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: June 30, 2019

OR

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

TWO HARBORS INVESTMENT CORP.

(Exact Name of Registrant as Specified in Its Charter)

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

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

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

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

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

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

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

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

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

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

As of August 6, 2019, there were 272,904,844 shares of outstanding common stock, par value $.01 per share, issued and outstanding.

TWO HARBORS INVESTMENT CORP.

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

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

	June 30, 2019	December 31, 2018
ASSETS	(unaudited)	
Available-for-sale securities, at fair value	$ 30,186,079	$ 25,552,604
Mortgage servicing rights, at fair value	1,800,826	1,993,440
Cash and cash equivalents	433,579	409,758
Restricted cash	358,109	688,006
Accrued interest receivable	97,631	86,589
Due from counterparties	983,429	154,626
Derivative assets, at fair value	246,995	319,981
Reverse repurchase agreements	109,500	761,815
Other assets	124,088	165,660
Total Assets (1)	$ 34,340,236	$ 30,132,479
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities		
Repurchase agreements	$ 28,168,044	$ 23,133,476
Federal Home Loan Bank advances	50,000	865,024
Revolving credit facilities	—	310,000
Term notes payable	394,061	—
Convertible senior notes	284,331	283,856
Derivative liabilities, at fair value	255	820,590
Due to counterparties	255,281	130,210
Dividends payable	128,110	135,551
Accrued interest payable	145,850	160,005
Other liabilities	45,530	39,278
Total Liabilities (1)	29,471,462	25,877,990
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 272,899,638 and 248,085,721 shares issued and outstanding, respectively	2,729	2,481
Additional paid-in capital	5,149,175	4,809,616
Accumulated other comprehensive income	777,518	110,817
Cumulative earnings	2,215,437	2,332,371
Cumulative distributions to stockholders	(4,253,586)	(3,978,297)
Total Stockholders' Equity	4,868,774	4,254,489
Total Liabilities and Stockholders' Equity	$ 34,340,236	$ 30,132,479

(1) The condensed consolidated balance sheets include assets and liabilities of consolidated variable interest entities, or VIEs. At June 30, 2019 and December 31, 2018, assets of the VIEs totaled $396,060 and $0, and liabilities of the VIEs totaled $396,060 and $0, 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 (unaudited)
(in thousands, except share data)

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Interest income:				
Available-for-sale securities	$ 253,807	$ 183,467	$ 489,693	$ 374,183
Other	7,222	3,893	16,819	7,196
Total interest income	261,029	187,360	506,512	381,379
Interest expense:				
Repurchase agreements	177,351	97,812	324,911	184,392
Federal Home Loan Bank advances	3,941	4,896	10,015	9,354
Revolving credit facilities	6,196	999	11,352	1,803
Term notes payable	231	—	231	—
Convertible senior notes	4,724	4,707	9,459	9,425
Total interest expense	192,443	108,414	355,968	204,974
Net interest income	68,586	78,946	150,544	176,405
Other-than-temporary impairments:				
Total other-than-temporary impairment losses	(4,848)	(174)	(5,054)	(268)
Other (loss) income:				
Gain (loss) on investment securities	22,441	(31,882)	3,149	(52,553)
Servicing income	130,949	77,665	247,897	148,855
(Loss) gain on servicing asset	(252,432)	9,853	(441,406)	81,660
(Loss) gain on interest rate swap, cap and swaption agreements	(88,775)	29,133	(172,034)	179,678
Gain on other derivative instruments	80,664	7,675	184,942	15,728
Other (loss) income	(341)	730	(218)	1,788
Total other (loss) income	(107,494)	93,174	(177,670)	375,156
Expenses:				
Management fees	13,635	11,453	25,717	23,161
Servicing expenses	16,746	11,539	36,658	26,093
Other operating expenses	14,013	15,515	29,569	30,007
Total expenses	44,394	38,507	91,944	79,261
(Loss) income before income taxes	(88,150)	133,439	(124,124)	472,032
Provision for (benefit from) income taxes	2,407	(6,051)	(7,632)	(2,267)
Net (loss) income	(90,557)	139,490	(116,492)	474,299
Dividends on preferred stock	18,950	13,747	37,900	27,494
Net (loss) income attributable to common stockholders	$ (109,507)	$ 125,743	$ (154,392)	$ 446,805
Basic (loss) earnings per weighted average common share	$ (0.40)	$ 0.72	$ (0.59)	$ 2.55
Diluted (loss) earnings per weighted average common share	$ (0.40)	$ 0.68	$ (0.59)	$ 2.36
Dividends declared per common share	$ 0.40	$ 0.47	$ 0.87	$ 0.94
Weighted average number of shares of common stock:				
Basic	272,863,153	175,451,989	262,667,160	175,299,822
Diluted	272,863,153	193,212,877	262,667,160	193,016,793

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

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	**2018**	**2019**	**2018**
Comprehensive income:				
Net (loss) income	$ (90,557)	$ 139,490	$ (116,492)	$ 474,299
Other comprehensive income (loss), net of tax:				
Unrealized gain (loss) on available-for-sale securities	310,549	(34,887)	666,701	(379,664)
Other comprehensive income (loss)	310,549	(34,887)	666,701	(379,664)
Comprehensive income	219,992	104,603	550,209	94,635
Dividends on preferred stock	18,950	13,747	37,900	27,494
Comprehensive income attributable to common stockholders	$ 201,042	$ 90,856	$ 512,309	$ 67,141

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, 2017	$ 702,537	$ 1,745	$ 3,672,003	$ 334,813	$ 2,386,604	$ (3,526,278)	$ 3,571,424
Cumulative effect of adoption of new accounting principle	—	—	—	9,918	(9,918)	—	—
Adjusted balance, January 1, 2018	702,537	1,745	3,672,003	344,731	2,376,686	(3,526,278)	3,571,424
Net income	—	—	—	—	334,809	—	334,809
Other comprehensive loss before reclassifications, net of tax	—	—	—	(343,542)	—	—	(343,542)
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	(1,235)	—	—	(1,235)
Other comprehensive loss, net of tax	—	—	—	(344,777)	—	—	(344,777)
Issuance of preferred stock, net of offering costs	13	—	—	—	—	—	13
Issuance of common stock, net of offering costs	—	—	76	—	—	—	76
Preferred dividends declared	—	—	—	—	—	(13,747)	(13,747)
Common dividends declared	—	—	—	—	—	(82,454)	(82,454)
Non-cash equity award compensation	—	9	2,332	—	—	—	2,341
Balance, March 31, 2018	702,550	1,754	3,674,411	(46)	2,711,495	(3,622,479)	3,467,685
Net income	—	—	—	—	139,490	—	139,490
Other comprehensive loss before reclassifications, net of tax	—	—	—	(58,676)	—	—	(58,676)
Amounts reclassified from accumulated other comprehensive income, net of tax	—	—	—	23,789	—	—	23,789
Other comprehensive loss, net of tax	—	—	—	(34,887)	—	—	(34,887)
Issuance of common stock, net of offering costs	—	—	119	—	—	—	119
Preferred dividends declared	—	—	—	—	—	(13,747)	(13,747)
Common dividends declared	—	—	—	—	—	(82,472)	(82,472)
Non-cash equity award compensation	—	1	4,056	—	—	—	4,057
Balance, June 30, 2018	$ 702,550	$ 1,755	$ 3,678,586	$ (34,933)	$ 2,850,985	$ (3,718,698)	$ 3,480,245
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

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)

	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Cash Flows From Operating Activities:		
Net (loss) income	$ (116,492)	$ 474,299
Adjustments to reconcile net (loss) income to net cash provided by operating activities:		
Amortization of premiums and discounts on investment securities, net	65,126	44,891
Amortization of deferred debt issuance costs on convertible senior notes	475	441
Other-than-temporary impairment losses	5,054	268
Realized and unrealized (gains) losses on investment securities	(3,149)	53,846
Loss (gain) on servicing asset	441,406	(81,660)
Realized and unrealized loss (gain) on interest rate swaps, caps and swaptions	218,629	(162,029)
Unrealized (gain) loss on other derivative instruments	(72,300)	22,040
Equity based compensation	4,358	6,398
Net change in assets and liabilities:		
(Increase) decrease in accrued interest receivable	(11,042)	7,201
Increase in deferred income taxes, net	(18,466)	(1,954)
Decrease in accrued interest payable	(14,155)	(3,402)
Change in other operating assets and liabilities, net	28,062	(901)
Net cash provided by operating activities	527,506	359,438
Cash Flows From Investing Activities:		
Purchases of available-for-sale securities	(13,264,312)	(3,221,949)
Proceeds from sales of available-for-sale securities	7,953,676	3,719,959
Principal payments on available-for-sale securities	1,276,880	949,116
Purchases of mortgage servicing rights, net of purchase price adjustments	(249,081)	(282,283)
Proceeds from sales of mortgage servicing rights	289	399
(Purchases) short sales of derivative instruments, net	(64,302)	(78,944)
(Payments for termination and settlement) proceeds from sales and settlement of derivative instruments, net	(829,376)	278,460
Payments for reverse repurchase agreements	(1,010,875)	—
Proceeds from reverse repurchase agreements	1,663,190	—
(Decrease) increase in due to counterparties, net	(703,732)	743,977
Change in other investing assets and liabilities, net	37,737	12,981
Net cash (used in) provided by investing activities	$ (5,189,906)	$ 2,121,716

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)

	Six Months Ended June 30,	
	2019	**2018**
Cash Flows From Financing Activities:		
Proceeds from repurchase agreements	$ 140,318,287	$ 64,622,311
Principal payments on repurchase agreements	(135,283,719)	(66,867,695)
Principal payments on Federal Home Loan Bank advances	(815,024)	(350,000)
Proceeds from revolving credit facilities	150,000	170,000
Principal payments on revolving credit facilities	(460,000)	(20,000)
Proceeds from issuance of term notes payable	394,061	—
Proceeds from issuance of preferred stock, net of offering costs	—	13
Proceeds from issuance of common stock, net of offering costs	335,449	195
Dividends paid on preferred stock	(37,900)	(25,696)
Dividends paid on common stock	(244,830)	(83,057)
Net cash provided by (used in) financing activities	4,356,324	(2,553,929)
Net decrease in cash, cash equivalents and restricted cash	(306,076)	(72,775)
Cash, cash equivalents and restricted cash at beginning of period	1,097,764	1,054,995
Cash, cash equivalents and restricted cash at end of period	$ 791,688	$ 982,220
Supplemental Disclosure of Cash Flow Information:		
Cash paid for interest	$ 370,122	$ 208,377
Cash paid for taxes	$ 5,820	$ 3
Noncash Activities:		
Cumulative-effect adjustment to equity for adoption of new accounting principle	$ 442	$ 9,918
Dividends declared but not paid at end of period	$ 128,110	$ 96,219

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

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Note 1. Organization and Operations

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

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

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

On April 26, 2018, the Company announced that it had entered into a definitive merger agreement to acquire CYS Investments, Inc., or CYS, a Maryland corporation that invested primarily in Agency RMBS and was treated as a REIT for U.S. federal income tax purposes. The transaction was approved by the stockholders of both the Company and CYS on July 27, 2018, and the merger was completed on July 31, 2018, at which time CYS became a wholly owned subsidiary of the Company. In exchange for all of the shares of CYS common stock outstanding immediately prior to the effective time of the merger, the Company issued approximately 72.6 million new shares of common stock, as well as aggregate cash consideration of $15.0 million, to CYS common stockholders. In addition, the Company issued 3 million shares of newly classified Series D cumulative redeemable preferred stock and 8 million shares of newly classified Series E cumulative redeemable preferred stock in exchange for all shares of CYS's Series A and Series B cumulative redeemable preferred stock outstanding prior to the effective time of the merger.

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, 2018. In the opinion of management, all normal and recurring adjustments necessary to present fairly the financial condition of the Company at June 30, 2019 and results of operations for all periods presented have been made. The results of operations for the three and six months ended June 30, 2019 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, 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 2018 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 six months ended June 30, 2019.

Securitizations and 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 basi. 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.

Term Notes Payable

Term notes payable related to the Company's on-balance sheet securitization are recorded at outstanding principal balance, net of any unamortized deferred debt issuance costs, on the Company's condensed consolidated balance sheets.

Recently Issued and/or Adopted Accounting Standards

Lease Classification and Accounting

In February 2016, the FASB issued ASU No. 2016-02, which requires lessees to recognize on their balance sheets both a lease liability for the obligation to make lease payments and a right-of-use asset for the right to use the underlying asset for the lease term. The ASU is effective for annual periods, and interim periods within those annual periods, beginning on or after December 15, 2018, with early adoption permitted. The Company's adoption of this ASU was applied by recording a cumulative-effect adjustment to retained earnings as of January 1, 2019, which did not have a material impact on the Company's financial condition, results of operations or financial statement disclosures.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

Measurement of Credit Losses on Financial Instruments

In June 2016, the FASB issued ASU No. 2016-13, which changes the impairment model for most financial assets and certain other instruments. Valuation allowances for credit losses on AFS debt securities will be 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 and is effective for annual periods, and interim periods within those annual periods, beginning on or after December 15, 2019, with early adoption permitted for annual periods, and interim periods within those annual periods, beginning on or after December 15, 2018. The Company is evaluating the adoption of this ASU to determine the impact it may have on its condensed consolidated financial statements, which at the date of adoption, will establish an allowance for credit losses on AFS securities which will be derived from the current designated credit reserve with a resulting increase to amortized cost on the securities. The Company also expects adoption of this ASU to impact the recording for the purchase of certain non-Agency securities with purchased credit deterioration by recording an allowance for credit losses with an increase in amortized cost above the purchase price of the same amount. Subsequent changes in expected credit losses will be recognized immediately in earnings as a provision for credit losses until the allowance is reduced to zero. Further favorable changes will result in prospective yield adjustments.

