

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: September 30, 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

(State or Other Jurisdiction of
Incorporation or Organization)

27-0312904

(I.R.S. Employer
Identification No.)

601 Carlson Parkway, Suite 1400
Minnetonka, Minnesota

(Address of Principal Executive Offices)

55305

(Zip Code)

(612) 453-4100

(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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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 November 3, 2020, there were 273,699,768 shares of outstanding common stock, par value \$0.01 per share, issued and outstanding.

TWO HARBORS INVESTMENT CORP.

INDEX

	<u>Page</u>	
PART I - FINANCIAL INFORMATION		
Item 1.	Financial Statements (unaudited)	1
	Condensed Consolidated Balance Sheets at September 30, 2020 and December 31, 2019	1
	Condensed Consolidated Statements of Comprehensive Income (Loss) for the Three and Nine Months Ended September 30, 2020 and 2019	2
	Condensed Consolidated Statements of Stockholders' Equity for the Nine Months Ended September 30, 2020 and 2019	4
	Condensed Consolidated Statements of Cash Flows for the Nine Months Ended September 30, 2020 and 2019	6
	Notes to the Condensed Consolidated Financial Statements	8
Item 2.	Management's Discussion and Analysis of Financial Condition and Results of Operations	48
Item 3.	Quantitative and Qualitative Disclosures About Market Risk	73
Item 4.	Controls and Procedures	77
PART II - OTHER INFORMATION		
Item 1.	Legal Proceedings	79
Item 1A.	Risk Factors	80
Item 2.	Unregistered Sales of Equity Securities and Use of Proceeds	81
Item 3.	Defaults Upon Senior Securities	81
Item 4.	Mine Safety Disclosures	81
Item 5.	Other Information	81
Item 6.	Exhibits	82
	Index of Exhibits	83
	Signatures	84

Item 1. Financial Statements

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

	September 30, 2020	December 31, 2019
ASSETS		
	(unaudited)	
Available-for-sale securities, at fair value (amortized cost \$15,879,431; allowance for credit losses \$25,495)	\$ 16,574,321	\$ 31,406,328
Mortgage servicing rights, at fair value	1,257,503	1,909,444
Cash and cash equivalents	1,615,074	558,136
Restricted cash	596,951	1,058,690
Accrued interest receivable	50,140	92,634
Due from counterparties	118,819	318,963
Derivative assets, at fair value	97,889	188,051
Reverse repurchase agreements	82,410	220,000
Other assets	194,543	169,376
Total Assets ⁽¹⁾	\$ 20,587,650	\$ 35,921,622
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities		
Repurchase agreements	\$ 16,376,696	\$ 29,147,463
Federal Home Loan Bank advances	—	210,000
Revolving credit facilities	274,830	300,000
Term notes payable	395,328	394,502
Convertible senior notes	285,843	284,954
Derivative liabilities, at fair value	3,551	6,740
Due to counterparties	109,200	259,447
Dividends payable	57,268	128,125
Accrued interest payable	12,304	149,626
Commitments and contingencies (see Note 16)	—	—
Other liabilities	52,958	70,299
Total Liabilities ⁽¹⁾	17,567,978	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 273,694,411 and 272,935,731 shares issued and outstanding, respectively	2,737	2,729
Additional paid-in capital	5,161,491	5,154,764
Accumulated other comprehensive income	720,340	689,400
Cumulative earnings	814,585	2,655,891
Cumulative distributions to stockholders	(4,656,982)	(4,509,819)
Total Stockholders' Equity	3,019,672	4,970,466
Total Liabilities and Stockholders' Equity	\$ 20,587,650	\$ 35,921,622

(1) The condensed consolidated balance sheets include assets and liabilities of consolidated variable interest entities, or VIEs. At September 30, 2020 and December 31, 2019, assets of the VIEs totaled \$430,725 and \$395,008, and liabilities of the VIEs totaled \$430,725 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 INCOME (LOSS) (unaudited)
(in thousands, except share data)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Interest income:				
Available-for-sale securities	\$ 89,200	\$ 242,023	\$ 443,614	\$ 731,716
Other	516	7,717	8,936	24,536
Total interest income	89,716	249,740	452,550	756,252
Interest expense:				
Repurchase agreements	18,652	176,450	222,068	501,361
Federal Home Loan Bank advances	—	391	1,747	10,406
Revolving credit facilities	2,391	3,964	8,748	15,316
Term notes payable	3,321	5,475	11,678	5,706
Convertible senior notes	4,821	4,797	14,366	14,256
Total interest expense	29,185	191,077	258,607	547,045
Net interest income	60,531	58,663	193,943	209,207
Other-than-temporary impairments:				
Total other-than-temporary impairment losses	—	(5,950)	—	(11,004)
Other income (loss):				
(Loss) gain on investment securities	(9,107)	248,828	(1,037,222)	251,977
Servicing income	99,114	126,025	342,802	373,922
Loss on servicing asset	(112,763)	(234,514)	(938,219)	(675,920)
Gain (loss) on interest rate swap, cap and swaption agreements	1,401	70,620	(296,117)	(101,414)
Gain on other derivative instruments	65,596	85,856	8,734	270,798
Other income	84	495	948	277
Total other income (loss)	44,325	297,310	(1,919,074)	119,640
Expenses:				
Management fees	5,759	16,839	31,738	42,556
Servicing expenses	26,197	17,696	70,049	54,354
Other operating expenses	18,976	13,344	47,892	42,913
Restructuring charges	(139,788)	—	6,000	—
Total expenses	(88,856)	47,879	155,679	139,823
Income (loss) before income taxes	193,712	302,144	(1,880,810)	178,020
Benefit from income taxes	(8,202)	(3,556)	(39,504)	(11,188)
Net income (loss)	201,914	305,700	(1,841,306)	189,208
Dividends on preferred stock	18,950	18,951	56,851	56,851
Net income (loss) attributable to common stockholders	\$ 182,964	\$ 286,749	\$ (1,898,157)	\$ 132,357
Basic earnings (loss) per weighted average common share	\$ 0.67	\$ 1.05	\$ (6.94)	\$ 0.50
Diluted earnings (loss) per weighted average common share	\$ 0.64	\$ 1.00	\$ (6.94)	\$ 0.50
Dividends declared per common share	\$ 0.14	\$ 0.40	\$ 0.33	\$ 1.27
Weighted average number of shares of common stock:				
Basic	273,705,785	272,897,575	273,567,998	266,114,772
Diluted	291,876,935	291,053,718	273,567,998	266,114,772

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

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Comprehensive income (loss):				
Net income (loss)	\$ 201,914	\$ 305,700	\$ (1,841,306)	\$ 189,208
Other comprehensive income (loss), net of tax:				
Unrealized gain (loss) on available-for-sale securities	36,216	(29,164)	30,940	637,537
Other comprehensive income (loss)	36,216	(29,164)	30,940	637,537
Comprehensive income (loss)	238,130	276,536	(1,810,366)	826,745
Dividends on preferred stock	18,950	18,951	56,851	56,851
Comprehensive income (loss) attributable to common stockholders	<u>\$ 219,180</u>	<u>\$ 257,585</u>	<u>\$ (1,867,217)</u>	<u>\$ 769,894</u>

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
Net loss	—	—	—	—	(90,557)	—	(90,557)
Other comprehensive income before reclassifications, net of tax	—	—	—	296,637	—	—	296,637
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	13,912	—	—	13,912
Other comprehensive income, net of tax	—	—	—	310,549	—	—	310,549
Issuance of common stock, net of offering costs	—	—	171	—	—	—	171
Preferred dividends declared	—	—	—	—	—	(18,950)	(18,950)
Common dividends declared	—	—	—	—	—	(109,160)	(109,160)
Non-cash equity award compensation	—	1	2,496	—	—	—	2,497
Balance, June 30, 2019	977,501	2,729	5,149,175	777,518	2,215,437	(4,253,586)	4,868,774
Net income	—	—	—	—	305,700	—	305,700
Other comprehensive income before reclassifications, net of tax	—	—	—	191,676	—	—	191,676
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	(220,840)	—	—	(220,840)
Other comprehensive loss, net of tax	—	—	—	(29,164)	—	—	(29,164)
Issuance of common stock, net of offering costs	—	—	217	—	—	—	217
Repurchase of common stock	—	—	(19)	—	—	—	(19)
Preferred dividends declared	—	—	—	—	—	(18,951)	(18,951)
Common dividends declared	—	—	—	—	—	(109,158)	(109,158)
Non-cash equity award compensation	—	—	2,181	—	—	—	2,181
Balance, September 30, 2019	\$ 977,501	\$ 2,729	\$ 5,151,554	\$ 748,354	\$ 2,521,137	\$ (4,381,695)	\$ 5,019,580

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

TWO HARBORS INVESTMENT CORP.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (unaudited), continued
(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, 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	—	—	—	234,926	—	—	234,926
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	(432,996)	—	—	(432,996)
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)
Non-cash equity award compensation	—	7	2,308	—	—	—	2,315
Balance, March 31, 2020	<u>977,501</u>	<u>2,735</u>	<u>5,156,151</u>	<u>491,330</u>	<u>786,235</u>	<u>(4,509,819)</u>	<u>2,904,133</u>
Net loss	—	—	—	—	(173,564)	—	(173,564)
Other comprehensive income before reclassifications, net of tax	—	—	—	231,099	—	—	231,099
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	(38,305)	—	—	(38,305)
Other comprehensive income, net of tax	—	—	—	192,794	—	—	192,794
Issuance of common stock, net of offering costs	—	—	95	—	—	—	95
Preferred dividends declared	—	—	—	—	—	(37,901)	(37,901)
Common dividends declared	—	—	—	—	—	(51,936)	(51,936)
Non-cash equity award compensation	—	2	2,313	—	—	—	2,315
Balance, June 30, 2020	<u>977,501</u>	<u>2,737</u>	<u>5,158,559</u>	<u>684,124</u>	<u>612,671</u>	<u>(4,599,656)</u>	<u>2,835,936</u>
Net income	—	—	—	—	201,914	—	201,914
Other comprehensive income before reclassifications, net of tax	—	—	—	36,216	—	—	36,216
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	—	—	—	—
Other comprehensive income, net of tax	—	—	—	36,216	—	—	36,216
Issuance of common stock, net of offering costs	—	—	75	—	—	—	75
Preferred dividends declared	—	—	—	—	—	(18,950)	(18,950)
Common dividends declared	—	—	—	—	—	(38,376)	(38,376)
Non-cash equity award compensation	—	—	2,857	—	—	—	2,857
Balance, September 30, 2020	<u>\$ 977,501</u>	<u>\$ 2,737</u>	<u>\$ 5,161,491</u>	<u>\$ 720,340</u>	<u>\$ 814,585</u>	<u>\$ (4,656,982)</u>	<u>\$ 3,019,672</u>

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)

	Nine Months Ended September 30,	
	2020	2019
Cash Flows From Operating Activities:		
Net (loss) income	\$ (1,841,306)	\$ 189,208
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Amortization of premiums and discounts on investment securities, net	167,609	119,175
Amortization of deferred debt issuance costs on term notes payable and convertible senior notes	1,715	1,096
Other-than-temporary impairment losses	—	11,004
Provision for credit losses on investment securities	53,931	—
Realized and unrealized losses (gains) on investment securities	983,291	(251,977)
Loss on servicing asset	938,219	675,920
Realized and unrealized loss on interest rate swaps, caps and swaptions	227,989	167,160
Unrealized gain on other derivative instruments	(20,665)	(36,439)
Equity based compensation	7,487	6,539
Net change in assets and liabilities:		
Decrease (increase) in accrued interest receivable	42,494	(732)
Increase in deferred income taxes, net	(50,728)	(33,287)
Decrease in accrued interest payable	(137,322)	(37,212)
Change in other operating assets and liabilities, net	5,696	40,629
Net cash provided by operating activities	<u>378,410</u>	<u>851,084</u>
Cash Flows From Investing Activities:		
Purchases of available-for-sale securities	(6,433,637)	(18,406,882)
Proceeds from sales of available-for-sale securities	16,969,870	14,065,573
Principal payments on available-for-sale securities	3,120,922	2,334,729
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	(284,456)	(333,506)
(Payments for) proceeds from sales of mortgage servicing rights, net	(1,822)	(530)
(Purchases) short sales of derivative instruments, net	(28,862)	(76,739)
(Payments for termination and settlement) proceeds from sales and settlement of derivative instruments, net	(91,489)	(768,010)
Payments for reverse repurchase agreements	(1,928,977)	(1,480,150)
Proceeds from reverse repurchase agreements	2,066,567	2,061,390
Increase (decrease) in due to counterparties, net	49,897	(59,434)
Change in other investing assets and liabilities, net	2,508	37,737
Net cash provided by (used in) investing activities	<u>\$ 13,441,498</u>	<u>\$ (2,625,822)</u>

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)

	Nine Months Ended September 30,	
	2020	2019
Cash Flows From Financing Activities:		
Proceeds from repurchase agreements	\$ 74,561,271	\$ 202,963,685
Principal payments on repurchase agreements	(87,332,038)	(200,530,025)
Proceeds from Federal Home Loan Bank advances	585,000	—
Principal payments on Federal Home Loan Bank advances	(795,000)	(815,024)
Proceeds from revolving credit facilities	143,000	450,000
Principal payments on revolving credit facilities	(168,170)	(460,000)
Proceeds from issuance of term notes payable	—	393,918
Proceeds from issuance of common stock, net of offering costs	312	335,666
Repurchase of common stock	(1,064)	(19)
Dividends paid on preferred stock	(56,851)	(56,851)
Dividends paid on common stock	(161,169)	(353,989)
Net cash (used in) provided by financing activities	(13,224,709)	1,927,361
Net increase in cash, cash equivalents and restricted cash	595,199	152,623
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	\$ 2,212,025	\$ 1,250,387
Supplemental Disclosure of Cash Flow Information:		
Cash paid for interest	\$ 392,276	\$ 581,333
Cash paid for taxes, net	\$ 9,535	\$ 16,946
Noncash Activities:		
Cumulative-effect adjustment to equity for adoption of new accounting principle	\$ —	\$ 442
Dividends declared but not paid at end of period	\$ 57,268	\$ 128,109

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. is a Maryland corporation that, through its wholly owned subsidiaries (collectively, the Company), invests in and manages Agency residential mortgage-backed securities, or Agency RMBS, mortgage servicing rights, or MSR, and other financial assets. The investment portfolio as a whole is managed by the Company's Chief Investment Officer and resources are allocated and financial performance is assessed on a consolidated basis. 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.

In the first quarter of 2020, the Company experienced unprecedented market conditions as a result of the global COVID-19 pandemic, 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 margin calls and ongoing funding concerns associated with the significant spread widening on these assets. During the first quarter, 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. Since then, the Company has added modestly to its Agency RMBS and MSR portfolio, deploying risk as the market entered a period of stabilization and asset price recovery.

Through August 14, 2020, the Company was externally managed and advised by PRCM Advisers LLC, a subsidiary of Pine River Capital Management L.P., or Pine River, under the terms of a Management Agreement between the Company and PRCM Advisers. The Company terminated the Management Agreement effective August 14, 2020 for "cause" in accordance with Section 15(a) thereof. On August 15, 2020, the Company completed its transition to self-management and directly hired the senior management team and other personnel who had historically provided services to the Company.

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 September 30, 2020 and results of operations for all periods presented have been made. The results of operations for the three and nine months ended September 30, 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 nine months ended September 30, 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 income (loss) 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*, 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.

Issuer's Accounting for Debt and Equity Instruments

In August 2020, the FASB issued ASU No. 2020-06 to simplify an issuer's accounting for convertible instruments and its application of the derivatives scope exception for contracts in its own equity. Under the new guidance, only conversion features associated with a convertible debt instrument issued at a substantial premium and those that are considered embedded derivatives in accordance with derivatives guidance will be accounted for separate from the convertible instrument. Additionally, for contracts in an entity's own equity, the new guidance eliminates some of the requirements for equity classification. The guidance also addresses how convertible instruments are accounted for in the diluted earnings per share calculation and requires enhanced disclosures about the terms of convertible instruments and contracts in an entity's own equity. The ASU is effective for annual periods, and interim periods within those annual periods, beginning on or after December 15, 2021, with early adoption permitted. The Company has determined this ASU will not have an impact on the Company's financial condition, results of operations or financial statement disclosures.

