a % of common equity	*7.5 %*	*4.0 %*	*(4.6)%*	*(9.8)%*
Mortgage servicing rights	$ (230,075)	$ (119,471)	$ 127,175	$ 260,332
As a % of common equity	*(12.1)%*	*(6.3)%*	*6.7 %*	*13.7 %*
Derivatives, net	$ 84,685	$ 41,744	$ (55,287)	$ (114,613)
As a % of common equity	*4.5 %*	*2.2 %*	*(2.9)%*	*(6.0)%*
Reverse repurchase agreements	$ 31	$ 15	$ (15)	$ (31)
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Repurchase agreements	$ (13,665)	$ (6,833)	$ 6,833	$ 13,665
As a % of common equity	*(0.7)%*	*(0.4)%*	*0.4 %*	*0.7 %*
Federal Home Loan Bank advances	$ (10)	$ (5)	$ 5	$ 10
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Revolving credit facilities	$ (53)	$ (26)	$ 26	$ 53
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Term notes payable	$ (976)	$ (486)	$ 481	$ 958
As a % of common equity	*(0.1)%*	*— %*	*— %*	*0.1 %*
Convertible senior notes	$ (2,284)	$ (1,139)	$ 1,132	$ 2,259
As a % of common equity	*(0.1)%*	*(0.1)%*	*0.1 %*	*0.1 %*
Total Net Assets	$ (19,778)	$ (9,963)	$ (6,782)	$ (23,869)
As a % of total assets	*(0.1)%*	*— %*	*— %*	*(0.1)%*
As a % of common equity	(1.0)%	(0.5)%	(0.4)%	(1.3)%

(1) Amounts include the effect of interest spread from our interest rate swaps and caps and float income from custodial accounts associated with our MSR, but do not reflect any potential changes to dollar roll income associated with our TBA positions, which are accounted for as derivative instruments in accordance with U.S. GAAP.

Certain assumptions have been made in connection with the calculation of the information set forth in the foregoing interest rate sensitivity table and, as such, there can be no assurance that assumed events will occur or that other events will not occur that would affect the outcomes. The base interest rate scenario assumes interest rates at March 31, 2020. As discussed, the analysis utilizes assumptions and estimates based on our experience and judgment. Furthermore, future purchases and sales of assets could materially change our interest rate risk profile.

The information set forth in the interest rate sensitivity table above and all related disclosures constitutes forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. While this table reflects the estimated impact of interest rate changes on the static portfolio, we actively manage our portfolio and continuously make adjustments to the size and composition of our asset and hedge portfolio. Actual results could differ significantly from those estimated in the foregoing interest rate sensitivity table.

Prepayment Risk

Prepayment risk is the risk that principal will be repaid at a different rate than anticipated. As we receive prepayments of principal on our Agency RMBS and non-Agency securities, premiums paid on such assets will be amortized against interest income. In general, an increase in prepayment rates will accelerate the amortization of purchase premiums, thereby reducing the interest income earned on the assets. Conversely, discounts on such assets are accreted into interest income. In general, an increase in prepayment rates will accelerate the accretion of purchase discounts, thereby increasing the interest income earned on the assets.

We believe that we will be able to reinvest proceeds from scheduled principal payments and prepayments at acceptable yields; however, no assurances can be given that, should significant prepayments occur, market conditions would be such that acceptable investments could be identified and the proceeds timely reinvested.

MSR are also subject to prepayment risk in that, generally, an increase in prepayment rates would result in a decline in value of the MSR.

Market Risk

Market Value Risk. Our AFS securities are reflected at their estimated fair value, with the difference between amortized cost net of allowance for credit losses and estimated fair value for all AFS securities except Agency interest-only securities reflected in accumulated other comprehensive income. The estimated fair value of these securities fluctuates primarily due to changes in interest rates, market valuation of credit risks, and other factors. Generally, in a rising interest rate environment, we would expect the fair value of these securities to decrease; conversely, in a decreasing interest rate environment, we would expect the fair value of these securities to increase. As market volatility increases or liquidity decreases, the fair value of our assets may be adversely impacted.

Our MSR are reflected at their estimated fair value. The estimated fair value fluctuates primarily due to changes in interest rates and other factors. Generally, in a rising interest rate environment, we would expect prepayments to decrease, resulting in an increase in the fair value of our MSR. Conversely, in a decreasing interest rate environment, we would expect prepayments to increase, resulting in a decline in fair value.

Real estate risk. Residential property values are subject to volatility and may be affected adversely by a number of factors, including national, regional and local economic conditions; local real estate conditions (such as the supply of housing); changes or continued weakness in specific industry segments; construction quality, age and design; demographic factors; retroactive changes to building or similar codes; and natural disasters and other catastrophes. Decreases in property values reduce the value of the collateral for residential mortgage loans and the potential proceeds available to borrowers to repay the loans, which could cause us to suffer losses on our non-Agency securities and may increase costs to service the residential mortgage loans underlying our MSR.