SEC Disclosure Update and Simplification

In August 2018, the SEC adopted a final rule that amends certain disclosure requirements that have become duplicative, overlapping, or outdated in light of other SEC disclosure requirements, U.S. GAAP, or changes in the information environment. However, the guidance also added requirements for entities to include in their interim financial statements a reconciliation of changes in stockholders' equity for each period for which an income statement is required (both year-to-date and quarterly periods). The final rule is effective for all filings made on or after November 5, 2018. However, the SEC staff said it would not object to a registrant waiting to comply with the new interim disclosure requirement until the filing of its Form 10-Q for the quarter that begins after the effective date. As a result, the Company adopted the new interim disclosure requirement in connection with the Form 10-Q filing for the first quarter 2019. The Company's adoption of this final rule did not have a material impact on the Company's financial condition, results of operations or financial statement disclosures.

Note 3. Variable Interest Entities

The Issuer Trust that was formed for the purpose of financing MSR through securitization (see discussion in Note 2 - *Basis of Presentation and Significant Accounting Policies*) is considered a VIE for financial reporting purposes and, thus, was reviewed for consolidation under the applicable consolidation guidance. As the Company has both the power to direct the activities of the Issuer Trust that most significantly impact the entity's performance, and the obligation to absorb losses or the right to receive benefits of the entity that could be significant, the Company consolidates the trust. Additionally, in accordance with arrangements entered into in connection with the securitization transaction, the Company has direct financial obligations payable to the Issuer Trust, which, in turn, support the Issuer Trust's obligations to noteholders under the securitization transaction.

The following table presents a summary of the assets and liabilities of all consolidated trusts as reported on the condensed consolidated balance sheets as of June 30, 2019 and December 31, 2018:

(in thousands)	June 30, 2019	December 31, 2018
Note receivable [1]	$ 394,061	$ —
Cash and cash equivalents	1,768	—
Accrued interest receivable [1]	231	—
Total Assets	$ 396,060	$ —
Term notes payable	$ 394,061	$ —
Accrued interest payable	231	—
Other liabilities	1,768	—
Total Liabilities	$ 396,060	$ —

(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 AFS investment securities which are carried at fair value on the condensed consolidated balance sheets. The following table presents the Company's AFS investment securities by collateral type as of June 30, 2019 and December 31, 2018:

(in thousands)	June 30, 2019	December 31, 2018
Agency		
Federal National Mortgage Association	$ 18,588,591	$ 15,812,696
Federal Home Loan Mortgage Corporation	7,034,641	4,930,963
Government National Mortgage Association	685,211	941,374
Non-Agency	3,877,636	3,867,571
Total available-for-sale securities	$ 30,186,079	$ 25,552,604

At June 30, 2019 and December 31, 2018, the Company pledged AFS securities with a carrying value of $28.8 billion and $25.2 billion, respectively, as collateral for repurchase agreements and advances from the Federal Home Loan Bank of Des Moines, or the FHLB. See Note 10 - *Repurchase Agreements* and Note 12 - *Federal Home Loan Bank of Des Moines Advances*.

At June 30, 2019 and December 31, 2018, the Company did not have any securities purchased from and financed with the same counterparty that did not meet the conditions of ASC 860, to be considered linked transactions and, therefore, classified as derivatives.

The Company is not required to consolidate variable interest entities, or VIEs, for which it has concluded it does not have both the power to direct the activities of the VIEs that most significantly impact the entities' performance, and the obligation to absorb losses or the right to receive benefits of the entities that could be significant. The Company's investments in these unconsolidated VIEs include all non-Agency securities, which are classified within available-for-sale securities, at fair value on the condensed consolidated balance sheets. As of June 30, 2019 and December 31, 2018, the carrying value, which also represents the maximum exposure to loss, of all non-Agency securities in unconsolidated VIEs was $3.9 billion and $3.9 billion, respectively.

The following tables present the amortized cost and carrying value of AFS securities by collateral type as of June 30, 2019 and December 31, 2018:

	June 30, 2019							
(in thousands)	Principal/ Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value
Agency								
Principal and interest	$ 24,767,755	$ 1,014,068	$ (24)	$ —	$ 25,781,799	$ 388,624	$ (21,745)	$ 26,148,678
Interest-only	2,888,397	188,009	—	—	188,009	17,731	(45,975)	159,765
Total Agency	27,656,152	1,202,077	(24)	—	25,969,808	406,355	(67,720)	26,308,443
Non-Agency								
Principal and interest	5,566,823	5,745	(589,371)	(1,640,055)	3,343,142	461,181	(17,978)	3,786,345
Interest-only	4,912,069	88,917	—	—	88,917	4,530	(2,156)	91,291
Total Non-Agency	10,478,892	94,662	(589,371)	(1,640,055)	3,432,059	465,711	(20,134)	3,877,636
Total	$ 38,135,044	$ 1,296,739	$ (589,395)	$ (1,640,055)	$ 29,401,867	$ 872,066	$ (87,854)	$ 30,186,079

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	December 31, 2018							
(in thousands)	**Principal/ Current Face**	**Un-amortized Premium**	**Accretable Purchase Discount**	**Credit Reserve Purchase Discount**	**Amortized Cost**	**Unrealized Gain**	**Unrealized Loss**	**Carrying Value**
Agency								
Principal and interest	$ 20,775,790	$ 1,037,781	$ (25,085)	$ —	$ 21,788,486	$ 61,128	$ (339,997)	$ 21,509,617
Interest-only	3,115,967	209,901	—	—	209,901	14,170	(48,655)	175,416
Total Agency	23,891,757	1,247,682	(25,085)	—	21,998,387	75,298	(388,652)	21,685,033
Non-Agency								
Principal and interest	5,360,124	6,682	(694,119)	(1,322,762)	3,349,925	478,095	(44,657)	3,783,363
Interest-only	5,137,169	83,846	—	—	83,846	3,655	(3,293)	84,208
Total Non-Agency	10,497,293	90,528	(694,119)	(1,322,762)	3,433,771	481,750	(47,950)	3,867,571
Total	$ 34,389,050	$ 1,338,210	$ (719,204)	$ (1,322,762)	$ 25,432,158	$ 557,048	$ (436,602)	$ 25,552,604

The following tables present the carrying value of the Company’s AFS securities by rate type as of June 30, 2019 and December 31, 2018:

	June 30, 2019		
(in thousands)	**Agency**	**Non-Agency**	**Total**
Adjustable Rate	$ 16,506	$ 3,591,037	$ 3,607,543
Fixed Rate	26,291,937	286,599	26,578,536
Total	$ 26,308,443	$ 3,877,636	$ 30,186,079

	December 31, 2018		
(in thousands)	**Agency**	**Non-Agency**	**Total**
Adjustable Rate	$ 19,073	$ 3,475,171	$ 3,494,244
Fixed Rate	21,665,960	392,400	22,058,360
Total	$ 21,685,033	$ 3,867,571	$ 25,552,604

The following table presents the Company’s AFS securities according to their estimated weighted average life classifications as of June 30, 2019:

	June 30, 2019		
(in thousands)	**Agency**	**Non-Agency**	**Total**
≤ 1 year	$ 3,084	$ 38,074	$ 41,158
> 1 and ≤ 3 years	60,936	244,657	305,593
> 3 and ≤ 5 years	5,269,154	311,553	5,580,707
> 5 and ≤ 10 years	20,974,109	2,822,191	23,796,300
> 10 years	1,160	461,161	462,321
Total	$ 26,308,443	$ 3,877,636	$ 30,186,079

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When the Company purchases a credit-sensitive AFS security at a significant discount to its face value, the Company often does not amortize into income a significant portion of this discount that the Company is entitled to earn because the Company does not expect to collect the entire discount due to the inherent credit risk of the security. The Company may also record an other-than-temporary impairment, or OTTI, for a portion of its investment in the security to the extent the Company believes that the amortized cost will exceed the present value of expected future cash flows. The amount of principal that the Company does not amortize into income is designated as a credit reserve on the security, with unamortized net discounts or premiums amortized into income over time to the extent realizable.

The following table presents the changes for the three and six months ended June 30, 2019 and 2018 of the net unamortized discount/premium and designated credit reserves on non-Agency AFS securities.

	Six Months Ended June 30,					
	2019			2018		
(in thousands)	Designated Credit Reserve	Net Unamortized Discount/Premium	Total	Designated Credit Reserve	Net Unamortized Discount/Premium	Total
Beginning balance at January 1	$ (1,322,762)	$ (603,591)	$ (1,926,353)	$ (653,613)	$ (607,609)	$ (1,261,222)
Acquisitions	(336,914)	5,911	(331,003)	(310,985)	(14,025)	(325,010)
Accretion of net discount	—	23,822	23,822	—	44,611	44,611
Realized credit losses	12,353	—	12,353	14,810	—	14,810
Reclassification adjustment for other-than-temporary impairments	(2,511)	—	(2,511)	(268)	—	(268)
Transfers from (to)	11,520	(11,520)	—	26,222	(26,222)	—
Sales, calls, other	(1,741)	90,669	88,928	—	18,430	18,430
Ending balance at June 30	$ (1,640,055)	$ (494,709)	$ (2,134,764)	$ (923,834)	$ (584,815)	$ (1,508,649)

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 June 30, 2019 and December 31, 2018. At June 30, 2019, the Company held 1,311 AFS securities, of which 72 were in an unrealized loss position for less than twelve consecutive months and 227 were in an unrealized loss position for more than twelve consecutive months. At December 31, 2018, the Company held 1,550 AFS securities, of which 290 were in an unrealized loss position for less than twelve consecutive months and 489 were in an unrealized loss position for more than twelve consecutive months.

	Unrealized Loss Position for					
	Less than 12 Months		12 Months or More		Total	
(in thousands)	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
June 30, 2019	$ 1,434,793	$ (17,639)	$ 3,372,962	$ (70,215)	$ 4,807,755	$ (87,854)
December 31, 2018	$ 4,386,946	$ (66,520)	$ 9,501,123	$ (370,082)	$ 13,888,069	$ (436,602)

Evaluating AFS Securities for Other-Than-Temporary Impairments

In evaluating AFS securities for OTTI, the Company determines whether there has been a significant adverse quarterly change in the cash flow expectations for a security. The Company compares 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 considers whether there has been a significant adverse change in the regulatory and/or economic environment as part of this analysis. If the amortized cost of the security is greater than the present value of expected future cash flows using the original yield as the discount rate, an other-than-temporary credit impairment has occurred. If the Company does not intend to sell and will not be more likely than not required to sell the security, the credit loss is recognized in earnings and the balance of the unrealized loss is recognized in either other comprehensive income (loss), net of tax, or gain (loss) on investment securities, depending on the accounting treatment. If the Company intends to sell the security or will be more likely than not required to sell the security, the full unrealized loss is recognized in earnings.

During the three and six months ended June 30, 2019, the Company recorded $4.8 million and $5.1 million in other-than-temporary credit impairments on a total of eight non-Agency securities where the future expected cash flows for each security were less than its amortized cost. During the three and six months ended June 30, 2018, the Company recorded $0.2 million and $0.3 million in other-than-temporary credit impairments on a total of two non-Agency securities where the future expected cash flows for each security were less than its amortized cost. As of June 30, 2019, impaired securities with a carrying value of $215.0 million had actual weighted average cumulative losses of 4.9%, weighted average three-month prepayment speed of 6.8%, weighted average 60+ day delinquency of 16.9% of the pool balance, and weighted average FICO score of 687. At June 30, 2019, the Company did not intend to sell the securities and determined that it was not more likely than not that the Company will be required to sell the securities; therefore, only the projected credit loss was recognized in earnings.

The following table presents the changes in OTTI included in earnings for the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	**2019**	**2018**	**2019**	**2018**
Cumulative credit loss at beginning of period	$ (4,528)	$ (6,489)	$ (6,865)	$ (6,395)
Additions:				
Other-than-temporary impairments not previously recognized	(4,304)	(85)	(4,403)	(85)
Increases related to other-than-temporary impairments on securities with previously recognized other-than-temporary impairments	(544)	(89)	(651)	(183)
Reductions:				
Decreases related to other-than-temporary impairments on securities paid down	—	—	1,703	—
Decreases related to other-than-temporary impairments on securities sold	—	—	840	—
Cumulative credit loss at end of period	$ (9,376)	$ (6,663)	$ (9,376)	$ (6,663)

Cumulative credit losses related to OTTI may be 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.

Gross Realized Gains and Losses

Gains and losses from the sale of AFS securities are recorded as realized gains (losses) within gain (loss) on investment securities in the Company's condensed consolidated statements of comprehensive income. For the three and six months ended June 30, 2019, the Company sold AFS securities for $3.1 billion and $8.0 billion with an amortized cost of $3.1 billion and $7.9 billion for net realized gains of $23.6 million and $6.1 million, respectively. For the three and six months ended June 30, 2018, the Company sold AFS securities for $1.7 billion and $3.7 billion with an amortized cost of $1.7 billion and $3.8 billion for net realized losses of $39.0 million and $58.6 million, respectively.