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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020	December 31, 2019
Note receivable ⁽¹⁾	\$ 395,328	\$ 394,502
Cash and cash equivalents	—	200
Restricted cash	35,200	—
Accrued interest receivable ⁽¹⁾	197	306
Total Assets	\$ 430,725	\$ 395,008
Term notes payable	\$ 395,328	\$ 394,502
Accrued interest payable	197	306
Other liabilities	35,200	200
Total Liabilities	\$ 430,725	\$ 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. In the first quarter of 2020, the Company experienced unprecedented market conditions as a result of the global COVID-19 pandemic, 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 margin calls and ongoing funding concerns associated with the significant spread widening on these assets. During the first quarter, 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. Since then, the Company has added modestly to its Agency RMBS portfolio, deploying risk as the market entered a period of stabilization and asset price recovery.

The following table presents the Company's AFS investment securities by collateral type as of September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020	December 31, 2019
Agency		
Federal National Mortgage Association	\$ 13,607,826	\$ 21,252,575
Federal Home Loan Mortgage Corporation	2,603,002	6,070,500
Government National Mortgage Association	345,500	454,980
Non-Agency	17,993	3,628,273
Total available-for-sale securities	\$ 16,574,321	\$ 31,406,328

At September 30, 2020 and December 31, 2019, the Company pledged AFS securities with a carrying value of \$16.6 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 September 30, 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, *Transfers and Servicing*, to be considered linked transactions and, therefore, classified as derivatives.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 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 \$18.0 million and \$3.6 billion, respectively.

The following tables present the amortized cost and carrying value of AFS securities by collateral type as of September 30, 2020 and December 31, 2019:

		September 30, 2020							
(in thousands)	<u>Principal/ Current Face</u>	<u>Un-amortized Premium</u>	<u>Accretable Purchase Discount</u>	<u>Amortized Cost</u>	<u>Allowance for Credit Losses</u>	<u>Unrealized Gain</u>	<u>Unrealized Loss</u>	<u>Carrying Value</u>	
Agency:									
Principal and interest	\$ 15,040,007	\$ 688,566	\$ (14)	\$ 15,728,559	\$ —	\$ 722,176	\$ (349)	\$ 16,450,386	
Interest-only	2,189,734	126,068	—	126,068	(19,241)	12,298	(13,183)	105,942	
Total Agency	17,229,741	814,634	(14)	15,854,627	(19,241)	734,474	(13,532)	16,556,328	
Non-Agency:									
Principal and interest	2,429	7	(38)	2,398	—	141	—	2,539	
Interest-only	2,714,583	22,406	—	22,406	(6,254)	62	(760)	15,454	
Total Non-Agency	2,717,012	22,413	(38)	24,804	(6,254)	203	(760)	17,993	
Total	\$ 19,946,753	\$ 837,047	\$ (52)	\$ 15,879,431	\$ (25,495)	\$ 734,677	\$ (14,292)	\$ 16,574,321	

		December 31, 2019							
(in thousands)	<u>Principal/ Current Face</u>	<u>Un-amortized Premium</u>	<u>Accretable Purchase Discount</u>	<u>Credit Reserve Purchase Discount</u>	<u>Amortized Cost</u>	<u>Unrealized Gain</u>	<u>Unrealized Loss</u>	<u>Carrying Value</u>	
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 September 30, 2020 and December 31, 2019:

		September 30, 2020		
(in thousands)	<u>Agency</u>	<u>Non-Agency</u>	<u>Total</u>	
Adjustable Rate	\$ 11,798	\$ 16,235	\$ 28,033	
Fixed Rate	16,544,530	1,758	16,546,288	
Total	\$ 16,556,328	\$ 17,993	\$ 16,574,321	

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

(in thousands)	December 31, 2019		
	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 September 30, 2020:

(in thousands)	September 30, 2020		
	Agency	Non-Agency	Total
< 1 year	\$ 2,316	\$ 3,150	\$ 5,466
≥ 1 and < 3 years	215,402	14,843	230,245
≥ 3 and < 5 years	14,444,913	—	14,444,913
≥ 5 and < 10 years	1,892,932	—	1,892,932
≥ 10 years	765	—	765
Total	\$ 16,556,328	\$ 17,993	\$ 16,574,321

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

Following 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 both Agency and non-Agency AFS securities that are not accounted for under the fair value option. 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 on Agency AFS securities relates to prepayment assumption changes on interest-only Agency RMBS. 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) gain on investment securities) and the balance of the unrealized loss recognized in either other comprehensive income (loss), net of tax, or (loss) gain on investment securities, depending on the accounting treatment.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following table presents the changes for the three and nine months ended September 30, 2020 in the allowance for credit losses on Agency and non-Agency AFS securities:

(in thousands)	Three Months Ended September 30, 2020			Nine Months Ended September 30, 2020		
	Agency	Non-Agency	Total	Agency	Non-Agency	Total
Allowance for credit losses at beginning of period	\$ (30,634)	\$ (11,949)	\$ (42,583)	\$ —	\$ (244,876)	\$ (244,876)
Additions:						
On securities for which credit losses were not previously recorded	(86)	—	(86)	(32,882)	(11,404)	(44,286)
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	(558)	(6,456)	(7,014)	1,604	(11,249)	(9,645)
Writeoffs	12,037	12,151	24,188	12,037	17,018	29,055
Recoveries of amounts previously written off	—	—	—	—	(2,535)	(2,535)
Allowance for credit losses at end of period	\$ (19,241)	\$ (6,254)	\$ (25,495)	\$ (19,241)	\$ (6,254)	\$ (25,495)

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 September 30, 2020 (subsequent to the adoption of Topic 326). At September 30, 2020, the Company held 833 AFS securities; of the securities for which an allowance for credit losses has not been recorded, 8 were in an unrealized loss position for less than twelve consecutive months and 11 were in an unrealized loss position for more than twelve consecutive months.

(in thousands)	September 30, 2020					
	Less than 12 Months		Unrealized Loss Position for 12 Months or More		Total	
	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
Agency	\$ 17,991	\$ (4,598)	\$ 12,962	\$ (437)	\$ 30,953	\$ (5,035)
Non-Agency	—	—	—	—	—	—
Total	\$ 17,991	\$ (4,598)	\$ 12,962	\$ (437)	\$ 30,953	\$ (5,035)

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 income (loss), net of tax, or (loss) gain 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 and nine months ended September 30, 2019, the Company recorded \$6.0 million and \$11.0 million in other-than-temporary credit impairments on a total of sixteen non-Agency securities where the future expected cash flows for each security were less than its amortized cost. At September 30, 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 September 30, 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 and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Cumulative other-than-temporary credit losses at beginning of period	\$ —	\$ (9,376)	\$ (17,021)	\$ (6,865)
Additions:				
Other-than-temporary impairments not previously recognized	—	(5,950)	—	(10,353)
Increases related to other-than-temporary impairments on securities with previously recognized other-than-temporary impairments	—	—	—	(651)
Reductions:				
Decreases related to other-than-temporary impairments on securities paid down	—	—	—	1,703
Decreases related to other-than-temporary impairments on securities sold	—	1,613	17,021	2,453
Cumulative other-than-temporary credit losses at end of period	\$ —	\$ (13,713)	\$ —	\$ (13,713)

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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following table presents the changes for the nine months ended September 30, 2019 in the net unamortized discount/premium and designated credit reserve on non-Agency AFS securities:

(in thousands)	Nine Months Ended September 30, 2019		
	Designated Credit Reserve	Net Unamortized Discount/Premium	Total
Beginning balance at January 1	\$ (1,322,762)	\$ (603,591)	\$ (1,926,353)
Acquisitions	(471,746)	10,524	(461,222)
Accretion of net discount	—	27,782	27,782
Realized credit losses	18,668	—	18,668
Reclassification adjustment for other-than-temporary impairments	(6,847)	—	(6,847)
Transfers from (to)	34,157	(34,157)	—
Sales, calls, other	24,892	226,923	251,815
Ending balance at September 30	<u>\$ (1,723,638)</u>	<u>\$ (372,519)</u>	<u>\$ (2,096,157)</u>

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.

(in thousands)	December 31, 2019					
	Unrealized Loss Position for					
	Less than 12 Months		12 Months or More		Total	
	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	<u>\$ 3,970,743</u>	<u>\$ (25,061)</u>	<u>\$ 735,727</u>	<u>\$ (62,932)</u>	<u>\$ 4,706,470</u>	<u>\$ (87,993)</u>

Gross Realized Gains and Losses

Gains and losses from the sale of AFS securities are recorded as realized gains (losses) within (loss) gain on investment securities in the Company's condensed consolidated statements of comprehensive income (loss). The following table presents details around sales of AFS securities during the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Proceeds from sales of available-for-sale securities	\$ —	\$ 6,111,897	\$ 16,969,870	\$ 14,065,573
Amortized cost of available-for-sale securities sold	—	(5,861,630)	(17,947,686)	(13,809,174)
Total realized gains (losses) on sales, net	<u>\$ —</u>	<u>\$ 250,267</u>	<u>\$ (977,816)</u>	<u>\$ 256,399</u>
Gross realized gains	\$ —	\$ 254,655	\$ 280,885	\$ 380,808
Gross realized losses	—	(4,388)	(1,258,701)	(124,409)
Total realized gains (losses) on sales, net	<u>\$ —</u>	<u>\$ 250,267</u>	<u>\$ (977,816)</u>	<u>\$ 256,399</u>

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 5. Servicing Activities

Mortgage Servicing Rights, at Fair Value

A wholly owned subsidiary of the Company has approvals from Fannie Mae and Freddie Mac to own and manage MSR, which represent the right to control the servicing of residential 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 and nine months ended September 30, 2020 and 2019.

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Balance at beginning of period	\$ 1,279,195	\$ 1,800,826	\$ 1,909,444	\$ 1,993,440
Purchases of mortgage servicing rights	88,706	76,588	294,040	341,110
Sales of mortgage servicing rights	—	905	1,814	905
Changes in fair value due to:				
Changes in valuation inputs or assumptions used in the valuation model	41,429	(144,071)	(570,347)	(477,710)
Other changes in fair value ⁽¹⁾	(154,184)	(90,529)	(367,864)	(198,585)
Other changes ⁽²⁾	2,357	7,837	(9,584)	(7,604)
Balance at end of period ⁽³⁾	<u>\$ 1,257,503</u>	<u>\$ 1,651,556</u>	<u>\$ 1,257,503</u>	<u>\$ 1,651,556</u>

(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.

(3) Based on the principal balance of the loans underlying the MSR reported by servicers on a month lag, adjusted for current month purchases.

At September 30, 2020 and December 31, 2019, the Company pledged MSR with a carrying value of \$1.0 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 September 30, 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)	September 30, 2020	December 31, 2019
Weighted average prepayment speed:	21.4 %	14.8 %
Impact on fair value of 10% adverse change	\$ (103,057)	\$ (88,459)
Impact on fair value of 20% adverse change	\$ (193,815)	\$ (188,209)
Weighted average delinquency:	2.4 %	0.9 %
Impact on fair value of 10% adverse change	\$ (2,159)	\$ (7,470)
Impact on fair value of 20% adverse change	\$ (3,894)	\$ (15,020)
Weighted average discount rate:	5.1 %	7.2 %
Impact on fair value of 10% adverse change	\$ (19,684)	\$ (49,274)
Impact on fair value of 20% adverse change	\$ (38,195)	\$ (95,963)
Weighted average per loan annual cost to service:	\$ 68.63	\$ 66.62
Impact on fair value of 10% adverse change	\$ (18,506)	\$ (23,932)
Impact on fair value of 20% adverse change	\$ (37,096)	\$ (48,054)

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 primarily 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 income (loss) for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Servicing fee income	\$ 96,332	\$ 106,700	\$ 318,686	\$ 327,184
Ancillary and other fee income	391	499	1,388	1,302
Float income	2,391	18,826	22,728	45,436
Total	\$ 99,114	\$ 126,025	\$ 342,802	\$ 373,922

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 \$37.8 million and \$45.6 million and were included in other assets on the condensed consolidated balance sheets as of September 30, 2020 and December 31, 2019, respectively. At September 30, 2020, mortgage loans in 60+ day delinquent status (whether or not subject to forbearance) accounted for approximately 4.1% of the aggregate principal balance of loans for which the Company had servicing advance funding obligations.

During the three months ended September 30, 2020, the Company entered into a new revolving credit facility to finance its servicing advance obligations. At September 30, 2020, the Company had pledged servicing advances with a carrying value of \$11.1 million as collateral for this revolving credit facility. See Note 13 - *Revolving Credit Facilities*.

Serviced Mortgage Assets

The Company's total serviced mortgage assets consist of residential mortgage loans underlying its MSR asset, off-balance sheet residential mortgage loans owned by other entities for which the Company acts as servicing administrator, 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 September 30, 2020 and December 31, 2019:

(dollars in thousands)	September 30, 2020		December 31, 2019	
	Number of Loans	Unpaid Principal Balance	Number of Loans	Unpaid Principal Balance
Mortgage servicing rights	719,344	\$ 156,444,362	793,470	\$ 175,882,142
Residential mortgage loans	2,139	1,372,188	3,157	2,033,951
Other assets	—	—	71	12,511
Total serviced mortgage assets	721,483	\$ 157,816,550	796,698	\$ 177,928,604

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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, servicing activities and collateral for the Company's borrowings 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 September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020	December 31, 2019
Restricted cash balances held by trading counterparties:		
For securities trading activity	\$ 45,000	\$ 45,050
For derivatives trading activity	57,355	94,570
For servicing activities	2,438	—
As restricted collateral for borrowings	492,098	919,010
Total restricted cash balances held by trading counterparties	596,891	1,058,630
Restricted cash balance pursuant to letter of credit on office lease	60	60
Total	<u>\$ 596,951</u>	<u>\$ 1,058,690</u>

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported on the Company's condensed consolidated balance sheets as of September 30, 2020 and December 31, 2019 that sum to the total of the same such amounts shown in the statements of cash flows:

(in thousands)	September 30, 2020	December 31, 2019
Cash and cash equivalents	\$ 1,615,074	\$ 558,136
Restricted cash	596,951	1,058,690
Total cash, cash equivalents and restricted cash	<u>\$ 2,212,025</u>	<u>\$ 1,616,826</u>

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 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 or the OIS rate) 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 agreements and TBAs. 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).

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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.

Balance Sheet Presentation

In accordance with ASC 815, *Derivatives and Hedging*, 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 September 30, 2020 and December 31, 2019.