Liquidity Risk

Our liquidity risk is principally associated with our financing of long-maturity assets with shorter-term borrowings in the form of repurchase agreements and borrowings under revolving credit facilities. Although the interest rate adjustments of these assets and liabilities fall within the guidelines established by our operating policies, maturities are not required to be, nor are they, matched.

Should the value of our assets pledged as collateral suddenly decrease, lender margin calls could increase, causing an adverse change in our liquidity position. Moreover, the portfolio construction of MSR, which generally have negative duration, combined with levered RMBS, which generally have positive duration, may in certain market scenarios lead to variation margin calls, which could negatively impact our excess cash position. Additionally, if one or more of our repurchase agreement or revolving credit facility counterparties chose not to provide ongoing funding, our ability to finance would decline or exist at possibly less advantageous terms. As such, we cannot assure that we will always be able to roll over our repurchase agreements and revolving credit facilities. See Item 2, "*Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources*" in this Quarterly Report on 10-Q 10-K for further information about our liquidity and capital resource management.

Certain mortgage loan forbearance programs were announced in connection with the CARES Act. As the servicer of record for the MSR assets in our portfolio, we may be responsible for continuing to advance principal, interest, taxes and insurance on mortgage loans that are in forbearance, delinquency or default. Although the potential aggregate size of the servicing advance obligation is not known, at this time we believe we will be well positioned from a liquidity standpoint, through a combination of excess cash and financing facilities, to continue to make servicing advances in the future. This is a situation we are

monitoring closely and are focused on evaluating the ability of additional funding options, including servicing advance facilities.

Credit Risk

We believe that our investment strategy will generally keep our risk of credit losses low to moderate. However, we retain the risk of potential credit losses on all of the loans underlying on our remaining non-Agency securities.

Item 4. Controls and Procedures

A review and evaluation was performed by our management, including our Chief Executive Officer, or CEO, and Chief Financial Officer, or CFO, of the effectiveness of our disclosure controls and procedures (as such term is defined in Rule 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on that review and evaluation, the CEO and CFO have concluded that our current disclosure controls and procedures, as designed and implemented, were effective as of March 31, 2020. Although our CEO and CFO have determined our disclosure controls and procedures were effective at the end of the period covered by this Quarterly Report on Form 10-Q, a control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that it will detect or uncover failures within the Company to disclose material information otherwise required to be set forth in the reports we submit under the Exchange Act.

There was no change in our internal control over financial reporting that occurred during the quarter ended March 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

From time to time we may be involved in various legal claims and/or administrative proceedings that arise in the ordinary course of our business. As of the date of this filing, we are not party to any litigation or legal proceedings or, to the best of our knowledge, any threatened litigation or legal proceedings, which, in our opinion, individually or in the aggregate, would have a material adverse effect on our results of operations or financial condition.

Item 1A. Risk Factors

Except as set forth below, there have been no material changes to the risk factors set forth under the heading "Item 1A. Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2019, or the Form 10-K. The materialization of any risks and uncertainties identified in our Forward-Looking Statements contained in this Quarterly Report on Form 10-Q, together with those previously disclosed in the Form 10-K or those that are presently unforeseen could result in significant adverse effects on our financial condition, results of operations, and cash flows. See Item 2, "*Management's Discussion and Analysis of Financial Condition and Results of Operations - Forward-Looking Statements*" in this Quarterly Report on Form 10-Q.

Risks Related to the Termination of our Management Agreement with PRCM Advisers LLC

We may not be able to fully realize the expected benefits of our planned transition to a self-managed company or the ability to realize such benefits may take longer than anticipated.

On April 13, 2020, we announced that we have elected not to renew our management agreement with PRCM Advisers LLC. As a result, the management agreement will terminate and we will be required to pay a termination fee, currently estimated to be $144 million, on September 19, 2020. Thereafter, we will become a self-managed company. We believe that the non-renewal of the management agreement, elimination of the annual management fee, and the transition to a self-management structure will result in material benefits to our stockholders, including substantial cost savings, the potential for enhanced returns on future capital growth, strengthened alignment of interests between management and stockholders and the potential to attract new institutional investors.

Our ability to execute the smooth and timely transition of all functions necessary to operate our business and to fully and timely realize the anticipated benefits of this transition is subject to various risks. Certain risks that may adversely impact the process include: the inability to successfully retain our senior management team and other personnel who currently support our business and operations; the adverse impact of the termination fee payment on our liquidity position; unforeseen or higher than anticipated expenses following the transition; potential disruptions to our ordinary course operations, financing and vendor relationships and internal procedures; and the diversion of management's attention caused by the transition process. The failure to manage the transition process efficiently and effectively, including the failure to smoothly transition services or retain our dedicated personnel, could result in the anticipated benefits of the transition not being realized in the timeframe currently anticipated or at all.