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The following table presents the gross realized gains and losses on sales of AFS securities for the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2019	2018	2019	2018
Gross realized gains	$ 24,855	$ 1,559	$ 126,153	$ 9,754
Gross realized losses	(1,266)	(40,559)	(120,021)	(68,317)
Total realized gains (losses) on sales, net	$ 23,589	$ (39,000)	$ 6,132	$ (58,563)

Note 5. Servicing Activities

Mortgage Servicing Rights, at Fair Value

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

The following table summarizes activity related to MSR for the three and six months ended June 30, 2019 and 2018.

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands)	2019	2018	2019	2018
Balance at beginning of period	$ 2,014,370	$ 1,301,023	$ 1,993,440	$ 1,086,717
Additions from purchases of mortgage servicing rights	43,710	132,366	264,522	279,265
Changes in fair value due to:				
Changes in valuation inputs or assumptions used in the valuation model	(182,025)	46,221	(333,639)	146,930
Other changes in fair value (1)	(70,407)	(36,467)	(108,056)	(65,669)
Other changes (2)	(4,822)	7,118	(15,441)	3,018
Balance at end of period	$ 1,800,826	$ 1,450,261	$ 1,800,826	$ 1,450,261

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

At June 30, 2019 and December 31, 2018, the Company pledged MSR with a carrying value of $1.4 billion and $1.1 billion, respectively, as collateral for repurchase agreements, revolving credit facilities and term notes payable. See Note 10 - *Repurchase Agreements*, Note 13 - *Revolving Credit Facilities* and Note 14 - *Term Notes Payable*.

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As of June 30, 2019 and December 31, 2018, 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)		June 30, 2019	December 31, 2018
Weighted average prepayment speed:		14.7%	8.6%
Impact on fair value of 10% adverse change	$	(99,045)	(67,245)
Impact on fair value of 20% adverse change	$	(187,586)	(130,371)
Weighted average delinquency:		0.9%	1.3%
Impact on fair value of 10% adverse change	$	(7,804)	(6,911)
Impact on fair value of 20% adverse change	$	(15,307)	(13,688)
Weighted average discount rate:		7.4%	9.4%
Impact on fair value of 10% adverse change	$	(38,538)	(62,528)
Impact on fair value of 20% adverse change	$	(74,854)	(121,135)

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

Risk Mitigation Activities

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

Mortgage Servicing Income

The following table presents the components of servicing income recorded on the Company's condensed consolidated statements of comprehensive income for the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 30,				Six Months Ended June 30,			
(in thousands)		2019		2018		2019		2018
Servicing fee income	$	114,548	$	70,883	$	220,484	$	137,332
Ancillary and other fee income		493		324		803		646
Float income		15,908		6,458		26,610		10,877
Total	$	130,949	$	77,665	$	247,897	$	148,855

Mortgage Servicing Advances

In connection with the servicing of loans, the Company's subservicers make certain payments for property taxes and insurance premiums, default and property maintenance payments, as well as advances of principal and interest payments before collecting them from individual borrowers. Servicing advances, including contractual interest, 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, which are funded by the Company, totaled $32.7 million and $39.7 million and were included in other assets on the condensed consolidated balance sheets as of June 30, 2019 and December 31, 2018, respectively.

Serviced Mortgage Assets

The Company's total serviced mortgage assets consist of residential mortgage loans underlying MSR, residential mortgage loans held in previous on-balance sheet securitization trusts for which the Company is the named 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 June 30, 2019 and December 31, 2018:

	June 30, 2019		December 31, 2018	
(dollars in thousands)	**Number of Loans**	**Unpaid Principal Balance**	**Number of Loans**	**Unpaid Principal Balance**
Mortgage servicing rights	753,312	$ 169,643,681	717,167	$ 163,102,308
Residential mortgage loans in securitization trusts	3,492	2,280,805	3,612	2,392,471
Other assets	83	13,882	220	34,374
Total serviced mortgage assets	756,887	$ 171,938,368	720,999	$ 165,529,153

Note 6. Cash, Cash Equivalents and Restricted Cash

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

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

The following table presents the Company's restricted cash balances as of June 30, 2019 and December 31, 2018:

(in thousands)	**June 30, 2019**	**December 31, 2018**
Restricted cash balances held by trading counterparties:		
For securities and loan trading activity	$ 45,050	$ 51,350
For derivatives trading activity	135,920	219,900
As restricted collateral for repurchase agreements and Federal Home Loan Bank advances	177,079	416,696
Total restricted cash balances held by trading counterparties	358,049	687,946
Restricted cash balance pursuant to letter of credit on office lease	60	60
Total	$ 358,109	$ 688,006

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported on the Company's condensed consolidated balance sheets as of June 30, 2019 and December 31, 2018 that sum to the total of the same such amounts shown in the statements of cash flows:

(in thousands)	**June 30, 2019**	**December 31, 2018**
Cash and cash equivalents	$ 433,579	$ 409,758
Restricted cash	358,109	688,006
Total cash, cash equivalents and restricted cash	$ 791,688	$ 1,097,764

Note 7. Derivative Instruments and Hedging Activities

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

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

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

Balance Sheet Presentation

In accordance with ASC 815, *Derivatives and Hedging*, or ASC 815, the Company records derivative financial instruments on its condensed consolidated balance sheets as assets or liabilities at fair value. Changes in fair value are accounted for depending on the use of the derivative instruments and whether they are designated or qualifying as hedge instruments. Due to the volatility of the 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 June 30, 2019 and December 31, 2018.

	June 30, 2019			
	Derivative Assets		Derivative Liabilities	
(in thousands)	Fair Value	Notional	Fair Value	Notional
Inverse interest-only securities	$ 76,724	$ 436,611	$ —	$ —
Interest rate swap agreements	101,820	2,725,000	—	37,745,277
Swaptions, net	29,959	3,875,000	—	—
TBAs	12,649	9,178,000	(170)	244,000
U.S. Treasury futures	25,843	1,300,000	—	—
Markit IOS total return swaps	—	—	(85)	45,536
Total	$ 246,995	$ 17,514,611	$ (255)	$ 38,034,813

	December 31, 2018							
	Derivative Assets				Derivative Liabilities			
(in thousands)	Fair Value		Notional		Fair Value		Notional	
Inverse interest-only securities	$	70,813	$	476,299	$	—	$	—
Interest rate swap agreements		187,231		26,798,605		—		2,725,000
Interest rate cap contracts		40,335		2,500,000		—		—
Swaptions, net		—		—		(13,456)		63,000
TBAs		21,602		6,484,000		—		—
Put and call options for TBAs, net		—		—		(25,296)		1,767,000
Short U.S. Treasuries		—		—		(781,455)		800,000
Markit IOS total return swaps		—		—		(383)		48,265
Total	$	319,981	$	36,258,904	$	(820,590)	$	5,403,265

Comprehensive Income Statement Presentation

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

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

Derivative Instruments	Location of Gain (Loss) Recognized in Income	Amount of Gain (Loss) Recognized in Income							
(in thousands)		Three Months Ended June 30,				Six Months Ended June 30,			
		2019		2018		2019		2018	
Interest rate risk management									
TBAs	Gain on other derivative instruments	$	28,964	$	12,131	$	138,475	$	(10,535)
Short U.S. Treasuries	Gain on other derivative instruments		—		—		(6,801)		—
U.S. Treasury futures	Gain on other derivative instruments		42,721		—		46,448		—
Put and call options for TBAs	Gain on other derivative instruments		—		(2,396)		(7,666)		29,839
Interest rate swaps - Payers	(Loss) gain on interest rate swap, cap and swaption agreements		(422,602)		63,991		(661,570)		307,096
Interest rate swaps - Receivers	(Loss) gain on interest rate swap, cap and swaption agreements		289,626		(43,907)		453,227		(197,722)
Swaptions	(Loss) gain on interest rate swap, cap and swaption agreements		48,525		9,049		43,993		70,304
Interest rate caps	(Loss) gain on interest rate swap, cap and swaption agreements		(4,324)		—		(7,684)		—
Markit IOS total return swaps	Gain on other derivative instruments		103		(220)		(477)		673
Non-risk management									
Inverse interest-only securities	Gain on other derivative instruments		8,876		(1,840)		14,963		(4,249)
Total		$	(8,111)	$	36,808	$	12,908	$	195,406

For the three and six months ended June 30, 2019, the Company recognized $22.9 million and $46.6 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 receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on an average $40.7 billion and $39.1 billion notional, respectively. For the three and six months ended June 30, 2018, the Company recognized $13.8 million and $17.6 million, respectively, of expenses for the accrual and/or settlement of the net interest expense associated with its interest rate swaps and caps. The expenses result from paying either a fixed interest rate or LIBOR interest and receiving either LIBOR interest or a fixed interest rate on an average $25.4 billion and $23.3 billion notional, respectively.

The following tables present information with respect to the volume of activity in the Company's derivative instruments during the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 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	$ 456,433	$ —	$ (19,822)	$ 436,611	$ 447,550	$ —
Interest rate swap agreements	38,396,277	3,904,000	(1,830,000)	40,470,277	38,903,453	14,114
Interest rate cap contracts	2,500,000	—	(2,500,000)	—	1,779,121	(8,690)
Swaptions, net	5,900,000	7,300,000	(9,325,000)	3,875,000	5,959,615	50,089
TBAs, net	10,168,000	36,172,000	(36,918,000)	9,422,000	8,790,560	76,683
U.S. Treasury futures	1,310,000	3,200,000	(3,210,000)	1,300,000	1,267,692	20,626
Markit IOS total return swaps	47,073	—	(1,537)	45,536	46,088	—
Total	$ 58,777,783	$ 50,576,000	$ (53,804,359)	$ 55,549,424	$ 57,194,079	$ 152,822

	Three Months Ended June 30, 2018					
(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	$ 558,942	$ —	$ (29,886)	$ 529,056	$ 545,159	$ —
Interest rate swap agreements	23,598,825	7,740,752	(5,292,313)	26,047,264	25,377,155	(35,568)
Swaptions, net	(6,175,000)	(23,000)	5,460,000	(738,000)	(4,263,868)	15,119
TBAs, net	445,000	6,482,000	(3,878,000)	3,049,000	2,341,879	6,222
Put and call options for TBAs, net	(60,000)	(1,468,000)	1,208,000	(320,000)	203,429	(19,661)
Markit IOS total return swaps	61,521	—	(9,980)	51,541	59,594	(249)
Total	$ 18,429,288	$ 12,731,752	$ (2,542,179)	$ 28,618,861	$ 24,263,348	$ (34,137)

(in thousands)	Six Months Ended June 30, 2019 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	$ —	$ (39,688)	$ 436,611	$ 457,177	$ —
Interest rate swap agreements	29,523,605	14,498,633	(3,551,961)	40,470,277	36,991,058	3,931
Interest rate cap contracts	2,500,000	—	(2,500,000)	—	2,137,569	(8,690)
Swaptions, net	63,000	13,200,000	(9,388,000)	3,875,000	3,569,343	25,774
TBAs, net	6,484,000	78,905,000	(75,967,000)	9,422,000	8,802,365	147,597
Short U.S. Treasuries	(800,000)	—	800,000	—	(14,365)	(23,172)
U.S. Treasury futures	—	4,510,000	(3,210,000)	1,300,000	708,895	20,626
Put and call options for TBAs, net	(1,767,000)	—	1,767,000	—	(222,633)	(32,962)
Markit IOS total return swaps	48,265	—	(2,729)	45,536	46,768	—
Total	$ 36,528,169	$ 111,113,633	$ (92,092,378)	$ 55,549,424	$ 52,476,177	$ 133,104

(in thousands)	Six Months Ended June 30, 2018 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	$ 588,246	$ —	$ (59,190)	$ 529,056	$ 559,844	$ —
Interest rate swap agreements	28,482,125	25,349,632	(27,784,493)	26,047,264	23,272,892	4,138
Swaptions, net	2,666,000	(1,238,000)	(2,166,000)	(738,000)	(3,092,050)	67,892
TBAs, net	(573,000)	17,713,000	(14,091,000)	3,049,000	1,563,801	(5,614)
Put and call options for TBAs, net	—	4,602,000	(4,922,000)	(320,000)	(327,917)	38,542
Markit IOS total return swaps	63,507	—	(11,966)	51,541	60,864	(249)
Total	$ 31,226,878	$ 46,426,632	$ (49,034,649)	$ 28,618,861	$ 22,037,434	$ 104,709

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

Interest Rate Sensitive Assets/Liabilities

The Company's Agency RMBS portfolio is generally subject to change in value when mortgage rates decline or increase, depending on the type of investment. Rising mortgage rates generally result in a slowing of refinancing activity, which slows prepayments and results in a decline in the value of the Company's fixed-rate Agency pools. To mitigate the impact of this risk on the Company's fixed-rate Agency pool portfolio, the Company maintains a portfolio of fixed-rate interest-only securities and MSR, which increase in value when interest rates increase. As of June 30, 2019 and December 31, 2018, the Company had $147.0 million and $147.6 million, respectively, of interest-only securities, and $1.8 billion and $2.0 billion, respectively, of MSR in place to economically hedge its Agency RMBS. Interest-only securities are included in AFS securities, at fair value, in the condensed consolidated balance sheets.