(in thousands)	September 30, 2020			
	Derivative Assets		Derivative Liabilities	
	Fair Value	Notional	Fair Value	Notional
Inverse interest-only securities	\$ 67,468	\$ 338,646	\$ —	\$ —
Interest rate swap agreements	—	—	—	12,394,818
Swaptions, net	10,791	6,000,000	—	—
TBAs	18,460	3,947,000	(3,551)	2,289,000
U.S. Treasury futures	1,170	866,600	—	—
Total	\$ 97,889	\$ 11,152,246	\$ (3,551)	\$ 14,683,818

(in thousands)	December 31, 2019			
	Derivative Assets		Derivative Liabilities	
	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 Income (Loss) 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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

Derivative Instruments (in thousands)	Location of Gain (Loss) Recognized in Income	Amount of Gain (Loss) Recognized in Income			
		Three Months Ended September 30,		Nine Months Ended September 30,	
		2020	2019	2020	2019
Interest rate risk management					
TBAs	Gain on other derivative instruments	\$ 60,993	\$ 82,964	\$ (29,385)	\$ 221,439
Short U.S. Treasuries	Gain on other derivative instruments	—	—	—	(6,801)
U.S. Treasury futures	Gain on other derivative instruments	4,448	(359)	26,956	46,089
Put and call options for TBAs	Gain on other derivative instruments	—	—	—	(7,666)
Interest rate swaps - Payers	Gain (loss) on interest rate swap, cap and swaption agreements	8,269	(172,856)	(1,151,119)	(834,426)
Interest rate swaps - Receivers	Gain (loss) on interest rate swap, cap and swaption agreements	(7,879)	211,086	904,492	664,313
Swaptions	Gain (loss) on interest rate swap, cap and swaption agreements	1,011	32,390	(49,490)	76,383
Interest rate caps	Gain (loss) on interest rate swap, cap and swaption agreements	—	—	—	(7,684)
Markit IOS total return swaps	Gain on other derivative instruments	—	(888)	(2,430)	(1,365)
Non-risk management					
Inverse interest-only securities	Gain on other derivative instruments	155	4,139	13,593	19,102
Total		<u>\$ 66,997</u>	<u>\$ 156,476</u>	<u>\$ (287,383)</u>	<u>\$ 169,384</u>

For the three and nine months ended September 30, 2020, the Company recognized \$0.8 million of income and \$68.1 million of expense, respectively, for the accrual and/or settlement of the net interest expense associated with its interest rate swaps and caps. The income results from receiving either a floating interest rate (LIBOR or the OIS rate) or a fixed interest rate and paying either a fixed interest rate or a floating interest rate (LIBOR or the OIS rate) on an average \$7.6 billion and \$32.0 billion notional, respectively. For the three and nine months ended September 30, 2019, the Company recognized \$19.2 million and \$65.7 million, respectively, of income for the accrual and/or settlement of the net interest expense associated with its interest rate swaps and caps. The income results from paying either a fixed interest rate or a floating interest rate (LIBOR or the OIS rate) and receiving either a floating interest rate (LIBOR or the OIS rate) or a fixed interest rate on an average \$41.2 billion and \$39.8 billion notional, respectively.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following tables present information with respect to the volume of activity in the Company's derivative instruments during the three and nine months ended September 30, 2020 and 2019:

Three Months Ended September 30, 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	\$ 361,933	\$ —	\$ (23,287)	\$ 338,646	\$ 350,876	\$ —
Interest rate swap agreements	4,479,000	7,915,818	—	12,394,818	7,595,385	—
Swaptions, net	—	6,000,000	—	6,000,000	239,130	—
TBAs, net	3,236,000	21,358,000	(18,358,000)	6,236,000	4,760,456	82,490
U.S. Treasury futures	—	2,552,500	(1,685,900)	866,600	986,795	3,291
Total	<u>\$ 8,076,933</u>	<u>\$ 37,826,318</u>	<u>\$ (20,067,187)</u>	<u>\$ 25,836,064</u>	<u>\$ 13,932,642</u>	<u>\$ 85,781</u>
Three Months Ended September 30, 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	\$ 436,611	\$ —	\$ (20,668)	\$ 415,943	\$ 427,222	\$ —
Interest rate swap agreements	40,470,277	17,874,435	(16,511,217)	41,833,495	41,180,308	38,044
Interest rate cap contracts	—	—	—	—	—	—
Swaptions, net	3,875,000	1,000,000	(3,125,000)	1,750,000	2,650,815	37,365
TBAs, net	9,422,000	40,347,000	(39,906,000)	9,863,000	9,107,707	94,505
U.S. Treasury futures	1,300,000	3,567,000	(4,547,000)	320,000	657,022	26,939
Markit IOS total return swaps	45,536	—	(1,769)	43,767	46,088	—
Total	<u>\$ 55,549,424</u>	<u>\$ 62,788,435</u>	<u>\$ (64,111,654)</u>	<u>\$ 54,226,205</u>	<u>\$ 54,069,162</u>	<u>\$ 196,853</u>
Nine Months Ended September 30, 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	\$ —	\$ (58,491)	\$ 338,646	\$ 370,379	\$ —
Interest rate swap agreements	39,702,470	56,403,253	(83,710,905)	12,394,818	32,006,660	(334,502)
Swaptions, net	1,257,000	7,017,000	(2,274,000)	6,000,000	956,387	(50,700)
TBAs, net	7,427,000	41,431,000	(42,622,000)	6,236,000	3,809,515	(42,993)
U.S. Treasury futures	(380,000)	10,782,500	(9,535,900)	866,600	681,497	26,295
Markit IOS total return swaps	41,890	—	(41,890)	—	13,547	(2,077)
Total	<u>\$ 48,445,497</u>	<u>\$ 115,633,753</u>	<u>\$ (138,243,186)</u>	<u>\$ 25,836,064</u>	<u>\$ 37,837,985</u>	<u>\$ (403,977)</u>

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Nine Months Ended September 30, 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	\$ —	\$ (60,356)	\$ 415,943	\$ 447,082	\$ —
Interest rate swap agreements	29,523,605	32,373,068	(20,063,178)	41,833,495	38,402,820	41,975
Interest rate cap contracts	2,500,000	—	(2,500,000)	—	1,417,216	(8,690)
Swaptions, net	63,000	14,200,000	(12,513,000)	1,750,000	3,259,802	63,139
TBAs, net	6,484,000	119,252,000	(115,873,000)	9,863,000	8,905,264	242,102
Short U.S. Treasuries	(800,000)	—	800,000	—	(61,097)	(23,172)
U.S. Treasury futures	—	8,077,000	(7,757,000)	320,000	691,414	47,565
Put and call options for TBAs, net	(1,767,000)	—	1,767,000	—	(147,606)	(32,962)
Markit IOS total return swaps	48,265	—	(4,498)	43,767	45,964	—
Total	<u>\$ 36,528,169</u>	<u>\$ 173,902,068</u>	<u>\$ (156,204,032)</u>	<u>\$ 54,226,205</u>	<u>\$ 52,960,859</u>	<u>\$ 329,957</u>

(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 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 increase (decrease) 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 principal and interest (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 September 30, 2020 and December 31, 2019, the Company had \$48.7 million and \$122.2 million, respectively, of interest-only securities, and \$1.3 billion and \$1.9 billion, respectively, of MSR in place to primarily 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 or the OIS rate) 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 and interest rate swap agreements.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020 and December 31, 2019:

September 30, 2020					
(in thousands)	Notional Amount ⁽¹⁾	Cost Basis ⁽²⁾	Market Value ⁽³⁾	Net Carrying Value ⁽⁴⁾	
				Derivative Assets	Derivative Liabilities
Purchase contracts	\$ 8,789,000	\$ 9,196,682	\$ 9,210,143	\$ 16,768	\$ (3,307)
Sale contracts	(2,553,000)	(2,700,653)	(2,699,205)	1,692	(244)
TBAs, net	\$ 6,236,000	\$ 6,496,029	\$ 6,510,938	\$ 18,460	\$ (3,551)

December 31, 2019					
(in thousands)	Notional Amount ⁽¹⁾	Cost Basis ⁽²⁾	Market Value ⁽³⁾	Net Carrying Value ⁽⁴⁾	
				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 September 30, 2020 and December 31, 2019, the Company had purchased U.S. Treasury futures with a notional amount of \$866.6 million and \$380.0 million and a fair market value of \$1.2 million and \$0.5 million included in derivative assets, at fair value, on the condensed consolidated balance sheet as of September 30, 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 September 30, 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 floating interest rate (LIBOR or the OIS rate):

(notional in thousands)

September 30, 2020					
Swaps Maturities	Notional Amount	Weighted Average Fixed Pay Rate	Weighted Average Receive Rate	Weighted Average Maturity (Years)	
2022	\$ 7,415,818	0.042 %	0.090 %	1.91	
2023	2,281,500	0.023 %	0.090 %	2.73	
2024 and Thereafter	1,497,500	0.257 %	0.090 %	6.74	
Total	\$ 11,194,818	0.067 %	0.090 %	2.72	

(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 September 30, 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 floating interest rate (LIBOR or the OIS rate):

(notional in thousands)

September 30, 2020					
Swaps Maturities	Notional Amounts	Weighted Average Pay Rate	Weighted Average Fixed Receive Rate	Weighted Average Maturity (Years)	
2024 and Thereafter	\$ 1,200,000	0.090 %	0.442 %	9.68	
Total	\$ 1,200,000	0.090 %	0.442 %	9.68	

(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	

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020 and December 31, 2019, the Company had the following outstanding interest rate swaptions that were utilized as macro-economic hedges:

September 30, 2020									
(notional and dollars in thousands)	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	\$ 5,780	\$ 6,942	3.36	\$ 3,000,000	1.23 %	SOFR	10.0	
Receiver	< 6 Months	\$ 4,000	\$ 3,849	3.36	\$ 3,000,000	SOFR	0.23 %	10.0	

December 31, 2019									
(notional and dollars in thousands)	Option					Underlying Swap			
Swaption	Expiration	Cost	Fair Value	Average Months to Expiration	Notional Amount	Average 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 September 30, 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)	\$ (30)	\$ (30)	\$ 35
January 12, 2044	(23,265)	(34)	(29)	(29)	(29)	(5)
Total	\$ (41,890)	\$ (29)	\$ (59)	\$ (59)	\$ (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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020, the fair value of derivative financial instruments as an asset and liability position was \$97.9 million and \$3.6 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 September 30, 2020 and December 31, 2019, the Company had \$82.8 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 \$82.4 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. Based on 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, the Company accounts for the receipt or payment of variation margin on Chicago Mercantile Exchange, or CME, and London Clearing House, or 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 is accounted for separate from the interest rate swap asset or liability.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020 and December 31, 2019:

September 30, 2020						
(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	Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets ⁽¹⁾		Net Amount
				Financial Instruments	Cash Collateral (Received) Pledged	
Assets						
Derivative assets	\$ 101,787	\$ (3,898)	\$ 97,889	\$ (3,551)	\$ —	\$ 94,338
Reverse repurchase agreements	82,410	—	82,410	—	(82,410)	—
Total Assets	\$ 184,197	\$ (3,898)	\$ 180,299	\$ (3,551)	\$ (82,410)	\$ 94,338
Liabilities						
Repurchase agreements	\$ (16,376,696)	\$ —	\$ (16,376,696)	\$ 16,376,696	\$ —	\$ —
Derivative liabilities	(7,449)	3,898	(3,551)	3,551	—	—
Total Liabilities	\$ (16,384,145)	\$ 3,898	\$ (16,380,247)	\$ 16,380,247	\$ —	\$ —

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

December 31, 2019

(in thousands)	Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets ⁽¹⁾					
	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, *Fair Value Measurements and Disclosures*, or 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 99.89% and 0.11% of its AFS securities as Level 2 and Level 3 fair value assets, respectively, at September 30, 2020. AFS securities account for 92.4% of all assets reported at fair value at September 30, 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 may be 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 forecasted 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 September 30, 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 September 30, 2020. The Company did not hold any interest rate caps, put and call options for TBAs or Markit IOS total return swaps at September 30, 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 September 30, 2020. The Company reported 100% of its TBAs and U.S. Treasury futures as Level 1 as of September 30, 2020. The Company did not hold any short U.S. Treasuries at September 30, 2020.

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.

(in thousands)	Recurring Fair Value Measurements			
	September 30, 2020			
	Level 1	Level 2	Level 3	Total
Assets				
Available-for-sale securities	\$ —	\$ 16,556,328	\$ 17,993	\$ 16,574,321
Mortgage servicing rights	—	—	1,257,503	1,257,503
Derivative assets	19,630	78,259	—	97,889
Total assets	\$ 19,630	\$ 16,634,587	\$ 1,275,496	\$ 17,929,713
Liabilities				
Derivative liabilities	\$ 3,551	\$ —	\$ —	\$ 3,551
Total liabilities	\$ 3,551	\$ —	\$ —	\$ 3,551

(in thousands)	Recurring Fair Value Measurements			
	December 31, 2019			
	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 September 30, 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:

(in thousands)	Three Months Ended September 30, 2020		Nine Months Ended September 30, 2020	
	Available-For-Sale Securities	Mortgage Servicing Rights	Available-For-Sale Securities	Mortgage Servicing Rights
Beginning of period level 3 fair value	\$ 3,860	\$ 1,279,195	\$ 249,174	\$ 1,909,444
Gains (losses) included in net income (loss):				
Realized (losses) gains, net	(1,577)	(154,192)	(5,968)	(372,616)
Unrealized (losses) gains, net	—	41,429 ⁽¹⁾	—	(565,603) ⁽¹⁾
Provision for credit losses	(6,456)	—	(7,352)	—
Net gains (losses) included in net income (loss)	(8,033)	(112,763)	(13,320)	(938,219)
Other comprehensive income (loss)	2,846	—	(21,492)	—
Purchases	—	88,706	—	294,040
Sales	—	8	(214,673)	1,822
Settlements	—	2,357	—	(9,584)
Gross transfers into level 3	19,320	—	23,785	—
Gross transfers out of level 3	—	—	(5,481)	—
End of period level 3 fair value	\$ 17,993	\$ 1,257,503	\$ 17,993	\$ 1,257,503
Change in unrealized gains or losses for the period included in earnings for assets held at the end of the reporting period	\$ —	\$ 45,027 ⁽²⁾	\$ —	\$ (439,795) ⁽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	\$ 2,846	\$ —	\$ 3,610	\$ —

(1) The change in unrealized gains or losses on MSR was recorded in loss on servicing asset on the condensed consolidated statements of comprehensive income (loss).

(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 income (loss).

The Company transferred certain AFS securities from Level 2 to Level 3 and from Level 3 to Level 2 based the observability of inputs during the nine months ended September 30, 2020. No additional AFS securities transfers between Level 1, Level 2 or Level 3 were made during the nine months ended September 30, 2020. Transfers between Levels are deemed to take place on the first day of the reporting period in which the transfer has taken place.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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.

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 September 30, 2020 and December 31, 2019:

September 30, 2020						
Valuation Technique	Unobservable Input ⁽¹⁾	Range			Weighted Average ⁽²⁾	
Discounted cash flow	Constant prepayment speed	14.7	-	25.1	%	21.4%
	Delinquency	1.6	-	2.7	%	2.4%
	Discount rate	4.7	-	7.7	%	5.1%
	Per loan annual cost to service	\$64.78	-	\$79.87		\$68.63
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 September 30, 2020, the Company had outstanding borrowings of \$214.8 million under revolving credit facilities that are considered long-term. The Company's long-term revolving credit facilities have floating rates based on an index plus a spread and 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

- 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.
- 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 September 30, 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 September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020		December 31, 2019	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Available-for-sale securities	\$ 16,574,321	\$ 16,574,321	\$ 31,406,328	\$ 31,406,328
Mortgage servicing rights	\$ 1,257,503	\$ 1,257,503	\$ 1,909,444	\$ 1,909,444
Cash and cash equivalents	\$ 1,615,074	\$ 1,615,074	\$ 558,136	\$ 558,136
Restricted cash	\$ 596,951	\$ 596,951	\$ 1,058,690	\$ 1,058,690
Derivative assets	\$ 97,889	\$ 97,889	\$ 188,051	\$ 188,051
Reverse repurchase agreements	\$ 82,410	\$ 82,410	\$ 220,000	\$ 220,000
Other assets	\$ 13,292	\$ 13,292	\$ 24,352	\$ 24,352
Liabilities				
Repurchase agreements	\$ 16,376,696	\$ 16,376,696	\$ 29,147,463	\$ 29,147,463
Federal Home Loan Bank advances	\$ —	\$ —	\$ 210,000	\$ 210,000
Revolving credit facilities	\$ 274,830	\$ 274,830	\$ 300,000	\$ 300,000
Term notes payable	\$ 395,328	\$ 387,625	\$ 394,502	\$ 400,000
Convertible senior notes	\$ 285,843	\$ 287,394	\$ 284,954	\$ 299,147
Derivative liabilities	\$ 3,551	\$ 3,551	\$ 6,740	\$ 6,740

Note 11. Repurchase Agreements

As of September 30, 2020 and December 31, 2019, the Company had outstanding \$16.4 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 0.29% and 2.14% and weighted average remaining maturities of 83 and 77 days as of September 30, 2020 and December 31, 2019, respectively.