There is no guarantee that members of our senior management team and other dedicated personnel will remain employed or engaged by us following the termination of the management agreement.

We currently depend on Pine River to provide us with our executives and employees to administer our business activities and day-to-day operations. Following the termination of the management agreement, we expect to retain and continue to be managed by our senior management team along with the other dedicated personnel currently providing services to us. While our Board of Directors intends to extend offers of employment to our current personnel, there can be no assurance that all such personnel will accept employment with us. As is presently the case under our management agreement with PRCM Advisers LLC, the departure or the loss of the services of members of our senior management team or other dedicated personnel, whether as a result of or following the transition to a self-managed company, could have a material adverse effect on our financial condition, results of operations and ability to effectively operate our business.

We may be exposed to risks to which we have not historically been exposed.

Our transition to a self-managed company will expose us to risks to which we have not historically been exposed. Currently, we do not directly employ any employees. As a result of the transition, we will become a direct employer, and we will be subject to potential liabilities commonly faced by employers, such as workers' disability and compensation claims, potential labor disputes and other employee-related liabilities and grievances. We will also bear the responsibility for implementing and maintaining health, retirement, and similar benefit plans for our employees. There may also be other unforeseen costs, expenses, responsibilities and difficulties associated with operating as a self-managed company.

Risks Related to the COVID-19 Pandemic

The COVID-19 pandemic, measures intended to prevent its spread and government actions to mitigate its economic impact could have a material adverse effect on our business, results of operations and financial condition.

The novel coronavirus (COVID-19) pandemic is causing significant disruptions to the U.S. and global economies and has contributed to volatility and negative pressure in financial markets. The outbreak has led governments and other authorities around the world to impose measures intended to control its spread, including restrictions on freedom of movement and business operations such as travel bans, border closings, business closures, quarantines and shelter-in-place orders. The impact of the pandemic and measures to prevent its spread have negatively impacted and could further negatively impact our business. Recently, we have experienced declines in the value of our target assets as well as adverse developments with respect to the cost and terms of financing available to us. Additionally, we expect over the near and long term that the economic impacts of pandemic will impact the financial stability of the mortgage loan borrowers underlying the RMBS and MSR assets that we own and, as a result, anticipate that the number of borrowers who become delinquent or default on their loans may increase significantly. Elevated levels of delinquency or default would have an adverse impact on the value of our RMBS and MSR assets, as well as increase the cost to service our MSR assets. To the extent current conditions persist or worsen, we expect there to be a negative effect on our results of operations, which may reduce earnings and, in turn, cash available for distribution to our stockholders.

In response to the pandemic, the U.S. government has taken various actions to support the economy and the continued functioning of the financial markets. The Federal Reserve has announced its commitment to purchase unlimited amounts of U.S. Treasuries, mortgage-backed securities, municipal bonds and other assets. In addition, President Trump signed into law the CARES Act, which will provide billions of dollars of relief to individuals, businesses, state and local governments, and the health care system suffering the impact of the pandemic, including mortgage loan forbearance and modification programs to qualifying borrowers who have difficulty making their loan payments. Under applicable Fannie Mae and Freddie Mac policies and guidelines, in these cases we are required to make certain servicing advances on the MSR assets we own (e.g., principal, interest, tax and insurance payments) and may be responsible for bearing the burden of funding these advances for extended periods of time before receiving reimbursement from Fannie Mae and Freddie Mac. In April 2020, the Federal Housing Finance Agency, or FHFA, announced the alignment of Fannie Mae's and Freddie Mac's policies regarding servicer obligations to advance scheduled monthly principal and interest payments for single-family mortgage loans, confirming that once a servicer has advanced four months of missed payments on a loan it will have no further obligation to advance scheduled payments, The FHFA also announced that it will allow Fannie Mae and Freddie Mac to begin purchasing certain loans that go into forbearance. Notwithstanding these actions, it is possible that the impact and cost of the servicing advances required to be borne by us, could have material adverse consequences on our liquidity and financial condition.

There can be no assurance as to how, in the long term, these and other actions by the U.S. government will affect the efficiency, liquidity and stability of the financial and mortgage markets. To the extent the financial or mortgage markets do not respond favorably to any of these actions, or such actions do not function as intended, our business may be harmed.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

(a) None.

(b) None.