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

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 June 30, 2019 and December 31, 2018:

	June 30, 2019				
				Net Carrying Value (4)	
(in thousands)	Notional Amount (1)	Cost Basis (2)	Market Value (3)	Derivative Assets	Derivative Liabilities
Purchase contracts	$ 9,422,000	$ 9,806,028	$ 9,818,507	$ 12,649	$ (170)
Sale contracts	—	—	—	—	—
TBAs, net	$ 9,422,000	$ 9,806,028	$ 9,818,507	$ 12,649	$ (170)

	December 31, 2018				
				Net Carrying Value (4)	
(in thousands)	Notional Amount (1)	Cost Basis (2)	Market Value (3)	Derivative Assets	Derivative Liabilities
Purchase contracts	$ 6,484,000	$ 6,734,858	$ 6,756,460	$ 21,602	$ —
Sale contracts	—	—	—	—	—
TBAs, net	$ 6,484,000	$ 6,734,858	$ 6,756,460	$ 21,602	$ —

(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.

Short U.S. Treasuries. The Company may use short U.S. Treasury securities independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of December 31, 2018, the Company had short-sold U.S. Treasuries with a notional amount of $800.0 million and a fair market value of $781.5 million included in derivative liabilities, at fair value, on the condensed consolidated balance sheet as of December 31, 2018. The Company did not hold any short U.S. Treasuries as of June 30, 2019.

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 June 30, 2019, the Company had purchased U.S. Treasury futures with a notional amount of $1.3 billion and a fair market value of $25.8 million included in derivative assets, at fair value, on the condensed consolidated balance sheet as of June 30, 2019. The Company did not hold any U.S. Treasury futures as of December 31, 2018.

Put and Call Options for TBAs. The Company may use put and call options for TBAs independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of December 31, 2018, the Company had purchased put and call options for TBAs with a notional amount of $5.4 billion and short sold put and call options for TBAs with a notional amount of $7.2 billion. The put and call options had a fair market value of $25.3 million included in derivative liabilities, at fair value, on the condensed consolidated balance sheet as of December 31, 2018. The Company did not hold any put and call options for TBAs as of June 30, 2019.

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 June 30, 2019 and December 31, 2018, the Company held the following interest rate swaps that were utilized as economic hedges of interest rate exposure (or duration) whereby the Company receives interest at a three-month LIBOR rate:

(notional in thousands)

	June 30, 2019			
Swaps Maturities	**Notional Amount**	**Weighted Average Fixed Pay Rate**	**Weighted Average Receive Rate**	**Weighted Average Maturity (Years)**
2019	$ 4,236,897	1.781%	2.569%	0.30
2020	3,640,000	1.806%	2.502%	1.33
2021	10,456,400	2.104%	2.484%	1.88
2022	2,470,000	2.002%	2.430%	3.25
2023 and Thereafter	8,540,309	2.532%	2.536%	6.54
Total	$ 29,343,606	2.136%	2.509%	3.05

(notional in thousands)

	December 31, 2018			
Swaps Maturities	**Notional Amount (1)**	**Weighted Average Fixed Pay Rate (2)**	**Weighted Average Receive Rate (2)**	**Weighted Average Maturity (Years) (2)**
2019	$ 4,336,897	1.769%	2.565%	0.79
2020	3,640,000	1.806%	2.689%	1.83
2021	4,117,000	1.550%	2.687%	2.69
2022	2,470,000	2.002%	2.728%	3.75
2023 and Thereafter	6,842,270	2.495%	2.636%	7.60
Total	$ 21,406,167	1.978%	2.651%	3.75

(1) Notional amount includes $572.0 million in forward starting interest rate swaps as of December 31, 2018.
(2) Weighted averages exclude forward starting interest rate swaps. As of December 31, 2018, the weighted average fixed pay rate on forward starting interest rate swaps was 2.8%.

Additionally, as of June 30, 2019 and December 31, 2018, the Company held the following interest rate swaps in order to mitigate mortgage interest rate exposure (or duration) risk whereby the Company pays interest at a three-month LIBOR rate:

(notional in thousands)

	June 30, 2019			
Swaps Maturities	**Notional Amounts**	**Weighted Average Pay Rate**	**Weighted Average Fixed Receive Rate**	**Weighted Average Maturity (Years)**
2020	$ 250,000	2.581%	2.258%	0.56
2021	2,477,438	2.575%	2.736%	1.74
2022	800,000	2.523%	2.975%	2.89
2023 and Thereafter	7,599,233	2.505%	2.648%	8.00
Total	$ 11,126,671	2.524%	2.682%	6.07

(notional in thousands)

	December 31, 2018			
Swaps Maturities	**Notional Amounts**	**Weighted Average Pay Rate**	**Weighted Average Fixed Receive Rate**	**Weighted Average Maturity (Years)**
2020	$ 250,000	2.469%	2.258%	1.06
2021	2,477,438	2.538%	2.736%	2.24
2022	800,000	2.653%	2.975%	3.39
2023 and Thereafter	4,590,000	2.653%	2.757%	7.37
Total	$ 8,117,438	2.612%	2.757%	5.22

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 June 30, 2019 and December 31, 2018, the Company had the following outstanding interest rate swaptions that were utilized as macro-economic hedges:

	June 30, 2019							
(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	$ 1,945	$ 878	4.86	$ 1,250,000	2.28%	3M Libor	5.2
Total Payer		$ 1,945	$ 878	4.86	$ 1,250,000	2.28%	3M Libor	5.2
Receiver	< 6 Months	$ 23,250	$ 29,081	4.71	$ 2,625,000	3M Libor	1.87%	10.0
Total Receiver		$ 23,250	$ 29,081	4.71	$ 2,625,000	3M Libor	1.87%	10.0

(notional and dollars in thousands)	December 31, 2018							
	Option				Underlying Swap			
Swaption	Expiration	Cost	Fair Value	Average Months to Expiration	Notional Amount	Average Fixed Pay Rate	Average Receive Rate	Average Term (Years)
Purchase contracts:								
Payer	< 6 Months	$ 4,855	$ 2,430	5.13	$ 900,000	3.16%	3M Libor	10.0
Payer	≥ 6 Months	8,400	5,992	8.60	800,000	3.14%	3M Libor	10.0
Total Payer		$ 13,255	$ 8,422	7.92	$ 1,700,000	3.15%	3M Libor	10.0
Sale contracts:								
Receiver	< 6 Months	$ (4,855)	$ (9,001)	4.74	$ (845,000)	3M Libor	2.66%	10.0
Receiver	≥ 6 Months	(8,400)	(12,877)	8.60	(792,000)	3M Libor	2.64%	10.0
Total Receiver		$ (13,255)	$ (21,878)	7.52	$ (1,637,000)	3M Libor	2.65%	10.0

Interest Rate Cap Contracts. The Company may use interest rate caps independently, or in conjunction with other derivative and non-derivative instruments, in order to mitigate risks. As of December 31, 2018, the Company held the following interest rate caps that were utilized as economic hedges of interest rate exposure (or duration) whereby the Company receives interest at a three-month LIBOR rate, net of a fixed cap rate:

(notional in thousands)

December 31, 2018				
Caps Maturities	Notional Amount	Weighted Average Cap Rate	Weighted Average Receive Rate	Weighted Average Maturity (Years)
2019	$ 800,000	1.344%	2.422%	0.53
2020	1,700,000	1.250%	2.766%	1.29
Total	$ 2,500,000	1.280%	2.656%	1.04

The Company did not hold any interest rate caps as of June 30, 2019.

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 had the following total return swap agreements in place at June 30, 2019 and December 31, 2018:

(notional and dollars in thousands)

June 30, 2019				
Maturity Date	Current Notional Amount	Fair Value	Cost Basis	Unrealized Gain (Loss)
January 12, 2043	$ (20,213)	$ (17)	$ (30)	$ 13
January 12, 2044	(25,323)	(68)	(29)	(39)
Total	$ (45,536)	$ (85)	$ (59)	$ (26)

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(notional and dollars in thousands)

	December 31, 2018			
Maturity Date	**Current Notional Amount**	**Fair Value**	**Cost Basis**	**Unrealized Gain (Loss)**
January 12, 2043	$ (21,395)	$ (153)	$ (30)	$ (123)
January 12, 2044	(26,870)	(230)	(29)	(201)
Total	$ (48,265)	$ (383)	$ (59)	$ (324)

Credit Risk

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

For non-Agency investment 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 June 30, 2019, the fair value of derivative financial instruments as an asset and liability position was $247.0 million and $0.3 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. As a result of amendments to rules governing certain central clearing activities, the exchange of variation margin is considered a settlement of the interest rate swap, as opposed to pledged collateral. Accordingly, beginning in the first quarter of 2018, the Company began accounting for the receipt or payment of variation margin as a direct reduction to the carrying value of the interest rate swap asset or liability.

Note 8. 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.

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

The Company presents repurchase agreements subject to master netting arrangements or similar agreements on a gross basis and derivative assets and liabilities (other than centrally cleared interest rate swaps) subject to such arrangements 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 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 June 30, 2019 and December 31, 2018:

	June 30, 2019					
				Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets (1)		
(in thousands)	Gross Amounts of Recognized Assets (Liabilities)	Gross Amounts Offset in the Balance Sheets	Net Amounts of Assets (Liabilities) Presented in the Balance Sheets	Financial Instruments	Cash Collateral (Received) Pledged	Net Amount
Assets						
Derivative assets	$ 699,710	$ (452,715)	$ 246,995	$ (255)	$ —	$ 246,740
Reverse repurchase agreements	109,500	—	109,500	—	(109,500)	—
Total Assets	$ 809,210	$ (452,715)	$ 356,495	$ (255)	$ (109,500)	$ 246,740
Liabilities						
Repurchase agreements	$ (28,168,044)	$ —	$ (28,168,044)	$ 28,168,044	$ —	$ —
Derivative liabilities	(452,970)	452,715	(255)	255	—	—
Total Liabilities	$ (28,621,014)	$ 452,715	$ (28,168,299)	$ 28,168,299	$ —	$ —

	December 31, 2018					
				Gross Amounts Not Offset with Financial Assets (Liabilities) in the Balance Sheets [(1)]		
(in thousands)	Gross Amounts of Recognized Assets (Liabilities)	Gross Amounts Offset in the Balance Sheets	Net Amounts of Assets (Liabilities) Presented in the Balance Sheets	Financial Instruments	Cash Collateral (Received) Pledged	Net Amount
Assets						
Derivative assets	$ 599,573	$ (279,592)	$ 319,981	$ (58,775)	$ —	$ 261,206
Reverse repurchase agreements	761,815	—	761,815	(761,815)	—	—
Total Assets	$ 1,361,388	$ (279,592)	$ 1,081,796	$ (820,590)	$ —	$ 261,206
Liabilities						
Repurchase agreements	$ (23,133,476)	$ —	$ (23,133,476)	$ 23,133,476	$ —	$ —
Derivative liabilities	(1,100,182)	279,592	(820,590)	820,590	—	—
Total Liabilities	$ (24,233,658)	$ 279,592	$ (23,954,066)	$ 23,954,066	$ —	$ —

(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 9. Fair Value

Fair Value Measurements

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

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

Level 1	Inputs are quoted prices in active markets for identical assets or liabilities as of the measurement date under current market conditions. Additionally, the entity must have the ability to access the active market and the quoted prices cannot be adjusted by the entity.
Level 2	Inputs include quoted prices in active markets for similar assets or liabilities; quoted prices in inactive markets for identical or similar assets or liabilities; or inputs that are observable or can be corroborated by observable market data by correlation or other means for substantially the full-term of the assets or liabilities.
Level 3	Unobservable inputs are supported by little or no market activity. The unobservable inputs represent the assumptions that market participants would use to price the assets and liabilities, including risk. Generally, Level 3 assets and liabilities are valued using pricing models, discounted cash flow methodologies, or similar techniques that require significant judgment or estimation.

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

Available-for-sale securities. The Company holds a portfolio of AFS securities that are carried at fair value in the condensed consolidated balance sheets and primarily comprised of Agency RMBS and non-Agency securities. The Company determines the fair value of its Agency RMBS based upon prices obtained from third-party pricing providers received using bid price, which are deemed indicative of market activity. The third-party pricing providers 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 providers 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 classified 99.3% and 0.7% of its AFS securities as Level 2 and Level 3 fair value assets, respectively, at June 30, 2019. AFS securities account for 93.6% of all assets reported at fair value at June 30, 2019.

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 providers. Although MSR transactions are observable in the marketplace, the valuation is based upon cash flow models that include unobservable market data inputs (including prepayment speeds, delinquency levels and discount rates). As a result, the Company classified 100% of its MSR as Level 3 fair value assets at June 30, 2019.

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 pricing providers to value its financial derivative instruments. The Company classified 100% of the interest rate swaps, swaptions, and Markit IOS total return swaps reported at fair value as Level 2 at June 30, 2019. The Company did not hold any interest rate caps or put and call options for TBAs at June 30, 2019.

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 a pricing service 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 June 30, 2019. The Company reported 100% of its TBAs and U.S. Treasury futures as Level 1 as of June 30, 2019. The Company did not hold any short U.S. Treasuries at June 30, 2019.