At September 30, 2020 and December 31, 2019, the repurchase agreement balances were as follows:

(in thousands)	September 30, 2020	December 31, 2019
	Short-term	\$ 16,376,696
Long-term	—	—
Total	\$ 16,376,696	\$ 29,147,463

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

At September 30, 2020 and December 31, 2019, the repurchase agreements had the following characteristics and remaining maturities:

(in thousands)	September 30, 2020				
	Collateral Type				Total Amount Outstanding
	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	
Within 30 days	\$ 3,754,489	\$ —	\$ 36,500	\$ —	\$ 3,790,989
30 to 59 days	3,903,905	2,371	14,082	—	3,920,358
60 to 89 days	—	—	—	—	—
90 to 119 days	3,644,581	—	—	—	3,644,581
120 to 364 days	5,019,249	—	1,519	—	5,020,768
Total	\$ 16,322,224	\$ 2,371	\$ 52,101	\$ —	\$ 16,376,696
Weighted average borrowing rate	0.28 %	2.30 %	1.02 %	— %	0.29 %

(in thousands)	December 31, 2019				
	Collateral Type				Total Amount Outstanding
	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	
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)	September 30, 2020	December 31, 2019
Available-for-sale securities, at fair value	\$ 16,550,904	\$ 29,575,948
Mortgage servicing rights, at fair value	—	530,222
Restricted cash	456,898	919,010
Due from counterparties	32,507	102,365
Derivative assets, at fair value	66,785	68,874
Total	\$ 17,107,094	\$ 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 September 30, 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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. However, the Company did not have any outstanding secured advances or credit capacity available as of September 30, 2020. As of December 31, 2019, TH Insurance had \$210.0 million in outstanding secured advances with a weighted average borrowing rate of 2.00%.

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.

At September 30, 2020 and December 31, 2019, FHLB advances had the following remaining maturities:

(in thousands)	September 30, 2020	December 31, 2019
≤ 1 year	\$ —	\$ 160,000
> 1 and ≤ 3 years	—	—
> 3 and ≤ 5 years	—	—
> 5 and ≤ 10 years	—	—
> 10 years	—	50,000
Total	<u>\$ —</u>	<u>\$ 210,000</u>

At December 31, 2019, the Company pledged AFS securities with a carrying value of \$226.5 million as collateral for advances from the FHLB. 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 September 30, 2020 and December 31, 2019, the Company had stock in the FHLB totaling \$10.0 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 September 30, 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 assets and related servicing advance obligations, the Company has entered into revolving credit facilities collateralized by the value of the MSR and/or servicing advances pledged. As of September 30, 2020 and December 31, 2019, the Company had outstanding short- and long-term borrowings under revolving credit facilities of \$274.8 million and \$300.0 million with a weighted average borrowing rate of 2.94% and 4.26% and weighted average remaining maturities of 1.3 and 1.2 years, respectively.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

At September 30, 2020 and December 31, 2019, borrowings under revolving credit facilities had the following remaining maturities:

(in thousands)	September 30, 2020	December 31, 2019
Within 30 days	\$ —	\$ —
30 to 59 days	—	—
60 to 89 days	—	—
90 to 119 days	—	—
120 to 364 days	60,000	—
One year and over	214,830	300,000
Total	\$ 274,830	\$ 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 September 30, 2020 and December 31, 2019, MSR with a carrying value of \$485.9 million and \$449.5 million, respectively, was pledged as collateral for the Company's future payment obligations under its MSR revolving credit facilities. As of September 30, 2020, servicing advances with a carrying value of \$11.1 million were pledged as collateral for the Company's future payment obligations under its servicing advance revolving credit facility. The Company did not have any outstanding borrowings under the servicing advance revolving credit facility as of September 30, 2020. 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 September 30, 2020 and December 31, 2019, the outstanding amount due on term notes payable was \$395.3 million and \$394.5 million, net of deferred debt issuance costs, with a weighted average interest rate of 2.95% and 4.59% and weighted average remaining maturities of 3.7 years and 4.5 years. At September 30, 2020 and December 31, 2019, the Company pledged MSR with a carrying value of \$539.2 million and \$575.1 million and weighted average underlying loan coupon of 4.09% 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. As of September 30, 2020 and December 31, 2019, the notes had a conversion rate of 63.2040 and 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 September 30, 2020 and December 31, 2019 was \$285.8 million and \$285.0 million, respectively, net of deferred issuance costs.

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 repurchase the notes in open market or privately negotiated transactions at the same or differing price without giving prior notice to or obtaining any consent of the holders. The Company may also be required to repurchase the notes from holders under certain circumstances.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 16. Commitments and Contingencies

The following represent the material commitments and contingencies of the Company as of September 30, 2020:

Legal and regulatory. From time to time, the Company may be subject to liability under laws and government regulations and various claims and legal actions arising in the ordinary course of business. Under ASC 450, *Contingencies*, or ASC 450, liabilities are established for legal claims when payments associated with the claims become probable and the costs can be reasonably estimated. The actual costs of resolving legal claims may be substantially higher or lower than the amounts established or the range of reasonably possible loss disclosed for those claims.

As previously disclosed, on April 13, 2020, the Company announced that it had elected not to renew the Management Agreement with PRCM Advisers. Subsequently, on July 15, 2020, the Company provided PRCM Advisers with a notice of termination of the Management Agreement for “cause” in accordance with Section 15(a) of the Management Agreement. The Company terminated the Management Agreement for “cause” on the basis of certain material breaches and certain events of gross negligence on the part of PRCM Advisers in the performance of its duties under the Management Agreement.

On July 21, 2020, PRCM Advisers filed a complaint against the Company in the United States District Court for the Southern District of New York. Subsequently, PRCM Advisers filed an amended complaint, or the Federal Complaint, on September 4, 2020. The Federal Complaint alleges, among other things, the misappropriation of trade secrets in violation of both the Defend Trade Secrets Act and New York common law, breach of contract, breach of the implied covenant of good faith and fair dealing, unfair competition and business practices, unjust enrichment, conversion, and tortious interference with contract. The Federal Complaint seeks, among other things, an order enjoining the Company from making any use of or disclosing PRCM Advisers’ trade secret, proprietary, or confidential information; damages in an amount to be determined at a hearing and/or trial; disgorgement of the Company’s wrongfully obtained profits; and fees and costs incurred by PRCM Advisers in pursuing the action. On September 25, 2020, the Company filed a motion to dismiss the Federal Complaint. PRCM Advisers thereafter filed an opposition to the motion to dismiss on October 16, 2020, and on October 26, 2020, the Company filed its reply. The Company’s board of directors believes the Federal Complaint is without merit and that the Company has fully complied with the terms of the Management Agreement.

Separately, the staff of the SEC is conducting a non-public investigation in connection with the Company’s decisions not to renew its Management Agreement with PRCM Advisers on the basis of unfair compensation payable to PRCM Advisers in accordance with Section 13(a)(ii) of the Management Agreement and to terminate its Management Agreement with PRCM Advisers for “cause” in accordance with Section 15 of the Management Agreement. The Company is cooperating with the SEC. The Company cannot predict the duration or outcome of the SEC investigation or the extent of any impact it may have on the Company.

As of September 30, 2020, the Company’s condensed consolidated financial statements do not recognize a contingency liability or disclose a range of reasonably possible loss under ASC 450 because management does not believe that a loss or expense related to the Federal Complaint or the SEC Investigation is probable or reasonably estimable. The specific factors that limit the Company’s ability to reasonably estimate a loss or expense related to the Federal Complaint or the SEC Investigation include that both matters are in early stages and no amount of damages has been specified. If and when management believes losses associated with the Federal Complaint or the SEC Investigation are a probable future event that may result in a loss or expense to the Company and the loss or expense is reasonably estimable, the Company will recognize a contingency liability and resulting loss in such period.

Based on information currently available, management is not aware of any other legal or regulatory claims that would have a material effect on the Company’s condensed consolidated financial statements and therefore no accrual is required as of September 30, 2020.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 17. 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 September 30, 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.

(dollars in thousands)

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

- (1) Subject to the Company's right under limited circumstances to redeem the preferred stock earlier than the redemption eligible 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. The Company may also purchase shares of preferred stock from time to time in the open market by tender or in privately negotiated transactions. 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 September 30, 2020, 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, as detailed below. Pursuant to their terms, all unpaid dividends on the Company's preferred stock accrue without interest.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following table presents cash dividends declared by the Company on its preferred stock from December 31, 2018 through September 30, 2020:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series A Preferred Stock:			
September 21, 2020	October 12, 2020	October 27, 2020	\$ 0.507810
June 18, 2020	July 10, 2020	July 27, 2020	\$ 0.507810
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.507810
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:			
September 21, 2020	October 12, 2020	October 27, 2020	\$ 0.476560
June 18, 2020	July 10, 2020	July 27, 2020	\$ 0.476560
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.476560
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:			
September 21, 2020	October 12, 2020	October 27, 2020	\$ 0.453130
June 18, 2020	July 10, 2020	July 27, 2020	\$ 0.453130
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.453130
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
Series D Preferred Stock:			
September 21, 2020	October 1, 2020	October 15, 2020	\$ 0.484375
June 18, 2020	July 1, 2020	July 15, 2020	\$ 0.484375
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.484375
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:			
September 21, 2020	October 1, 2020	October 15, 2020	\$ 0.468750
June 18, 2020	July 1, 2020	July 15, 2020	\$ 0.468750
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.468750
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

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020, the Company had 273,694,411 shares of common stock outstanding. The following table presents a reconciliation of the common shares outstanding for the three and nine months ended September 30, 2020 and 2019:

	Number of common shares
Common shares outstanding, December 31, 2018	248,085,721
Issuance of common stock	24,399,107
Issuance of restricted stock ⁽¹⁾	412,074
Repurchase of common stock	(1,500)
Common shares outstanding, September 30, 2019	272,895,402
Common shares outstanding, December 31, 2019	272,935,731
Issuance of common stock	50,729
Issuance of restricted stock ⁽¹⁾	813,251
Repurchase of common stock	(105,300)
Common shares outstanding, September 30, 2020	273,694,411

(1) Represents shares of restricted stock granted under the Second Restated 2009 Equity Incentive Plan, net of forfeitures, of which 1,223,020 restricted shares remained subject to vesting requirements at September 30, 2020.

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, as detailed below. The following table presents cash dividends declared by the Company on its common stock from December 31, 2018 through September 30, 2020:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Common Share
September 21, 2020	October 1, 2020	October 29, 2020	\$ 0.140000
June 18, 2020	June 30, 2020	July 29, 2020	\$ 0.140000
April 6, 2020	April 16, 2020	April 29, 2020	\$ 0.050000
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

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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 September 30, 2020, 320,717 shares have been issued under the plan for total proceeds of approximately \$5.3 million, of which 13,968 and 50,729 shares were issued for total proceeds of \$0.1 million and \$0.3 million during the three and nine months ended September 30, 2020, respectively. During the three and nine months ended September 30, 2019, 8,651 and 33,807 shares were issued for total proceeds of \$0.1 million and \$0.5 million, 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 September 30, 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 nine months ended September 30, 2020. During both the three and nine months ended September 30, 2019, 1,500 shares were repurchased for a total cost of \$19 thousand. No shares were repurchased during the three months ended September 30, 2020.

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 September 30, 2020, 7,490,235 shares of common stock had been sold under the Company's at the market offering program 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 nine months ended September 30, 2019. No shares were sold during the three and nine months ended September 30, 2020 or the three months ended September 30, 2019.

Accumulated Other Comprehensive Income

Accumulated other comprehensive income at September 30, 2020 and December 31, 2019 was as follows:

(in thousands)	September 30, 2020	December 31, 2019
Available-for-sale securities		
Unrealized gains	\$ 722,380	\$ 730,043
Unrealized losses	(2,040)	(40,643)
Accumulated other comprehensive income	<u>\$ 720,340</u>	<u>\$ 689,400</u>

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Reclassifications out of Accumulated Other Comprehensive Income

The Company reclassifies unrealized gains and losses on AFS securities in accumulated other comprehensive income to net income (loss) upon the recognition of any other-than-temporary impairments and realized gains and losses on sales, net of income tax effects, as individual securities are impaired or sold. The following table summarizes reclassifications out of accumulated other comprehensive income for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Affected Line Item in the Statements of Comprehensive Income (Loss)	Amount Reclassified out of Accumulated Other Comprehensive Income			
		Three Months Ended September 30,		Nine Months Ended September 30,	
		2020	2019	2020	2019
Other-than-temporary impairments on AFS securities	Total other-than-temporary impairment losses	\$ —	\$ 5,950	\$ —	\$ 11,004
Realized gains on sales of certain AFS securities, net of tax	(Loss) gain on investment securities	—	(226,790)	(471,301)	(189,620)
Total		\$ —	\$ (220,840)	\$ (471,301)	\$ (178,616)

Note 18. 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, personnel and other parties who may provide significant services to 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 nine months ended September 30, 2020 and 2019, the Company granted 168,942 and 60,108 shares of common stock, respectively, to its independent directors pursuant to the Plan. The estimated fair value of these awards was \$4.75 and \$13.35 per share on grant date, based on the adjusted closing price of the Company's common stock on the NYSE on such date. The shares underlying the grants are subject to a one-year vesting period.

Additionally, during the nine months ended September 30, 2020 and 2019, the Company granted 686,770 and 455,174 shares of restricted common stock, respectively, to the Company's executive officers and other eligible individuals, 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

The following table summarizes the activity related to restricted common stock for the nine months ended September 30, 2020 and 2019:

	Nine Months Ended September 30,			
	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	\$ 15.26	1,593,701	\$ 15.81
Granted	855,712	13.16	515,282	14.28
Vested	(653,132)	(15.30)	(803,523)	(15.59)
Forfeited	(42,461)	(14.58)	(103,208)	(15.52)
Outstanding at End of Period	<u>1,223,020</u>	<u>\$ 13.80</u>	<u>1,202,252</u>	<u>\$ 15.33</u>

For the three and nine months ended September 30, 2020, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of \$2.9 million and \$7.5 million, respectively. For the three and nine months ended September 30, 2019, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of \$2.2 million and \$6.5 million, respectively.

Note 19. Restructuring Charges

On April 13, 2020, the Company announced that it had elected to not renew the Management Agreement with PRCM Advisers on the basis of unfair compensation payable to the manager pursuant to Section 13(a)(ii) of the Management Agreement. As a result, the Company had expected the Management Agreement to terminate on September 19, 2020, at which time the Company would have been required to pay a termination fee equal to three times the sum of the average annual base management fee earned by PRCM Advisers during the 24-month period immediately preceding the date of termination, calculated as of the end of the most recently completed fiscal quarter prior to the date of termination, pursuant to the terms of the Management Agreement. The termination fee was calculated to be \$139.8 million based on results as of June 30, 2020.

On July 15, 2020, the Company provided PRCM Advisers with a notice of termination of the Management Agreement for “cause” on the basis of certain material breaches of the Management Agreement by PRCM Advisers, its agents and/or its assignees that are incapable of being cured within the time period set forth therein and certain events of gross negligence on the part of PRCM Advisers in the performance of its duties under the Management Agreement. The Management Agreement subsequently terminated on August 14, 2020. No termination fee was payable to PRCM Advisers in connection with such termination pursuant to Section 15(a) of the Management Agreement.

The following table presents a reconciliation of accrued restructuring charges incurred, paid and adjusted in connection with the termination of the Management Agreement for the three and nine months ended September 30, 2020:

(in thousands)	Three Months Ended September 30, 2020	Nine Months Ended September 30, 2020
Accrued restructuring costs at beginning of period	\$ 142,317	\$ —
Costs incurred and charged to expense	—	145,788
Costs paid	(2,235)	(5,706)
Non-cash adjustments	(139,788)	(139,788)
Accrued restructuring costs at end of period	<u>\$ 294</u>	<u>\$ 294</u>

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

In connection with the termination of the Management Agreement for cause, the Company reversed the \$139.8 million accrued fee attributable to the non-renewal during the three months ended September 30, 2020. For the nine months ended September 30, 2020, the Company incurred a total of \$6.0 million in contract termination costs, which includes all estimated costs incurred for legal and advisory services provided to facilitate the termination of the Management Agreement. In accordance with ASC 420, *Exit or Disposal Cost Obligations*, all contract termination costs are included within restructuring charges on the Company's condensed consolidated statements of comprehensive income (loss) for the three and nine months ended September 30, 2020. Accrued restructuring costs are included in other liabilities on the Company's condensed consolidated balance sheet as of September 30, 2020.