(c) The Company's share repurchase program allows for the repurchase of up to an aggregate of 37,500,000 shares of the Company's common stock. Shares may be repurchased from time to time through privately negotiated transactions or open market transactions, pursuant to a trading plan in accordance with Rules 10b5-1 and 10b-18 under the Exchange Act or by any combination of such methods. The manner, price, number and timing of share repurchases are subject to a variety of factors, including market conditions and applicable SEC rules. The share repurchase program does not require the purchase of any minimum number of shares, and, subject to SEC rules, purchases may be commenced or suspended at any time without prior notice. The share repurchase program does not have an expiration date. As of March 31, 2020, we had repurchased 12,174,300 shares under the program for a total cost of $201.5 million.

The following table reflects purchases under the plan during the three months ended March 31, 2020:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans of Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
January 1, 2020 through January 31, 2020	—	$ —	—	25,431,000
February 1, 2020 through February 29, 2020	—	—	—	25,431,000
March 1, 2020 through March 31, 2020	105,300	10.09	105,300	25,325,700
Total	105,300	$ 10.09	105,300	25,325,700

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

Item 6. Exhibits

(a) Exhibits

A list of exhibits to this Quarterly Report on Form 10-Q is set forth below.

Exhibit Number	Exhibit Description
3.1	Articles of Amendment and Restatement of Two Harbors Investment Corp. (incorporated by reference to Exhibit 99.1 to Annex B filed with Amendment No. 4).
3.2	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 19, 2012).
3.3	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp., effective as of 5:01 PM Eastern Time on November 1, 2017 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 2, 2017).
3.4	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp., effective as of 5:02 PM Eastern Time on November 1, 2017 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on November 2, 2017).
3.5	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 8.125% Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.3 of the Registrant's Form 8-A filed with the SEC on March 13, 2017).
3.6	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.625% Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.4 of the Registrant's Form 8-A filed with the SEC on July 17, 2017).
3.7	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.25% Series C Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.7 of the Registrant's Form 8-A filed with the SEC on November 22, 2017).
3.8	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.75% Series D Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.8 of the Registrant's Form 8-A filed with the SEC on July 31, 2018).
3.9	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.50% Series E Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.9 of the Registrant's Form 8-A filed with the SEC on July 31, 2018).
3.10	Amended and Restated Bylaws of Two Harbors Investment Corp. (incorporated by reference to Exhibit 3.4 to the Registrant's Current Report on Form 8-K filed with the SEC on April 6, 2017).
31.1	Certification of the Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
31.2	Certification of the Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
32.1	Certification of the Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. (furnished herewith)
32.2	Certification of the Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. (furnished herewith)
101	Financial statements from the Quarterly Report on Form 10-Q of Two Harbors Investment Corp. for the three months ended March 31, 2020, filed with the SEC on May 8, 2020, formatted in Inline XBRL: (i) the Condensed Consolidated Balance Sheets, (ii) the Condensed Consolidated Statements of Comprehensive (Loss) Income, (iii) the Condensed Consolidated Statements of Stockholders' Equity, (iv) the Condensed Consolidated Statements of Cash Flows, and (v) the Notes to the Condensed Consolidated Financial Statements. (filed herewith)
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101). (filed herewith)

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

			TWO HARBORS INVESTMENT CORP.
Dated:	May 8, 2020	By:	/s/ Thomas E. Siering
			Thomas E. Siering Chief Executive Officer, President and Director (Principal Executive Officer)
Dated:	May 8, 2020	By:	/s/ Mary Riskey
			Mary Riskey Chief Financial Officer (Principal Financial and Accounting Officer)

EXHIBIT 31.1

CHIEF EXECUTIVE OFFICER CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Thomas E. Siering, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Two Harbors Investment Corp.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 8, 2020

/s/ Thomas E. Siering
Thomas E. Siering
Chief Executive Officer and President

EXHIBIT 31.2

CHIEF FINANCIAL OFFICER CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mary Riskey, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Two Harbors Investment Corp.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 8, 2020

/s/ Mary Riskey

Mary Riskey
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned officer of Two Harbors Investment Corp. (the “Registrant”) hereby certifies that the Registrant’s Quarterly Report on Form 10-Q for the three months ended March 31, 2020 (the “Quarterly Report”) fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date: May 8, 2020

/s/ Thomas E. Siering

Thomas E. Siering
Chief Executive Officer and President

The foregoing certification is being furnished solely pursuant to 18 U.S.C. §1350 and is not being filed as part of the Quarterly Report or as a separate disclosure document.

EXHIBIT 32.2

CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned officer of Two Harbors Investment Corp. (the “Registrant”) hereby certifies that the Registrant’s Quarterly Report on Form 10-Q for the three months ended March 31, 2020 (the “Quarterly Report”) fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Quarterly Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date: May 8, 2020

/s/ Mary Riskey
Mary Riskey
Chief Financial Officer

The foregoing certification is being furnished solely pursuant to 18 U.S.C. §1350 and is not being filed as part of the Quarterly Report or as a separate disclosure document.