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

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

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

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

	Recurring Fair Value Measurements June 30, 2019			
(in thousands)	Level 1	Level 2	Level 3	Total
Assets				
Available-for-sale securities	$ —	$ 29,968,869	$ 217,210	$ 30,186,079
Mortgage servicing rights	—	—	1,800,826	1,800,826
Derivative assets	38,492	208,503	—	246,995
Total assets	$ 38,492	$ 30,177,372	$ 2,018,036	$ 32,233,900
Liabilities				
Derivative liabilities	$ 170	$ 85	$ —	$ 255
Total liabilities	$ 170	$ 85	$ —	$ 255

	Recurring Fair Value Measurements December 31, 2018			
(in thousands)	Level 1	Level 2	Level 3	Total
Assets				
Available-for-sale securities	$ —	$ 25,447,447	$ 105,157	$ 25,552,604
Mortgage servicing rights	—	—	1,993,440	1,993,440
Derivative assets	21,602	298,379	—	319,981
Total assets	$ 21,602	$ 25,745,826	$ 2,098,597	$ 27,866,025
Liabilities				
Derivative liabilities	$ —	$ 820,590	$ —	$ 820,590
Total liabilities	$ —	$ 820,590	$ —	$ 820,590

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 June 30, 2019, 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 providers and/or management. The third-party pricing providers 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 providers in the absence of market information. Assumptions used by the third-party pricing providers 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 providers. 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 price provider.

In determining fair value, third-party pricing providers 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 provider 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 for which market quotations are readily available 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 pricing providers, and are therefore classified within Level 2.

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

	Three Months Ended June 30, 2019		Six Months Ended June 30, 2019	
(in thousands)	**Available-For-Sale Securities**	**Mortgage Servicing Rights**	**Available-For-Sale Securities**	**Mortgage Servicing Rights**
Beginning of period level 3 fair value	$ 154,054	$ 2,014,370	$ 105,157	$ 1,993,440
Gains (losses) included in net (loss) income:				
Realized (losses) gains, net	(9,419)	(70,407)	(12,042)	(107,767)
Unrealized (losses) gains, net	—	(182,025) (1)	—	(333,639) (1)
Net gains (losses) included in net (loss) income	(9,419)	(252,432)	(12,042)	(441,406)
Other comprehensive income (loss)	1,351	—	3,319	—
Purchases	7,468	43,710	7,468	264,522
Sales	—	—	—	(289)
Settlements	—	(4,822)	—	(15,441)
Gross transfers into level 3	159,211	—	272,925	—
Gross transfers out of level 3	(95,455)	—	(159,617)	—
End of period level 3 fair value	$ 217,210	$ 1,800,826	$ 217,210	$ 1,800,826
Change in unrealized gains or losses for the period included in earnings for assets held at the end of the reporting period	$ —	$ (181,020) (2)	$ —	$ (327,632) (2)
Change in unrealized gains or losses for the period included in other comprehensive (loss) income for assets held at the end of the reporting period	$ 1,351	$ —	$ (166)	$ —

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

The Company transferred certain AFS from Level 2 to Level 3 and from Level 3 to Level 2 based the observability of inputs during the three and six months ended June 30, 2019. No additional AFS transfers between Level 1, Level 2 or Level 3 were made during the three and six months ended June 30, 2019. The Company did not transfer AFS between Level 1, Level 2 or Level 3 during the three and six months ended June 30, 2018. Transfers between Levels are deemed to take place on the first day of the reporting period in which the transfer has taken place.

The Company used third-party pricing providers in the fair value measurement of its Level 3 available-for-sale securities. The significant unobservable inputs used by the third-party pricing provider 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 providers in the fair value measurement of its Level 3 MSR. The tables below present information about the significant unobservable inputs used by the third-party pricing providers in the fair value measurement of the Company's MSR classified as Level 3 fair value assets at June 30, 2019:

June 30, 2019

Valuation Technique	Unobservable Input (1)	Range	Weighted Average (2)
Discounted cash flow	Constant prepayment speed	11.5 - 16.5 %	14.7%
	Delinquency	0.7 - 1.0 %	0.9%
	Discount rate	6.4 - 8.2 %	7.4%

December 31, 2018

Valuation Technique	Unobservable Input (1)	Range	Weighted Average (2)
Discounted cash flow	Constant prepayment speed	7.6 - 9.6 %	8.6%
	Delinquency	1.0 - 1.5 %	1.3%
	Discount rate	8.2 - 10.7 %	9.4%

(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 providers 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 9.
- 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 June 30, 2019, the Company held $300.0 million of repurchase agreements and $50.0 million of FHLB advances that are considered long-term. The Company's long-term repurchase agreements, FHLB advances and revolving credit facilities have floating rates based on an index plus a spread and, for members of the FHLB, the credit spread is typically consistent with those demanded in the market. Accordingly, the interest rates on these borrowings are at market and thus carrying value approximates fair value. The Company categorizes the fair value measurement of these liabilities as Level 2.
- Term notes payable are recorded at outstanding principal balance, net of any unamortized deferred debt issuance costs. In determining the fair value of term notes payable, management judgment may be used to arrive at fair value that considers prices obtained from third-party pricing providers, 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 June 30, 2019. 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 June 30, 2019 and December 31, 2018.

	June 30, 2019		December 31, 2018	
(in thousands)	Carrying Value	Fair Value	Carrying Value	Fair Value
Assets				
Available-for-sale securities	$ 30,186,079	$ 30,186,079	$ 25,552,604	$ 25,552,604
Mortgage servicing rights	$ 1,800,826	$ 1,800,826	$ 1,993,440	$ 1,993,440
Cash and cash equivalents	$ 433,579	$ 433,579	$ 409,758	$ 409,758
Restricted cash	$ 358,109	$ 358,109	$ 688,006	$ 688,006
Derivative assets	$ 246,995	$ 246,995	$ 319,981	$ 319,981
Reverse repurchase agreements	$ 109,500	$ 109,500	$ 761,815	$ 761,815
Other assets	$ 18,344	$ 18,344	74,412	74,412
Liabilities				
Repurchase agreements	$ 28,168,044	$ 28,168,044	$ 23,133,476	$ 23,133,476
Federal Home Loan Bank advances	$ 50,000	$ 50,000	$ 865,024	$ 865,024
Revolving credit facilities	$ —	$ —	$ 310,000	$ 310,000
Term notes payable	$ 394,061	$ 400,000	$ —	$ —
Convertible senior notes	$ 284,331	$ 290,979	$ 283,856	$ 281,951
Derivative liabilities	$ 255	$ 255	$ 820,590	$ 820,590

Note 10. Repurchase Agreements

As of June 30, 2019 and December 31, 2018, the Company had outstanding $28.2 billion and $23.1 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 2.70% and 2.68% and weighted average remaining maturities of 88 and 66 days as of June 30, 2019 and December 31, 2018, respectively.

At June 30, 2019 and December 31, 2018, the repurchase agreement balances were as follows:

(in thousands)	June 30, 2019	December 31, 2018
Short-term	$ 27,868,044	$ 22,833,476
Long-term	300,000	300,000
Total	$ 28,168,044	$ 23,133,476

At June 30, 2019 and December 31, 2018, the repurchase agreements had the following characteristics and remaining maturities:

	June 30, 2019				
	Collateral Type				
(in thousands)	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	Total Amount Outstanding
Within 30 days	$ 5,199,083	$ 696,848	$ 6,991	$ —	$ 5,902,922
30 to 59 days	4,115,347	281,192	16,177	—	4,412,716
60 to 89 days	5,379,111	302,586	1,633	—	5,683,330
90 to 119 days	3,732,735	341,688	14,065	—	4,088,488
120 to 364 days	7,331,458	441,236	7,894	—	7,780,588
One year and over	—	—	—	300,000	300,000
Total	$ 25,757,734	$ 2,063,550	$ 46,760	$ 300,000	$ 28,168,044
Weighted average borrowing rate	2.63%	3.58%	3.40%	4.15%	2.70%

	December 31, 2018				
	Collateral Type				
(in thousands)	Agency RMBS	Non-Agency Securities	Agency Derivatives	Mortgage Servicing Rights	Total Amount Outstanding
Within 30 days	$ 6,712,021	$ 770,287	$ 6,561	$ —	$ 7,488,869
30 to 59 days	4,557,688	496,466	23,444	—	5,077,598
60 to 89 days	5,410,967	242,473	1,621	—	5,655,061
90 to 119 days	1,209,395	722,399	7,065	—	1,938,859
120 to 364 days	2,201,325	463,939	7,825	—	2,673,089
One year and over	—	—	—	300,000	300,000
Total	$ 20,091,396	$ 2,695,564	$ 46,516	$ 300,000	$ 23,133,476
Weighted average borrowing rate	2.52%	3.65%	3.34%	4.51%	2.68%

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

(in thousands)	June 30, 2019	December 31, 2018
Available-for-sale securities, at fair value	$ 28,731,190	$ 24,240,507
Mortgage servicing rights, at fair value	609,405	685,683
Restricted cash	177,079	416,696
Due from counterparties	844,347	110,695
Derivative assets, at fair value	76,139	70,191
U.S. Treasuries (1)	—	6,457
Total	$ 30,438,160	$ 25,530,229

(1) U.S. Treasuries received as collateral and re-pledged.

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.

The following table summarizes certain characteristics of the Company’s repurchase agreements and counterparty concentration at June 30, 2019 and December 31, 2018:

	June 30, 2019				December 31, 2018			
(dollars in thousands)	**Amount Outstanding**	**Net Counterparty Exposure (1)**	**Percent of Equity**	**Weighted Average Days to Maturity**	**Amount Outstanding**	**Net Counterparty Exposure (1)**	**Percent of Equity**	**Weighted Average Days to Maturity**
Royal Bank of Canada	$ 2,788,912	$ 273,467	6%	129	$ 2,504,438	$ 342,739	8%	94
All other counterparties (2)	25,379,132	1,683,296	35%	84	20,629,038	1,679,335	39%	63
Total	$ 28,168,044	$ 1,956,763			$ 23,133,476	$ 2,022,074		

(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) Represents amounts outstanding with 26 and 29 counterparties at June 30, 2019 and December 31, 2018, respectively.

The Company does not anticipate any defaults by its repurchase agreement counterparties. There can be no assurance, however, that any such default or defaults will not occur.

Note 11. Reverse Repurchase Agreements

As of June 30, 2019, the Company had $109.5 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 $109.5 million.

As of December 31, 2018, the Company held securities, consisting of U.S Treasury securities, with a fair value of $781.5 million as collateral for reverse repurchase agreements that could be pledged, delivered or otherwise used, with a fair value of $761.8 million.

Note 12. Federal Home Loan Bank of Des Moines Advances

The Company’s wholly owned subsidiary, TH Insurance Holdings Company LLC, or TH Insurance, is a member of the FHLB. As a member of the FHLB, TH Insurance has access to a variety of products and services offered by the FHLB, including secured advances. As of June 30, 2019 and December 31, 2018, TH Insurance had $50.0 million and $865.0 million in outstanding secured advances with a weighted average borrowing rate of 3.20% and 2.79%, respectively.

The ability to borrow from the FHLB is subject to the Company’s continued creditworthiness, pledging of sufficient eligible collateral to secure advances, and compliance with certain agreements with the FHLB. Each advance requires approval by the FHLB and is secured by collateral in accordance with the FHLB’s credit and collateral guidelines, as may be revised from time to time by the FHLB. Eligible collateral may include conventional 1-4 family residential mortgage loans, 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 June 30, 2019 and December 31, 2018, FHLB advances had the following remaining maturities:

(in thousands)	June 30, 2019	December 31, 2018
≤ 1 year	$ —	$ 815,024
> 1 and ≤ 3 years	—	—
> 3 and ≤ 5 years	—	—
> 5 and ≤ 10 years	—	—
> 10 years	50,000	50,000
Total	$ 50,000	$ 865,024

At June 30, 2019 and December 31, 2018, the Company pledged AFS securities with a carrying value of $45.1 million and $917.5 million, respectively, as collateral for advances from the FHLB. The FHLB retains the right to mark the underlying collateral for FHLB advances to fair value. A reduction in the value of pledged assets would require the Company to provide additional collateral. In addition, as a condition to membership in the FHLB, the Company is required to purchase and hold a certain amount of FHLB stock, which is based, in part, upon the outstanding principal balance of advances from the FHLB. At June 30, 2019 and December 31, 2018, the Company had stock in the FHLB totaling $6.1 million and $40.8 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 June 30, 2019 and December 31, 2018, the Company had not recognized an impairment charge related to its FHLB stock.

Note 13. Revolving Credit Facilities

To finance MSR, the Company has entered into revolving credit facilities collateralized by the value of the MSR pledged. As of December 31, 2018, the Company had outstanding short- and long-term borrowings under revolving credit facilities of $310.0 million with a weighted average borrowing rate of 5.60% and weighted average remaining maturities of 4.25 years. The Company did not have any outstanding borrowings under revolving credit facilities as of June 30, 2019.