Note 20. Income Taxes

For the three and nine months ended September 30, 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 and nine months ended September 30, 2020, the Company's TRSs recognized a benefit from income taxes of \$8.2 million and \$39.5 million, respectively. The benefit recognized for the three months ended September 30, 2020 was primarily due to losses recognized on MSR. The benefit recognized for the nine months ended September 30, 2020 was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in the Company's TRSs. During the three and nine months ended September 30, 2019, the Company's TRSs recognized a benefit from income taxes of \$3.6 million and \$11.2 million, respectively, which 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.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 21. Earnings Per Share

The following table presents a reconciliation of the earnings (loss) and shares used in calculating basic and diluted earnings (loss) per share for the three and nine months ended September 30, 2020 and 2019:

(in thousands, except share data)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Numerator:				
Net income (loss)	\$ 201,914	\$ 305,700	\$ (1,841,306)	\$ 189,208
Dividends on preferred stock	18,950	18,951	56,851	56,851
Net income (loss) attributable to common stockholders - basic	182,964	286,749	(1,898,157)	132,357
Interest expense attributable to convertible notes ⁽¹⁾	4,812	4,779	—	—
Net income (loss) attributable to common stockholders - diluted	\$ 187,776	\$ 291,528	\$ (1,898,157)	\$ 132,357
Denominator:				
Weighted average common shares outstanding	272,415,242	271,689,878	272,315,905	264,871,455
Weighted average restricted stock shares	1,290,543	1,207,697	1,252,093	1,243,317
Basic weighted average shares outstanding	273,705,785	272,897,575	273,567,998	266,114,772
Effect of dilutive shares issued in an assumed conversion	18,171,150	18,156,143	—	—
Diluted weighted average shares outstanding	291,876,935	291,053,718	273,567,998	266,114,772
Earnings (Loss) Per Share				
Basic	\$ 0.67	\$ 1.05	\$ (6.94)	\$ 0.50
Diluted	\$ 0.64	\$ 1.00	\$ (6.94)	\$ 0.50

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

For the nine months ended September 30, 2020, excluded from the calculation of diluted earnings per share is the effect of adding back \$14.3 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 18,171,150 weighted average common share equivalents related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

For the nine months ended September 30, 2019, excluded from the calculation of diluted earnings per share is the effect of adding back \$14.2 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 18,116,911 weighted average common share equivalents related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

Note 22. Related Party Transactions

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

Through August 14, 2020, the Company was externally managed and advised by PRCM Advisers under the terms of a Management Agreement between the Company and PRCM Advisers. The Company terminated the Management Agreement effective August 14, 2020 for "cause" in accordance with Section 15(a) thereof. On August 15, 2020, the Company completed its transition to self-management and directly hired the senior management team and other personnel who had historically provided services to the Company.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Prior to the termination of the Management Agreement, PRCM Advisers was responsible for administering the Company's business activities and day-to-day operations, at all times subject to the supervision and oversight of the Company's board of directors. Under the Management Agreement, PRCM Advisers was required to provide the Company with its personnel, including its executive officers, investment professionals and other support personnel. The Company did not have its own employees. Each of the Company's executive officers was an employee or partner of an affiliate of Pine River. The Company paid PRCM Advisers a management fee equal to 1.5% per annum, calculated and payable quarterly in arrears, of the Company's stockholders' equity, and reimbursed it for certain expenses, as described below.

For purposes of calculating the management fee, the Company's stockholders' equity represented the sum of the net proceeds from all issuances of the Company's equity securities since inception (allocated on a pro rata daily basis for such issuances during the fiscal quarter of any such issuance), plus the Company's retained earnings at the end of the most recently completed calendar quarter (without taking into account any non-cash equity compensation expense incurred in current or prior periods), less the consolidated stockholders' equity of Granite Point Mortgage Trust Inc. and its subsidiaries, or Granite Point, during the time Granite Point was consolidated on the Company's balance sheet (i.e. prior to the Company's distribution of its shares of Granite Point common stock to the Company's common stockholders in 2017), the weighted average cost basis of Granite Point common stock purchased by the Company, the outstanding principal balance of the promissory note due from the sale of Granite Point preferred stock and any amount that the Company has paid for repurchases of its common stock since inception, and excluding any unrealized gains, losses or other items that do not affect realized net income (regardless of whether such items are included in other comprehensive income or loss, or in net income). In connection with the Company's acquisition of CYS Investments, Inc., or CYS, effective July 31, 2018, the Management Agreement was amended to reduce the base management fee with respect to the additional equity under management resulting from the merger from 1.5% to 0.75% from the effective time of the merger 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. The base management fee was subject to other adjustments from time to time, as described in the Management Agreement.

In accordance with the Management Agreement, the Company incurred \$5.8 million and \$31.7 million as a management fee to PRCM Advisers for the three and nine months ended September 30, 2020, respectively, and \$16.8 million and \$42.6 million as a management fee to PRCM Advisers for the three and nine months ended September 30, 2019, respectively.

Additionally, prior to the termination of the Management Agreement, the Company reimbursed PRCM Advisers for (i) the Company's allocable share of the compensation paid by PRCM Advisers to its personnel serving as the Company's principal financial officer and general counsel and personnel employed by PRCM Advisers as in-house legal, tax, accounting, consulting, auditing, administrative, information technology, valuation, computer programming and development and back-office resources to the Company, and (ii) any amounts for personnel of PRCM Advisers' affiliates arising under a shared facilities and services agreement. In accordance the Management Agreement, expense reimbursements to PRCM Advisers were required to be made in cash on a quarterly basis following the end of each quarter. The Company reimbursed PRCM Advisers for direct and allocated costs incurred by PRCM Advisers on behalf of the Company of approximately \$3.2 million and \$19.3 million for the three and nine months ended September 30, 2020, respectively, and \$4.8 million and \$23.0 million for the three and nine months ended September 30, 2019, respectively.

Subsequent to the transition to self-management, the Company no longer pays a management fee to, or reimburses the expenses of, PRCM Advisers. Expenses for which the Company previously reimbursed PRCM Advisers are now borne directly by the Company. The Company is also now responsible for the compensation of the Company's Chief Executive Officer, Chief Investment Officer and investment professionals, which was previously the responsibility of PRCM Advisers.

The Company recognized \$2.9 million and \$7.5 million of compensation during the three and nine months ended September 30, 2020, respectively, and \$2.2 million and \$6.5 million of compensation during the three and nine months ended September 30, 2019, respectively, related to restricted common stock issued to employees providing significant services to the Company and the Company's independent directors pursuant to the Plan. See Note 18 - *Equity Incentive Plan* for additional information.

Note 23. Subsequent Events

Events subsequent to September 30, 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, 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.

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;
- 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 included assets that were 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. In the first quarter of 2020, we experienced unprecedented market conditions as a result of the global COVID-19 pandemic, 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 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 during the first quarter in order to reduce risk and raise cash to establish a strong defensive liquidity position to weather potential ongoing economic and market instability. In second and third quarters, we added modestly to our Agency RMBS portfolio, deploying risk as management became more confident in our liquidity position. Going forward, management expects our capital to be fully allocated to our strategy of pairing Agency RMBS and MSR.

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. At September 30, 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.

The following table provides our capital allocation in each of our investment strategies as of September 30, 2020 and the four immediately preceding quarter-ends:

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

(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.

For the three months ended September 30, 2020, our net yield realized on the portfolio was higher than the prior quarter and recent periods. Our average annualized portfolio yield was lower primarily due to sales of higher yielding RMBS and higher Agency amortization due to prepaids, as well as higher servicing expenses and lower service income due to MSR portfolio runoff and forbearances. Cost of financing was lower due to the reset of borrowing and hedging rates in the lower interest rate environment. The following table provides the average annualized yield on our assets, including Agency RMBS, non-Agency securities and MSR for the three months ended September 30, 2020, and the four immediately preceding quarters:

	Three Months Ended				
	September 30, 2020	June 30, 2020	March 31, 2020	December 31, 2019	September 30, 2019
Average annualized portfolio yield ⁽¹⁾	2.42%	2.84%	3.52%	3.54%	3.67%
Cost of financing ⁽²⁾	0.64%	2.61%	2.39%	2.35%	2.51%
Net portfolio yield	1.78%	0.23%	1.13%	1.19%	1.16%

(1) Average annualized yield includes interest income on Agency RMBS and non-Agency securities and MSR servicing income, net of estimated amortization, and servicing expenses.

(2) Cost of financing includes swap and cap interest rate spread and amortization of upfront payments made or received upon entering.

We seek to deploy moderate leverage as part of our investment strategy. We generally finance our Agency RMBS securities through short- and long-term borrowings structured as repurchase agreements. We also finance our MSR through 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 MSR, with less liquidity and/or more exposure to 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. Following the sale of substantially all of our non-Agency securities in the first quarter, we expect debt-to-equity to increase over time. 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.

Through August 14, 2020, we were externally managed and advised by PRCM Advisers LLC, a subsidiary of Pine River Capital Management L.P., or Pine River, under the terms of a Management Agreement between us and PRCM Advisers. We terminated the Management Agreement effective August 14, 2020 for “cause” in accordance with Section 15(a) thereof. On August 15, 2020, we completed our transition to self-management and directly hired the senior management team and other personnel who had historically provided services to us.

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 and convertible notes;
- 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 income (loss) 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, including our transition to self-management, we have pursued or may in the future pursue;
- our decision to terminate our Management Agreement with PRCM Advisers and the ongoing litigation with PRCM Advisers related to such termination;
- 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 related to the termination of our Management Agreement with PRCM Advisers and 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.

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 income (loss) are significantly affected by fluctuations in market prices. At September 30, 2020, approximately 87.1% of our total assets, or \$17.9 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 reported income (loss) for U.S. GAAP purposes, or GAAP net income (loss). However, beginning on January 1, 2020 (as discussed above), changes in the provision for credit losses on AFS securities are recognized immediately in GAAP net income (loss). 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 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 and inverse interest-only Agency RMBS. 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 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, 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 6.2% of its total assets as Level 3 fair value assets at September 30, 2020.

Market Conditions and Outlook

The second quarter was a period of stabilization and asset price recovery, while the third quarter saw some tightening of primary and secondary mortgage spreads. The U.S. Federal Reserve, or Fed, moved overnight interest rates to the zero bound earlier in the year and is expected to hold overnight interest rates near current levels for an extended period of time. During the third quarter, the overnight rate cleared at less than 10 basis points and various term overnight indexed swap markets moved below zero. After announcing QE4 in March, the Fed has purchased more than \$1 trillion MBS and more than \$1.8 trillion U.S. Treasuries, increasing its overall balance sheet to approximately \$7 trillion. Interest rates across the yield curve remain low. All U.S. treasuries yield less than 150 basis points, with all maturities through five years yielding less than 50 basis points. Realized and implied volatility levels continue to be subdued. Primary and secondary mortgage spreads remain wide, but decreased somewhat during the quarter, and constant prepayment rates remain above customary levels.

The Coronavirus Aid, Relief, and Economic Security Act, or 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. 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 to advance principal, interest, taxes and insurance payments during the time when borrowers are in forbearance or while foreclosure moratorium is in effect. After increasing in the months following the passage of the Act, the number of loans in forbearance in our servicing portfolio has subsequently decreased. If the economy is further impacted by the recent surge in COVID-19 virus cases across the country, more borrowers could opt for forbearance relief from their mortgage loan payments. As a result, we could see the number of loans in forbearance in our servicing portfolio increase over the next several months.

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)	September 30, 2020		December 31, 2019	
Agency				
Fixed Rate	\$ 16,544,530	92.4 %	\$ 27,763,471	83.2 %
Hybrid ARM	11,798	0.1 %	14,584	— %
Total Agency	16,556,328	92.5 %	27,778,055	83.2 %
Agency Derivatives	66,848	0.4 %	68,925	0.2 %
Non-Agency	17,993	0.1 %	3,628,273	10.8 %
Mortgage servicing rights	1,257,503	7.0 %	1,909,444	5.7 %
Total	\$ 17,898,672		\$ 33,384,697	

Prepayment speeds and volatility due to interest rates

Our portfolio is subject to market risks, primarily interest rate risk and prepayment risk. We seek to offset a portion of our Agency pool market value exposure through our MSR and interest-only Agency RMBS portfolios. Generally, rising prepayment speeds will cause the market value of our RMBS trading at a premium to par (including interest-only securities) and MSR to deteriorate, and our RMBS trading at a discount to par to increase. The inverse relationship occurs when prepayment speeds slow. During periods of decreasing interest rates, the market value of our Agency pools generally increases and the market value of our interest-only securities and MSR generally decreases. We believe the low interest rate environment is expected to persist in the near term. 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 September 30, 2020, and the four immediately preceding quarter-ends:

	September 30, 2020	June 30, 2020	March 31, 2020	December 31, 2019	September 30, 2019
Agency RMBS	23.1 %	19.9 %	12.3 %	14.3 %	13.4 %
Mortgage servicing rights	41.5 %	35.6 %	19.9 %	20.8 %	20.5 %

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:

(dollars in thousands)	September 30, 2020							
	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								
≤ 2.5%	\$ 1,955,838	\$ 2,079,588	3.0 %	100.0 %	3.4 %	\$ 2,052,496	\$ —	5
3.0%	2,496,085	2,690,234	14.7 %	100.0 %	3.7 %	2,574,793	—	11
3.5%	3,610,881	3,935,960	22.4 %	100.0 %	4.2 %	3,783,465	—	14
4.0%	3,772,978	4,160,816	31.8 %	100.0 %	4.6 %	3,929,405	—	34
4.5%	2,526,161	2,817,491	31.3 %	100.0 %	5.0 %	2,663,879	—	32
≥ 5.0%	573,816	647,295	29.9 %	98.5 %	5.8 %	608,518	—	61
	14,935,759	16,331,384	23.3 %	99.9 %	4.3 %	15,612,556	—	23
Other P&I	104,248	119,002	11.0 %	— %	6.7 %	116,003	—	222
Interest-only	2,189,734	105,942	15.3 %	— %	3.3 %	126,068	(19,241)	115
Agency Derivatives	338,646	66,848	17.2 %	— %	6.7 %	48,535	—	192
Total Agency RMBS	\$ 17,568,387	\$ 16,623,176		98.2 %		\$ 15,903,162	\$ (19,241)	

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							
≤ 2.5%	\$ —	\$ —	— %	— %	— %	\$ —	—
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
≥ 5.0%	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	

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 September 30, 2020, we had entered into repurchase agreements with 45 counterparties, 20 of which had outstanding balances at September 30, 2020. In addition, we held short- and long-term borrowings under revolving credit facilities, long-term term notes payable and long-term unsecured convertible senior notes. As of September 30, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 5.7:1.0.

As of September 30, 2020, we held \$1.6 billion in cash and cash equivalents, approximately \$8.8 million of unpledged Agency securities and derivatives and \$14.7 million of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on our unpledged securities of approximately \$18.5 million. As of September 30, 2020, we held approximately \$232.4 million of unpledged MSR and \$26.7 million of unpledged servicing advances. Overall, we had unused borrowing capacity on MSR asset and servicing advance financing facilities of \$375.2 million and \$200.0 million, respectively. The unused borrowing capacity on MSR financing facilities 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, insufficient collateral or the inability to meet lenders' eligibility requirements for specific types of asset classes.

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

During the first quarter of 2020, we experienced unprecedented market conditions as a result of the global COVID-19 pandemic, 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 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 first quarter and a corresponding decline in book value.

The actions taken by the Fed to purchase Agency RMBS have been successful in stabilizing this market, as spreads and prices largely recovered on these assets in the second quarter. In addition, repurchase agreement financing markets for Agency RMBS continue to function well, term markets have re-developed, 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. At September 30, 2020, 36,277 loans, or 5.0% of our portfolio by loan count, were in forbearance, of which 27.7% had made their September payment and were current as of September 30, 2020. Therefore, approximately 3.6% of our portfolio by loan count was in forbearance and not current as of September 30, 2020. We are confident in our ability to meet our servicing advance obligations and have entered into a revolving credit facility to finance these advances.

Our GAAP net income attributable to common stockholders was \$183.0 million (\$0.64 per diluted weighted average share) for the three months ended September 30, 2020 and our GAAP net loss attributable to common stockholders was \$1.9 billion (\$(6.94) per diluted weighted average share) for the nine months ended September 30, 2020, as compared to GAAP net income attributable to common stockholders of \$286.7 million and \$132.4 million (\$1.00 and \$0.50 per diluted weighted average share) for the three and nine months ended September 30, 2019.

With our accounting treatment for AFS securities, unrealized fluctuations in the market values of AFS securities, excluding Agency interest-only securities and certain securities with an allowance for credit losses, 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.” For the three and nine months ended September 30, 2020, net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were \$36.2 million and \$30.9 million, respectively. This, combined with GAAP net income attributable to common stockholders of \$183.0 million and GAAP net loss attributable to common stockholders of \$1.9 billion for the three and nine months ended September 30, 2020, respectively, resulted in comprehensive income attributable to common stockholders of \$219.2 million and comprehensive loss attributable to common stockholders of \$1.9 billion for the three and nine months ended September 30, 2020, respectively. For the three and nine months ended September 30, 2019, net unrealized losses on AFS securities recognized as other comprehensive loss, net of tax, were \$29.2 million and net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were \$637.5 million, respectively. This, combined with GAAP net income attributable to common stockholders of \$286.7 million and \$132.4 million, resulted in comprehensive income attributable to common stockholders of \$257.6 million and \$769.9 million for the three and nine months ended September 30, 2019, respectively.

Our book value per common share for U.S. GAAP purposes was \$7.37 at September 30, 2020, a decrease from \$14.54 per common share at December 31, 2019. For the nine months ended September 30, 2020, we recognized comprehensive loss attributable to common stockholders of \$1.9 billion, which drove the overall decrease in book value.

Although some uncertainty remains regarding the future effects of the COVID-19 pandemic and the actions that may be taken by federal and state governmental authorities and GSEs in response, the Agency RMBS market has stabilized and there is more clarity regarding forbearance levels and deferral programs on Agency MSR. Our liquidity position is strong, with \$1.6 billion in unrestricted cash as of September 30, 2020. Given our increased confidence, we expect to continue to deploy such capital to our target assets over time.

The following tables present the components of our comprehensive income (loss) for the three and nine months ended September 30, 2020 and 2019:

(in thousands, except share data)

Income Statement Data:	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
	(unaudited)		(unaudited)	
Interest income:				
Available-for-sale securities	\$ 89,200	\$ 242,023	\$ 443,614	\$ 731,716
Other	516	7,717	8,936	24,536
Total interest income	89,716	249,740	452,550	756,252
Interest expense:				
Repurchase agreements	18,652	176,450	222,068	501,361
Federal Home Loan Bank advances	—	391	1,747	10,406
Revolving credit facilities	2,391	3,964	8,748	15,316
Term notes payable	3,321	5,475	11,678	5,706
Convertible senior notes	4,821	4,797	14,366	14,256
Total interest expense	29,185	191,077	258,607	547,045
Net interest income	60,531	58,663	193,943	209,207
Other-than-temporary impairment losses	—	(5,950)	—	(11,004)
Other income (loss):				
(Loss) gain on investment securities	(9,107)	248,828	(1,037,222)	251,977
Servicing income	99,114	126,025	342,802	373,922
Loss on servicing asset	(112,763)	(234,514)	(938,219)	(675,920)
Gain (loss) on interest rate swap, cap and swaption agreements	1,401	70,620	(296,117)	(101,414)
Gain on other derivative instruments	65,596	85,856	8,734	270,798
Other income	84	495	948	277
Total other income (loss)	44,325	297,310	(1,919,074)	119,640
Expenses:				
Management fees	5,759	16,839	31,738	42,556
Servicing expenses	26,197	17,696	70,049	54,354
Other operating expenses	18,976	13,344	47,892	42,913
Restructuring charges	(139,788)	—	6,000	—
Total expenses	(88,856)	47,879	155,679	139,823
Income (loss) before income taxes	193,712	302,144	(1,880,810)	178,020
Benefit from income taxes	(8,202)	(3,556)	(39,504)	(11,188)
Net loss	201,914	305,700	(1,841,306)	189,208
Dividends on preferred stock	18,950	18,951	56,851	56,851
Net income (loss) attributable to common stockholders	\$ 182,964	\$ 286,749	\$ (1,898,157)	\$ 132,357
Basic earnings (loss) per weighted average common share	\$ 0.67	\$ 1.05	\$ (6.94)	\$ 0.50
Diluted earnings (loss) per weighted average common share	\$ 0.64	\$ 1.00	\$ (6.94)	\$ 0.50
Dividends declared per common share	\$ 0.14	\$ 0.40	\$ 0.33	\$ 1.27
Weighted average number of shares of common stock:				
Basic	273,705,785	272,897,575	273,567,998	266,114,772
Diluted	291,876,935	291,053,718	273,567,998	266,114,772

(in thousands)

Income Statement Data:

	Three Months Ended		Nine Months Ended	
	September 30,		September 30,	
	2020	2019	2020	2019
	(unaudited)		(unaudited)	
Comprehensive income (loss):				
Net income (loss)	\$ 201,914	\$ 305,700	\$ (1,841,306)	\$ 189,208
Other comprehensive income (loss), net of tax:				
Unrealized gain (loss) on available-for-sale securities	36,216	(29,164)	30,940	637,537
Other comprehensive income (loss)	36,216	(29,164)	30,940	637,537
Comprehensive income (loss)	238,130	276,536	(1,810,366)	826,745
Dividends on preferred stock	18,950	18,951	56,851	56,851
Comprehensive income (loss) attributable to common stockholders	\$ 219,180	\$ 257,585	\$ (1,867,217)	\$ 769,894

(in thousands)

Balance Sheet Data:

	September 30,	December 31,
	2020	2019
	(unaudited)	
Available-for-sale securities	\$ 16,574,321	\$ 31,406,328
Mortgage servicing rights	\$ 1,257,503	\$ 1,909,444
Total assets	\$ 20,587,650	\$ 35,921,622
Repurchase agreements	\$ 16,376,696	\$ 29,147,463
Federal Home Loan Bank advances	\$ —	\$ 210,000
Revolving credit facilities	\$ 274,830	\$ 300,000
Term notes payable	\$ 395,328	\$ 394,502
Convertible senior notes	\$ 285,843	\$ 284,954
Total stockholders' equity	\$ 3,019,672	\$ 4,970,466

Results of Operations

The following analysis focuses on financial results during the three and nine months ended September 30, 2020 and 2019.

Interest Income

Interest income decreased from \$249.7 million and \$756.3 million for the three and nine months ended September 30, 2019 to \$89.7 million and \$452.6 million for the same periods in 2020 due to the sale of both Agency RMBS and non-Agency securities that occurred during the first quarter, further sales of some higher coupon Agencies and higher Agency amortization due to prepays.

Interest Expense

Interest expense decreased from \$191.1 million and \$547.0 million for the three and nine months ended September 30, 2019, respectively, to \$29.2 million and \$258.6 million for the same periods in 2020 due to lower borrowing balances related to the sale of both Agency RMBS and non-Agency securities that occurred during the first quarter and a lower interest rate environment.

Net Interest Income

The following tables present 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 and nine months ended September 30, 2020 and 2019:

(dollars in thousands)	Three Months Ended September 30, 2020			Nine Months Ended September 30, 2020		
	Average Balance	Interest Income/Expense	Net Yield/Cost of Funds ⁽²⁾	Average Balance	Interest Income/Expense	Net Yield/Cost of Funds ⁽²⁾
Interest-earning assets						
Agency available-for-sale securities	\$ 16,191,900	\$ 89,084	2.2 %	\$ 19,993,159	\$ 389,941	2.6 %
Non-Agency available-for-sale securities	35,623	116	1.3 %	1,070,114	53,673	6.7 %
Other	—	516	— %	2,743	8,936	3.8 %
Total interest income/net asset yield	\$ 16,227,523	\$ 89,716	2.2 %	\$ 21,066,016	\$ 452,550	2.9 %
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	\$ 16,705,047	\$ 18,268	0.4 %	\$ 20,324,490	\$ 207,483	1.4 %
Non-Agency available-for-sale securities	2,578	16	2.5 %	578,309	12,917	3.0 %
Agency derivatives ⁽³⁾	52,603	155	1.2 %	51,572	727	1.9 %
Mortgage servicing rights ⁽⁴⁾	656,739	5,925	3.6 %	746,323	23,114	4.1 %
Other unassignable						
Convertible senior notes	285,729	4,821	6.7 %	285,432	14,366	6.7 %
Total interest expense/cost of funds	\$ 17,702,696	\$ 29,185	0.7 %	\$ 21,986,126	\$ 258,607	1.6 %
Net interest income/spread ⁽⁵⁾		\$ 60,531	1.5 %		\$ 193,943	1.3 %

(dollars in thousands)	Three Months Ended September 30, 2019			Nine Months Ended September 30, 2019		
	Average Balance	Interest Income/Expense	Net Yield/Cost of Funds ⁽²⁾	Average Balance	Interest Income/Expense	Net Yield/Cost of Funds ⁽²⁾
Interest-earning assets						
Agency available-for-sale securities	\$ 25,140,887	\$ 199,122	3.2 %	\$ 23,241,104	\$ 584,981	3.4 %
Non-Agency available-for-sale securities	3,259,772	42,901	5.3 %	3,265,827	146,735	6.0 %
Other	9,430	7,717	4.3 %	17,642	24,536	4.6 %
Total interest income/net asset yield	\$ 28,410,089	\$ 249,740	3.5 %	\$ 26,524,573	\$ 756,252	3.8 %
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	\$ 24,608,562	\$ 160,608	2.6 %	\$ 22,448,615	\$ 445,727	2.6 %
Non-Agency available-for-sale securities	1,462,268	12,879	3.5 %	2,013,227	55,263	3.7 %
Agency derivatives ⁽³⁾	47,873	392	3.3 %	47,010	1,197	3.4 %
Mortgage servicing rights ⁽⁴⁾	946,488	12,401	5.2 %	757,654	30,602	5.4 %
Other unassignable						
Convertible senior notes	284,528	4,797	6.7 %	284,268	14,256	6.7 %
Total interest expense/cost of funds	\$ 27,349,719	\$ 191,077	2.8 %	\$ 25,550,774	\$ 547,045	2.9 %
Net interest income/spread ⁽⁵⁾		\$ 58,663	0.7 %		\$ 209,207	0.9 %

(1) Average asset balance represents average amortized cost on AFS securities.

(2) Cost of funds does not include the accrual and settlement of interest associated with interest rate swaps and caps. In accordance with U.S. GAAP, those costs are included in (loss) gain on interest rate swap, cap and swaption agreements in the condensed consolidated statements of comprehensive income (loss). For the three and nine months ended September 30, 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 and caps, was 0.7% and 1.3%, respectively, compared to 2.5% and 2.5% for the same periods in 2019.

(3) Yields on Agency Derivatives not shown as interest income is included in gain on other derivative instruments in the condensed consolidated statements of comprehensive income (loss).

(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 and caps. In accordance with U.S. GAAP, those costs are included in gain (loss) on interest rate swap, cap and swaption agreements in the condensed consolidated statements of comprehensive income (loss). For the three and nine months ended September 30, 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 and caps, was 1.6% and 1.5%, respectively, compared to 0.9% and 1.2% for the same periods in 2019.

The decrease in yields on Agency AFS securities for the three and nine months ended September 30, 2020, as compared to the same period in 2019, was predominantly driven by sales of pools with higher yields. The decrease in cost of funds associated with the financing of Agency AFS securities for the three and nine months ended September 30, 2020, as compared to the same period in 2019, was the result of lower average balance and decreases in the borrowing rates offered by financing counterparties.

The decrease in yields on non-Agency securities for the three and nine months ended September 30, 2020, as compared to the same periods in 2019, was due to the sale of substantially all legacy non-Agencies during the first quarter. The decrease in cost of funds associated with the financing of non-Agency AFS securities for the three and nine months ended September 30, 2020, as compared to the same period in 2019, was also a result of the sale.

The decrease in cost of funds associated with the financing of Agency Derivatives for the three and nine months ended September 30, 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 and nine months ended September 30, 2020, as compared to the same period in 2019, was the result of 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 and nine months ended September 30, 2020, as compared to the same period in 2019, was consistent.

The following tables present the components of the yield earned on our AFS securities portfolio as a percentage of our average amortized cost of securities for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Gross yield/stated coupon	3.8 %	4.2 %	3.9 %	4.3 %
Net (premium amortization) discount accretion	(1.6)%	(0.8)%	(1.1)%	(0.6)%
Net yield ⁽¹⁾	2.2 %	3.4 %	2.8 %	3.7 %

(1) Excludes Agency Derivatives. For the three and nine months ended September 30, 2020, the average annualized net yield on total RMBS, including Agency Derivatives, was 2.3% and 2.8%, respectively, compared to 3.4% and 3.7% for the same periods in 2019. 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 and nine months ended September 30, 2019, we recorded \$6.0 million and \$11.0 million in other-than-temporary credit impairments on nine and sixteen non-Agency securities, respectively, 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) Gain On Investment Securities

The following tables present the components of (loss) gain on investment securities for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30, 2020			Nine Months Ended September 30, 2020		
	Available-For-Sale Securities	Trading Securities	Total	Available-For-Sale Securities	Trading Securities	Total
Proceeds from sales	\$ —	\$ —	\$ —	\$ 16,969,870	\$ 1,053,477	\$ 18,023,347
Amortized cost of securities sold	—	—	—	(17,947,686)	(1,052,500)	(19,000,186)
Total realized (losses) gains on sales	—	—	—	(977,816)	977	(976,839)
Provision for credit losses	(7,100)	—	(7,100)	(53,931)	—	(53,931)
Other	(2,007)	—	(2,007)	(6,452)	—	(6,452)
(Loss) gain on investment securities	\$ (9,107)	\$ —	\$ (9,107)	\$ (1,038,199)	\$ 977	\$ (1,037,222)

(in thousands)	Three Months Ended September 30, 2019			Nine Months Ended September 30, 2019		
	Available-For-Sale Securities	Trading Securities	Total	Available-For-Sale Securities	Trading Securities	Total
Proceeds from sales	\$ 6,111,897	\$ —	\$ 6,111,897	\$ 14,065,573	\$ —	\$ 14,065,573
Amortized cost of securities sold	(5,861,630)	—	(5,861,630)	(13,809,174)	—	(13,809,174)
Total realized gains on sales	250,267	—	250,267	256,399	—	256,399
Provision for credit losses	—	—	—	—	—	—
Other	(1,439)	—	(1,439)	(4,422)	—	(4,422)
Gain on investment securities	\$ 248,828	\$ —	\$ 248,828	\$ 251,977	\$ —	\$ 251,977

Due to the unprecedented market conditions experienced as a result of the global COVID-19 pandemic, we sold substantially all of our portfolio of non-Agency securities and approximately one-third of our Agency RMBS during the first quarter. 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.

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) gain on investment securities) and the balance of the unrealized loss recognized in either other comprehensive income (loss), net of tax, or (loss) gain on investment securities, depending on the accounting treatment.

Servicing Income

The following table presents the components of servicing income for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Servicing fee income	\$ 96,332	\$ 106,700	\$ 318,686	\$ 327,184
Ancillary and other fee income	391	499	1,388	1,302
Float income	2,391	18,826	22,728	45,436
Total	\$ 99,114	\$ 126,025	\$ 342,802	\$ 373,922

The decrease in servicing income for the three and nine months ended September 30, 2020, as compared to the same periods in 2019, was the result of a decrease in service income as a result of a lower portfolio balance due to prepayments and deferred servicing fee income for loans in forbearance as a result of COVID-19. Additionally, the decrease in float income was the result of decreased float earning rates.