At June 30, 2019 and December 31, 2018, borrowings under revolving credit facilities had the following remaining maturities:

(in thousands)	June 30, 2019	December 31, 2018
Within 30 days	$ —	$ —
30 to 59 days	—	—
60 to 89 days	—	—
90 to 119 days	—	—
120 to 364 days	—	20,000
One year and over	—	290,000
Total	$ —	$ 310,000

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 June 30, 2019 and December 31, 2018, MSR with a carrying value of $199.6 million and $458.2 million, respectively, was pledged as collateral for the Company's future payment obligations under its revolving credit facilities. The Company does not anticipate any defaults by its revolving credit facility counterparties, although there can be no assurance that any such default or defaults will not occur.

Note 14. Term Notes Payable

The debt issued in connection with the on-balance sheet securitization discussed in Note 2 - *Basis of Presentation and Significant Accounting Policies* 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 June 30, 2019, the outstanding amount due on term notes payable was $394.1 million, net of deferred debt issuance costs, with a weighted average interest rate of 5.20% and weighted average remaining maturities of 5.0 years. At June 30, 2019, the Company pledged MSR with a carrying value of $581.0 million and weighted average underlying loan coupon of 4.31% as collateral for term notes payable.

Note 15. Convertible Senior Notes

In January 2017, the Company closed an underwritten public offering of $287.5 million aggregate principal amount of convertible senior notes due 2022. The net proceeds from the offering were approximately $282.2 million after deducting underwriting discounts and estimated offering expenses payable by the Company. The notes are unsecured, pay interest semiannually at a rate of 6.25% per annum and are convertible at the option of the holder into shares of the Company's common stock. The notes will mature in January 2022, unless earlier converted or repurchased in accordance with their terms. The Company does not have the right to redeem the notes prior to maturity, but may be required to repurchase the notes from holders under certain circumstances. As of June 30, 2019 and December 31, 2018, the notes had a conversion rate of 63.1227 and 62.4003 shares of common stock per $1,000 principal amount of the notes, respectively. The outstanding amount due on the convertible senior notes as of June 30, 2019 and December 31, 2018 was $284.3 million and $283.9 million, respectively, net of deferred issuance costs.

Note 16. Stockholders' Equity

Redeemable Preferred Stock

The following is a summary of the Company's series of cumulative redeemable preferred stock issued and outstanding as of June 30, 2019. In the event of a voluntary or involuntary liquidation, dissolution or winding up of the Company, each series of preferred stock will rank on parity with one another and rank senior to the Company's common stock with respect to the payment of the dividends and the distribution of assets.

As of June 30, 2019

(in thousands)

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

(1) Subject to the Company's right under limited circumstances to redeem the preferred stock earlier than the redemption date disclosed in order to preserve its qualification as a REIT or following a change in control of the Company.
(2) For the fixed-to-floating rate redeemable preferred stock, the dividend rate will remain at a 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.

On July 31, 2018, upon the closing of the merger with CYS, the Company issued 3,000,000 shares of newly classified 7.75% Series D Cumulative Redeemable Preferred Stock, par value $0.01 per share, and 8,000,000 shares of newly classified 7.50% Series E Cumulative Redeemable Preferred Stock, par value $0.01 per share, in exchange for all shares of CYS's Series A and Series B cumulative redeemable preferred stock outstanding prior to the effective time of the merger. Pursuant to the terms of the merger agreement with CYS, the terms of the Company's Series D and Series E Cumulative Redeemable Preferred Stock are substantially similar to the terms of CYS's Series A and Series B Cumulative Redeemable Preferred Stock.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

For each series of preferred stock, the Company may redeem the stock on or after the redemption date in whole or in part, at any time or from time to time. Each series of preferred stock has a par value of $0.01 per share and a liquidation and redemption price of $25.00, plus any accumulated and unpaid dividends thereon up to, but excluding, the redemption date. Through June 30, 2019, the Company had declared and paid all required quarterly dividends on the Company's preferred stock.

Distributions to Preferred Stockholders

The following table presents cash dividends declared by the Company on its preferred stock from December 31, 2017 through June 30, 2019:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series A Preferred Stock:			
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.507810
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.507810
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.507810
September 20, 2018	October 12, 2018	October 29, 2018	$ 0.507810
June 19, 2018	July 12, 2018	July 27, 2018	$ 0.507810
March 20, 2018	April 12, 2018	April 27, 2018	$ 0.507810
Series B Preferred Stock:			
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.476560
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.476560
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.476560
September 20, 2018	October 12, 2018	October 29, 2018	$ 0.476560
June 19, 2018	July 12, 2018	July 27, 2018	$ 0.476560
March 20, 2018	April 12, 2018	April 27, 2018	$ 0.476560
Series C Preferred Stock:			
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.453130
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.453130
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.453130
September 20, 2018	October 12, 2018	October 29, 2018	$ 0.453130
June 19, 2018	July 12, 2018	July 27, 2018	$ 0.453130
March 20, 2018	April 12, 2018	April 27, 2018	$ 0.453130
Series D Preferred Stock:			
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.484375
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.484375
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.484375
September 20, 2018	October 1, 2018	October 15, 2018	$ 0.484375
Series E Preferred Stock:			
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.468750
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.468750
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.468750
September 20, 2018	October 1, 2018	October 15, 2018	$ 0.468750

Common Stock

Public Offering

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

Issuance of Common Stock in Connection with Acquisition of CYS Investments, Inc.

On July 31, 2018, in exchange for all of the shares of CYS common stock outstanding immediately prior to the effective time of the merger, the Company issued approximately 72.6 million new shares of common stock, as well as aggregate cash consideration of $15.0 million, to CYS common stockholders.

As of June 30, 2019, the Company had 272,899,638 shares of common stock outstanding. The following table presents a reconciliation of the common shares outstanding for the three and six months ended June 30, 2019 and 2018:

	Number of common shares
Common shares outstanding, December 31, 2017	174,496,587
Issuance of common stock	12,468
Issuance of restricted stock [(1)]	961,343
Common shares outstanding, June 30, 2018	175,470,398
Common shares outstanding, December 31, 2018	248,085,721
Issuance of common stock	24,390,456
Issuance of restricted stock [(1)]	423,461
Common shares outstanding, June 30, 2019	272,899,638

(1) Represents shares of restricted stock granted under the Second Restated 2009 Equity Incentive Plan, net of forfeitures, of which 1,213,639 restricted shares remained subject to vesting requirements at June 30, 2019.

Distributions to Common Stockholders

The following table presents cash dividends declared by the Company on its common stock from December 31, 2017 through June 30, 2019:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Common Share
June 19, 2019	July 1, 2019	July 29, 2019	$ 0.400000
March 19, 2019	March 29, 2019	April 29, 2019	$ 0.470000
December 18, 2018	December 31, 2018	January 28, 2019	$ 0.470000
September 20, 2018	October 1, 2018	October 29, 2018	$ 0.311630
July 13, 2018	July 25, 2018	July 30, 2018	$ 0.158370
June 19, 2018	June 29, 2018	July 27, 2018	$ 0.470000
March 20, 2018	April 2, 2018	April 27, 2018	$ 0.470000

Dividend Reinvestment and Direct Stock Purchase Plan

The Company sponsors a dividend reinvestment and direct stock purchase plan through which stockholders may purchase additional shares of the Company's common stock by reinvesting some or all of the cash dividends received on shares of the Company's common stock. Stockholders may also make optional cash purchases of shares of the Company's common stock subject to certain limitations detailed in the plan prospectus. The plan allows for the issuance of up to an aggregate of 3,750,000 shares of the Company's common stock. As of June 30, 2019, 253,008 shares have been issued under the plan for total proceeds of approximately $4.7 million, of which 12,926 and 25,156 shares were issued for total proceeds of $0.2 million and $0.3 million during the three and six months ended June 30, 2019, respectively. During the three and six months ended June 30, 2018, 7,547 and 12,468 shares were issued for total proceeds of $0.1 million and $0.2 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 June 30, 2019, a total of 12,067,500 shares had been repurchased by the Company under the program for an aggregate cost of $200.4 million. No shares were repurchased during the three and six months ended June 30, 2019 and 2018.

At-the-Market Offerings

As of December 31, 2018, the Company was party to an equity distribution agreement under which the Company was authorized to sell up to an aggregate of 10,000,000 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. During the six months ended June 30, 2019, the Company terminated its prior equity distribution agreement and entered into a new equity distribution agreement pursuant to which a total of 35,000,000 shares of common stock are authorized for issuance. As of June 30, 2019, 7,458,235 shares of common stock had been sold under the equity distribution agreements for total accumulated net proceeds of approximately $128.2 million, of which 3,665,300 shares were sold for net proceeds of $50.6 million during the six months ended June 30, 2019. No shares were sold during the three months ended June 30, 2019 or three and six months ended June 30, 2018.

Accumulated Other Comprehensive Income

Accumulated other comprehensive income at June 30, 2019 and December 31, 2018 was as follows:

(in thousands)	June 30, 2019	December 31, 2018
Available-for-sale securities		
Unrealized gains	$ 819,396	$ 498,744
Unrealized losses	(41,878)	(387,927)
Accumulated other comprehensive income	$ 777,518	$ 110,817

Reclassifications out of Accumulated Other Comprehensive Income

The Company reclassifies unrealized gains and losses on AFS securities in accumulated other comprehensive income to net (loss) income 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 six months ended June 30, 2019 and 2018:

(in thousands)	Affected Line Item in the Statements of Comprehensive (Loss) Income	Amount Reclassified out of Accumulated Other Comprehensive Income			
		Three Months Ended June 30,		Six Months Ended June 30,	
		2019	2018	2019	2018
Other-than-temporary impairments on AFS securities	Total other-than-temporary impairment losses	$ 4,848	$ 174	$ 5,054	$ 268
Realized losses (gains) on sales of certain AFS securities, net of tax	Gain (loss) on investment securities	9,064	23,615	37,170	22,286
Total		$ 13,912	$ 23,789	$ 42,224	$ 22,554

Note 17. Equity Incentive Plan

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

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

During the six months ended June 30, 2019 and 2018, the Company granted 60,108 and 44,245 shares of common stock, respectively, to its independent directors pursuant to the Plan. The estimated fair value of these awards was $13.35 and $15.48 per share on grant date, based on the adjusted closing price of the Company’s common stock on the NYSE on such date. The restricted common shares granted in 2019 are subject to a one-year vesting period, and the common shares granted in 2018 vested immediately.

Additionally, during the six months ended June 30, 2019 and 2018, the Company granted 455,174 and 941,371 shares of restricted common stock, respectively, to the Company’s executive officers and key employees of PRCM Advisers who provide services to the Company, pursuant to the terms of the Plan and the associated award agreements. The estimated fair value of these awards was $14.40 and $15.12 per share on grant date, based on the adjusted closing market price of the Company’s common stock on the NYSE on such date. The shares underlying the grants vest in three equal annual installments commencing on the first anniversary of the grant date, as long as such grantee complies with the terms and conditions of his or her applicable restricted stock award agreement.

The following table summarizes the activity related to restricted common stock for the six months ended June 30, 2019 and 2018:

	Six Months Ended June 30,			
	2019		2018	
	Shares	Weighted Average Grant Date Fair Market Value	Shares	Weighted Average Grant Date Fair Market Value
Outstanding at Beginning of Period	1,593,701	$ 15.81	1,284,010	$ 17.15
Granted	515,282	14.28	985,616	15.14
Vested	(803,523)	(14.43)	(661,810)	(17.15)
Forfeited	(91,821)	(15.61)	(14,115)	(15.59)
Outstanding at End of Period	1,213,639	$ 16.09	1,593,701	$ 15.92

For the three and six months ended June 30, 2019, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of $2.5 million and $4.4 million, respectively. For the three and six months ended June 30, 2018, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of $4.1 million and $6.4 million, respectively.

Note 18. Income Taxes

For the three and six months ended June 30, 2019 and 2018, 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 six months ended June 30, 2019, the Company’s TRSs recognized a provision for income taxes of $2.4 million and a benefit from income taxes of $7.6 million, respectively. The provision recognized for the three months ended June 30, 2019 was primarily due to net gains recognized on derivative instruments, offset by losses recognized on MSR held in the Company’s TRSs. The benefit recognized for the six months ended June 30, 2019 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 six months ended June 30, 2018, the Company’s TRSs recognized a benefit from income taxes of $6.1 million and $2.3 million, respectively, which was primarily due to net losses incurred on derivative instruments, offset by gains recognized on MSR held in the Company’s TRSs.

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

Note 19. Earnings Per Share

The following table presents a reconciliation of the (loss) earnings and shares used in calculating basic and diluted (loss) earnings per share for the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 30,		Six Months Ended June 30,	
(in thousands, except share data)	2019	2018	2019	2018
Numerator:				
Net (loss) income	$ (90,557)	$ 139,490	$ (116,492)	$ 474,299
Dividends on preferred stock	18,950	13,747	37,900	27,494
Net (loss) income attributable to common stockholders - basic	(109,507)	125,743	(154,392)	446,805
Interest expense attributable to convertible notes (1)	—	4,689	—	9,390
Net (loss) income attributable to common stockholders - diluted	$ (109,507)	$ 130,432	$ (154,392)	$ 456,195
Denominator:				
Weighted average common shares outstanding	271,649,923	173,789,898	261,405,737	173,671,942
Weighted average restricted stock shares	1,213,230	1,662,091	1,261,423	1,627,880
Basic weighted average shares outstanding	272,863,153	175,451,989	262,667,160	175,299,822
Effect of dilutive shares issued in an assumed conversion	—	17,760,888	—	17,716,971
Diluted weighted average shares outstanding	272,863,153	193,212,877	262,667,160	193,016,793
(Loss) Earnings Per Share				
Basic	$ (0.40)	$ 0.72	$ (0.59)	$ 2.55
Diluted	$ (0.40)	$ 0.68	$ (0.59)	$ 2.36

(1) Includes a nondiscretionary adjustment for the assumed change in the management fee calculation.

For the three and six months ended June 30, 2019, excluded from the calculation of diluted earnings per share is the effect of adding back $4.7 million and $9.4 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 18,147,776 and 18,096,970 weighted average common share equivalents, respectively, related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

Note 20. Related Party Transactions

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

In accordance with the Management Agreement between the Company and PRCM Advisers dated as of October 28, 2009 and subsequently amended, the Company incurred $13.6 million and $25.7 million as a management fee to PRCM Advisers for the three and six months ended June 30, 2019, respectively, and $11.5 million and $23.2 million as a management fee to PRCM Advisers for the three and six months ended June 30, 2018, respectively, which represents approximately 1.5% of stockholders' equity on an annualized basis as defined by the Management Agreement. For purposes of calculating the management fee, stockholders' equity is adjusted as discussed below, and to exclude any common stock repurchases, as well as any unrealized gains, losses or other items that do not affect realized net (loss) income, among other adjustments, in accordance with the Management Agreement.

TWO HARBORS INVESTMENT CORP.

Notes to the Condensed Consolidated Financial Statements (unaudited)

In connection with the acquisition of CYS, the Management Agreement was amended to (i) 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 and (ii) for the fiscal quarter in which closing of the merger occurred, to make a one-time downward adjustment of Pine River's management fees payable by Two Harbors for such quarter by $15.0 million to offset the cash consideration payable to stockholders of CYS, plus an additional downward adjustment of up to $3.3 million for certain transaction-related expenses. For the year ended December 31, 2018, the total downward adjustment to management fees was $17.5 million. The Company does not anticipate any further downward adjustments to management fees for transaction-related expenses.

In addition, the Company reimbursed PRCM Advisers for direct and allocated costs incurred by PRCM Advisers on behalf of the Company. These direct and allocated costs totaled approximately $5.1 million and $18.3 million for the three and six months ended June 30, 2019, respectively, and $4.2 million and $15.5 million for the three and six months ended June 30, 2018, respectively. The Company will continue to have certain costs allocated to it by PRCM Advisers for compensation, data services, technology and certain office lease payments, however, the Company has direct relationships with most of its third party vendors and pays those expenses directly.

The Company recognized $2.5 million and $4.4 million of compensation during the three and six months ended June 30, 2019, respectively, and $4.1 million and $6.4 million of compensation during the three and six months ended June 30, 2018, respectively, related to restricted common stock issued to employees of PRCM Advisers and the Company's independent directors pursuant to the Plan. See Note 17 - *Equity Incentive Plan* for additional information.

Note 21. Subsequent Events

Events subsequent to June 30, 2019 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, 2018.

General

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

Our objective is to provide attractive risk-adjusted total return to our stockholders over the long term, primarily through dividends and secondarily through capital appreciation. We selectively acquire and manage an investment portfolio of our target assets, which is constructed to generate attractive returns through market cycles. We focus on asset selection and implement a relative value investment approach across various sectors within the mortgage market. Our target assets include the following:

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

We generally view 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 sensitive to changes in interest rates and prepayment speeds, specifically Agency RMBS and MSR. Our credit strategy includes assets with 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.

Within our MSR business, we purchase the right to control the servicing of residential mortgage loans 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.

On April 26, 2018, we announced that we had entered into a definitive merger agreement pursuant to which we would acquire CYS Investments, Inc., or CYS, a Maryland corporation investing in primarily Agency RMBS and treated as a REIT for U.S. federal income tax purposes. The transaction was approved by the stockholders of both Two Harbors and CYS on July 27, 2018, and the merger was completed on July 31, 2018, at which time CYS became our wholly owned subsidiary. In exchange for all of the shares of CYS common stock outstanding immediately prior to the effective time of the merger, we issued approximately 72.6 million new shares of common stock, as well as aggregate cash consideration of $15.0 million, to CYS common stockholders. In addition, we issued 3 million shares of newly classified Series D cumulative redeemable preferred stock and 8 million shares of newly classified Series E cumulative redeemable preferred stock in exchange for all shares of CYS's Series A and Series B cumulative redeemable preferred stock outstanding prior to the effective time of the merger. The financial results of CYS since the closing date of the acquisition have been included in our condensed consolidated financial statements.

We believe our investment model allows management to allocate capital across various sectors within the mortgage market, with a focus on asset selection and the implementation of a relative value investment approach. 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. As a result, capital allocation reflects management's flexible approach to investing in the marketplace. The following table provides our capital allocation in each of our investment strategies as of June 30, 2019 and the four immediately preceding period ends:

	Capital Allocations(1) as of				
	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018	June 30, 2018
Rates strategy	76%	77%	74%	76%	68%
Credit strategy	24%	23%	26%	24%	32%

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

As our capital allocation shifts, our annualized yields and cost of financing will also shift. Our capital allocation at June 30, 2019 was 76% to our rates strategy and 24% to our credit strategy. The increased allocation to our rates strategy was driven by the acquisition of CYS's Agency portfolio in 2018 and the continued growth of our MSR portfolio. Throughout the remainder of 2019, we intend to allocate capital to the most attractive investment opportunities in our target asset classes. We do not have a fixed allocation target between our rates and credit strategies. Our investment decisions are not driven solely by annualized yields, but rather a multitude of macroeconomic drivers, including market environments and their respective impacts (*e.g.*, uncertainty of prepayment speeds, extension risk and credit events).

For the three months ended June 30, 2019, our net yield realized on the portfolio was lower than recent periods due to the purchase of Agency and non-Agency RMBS at lower yields than our overall portfolio yields, higher prepayment speeds on MSR and a slight increase in our cost of financing. The following table provides the average annualized yield on our assets, including Agency RMBS, non-Agency securities and MSR for the three months ended June 30, 2019, and the four immediately preceding quarters:

	Three Months Ended				
	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018	June 30, 2018
Average annualized portfolio yield (1)	3.93%	4.25%	4.14%	3.76%	3.91%
Cost of financing (2)	2.55%	2.47%	2.53%	2.28%	1.98%
Net portfolio yield	1.38%	1.78%	1.61%	1.48%	1.93%

(1) Average annualized yield incorporates future prepayment, credit loss and other assumptions, all of which are estimates and subject to change.
(2) Cost of financing includes swap and cap interest rate spread.

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

Our Agency RMBS, given their liquidity and high credit quality, are eligible for higher levels of leverage, while non-Agency securities and MSR, with less liquidity and/or more exposure to credit risk, 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 6.0 times to finance our securities portfolio and MSR, on a fully deployed capital basis. Our debt-to-equity ratio is directly correlated to the composition of our portfolio; specifically, the higher percentage of Agency RMBS we hold, the higher our debt-to-equity ratio is, while the higher percentage of non-Agency securities and MSR we hold, the lower our debt-to-equity ratio is. We may alter the percentage allocation of our portfolio among our target assets depending on the relative value of the assets that are available to purchase from time to time, including at times when we are deploying proceeds from offerings we conduct. As we allocate capital toward Agency RMBS and deploy financing on MSR, our debt-to-equity ratio may increase beyond 6.0 times in the future. See the section titled *"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 provided by our external manager to identify investment opportunities. We believe that our significant focus in the residential market, the extensive mortgage market expertise of our investment team, our strong analytics and our disciplined relative value investment approach give us a competitive advantage versus our peers.

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

Forward-Looking Statements

This Quarterly Report on Form 10-Q contains, or incorporates by reference, not only historical information, but also forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, or the Exchange Act, and that are subject to the safe harbors created by such sections. Forward-looking statements involve numerous risks and uncertainties. Our actual results may differ from our beliefs, expectations, estimates, and projections and, consequently, you should not rely on these forward-looking statements as predictions of future events. Forward-looking statements are not historical in nature and can be identified by words such as "anticipate," "estimate," "will," "should," "expect," "target," "believe," "intend," "seek," "plan," "goals," "future," "likely," "may" and similar expressions or their negative forms, or by references to strategy, plans, or intentions. These forward-looking statements are subject to risks and uncertainties, including, among other things, those described in our Annual Report on Form 10-K for the year ended December 31, 2018, 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 and the credit status of borrowers;
- 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 and financing through the FHLB;
- declines in home prices;
- 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 and balance sheets, including our stockholders' equity;
- our ability to generate cash flow from our target assets;
- our ability to effectively execute and realize the benefits of strategic transactions and initiatives we have pursued or may in the future pursue;
- changes in the competitive landscape within our industry, including changes that may affect our ability to attract and retain personnel;
- our exposure to legal and regulatory claims, penalties or enforcement activities, including those arising from our ownership and management of MSR and prior securitization transactions;
- our exposure to counterparties involved in our MSR business and prior securitization transactions and our ability to enforce representations and warranties made by them;
- our ability to acquire MSR and successfully operate our seller-servicer subsidiary and oversee the activities of our subservicers;
- our ability to successfully diversify our business into new asset classes, and manage the new risks to which they may expose us;
- our ability to manage various operational and regulatory risks associated with our business;
- interruptions in or impairments to our communications and information technology systems;
- our ability to maintain appropriate internal controls over financial reporting;
- our ability to establish, adjust and maintain appropriate hedges for the risks in our portfolio;
- our ability to maintain our REIT qualification for U.S. federal income tax purposes; and
- limitations imposed on our business due to our REIT status and our status as exempt from registration under the 1940 Act.

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

Factors Affecting our Operating Results

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

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 are significantly affected by fluctuations in market prices. At June 30, 2019, approximately 93.9% of our total assets, or $32.2 billion, consisted of financial instruments recorded at fair value. See Note 9 - *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 available-for-sale, or AFS, securities, excluding Agency interest-only mortgage-backed securities, is recorded as a component of accumulated other comprehensive income and does not impact our earnings. Our reported (loss) earnings for U.S. GAAP purposes, or GAAP net (loss) income, is affected, however, 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 providers. We generally receive three or more broker and vendor quotes on pass-through Agency RMBS, and generally receive multiple broker or vendor quotes on all other securities, including interest-only Agency RMBS, inverse interest-only Agency RMBS, and non-Agency securities. We also currently receive three vendor quotes for the MSR in our investment portfolio. For Agency RMBS, the third-party pricing providers and brokers use pricing models that commonly incorporate such factors as coupons, primary and secondary mortgage rates, rate reset period, issuer, prepayment speeds, credit enhancements and expected life of the security. For non-Agency securities, the third-party pricing providers and brokers utilize both observable and unobservable inputs such as pool-specific characteristics (*e.g.*, loan age, loan size, credit quality of borrowers, vintage, servicer quality), floating rate indices, prepayment and default assumptions, and recent trading of the same or similar securities. For MSR, vendors use pricing models that generally incorporate observable inputs such as principal balance, note rate, geographical location, loan-to-value (LTV) ratios, FICO, appraised value and other loan characteristics, along with observed market yields and trading levels. Pricing providers 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 brokers and independent pricing providers 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 broker quotes and valuations from third-party pricing providers 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 independent providers, subject to internally-established hierarchy and override procedures.

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

Considerable judgment is used in forming conclusions and estimating inputs to our Level 3 fair value measurements. Level 3 inputs such as interest rate movements, prepayments speeds, credit losses and discount rates are inherently difficult to estimate. Changes to these inputs can have a significant effect on fair value measurements. Accordingly, there is no assurance that our estimates of fair value are indicative of the amounts that would be realized on the ultimate sale or exchange of these assets. The Company classified 5.9% of its total assets as Level 3 fair value assets at June 30, 2019.

Market Conditions and Outlook

The key macroeconomic factors that impact our business are U.S. residential property prices, national employment rates and the interest rate environment. Home prices continued to increase modestly during the second quarter of 2019 and are expected to gradually appreciate over the next several years, albeit at a slower rate. Unemployment rates remain low and U.S. payrolls continue to grow, although new job creation has yet to generate substantive wage growth. Other than LTV ratios and cash reserves, we believe employment is the most powerful determinant of homeowners’ ongoing likelihood to pay their mortgages. Home price performance and employment are particularly important to our non-Agency portfolio.

The U.S. interest rate environment is in a period of transition following several years of steadily increasing rates. The Federal Reserve has moved from a stance of patience and neutrality to one more concerned with sustaining economic expansion. The consensus expectation in the market as of the end of the second quarter was for the Federal Reserve to reduce the federal funds rate prior to the end of 2019. At the same time, in part due to the absence of meaningful inflation, the interest rate curve has inverted, with rates out to 10 years being lower than the federal funds target rate. The Trump administration continues to focus on multiple issues, including trade policies, that could impact interest rates, the U.S. economy and U.S. businesses. While there is much uncertainty regarding the timing and specifics of many potential policy changes, any such actions could affect our business. Further, while the Federal Reserve has been reducing its mortgage-backed securities holdings through cessation of reinvesting principal and interest payments, the approach has generally been to move gradually and cautiously. Mortgage investments could be impacted by a decision to increase or decrease the overall size, or the rate of change, of Federal Reserve’s System Open Market Account mortgage holdings.