Loss on Servicing Asset

The following table presents the components of loss on servicing asset for the three and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Changes in fair value due to changes in valuation inputs or assumptions used in the valuation model	\$ 41,429	\$ (144,071)	\$ (570,347)	\$ (477,710)
Changes in fair value due to realization of cash flows (runoff)	(154,184)	(90,529)	(367,864)	(198,585)
(Losses) gains on sales	(8)	86	(8)	375
Loss on servicing asset	\$ (112,763)	\$ (234,514)	\$ (938,219)	\$ (675,920)

The decrease in loss on servicing asset for the three months ended September 30, 2020, as compared to the same period in 2019, was driven by a decrease in the size of the portfolio, offset by higher portfolio runoff during the three months ended September 30, 2020. The increase in loss on servicing asset for the nine months ended September 30, 2020, as compared to the same period in 2019, was driven by an increase in prepayment speed assumptions used in the fair valuation of MSR, higher expected cost-to-service due to COVID-19 related forbearances and higher portfolio runoff on a larger average MSR portfolio balance throughout the nine months ended September 30, 2020.

Gain (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 and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Net interest spread	\$ 818	\$ 19,151	\$ (68,128)	\$ 65,746
Early termination, agreement maturation and option expiration gains (losses)	—	75,409	(385,202)	96,423
Change in unrealized gain (loss) on interest rate swap, cap and swaption agreements, at fair value	583	(23,940)	157,213	(263,583)
Gain (loss) on interest rate swap, cap and swaption agreements	\$ 1,401	\$ 70,620	\$ (296,117)	\$ (101,414)

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 a floating interest rate (LIBOR or the OIS rate) or a fixed interest rate and paying either a fixed interest rate or a floating interest rate (LIBOR or the OIS rate) 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. During the second quarter of 2020, we elected to terminate certain swaps and swaptions in order to adjust the total notional and fixed interest rates on these instruments, as a result of adjustments made to our investment portfolio and changes in interest rates. The change in fair value of interest rate swaps, caps and swaptions during the three and nine months ended September 30, 2020 and 2019 was a result of changes to floating interest rates (LIBOR or the OIS rate), 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 (excluding the reversal of unrealized gains and losses to realized gains and losses upon termination, maturation or option expiration) 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 income (loss), net of tax, or to (loss) gain on investment securities, in the case of Agency interest-only mortgage-backed securities.

Gain on Other Derivative Instruments

The following table provides a summary of the total net gains (losses) 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 and nine months ended September 30, 2020 and 2019:

(in thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Interest income, net of accretion, on inverse interest-only securities	\$ 2,691	\$ 1,236	\$ 7,247	\$ 3,883
Interest expense on short U.S. treasuries	—	—	—	(1,315)
Realized and unrealized net gains (losses) on other derivative instruments ⁽¹⁾	62,905	84,620	1,487	268,230
Gain on other derivative instruments	\$ 65,596	\$ 85,856	\$ 8,734	\$ 270,798

(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.

Expenses

The following table presents the components of expenses, other than restructuring charges, for the three and nine months ended September 30, 2020 and 2019:

(in thousands, except share data)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2020	2019	2020	2019
Management fees	\$ 5,759	\$ 16,839	\$ 31,738	\$ 42,556
Servicing expenses	\$ 26,197	\$ 17,696	\$ 70,049	\$ 54,354
Other operating expenses:				
Officers' compensation incurred by PRCM Advisers on our behalf and reimbursed by us ⁽¹⁾⁽²⁾	\$ 106	\$ 152	\$ 1,388	\$ 2,913
Other direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us ⁽²⁾	3,109	4,610	17,883	20,125
Non-cash equity compensation expenses				
Amortization of executive officers' restricted stock ⁽³⁾	944	846	2,994	2,173
Amortization of other restricted stock	1,913	1,134	4,493	4,064
Total non-cash equity compensation expenses	2,857	1,980	7,487	6,237
Other nonrecurring expenses	3,664	—	3,664	—
All other operating expenses	9,240	6,602	17,470	13,638
Total other operating expenses	\$ 18,976	\$ 13,344	\$ 47,892	\$ 42,913
Annualized other operating expense ratio	2.6 %	1.1 %	1.8 %	1.2 %
Annualized other operating expense ratio, excluding non-cash equity compensation and other nonrecurring expenses	1.7 %	0.9 %	1.4 %	1.0 %

(1) Officers include our principal financial officer and general counsel. We did not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or chief investment officer.

(2) Subsequent to the transition to self-management, PRCM Advisers no longer incurs any expenses on our behalf.

(3) Equity based compensation expense related to the amortization of restricted stock awarded to our executive officers, including our chief executive officer, chief investment officer, principal financial officer and general counsel.

Prior to the termination of the Management Agreement on August 14, 2020, management fees were payable to PRCM Advisers under the agreement. The management fee was 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. The increase in servicing expenses during the three and nine months ended September 30, 2020, as compared to the same periods in 2019, was a result of a higher cost to service loans in forbearance. Prior to the termination of the Management Agreement, included in other operating expenses were 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 was based on time spent overseeing our activities in accordance with the Management Agreement; we did not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or chief investment officer.

Subsequent to the transition to self-management, we no longer pay a management fee to, or reimburse the expenses of, PRCM Advisers. Expenses for which we previously reimbursed PRCM Advisers are now borne directly by us. We are also now responsible for the compensation of our Chief Executive Officer, Chief Investment Officer and investment professionals, which was previously the responsibility of PRCM Advisers.

Restructuring Charges

On April 13, 2020, we announced that we had elected to not renew the Management Agreement with PRCM Advisers on the basis of unfair compensation payable to the manager pursuant to Section 13(a)(ii) of the Management Agreement. As a result, we had expected the Management Agreement to terminate on September 19, 2020, at which time we would have been required to pay a termination fee equal to three times the sum of the average annual base management fee earned by PRCM Advisers during the 24-month period immediately preceding the date of termination, calculated as of the end of the most recently completed fiscal quarter prior to the date of termination, pursuant to the terms of the Management Agreement. The termination fee was calculated to be \$139.8 million based on results as of June 30, 2020.

On July 15, 2020, we provided PRCM Advisers with a notice of termination of the Management Agreement for “cause” on the basis of certain material breaches of the Management Agreement by PRCM Advisers, its agents and/or its assignees that are incapable of being cured within the time period set forth therein and certain events of gross negligence on the part of PRCM Advisers in the performance of its duties under the Management Agreement. The Management Agreement subsequently terminated on August 14, 2020. No termination fee was payable to PRCM Advisers in connection with such termination, pursuant to Section 15(a) of the Management Agreement.

In connection with the termination of the Management Agreement, we reversed the \$139.8 million accrued termination fee during the three months ended September 30, 2020. For the nine months ended September 30, 2020, we incurred a total of \$6.0 million in contract termination costs, which includes all estimated costs incurred for legal and advisory services provided to facilitate the termination of the Management Agreement. In accordance with Accounting Standards Codification (ASC) 420, *Exit or Disposal Cost Obligations*, all contract termination costs are included within restructuring charges on our condensed consolidated statements of comprehensive income (loss) for the three and nine months ended September 30, 2020. Accrued restructuring costs are included in other liabilities on our condensed consolidated balance sheet as of September 30, 2020.

Income Taxes

During the three and nine months ended September 30, 2020, the Company’s TRSs recognized a benefit from income taxes of \$8.2 million and \$39.5 million, respectively. The benefit recognized for the three months ended September 30, 2020 was primarily due to losses recognized on MSR. The benefit recognized for the nine months ended September 30, 2020 was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in the Company’s TRSs. During the three and nine months ended September 30, 2019, the Company’s TRSs recognized a benefit from income taxes of \$3.6 million and \$11.2 million, respectively, which was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in our TRSs.

Financial Condition

Available-for-Sale Securities, at Fair Value

The majority of our AFS investment securities portfolio is comprised of adjustable rate and fixed rate Agency mortgage-backed securities backed by single-family and multi-family mortgage loans. We also hold \$18.0 million in tranches of mortgage-backed and asset-backed P&I and interest-only non-Agency securities. All of our P&I Agency RMBS AFS are 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 following table summarizes certain characteristics of our Agency RMBS AFS at September 30, 2020:

September 30, 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	\$ 15,028,990	\$ 688,058	\$ 15,717,048	\$ —	\$ 721,772	\$ (231)	\$ 16,438,589	3.68 %	\$ 104.88
Hybrid ARM	11,017	494	11,511	—	404	(118)	11,797	5.86 %	\$ 107.88
Total P&I securities	15,040,007	688,552	15,728,559	—	722,176	(349)	16,450,386	3.68 %	\$ 104.88
Interest-only securities									
Fixed	473,708	35,425	35,425	(626)	3,140	(4,683)	33,256	3.38 %	\$ 38.23
Fixed Other ⁽¹⁾	1,716,026	90,643	90,643	(18,615)	9,158	(8,500)	72,686	1.86 %	\$ 8.64
Total	\$ 17,229,741	\$ 814,620	\$ 15,854,627	\$ (19,241)	\$ 734,474	\$ (13,532)	\$ 16,556,328		

(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 September 30, 2020 on an annualized basis, was 23.2%.

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 residential 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 September 30, 2020, our MSR had a fair market value of \$1.3 billion.

As of September 30, 2020, our MSR portfolio included MSR on 719,344 loans with an unpaid principal balance of approximately \$156.4 billion. The following tables summarize certain characteristics of the loans underlying our MSR by gross weighted average coupon rate types and ranges at September 30, 2020:

September 30, 2020										
(dollars in thousands)	Number of Loans	Unpaid Principal Balance	% 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%	144,020	\$ 39,808,228	62.0 %	3.4 %	31	768	71.0 %	1.8 %	36.8 %	26.5
> 3.75 - 4.25%	208,657	48,982,804	64.0 %	3.9 %	43	758	76.0 %	3.8 %	43.5 %	27.6
> 4.25 - 4.75%	147,230	30,390,639	66.0 %	4.4 %	42	742	78.0 %	6.1 %	47.1 %	26.6
> 4.75 - 5.25%	71,543	13,444,735	67.0 %	4.9 %	36	728	80.0 %	8.2 %	44.5 %	27.8
> 5.25%	28,080	4,465,682	70.0 %	5.5 %	33	708	80.0 %	10.4 %	38.7 %	30.9
	599,530	137,092,088	64.0 %	4.0 %	38	753	76.0 %	4.4 %	42.8 %	27.2
15-Year Fixed										
≤ 2.75%	6,663	1,722,622	64.0 %	2.5 %	14	779	58.0 %	0.3 %	15.1 %	25.5
> 2.75 - 3.25%	42,552	7,457,403	73.0 %	2.9 %	43	772	62.0 %	1.5 %	26.7 %	26.2
> 3.25 - 3.75%	37,346	5,551,126	72.0 %	3.4 %	44	759	65.0 %	2.6 %	30.7 %	27.7
> 3.75 - 4.25%	18,616	2,371,688	64.0 %	3.9 %	40	745	66.0 %	3.6 %	35.5 %	29.4
> 4.25%	9,849	1,079,990	62.0 %	4.5 %	31	732	66.0 %	3.6 %	36.1 %	31.3
	115,026	18,182,829	70.0 %	3.3 %	39	763	63.0 %	2.1 %	29.6 %	27.3
Total ARMs	4,788	1,169,445	67.0 %	3.5 %	52	761	66.0 %	4.6 %	48.8 %	25.3
Total	719,344	\$ 156,444,362	65.0 %	3.9 %	38	754	74.0 %	4.1 %	41.5 %	27.2

Financing

Our borrowings consist primarily of repurchase agreements, 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 for repurchase agreements.

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, our convertible senior notes due 2022 were issued in January 19, 2017, are unsecured and pay interest semiannually at a rate of 6.25% per annum.

At September 30, 2020, borrowings under repurchase agreements, revolving credit facilities, term notes payable and convertible senior notes had the following characteristics:

(dollars in thousands)

Borrowing Type	September 30, 2020		
	Amount Outstanding	Weighted Average Borrowing Rate	Weighted Average Years to Maturity
Repurchase agreements	\$ 16,376,696	0.29 %	0.2
Revolving credit facilities	274,830	2.94 %	1.3
Term notes payable	395,328	2.95 %	3.7
Convertible senior notes ⁽¹⁾	285,843	6.25 %	1.3
Total	\$ 17,332,697	0.49 %	0.3

(dollars in thousands)

Collateral Type	September 30, 2020		
	Amount Outstanding	Weighted Average Borrowing Rate	Weighted Average Haircut on Collateral Value
Agency RMBS	\$ 16,322,224	0.28 %	4.2 %
Non-Agency securities	2,371	2.30 %	34.0 %
Agency Derivatives	52,101	1.02 %	27.5 %
Mortgage servicing rights	670,158	2.95 %	24.6 %
Other ⁽¹⁾	285,843	6.25 %	NA
Total	\$ 17,332,697	0.49 %	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 September 30, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 5.7:1.0. 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 September 30, 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⁾
September 30, 2020	\$ 17,702,696	\$ 17,332,697	\$ 17,896,976	5.7:1.0	\$ 6,236,000	7.7:1.0
June 30, 2020	\$ 18,121,689	\$ 17,938,992	\$ 18,062,737	6.3:1.0	\$ 3,236,000	7.4:1.0
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

(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 June 30, 2020 to September 30, 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 June 30, 2020	\$ 1,834.6	273.7	\$ 6.70
Core Earnings, net of tax benefit of \$1.5 million ⁽¹⁾	94.5		
Dividends on preferred stock	(18.9)		
Core Earnings attributable to common stockholders, net of tax benefit of \$1.5 million ⁽¹⁾	75.6		
Realized and unrealized gains and losses, net of tax benefit of \$6.7 million	107.4		
Other comprehensive income, net of tax	36.2		
Dividend declaration	(38.4)		
Other	2.9		
Issuance of common stock, net of offering costs	0.1		
Common stockholders' equity at September 30, 2020	\$ 2,018.4	273.7	\$ 7.37
Total preferred stock liquidation preference	1,001.3		
Total equity at September 30, 2020	\$ 3,019.7		

(in millions)	Three Months Ended September 30, 2020	
Comprehensive income attributable to common stockholders	\$	219.2
Adjustment for other comprehensive income attributable to common stockholders:		
Unrealized gains on available-for-sale securities		(36.2)
Net income attributable to common stockholders		183.0
Adjustments for non-Core Earnings:		
Realized losses on investment securities		1.8
Unrealized loss on investment securities		0.2
Provision for credit losses on investment securities		7.1
Realized and unrealized losses on mortgage servicing rights		55.9
Realized loss on termination or expiration of interest rate swaps, caps and swaptions		—
Unrealized gain on interest rate swaps, caps and swaptions		(0.6)
Gain on other derivative instruments		(32.7)
Other loss		—
Change in servicing reserves		0.9
Non-cash equity compensation expense		2.8
Other nonrecurring expenses		3.7
Change in restructuring charges		(139.8)
Net benefit from income taxes on non-Core Earnings		(6.7)
Core Earnings attributable to common stockholders ⁽¹⁾	\$	75.6

(1) Core Earnings is a non-U.S. GAAP measure that we define as comprehensive income (loss) 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, other nonrecurring expenses and restructuring charges). 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, 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 borrowings, 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 September 30, 2020, we held \$1.6 billion in cash and cash equivalents available to support our operations; \$17.9 billion of AFS securities, MSR, and derivative assets held at fair value; and \$17.3 billion of outstanding debt in the form of repurchase agreements, borrowings under revolving credit facilities, term notes payable and convertible senior notes. During the three months ended September 30, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, decreased from 6.3:1.0 to 5.7:1.0. The decrease was driven by the repositioning of financing on Agency AFS securities to TBA positions and a higher equity balance driven by our financial results for the quarter. During the nine months ended September 30, 2020, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, decreased from 6.1:1.0 to 5.7:1.0. The decrease was also driven by the repositioning of financing on Agency AFS securities to TBA positions.

As of September 30, 2020, we held approximately \$8.8 million of unpledged Agency securities and derivatives and \$14.7 million of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on unpledged securities of approximately \$18.5 million. As of September 30, 2020, we held approximately \$232.4 million of unpledged MSR and \$26.7 million of unpledged servicing advances. Overall, we had unused borrowing capacity on MSR asset and servicing advance financing facilities of \$375.2 million and \$200.0 million, respectively. The unused borrowing capacity on MSR financing facilities 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, insufficient collateral 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 nine months ended September 30, 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 September 30, 2020, we had master repurchase agreements in place with 45 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 September 30, 2020 and December 31, 2019:

(dollars in thousands)	September 30, 2020			December 31, 2019		
	Amount Outstanding	Net Counterparty Exposure ⁽¹⁾	Percent of Funding	Amount Outstanding	Net Counterparty Exposure ⁽¹⁾	Percent of Funding
North America	\$ 9,653,237	\$ 451,740	59.3 %	\$ 16,165,067	\$ 1,026,474	57.6 %
Europe ⁽²⁾	3,923,751	197,940	26.0 %	7,519,258	521,804	29.3 %
Asia ⁽²⁾	2,799,708	111,965	14.7 %	5,463,138	234,180	13.1 %
Total	\$ 16,376,696	\$ 761,645	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 one repurchase facility and two revolving credit facilities that provide short- and long-term financing for our MSR portfolio. We also have one revolving credit facility that provides long-term financing for our servicing advances. An overview of the facilities is presented in the table below:

(dollars in thousands)

September 30, 2020

Expiration Date ⁽¹⁾	Committed	Amount Outstanding	Unused Capacity	Total Capacity	Eligible Collateral
March 12, 2022	Yes ⁽²⁾	\$ 214,830	\$ 135,170	\$ 350,000	Mortgage servicing rights
July 16, 2021	Yes ⁽²⁾	\$ 60,000	\$ 40,000	\$ 100,000	Mortgage servicing rights
June 21, 2021	No	\$ —	\$ 200,000	\$ 200,000	Mortgage servicing rights ⁽³⁾
September 28, 2022	Yes ⁽²⁾	\$ —	\$ 200,000	\$ 200,000	Mortgage servicing advances

(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.

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. However, the Company currently does not have any credit capacity available.

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.

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 September 30, 2020:

- Total indebtedness to tangible net worth must be less than 8.0:1.0. As of September 30, 2020, our total indebtedness to tangible net worth, as defined, was 5.8:1.0.
- Cash liquidity must be greater than \$200.0 million. As of September 30, 2020, our liquidity, as defined, was \$1.6 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 September 30, 2020, 50% of the highest net worth during the 24 calendar months prior was \$2.6 billion and our net worth, as defined, was \$3.0 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 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 September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020	December 31, 2019
Available-for-sale securities, at fair value	\$ 16,550,904	\$ 29,802,456
Mortgage servicing rights, at fair value	1,025,075	1,554,825
Restricted cash	492,098	919,010
Due from counterparties	32,507	102,365
Derivative assets, at fair value	66,785	68,874
Other assets	11,123	—
Total	\$ 18,178,492	\$ 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 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, 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 September 30, 2020 and December 31, 2019:

(in thousands)	September 30, 2020	December 31, 2019
Within 30 days	\$ 3,790,989	\$ 5,465,916
30 to 59 days	3,920,358	6,300,372
60 to 89 days	—	6,687,285
90 to 119 days	3,644,581	4,740,217
120 to 364 days	5,080,768	6,113,673
One to three years	500,673	584,954
Three to five years	395,328	394,502
Five to ten years	—	—
Ten years and over	—	50,000
Total	\$ 17,332,697	\$ 30,336,919

For the three months ended September 30, 2020, our restricted and unrestricted cash balance increased approximately \$161.7 million to \$2.2 billion at September 30, 2020. The cash movements can be summarized by the following:

- *Cash flows from operating activities.* For the three months ended September 30, 2020, operating activities increased our cash balances by approximately \$226.0 million, primarily driven by our financial results for the quarter.
- *Cash flows from investing activities.* For the three months ended September 30, 2020, investing activities increased our cash balances by approximately \$599.9 million, primarily driven by principal payments on AFS securities, offset by purchases of MSR and a decrease in due to counterparties as a result of the settlement of purchases of AFS securities that were made in the prior quarter.
- *Cash flows from financing activities.* For the three months ended September 30, 2020, financing activities decreased our cash balance by approximately \$664.2 million, primarily driven by net repayment of repurchase agreements due to the repositioning of financing on Agency AFS securities to TBA positions.

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 or the OIS rate) 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 and interest rate swap agreements. 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. 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 September 30, 2020 and December 31, 2019, respectively, based on carrying value (dollars in thousands).

Index Type	September 30, 2020				December 31, 2019			
	Floating	Hybrid ⁽¹⁾	Total	Index %	Floating	Hybrid ⁽¹⁾	Total	Index %
CMT	\$ —	\$ 9,457	\$ 9,457	7 %	\$ —	\$ 11,884	\$ 11,884	— %
LIBOR	100,801	1,277	102,078	75 %	3,247,387	8,400	3,255,787	94 %
Other ⁽²⁾	11,346	13,139	24,485	18 %	44,824	164,635	209,459	6 %
Total	\$ 112,147	\$ 23,873	\$ 136,020	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 September 30, 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, 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 September 30, 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.

(dollars in thousands)	Changes in Interest Rates			
	-50 bps	-25 bps	+25 bps	+50 bps
Change in annualized net interest income ⁽¹⁾:	\$ (3,371)	\$ (1,424)	\$ 1,011	\$ 2,022
<i>% change in net interest income ⁽¹⁾</i>	<i>(1.1)%</i>	<i>(0.5)%</i>	<i>0.3 %</i>	<i>0.7 %</i>
Change in value of financial position:				
Available-for-sale securities	\$ 146,997	\$ 79,664	\$ (92,762)	\$ (198,044)
<i>As a % of common equity</i>	<i>7.3 %</i>	<i>3.9 %</i>	<i>(4.6)%</i>	<i>(9.8)%</i>
Mortgage servicing rights ⁽²⁾	\$ (198,557)	\$ (105,262)	\$ 115,474	\$ 238,675
<i>As a % of common equity ⁽²⁾</i>	<i>(9.8)%</i>	<i>(5.2)%</i>	<i>5.7 %</i>	<i>11.8 %</i>
Derivatives, net	\$ 62,422	\$ 35,269	\$ (49,214)	\$ (112,282)
<i>As a % of common equity</i>	<i>3.1 %</i>	<i>1.7 %</i>	<i>(2.4)%</i>	<i>(5.6)%</i>
Reverse repurchase agreements	\$ 17	\$ 9	\$ (9)	\$ (17)
<i>As a % of common equity</i>	<i>— %</i>	<i>— %</i>	<i>— %</i>	<i>— %</i>
Repurchase agreements	\$ (19,585)	\$ (9,793)	\$ 9,793	\$ 19,585
<i>As a % of common equity</i>	<i>(1.0)%</i>	<i>(0.5)%</i>	<i>0.5 %</i>	<i>1.0 %</i>
Revolving credit facilities	\$ (238)	\$ (119)	\$ 119	\$ 239
<i>As a % of common equity</i>	<i>— %</i>	<i>— %</i>	<i>— %</i>	<i>— %</i>
Term notes payable	\$ (1,116)	\$ (1,061)	\$ 339	\$ 441
<i>As a % of common equity</i>	<i>(0.1)%</i>	<i>(0.1)%</i>	<i>— %</i>	<i>— %</i>
Convertible senior notes	\$ (1,669)	\$ (833)	\$ 829	\$ 1,654
<i>As a % of common equity</i>	<i>(0.1)%</i>	<i>— %</i>	<i>— %</i>	<i>0.1 %</i>
Total Net Assets	\$ (11,729)	\$ (2,126)	\$ (15,431)	\$ (49,749)
<i>As a % of total assets</i>	<i>(0.1)%</i>	<i>— %</i>	<i>(0.1)%</i>	<i>(0.2)%</i>
<i>As a % of common equity</i>	<i>(0.6)%</i>	<i>(0.1)%</i>	<i>(0.8)%</i>	<i>(2.5)%</i>

(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.

(2) Includes the effect of unsettled MSR.

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 September 30, 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, 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.

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 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 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.

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 September 30, 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 September 30, 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 the Company may be involved in various legal claims and/or administrative proceedings that arise in the ordinary course of our business. Under ASC 450, *Contingencies*, or ASC 450, liabilities are established for legal claims when payments associated with the claims become probable and the costs can be reasonably estimated. The actual costs of resolving legal claims may be substantially higher or lower than the amounts established or the range of reasonably possible loss disclosed for those claims.

As previously disclosed, on April 13, 2020, the Company announced that it had elected not to renew the Management Agreement with PRCM Advisers. Subsequently, on July 15, 2020, the Company provided PRCM Advisers with a notice of termination of the Management Agreement for “cause” in accordance with Section 15(a) of the Management Agreement. The Company terminated the Management Agreement for “cause” on the basis of certain material breaches and certain events of gross negligence on the part of PRCM Advisers in the performance of its duties under the Management Agreement.

On July 21, 2020, PRCM Advisers filed a complaint against the Company in the United States District Court for the Southern District of New York. Subsequently, PRCM Advisers filed an amended complaint, or the Federal Complaint, on September 4, 2020. The Federal Complaint alleges, among other things, the misappropriation of trade secrets in violation of both the Defend Trade Secrets Act and New York common law, breach of contract, breach of the implied covenant of good faith and fair dealing, unfair competition and business practices, unjust enrichment, conversion, and tortious interference with contract. The Federal Complaint seeks, among other things, an order enjoining the Company from making any use of or disclosing PRCM Advisers’ trade secret, proprietary, or confidential information; damages in an amount to be determined at a hearing and/or trial; disgorgement of the Company’s wrongfully obtained profits; and fees and costs incurred by PRCM Advisers in pursuing the action. On September 25, 2020, the Company filed a motion to dismiss the Federal Complaint. PRCM Advisers thereafter filed an opposition to the motion to dismiss on October 16, 2020, and on October 26, 2020, the Company filed its reply. The Company’s board of directors believes the Federal Complaint is without merit and that the Company has fully complied with the terms of the Management Agreement.

Separately, the staff of the SEC is conducting a non-public investigation in connection with the Company’s decisions not to renew its Management Agreement with PRCM Advisers on the basis of unfair compensation payable to PRCM Advisers in accordance with Section 13(a)(ii) of the Management Agreement and to terminate its Management Agreement with PRCM Advisers for “cause” in accordance with Section 15 of the Management Agreement. The Company is cooperating with the SEC. The Company cannot predict the duration or outcome of the SEC investigation or the extent of any impact it may have on the Company.

As of September 30, 2020, the Company’s condensed consolidated statements of comprehensive income (loss) do not recognize a contingency liability or disclose a range of reasonably possible loss under ASC 450 because management does not believe that a loss or expense related to the Federal Complaint or the SEC Investigation is probable or reasonably estimable. If and when management believes losses associated with the Federal Complaint or the SEC Investigation are a probable future event that may result in a loss or expense to the Company and the loss or expense is reasonably estimable, the Company will recognize a contingency liability and resulting loss in such period.

Based on information currently available, management is not aware of any other legal or regulatory claims that would have a material effect on the Company’s condensed consolidated statements of comprehensive income (loss) and therefore no additional accrual is required as of November 5, 2020.

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 transition to a self-managed company or the ability to realize such benefits may take longer than anticipated.

On August 14, 2020, our Management Agreement with PRCM Advisers terminated and we thereafter became a self-managed company. We believe that the termination of the Management Agreement, the elimination of the annual base 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, the elimination of conflicts of interest and strengthened alignment of interests between management and stockholders, and the potential to attract new institutional investors.

Our ability 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: any adverse impacts resulting from litigation with PRCM Advisers related to the termination of the Management Agreement; unforeseen or higher than anticipated expenses following the transition; and the diversion of management’s attention caused by the transition process. The failure to manage the transition process efficiently and effectively could result in the anticipated benefits of the transition not being realized in the timeframe currently anticipated or at all.

Legal and regulatory matters related to the termination of our Management Agreement with PRCM Advisers may adversely affect our business, results of operations, and/or financial condition.

In connection with the termination of our Management Agreement, PRCM Advisers has filed a complaint in federal court that alleges, among other things, the misappropriation of trade secrets in violation of both the Defend Trade Secrets Act and New York common law, breach of contract, breach of the implied covenant of good faith and fair dealing, unfair competition and business practices, unjust enrichment, conversion, and tortious interference with contract. The complaint seeks, among other things, an order enjoining the Company from making any use of or disclosing PRCM Advisers’ trade secret, proprietary, or confidential information; damages in an amount to be determined at a hearing and/or trial; disgorgement of the Company’s wrongfully obtained profits; and fees and costs incurred by PRCM Advisers in pursuing the action. Our board of directors believes the complaint is without merit and that the Company has complied with the terms of the Management Agreement. However, the results of litigation are inherently uncertain. It is possible that a court could enjoin us from using certain intellectual property. In addition, any damages or costs and fees that may be awarded to PRCM Advisers related to the litigation may be significant. While we dispute and intend to vigorously defend against the claims set forth in the complaint, it is possible that the results of the litigation with PRCM Advisers may adversely affect our business, results of operations, and/or financial condition.

Separately, the staff of the SEC is conducting a non-public investigation following the Company’s decision not to renew its Management Agreement with PRCM Advisers on the basis of unfair compensation payable to PRCM Advisers in accordance with Section 13(a)(ii) of the Management Agreement. We are cooperating with the SEC but cannot predict the duration or outcome of the SEC investigation.

We are exposed to risks to which we have not historically been exposed.

Our transition to a self-managed company exposes us to risks to which we have not historically been exposed. As a result of the transition, we have become a direct employer, and are 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 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 has caused 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, including 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, the economic impacts of pandemic have affected the financial stability of certain mortgage loan borrowers underlying the RMBS and MSR assets that we own and, as a result, the number of borrowers who are delinquent or default on their loans remains elevated compared to pre-pandemic levels. Elevated levels of delinquency or default may 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 has and 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 September 30, 2020, we had repurchased 12,174,300 shares under the program for a total cost of \$201.5 million. We did not repurchase shares during the three months ended September 30, 2020.

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	<u>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 to the Registrant's Registration Statement on Form S-4 filed with the SEC on October 8, 2009).</u>
3.2	<u>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).</u>
3.3	<u>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).</u>
3.4	<u>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).</u>
3.5	<u>Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 23, 2020).</u>
3.6	<u>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).</u>
3.7	<u>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).</u>
3.8	<u>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).</u>
3.9	<u>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).</u>
3.10	<u>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).</u>
3.11	<u>Amended and Restated Bylaws of Two Harbors Investment Corp. (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on September 23, 2020).</u>
31.1	<u>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)</u>
31.2	<u>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)</u>
32.1	<u>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)</u>
32.2	<u>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)</u>
101	Financial statements from the Quarterly Report on Form 10-Q of Two Harbors Investment Corp. for the three months ended September 30, 2020, filed with the SEC on November 5, 2020, formatted in Inline XBRL: (i) the Condensed Consolidated Balance Sheets, (ii) the Condensed Consolidated Statements of Comprehensive Income (Loss), (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.

Dated:	November 5, 2020	By:	TWO HARBORS INVESTMENT CORP. /s/ William Greenberg
			_____ William Greenberg Chief Executive Officer and President (Principal Executive Officer)
Dated:	November 5, 2020	By:	/s/ Mary Risky
			_____ Mary Risky Chief Financial Officer (Principal Financial and Accounting Officer)

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

I, William Greenberg, 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: November 5, 2020

/s/ William Greenberg

William Greenberg
Chief Executive Officer and President

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

I, Mary Risky, 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: November 5, 2020

/s/ Mary Risky

Mary Risky
Chief Financial Officer

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 and nine months ended September 30, 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: November 5, 2020

/s/ William Greenberg

William Greenberg

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.

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 and nine months ended September 30, 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: November 5, 2020

/s/ Mary Risky

Mary Risky

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.