We believe our blended Agency and non-Agency securities portfolio 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. Having a diversified portfolio allows us to mitigate a variety of risks, including interest rate and RMBS spread volatility.

We expect that whole-pool Agency RMBS will continue to comprise the majority of our assets in light of the long-term attractiveness of the asset class and in order to continue to satisfy the requirements of our exemption from registration under the 1940 Act. Interest-only Agency securities and MSR also provide a complementary investment and risk-management strategy to our principal and interest (P&I) Agency RMBS. Risk-adjusted returns in our Agency RMBS portfolio may decline if we are required to pay higher purchase premiums due to lower interest rates or additional liquidity in the market. Additionally, the Federal Reserve's prior quantitative easing programs and reinvestment of its mortgage-backed security principal repayments and other policy changes may impact the returns of our Agency RMBS portfolio.

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

(dollars in thousands)	June 30, 2019		December 31, 2018	
Agency				
Fixed Rate	$ 26,291,937	86.9%	$ 21,665,960	84.6%
Hybrid ARM	16,506	—%	19,073	0.1%
Total Agency	26,308,443	86.9%	21,685,033	84.7%
Agency Derivatives	76,206	0.3%	70,257	0.3%
Non-Agency				
Senior	3,211,099	10.6%	2,854,731	11.1%
Mezzanine	575,246	1.9%	928,632	3.6%
Interest-only securities	91,291	0.3%	84,208	0.3%
Total Non-Agency	3,877,636	12.8%	3,867,571	15.0%
Total	$ 30,262,285		$ 25,622,861	

Prepayment speeds and volatility due to interest rates

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

The following table provides the three-month weighted average constant prepayment rate, or CPR, on our Agency RMBS for the three months ended June 30, 2019, and the four immediately preceding quarters:

	Three Months Ended				
Agency RMBS	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018	June 30, 2018
Weighted Average CPR	10.1%	6.5%	6.8%	8.1%	9.2%

Although we are unable to predict the movement in interest rates in the remainder of 2019 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 $175,000 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:

	June 30, 2019						
(dollars in thousands)	Principal/ Current Face	Carrying Value	% of Agency Portfolio	% Prepayment Protected	Weighted Average Coupon Rate	Amortized Cost	Weighted Average Loan Age (months)
Agency RMBS AFS:							
30-Year Fixed							
3.0-3.5%	$ 2,943,123	$ 3,032,757	11.5%	94.7%	3.5%	$ 3,000,641	3
4.0%	12,373,610	13,011,899	49.3%	90.2%	4.0%	12,865,038	19
4.5%	7,620,020	8,128,603	30.8%	100.0%	4.5%	7,970,959	15
≥ 5%	1,693,280	1,820,660	6.9%	77.9%	5.1%	1,791,501	24
	24,630,033	25,993,919	98.5%	92.9%	4.2%	25,628,139	16
Other P&I	137,722	154,759	0.6%	0.4%	6.3%	153,660	204
Interest-only	2,888,397	159,765	0.6%	—%	2.0%	188,009	98
Agency Derivatives	436,611	76,206	0.3%	—%	4.0%	63,128	178
Total Agency RMBS	$ 28,092,763	$ 26,384,649	100.0%	91.5%		$ 26,032,936	

	December 31, 2018						
(dollars in thousands)	Principal/ Current Face	Carrying Value	% of Agency Portfolio	% Prepayment Protected	Weighted Average Coupon Rate	Amortized Cost	Weighted Average Loan Age (months)
Agency RMBS AFS:							
30-Year Fixed							
3.0-3.5%	$ 234,323	$ 234,521	1.1%	100.0%	3.5%	$ 235,514	19
4.0%	8,640,859	8,846,367	40.7%	83.0%	4.0%	9,047,282	22
4.5%	10,237,108	10,686,699	49.1%	99.0%	4.5%	10,765,144	16
≥ 5%	1,367,700	1,452,170	6.7%	74.4%	5.1%	1,449,256	24
	20,479,990	21,219,757	97.6%	90.7%	4.3%	21,497,196	19
Other P&I	295,800	289,860	1.3%	0.3%	4.7%	291,290	151
Interest-only	3,115,967	175,416	0.8%	—%	2.0%	209,901	92
Agency Derivatives	476,299	70,257	0.3%	—%	4.0%	69,496	173
Total Agency RMBS	$ 24,368,056	$ 21,755,290	100.0%	88.4%		$ 22,067,883	

Our non-Agency securities yields are expected to increase if prepayment rates on such assets exceed our prepayment assumptions. To the extent that prepayment speeds increase due to macroeconomic factors, we expect to benefit from the ability to recognize the income from the heavily discounted prices that principally arose from credit or payment default expectations.

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

	June 30, 2019				
(in thousands)	Principal/ Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost
Principal and interest securities					
Senior	$ 4,847,435	$ 5,518	$ (457,094)	$ (1,526,732)	$ 2,869,127
Mezzanine	719,388	227	(132,277)	(113,323)	474,015
Total P&I securities	5,566,823	5,745	(589,371)	(1,640,055)	3,343,142
Interest-only	4,912,069	88,917	—	—	88,917
Total Non-Agency	$ 10,478,892	$ 94,662	$ (589,371)	$ (1,640,055)	$ 3,432,059

	December 31, 2018				
(in thousands)	Principal/ Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost
Principal and interest securities					
Senior	$ 4,227,631	$ 5,381	$ (477,682)	$ (1,204,325)	$ 2,551,005
Mezzanine	1,132,493	1,301	(216,437)	(118,437)	798,920
Total P&I securities	5,360,124	6,682	(694,119)	(1,322,762)	3,349,925
Interest-only	5,137,169	83,846	—	—	83,846
Total Non-Agency	$ 10,497,293	$ 90,528	$ (694,119)	$ (1,322,762)	$ 3,433,771

Credit losses

Although our Agency portfolio is supported by U.S. government agency and federally chartered corporation guarantees of payment of principal and interest, we are exposed to credit risk in our non-Agency securities.

The credit support built into non-Agency securities deal structures is designed to provide a level of protection from potential credit losses for more senior tranches. We evaluate credit risk on our non-Agency investments through a comprehensive asset selection process, which is predominantly focused on quantifying and pricing credit risk, including extensive initial modeling and scenario analysis. In addition, the discounted purchase prices paid for our non-Agency securities provide additional insulation from credit losses in the event we receive less than 100% of par on such assets. At purchase, we estimate the portion of the discount we do not expect to recover and factor that into our expected yield and accretion methodology. We may also record an other-than-temporary impairment, or OTTI, for a portion of our investment in a security to the extent we believe that the amortized cost exceeds the present value of expected future cash flows. We review our non-Agency securities on an ongoing basis using quantitative and qualitative analysis of the risk-adjusted returns on such investments and through on-going asset surveillance. Nevertheless, unanticipated credit losses could occur, adversely impacting our operating results.

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 a single counterparty.

As of June 30, 2019, we had entered into repurchase agreements with 47 counterparties, 26 of which had outstanding balances at June 30, 2019. In addition, we held long-term secured advances from the FHLB, short- and long-term borrowings under revolving credit facilities, long-term term notes payable and long-term unsecured convertible senior notes. As of June 30, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 5.9:1.0.

As of June 30, 2019, we held $433.6 million in cash and cash equivalents, approximately $269.3 million of unpledged Agency securities and derivatives and $1.1 billion of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on our unpledged securities of approximately $1.1 billion. As of June 30, 2019, we held approximately $410.8 million of unpledged MSR and had an overall estimated unused borrowing capacity on MSR financing facilities of $490.0 million. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. If borrowing rates and collateral requirements change in the near term, we believe we are subject to less earnings volatility than if we carried higher leverage.

We also monitor exposure to our MSR counterparties. We may also 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.

Summary of Results of Operations and Financial Condition

Our GAAP net loss attributable to common stockholders was $109.5 million and $154.4 million ($(0.40) and $(0.59) per diluted weighted average share) for the three and six months ended June 30, 2019, as compared to GAAP net income attributable to common stockholders of $125.7 million and $446.8 million ($0.68 and $2.36 per diluted weighted average share) for the three and six months ended June 30, 2018.

With our accounting treatment for AFS securities, unrealized fluctuations in the market values of AFS securities, excluding Agency interest-only securities, do not impact our GAAP net (loss) income or taxable income but are recognized on our condensed consolidated balance sheets as a change in stockholders' equity under "accumulated other comprehensive income." As a result of this fair value accounting through stockholders' equity, we expect our net (loss) income to have less significant fluctuations and result in less U.S. GAAP to taxable income timing differences, than if the portfolio were accounted for as trading instruments. For the three and six months ended June 30, 2019, net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were $310.5 million and $666.7 million, respectively. This, combined with GAAP net loss attributable to common stockholders of $109.5 million and $154.4 million, resulted in comprehensive income attributable to common stockholders of $201.0 million and $512.3 million for the three and six months ended June 30, 2019, respectively. For the three and six months ended June 30, 2018, net unrealized losses on AFS securities recognized as other comprehensive loss, net of tax, were $34.9 million and $379.7 million, respectively. This, combined with GAAP net income attributable to common stockholders of $125.7 million and $446.8 million, resulted in comprehensive income attributable to common stockholders of $90.8 million and $67.1 million for the three and six months ended June 30, 2018, respectively.

Our book value per common share for U.S. GAAP purposes was $14.17 at June 30, 2019, an increase from $13.11 book value per common share at December 31, 2018. During this six month period, we issued 24,390,456 shares of common stock for net proceeds of $335.4 million and recognized comprehensive income attributable to common stockholders of $512.3 million, which drove the overall increase in book value.

The following tables present the components of our comprehensive income for the three and six months ended June 30, 2019 and 2018:

(in thousands, except share data) Income Statement Data:	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
	(unaudited)		(unaudited)	
Interest income:				
Available-for-sale securities	$ 253,807	$ 183,467	$ 489,693	$ 374,183
Other	7,222	3,893	16,819	7,196
Total interest income	261,029	187,360	506,512	381,379
Interest expense:				
Repurchase agreements	177,351	97,812	324,911	184,392
Federal Home Loan Bank advances	3,941	4,896	10,015	9,354
Revolving credit facilities	6,196	999	11,352	1,803
Term notes payable	231	—	231	—
Convertible senior notes	4,724	4,707	9,459	9,425
Total interest expense	192,443	108,414	355,968	204,974
Net interest income	68,586	78,946	150,544	176,405
Other-than-temporary impairment losses	(4,848)	(174)	(5,054)	(268)
Other (loss) income:				
Gain (loss) on investment securities	22,441	(31,882)	3,149	(52,553)
Servicing income	130,949	77,665	247,897	148,855
(Loss) gain on servicing asset	(252,432)	9,853	(441,406)	81,660
(Loss) gain on interest rate swap, cap and swaption agreements	(88,775)	29,133	(172,034)	179,678
Gain on other derivative instruments	80,664	7,675	184,942	15,728
Other (loss) income	(341)	730	(218)	1,788
Total other (loss) income	(107,494)	93,174	(177,670)	375,156
Expenses:				
Management fees	13,635	11,453	25,717	23,161
Servicing expenses	16,746	11,539	36,658	26,093
Other operating expenses	14,013	15,515	29,569	30,007
Total expenses	44,394	38,507	91,944	79,261
(Loss) income before taxes	(88,150)	133,439	(124,124)	472,032
Provision for (benefit from) income taxes	2,407	(6,051)	(7,632)	(2,267)
Net (loss) income	(90,557)	139,490	(116,492)	474,299
Dividends on preferred stock	18,950	13,747	37,900	27,494
Net (loss) income attributable to common stockholders	$ (109,507)	$ 125,743	$ (154,392)	$ 446,805
Basic (loss) earnings per weighted average common share	$ (0.40)	$ 0.72	$ (0.59)	$ 2.55
Diluted (loss) earnings per weighted average common share	$ (0.40)	$ 0.68	$ (0.59)	$ 2.36
Dividends declared per common share	$ 0.40	$ 0.47	$ 0.87	$ 0.94
Weighted average number of shares of common stock:				
Basic	272,863,153	175,451,989	262,667,160	175,299,822
Diluted	272,863,153	193,212,877	262,667,160	193,016,793

(in thousands) Income Statement Data:	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
	(unaudited)		(unaudited)	
Comprehensive income:				
Net (loss) income	$ (90,557)	$ 139,490	$ (116,492)	$ 474,299
Other comprehensive income (loss), net of tax:				
Unrealized gain (loss) on available-for-sale securities	310,549	(34,887)	666,701	(379,664)
Other comprehensive income (loss)	310,549	(34,887)	666,701	(379,664)
Comprehensive income	219,992	104,603	550,209	94,635
Dividends on preferred stock	18,950	13,747	37,900	27,494
Comprehensive income attributable to common stockholders	$ 201,042	$ 90,856	$ 512,309	$ 67,141

(in thousands) Balance Sheet Data:	June 30, 2019	December 31, 2018
	(unaudited)	
Available-for-sale securities	$ 30,186,079	$ 25,552,604
Mortgage servicing rights	$ 1,800,826	$ 1,993,440
Total assets	$ 34,340,236	$ 30,132,479
Repurchase agreements	$ 28,168,044	$ 23,133,476
Federal Home Loan Bank advances	$ 50,000	$ 865,024
Total stockholders’ equity	$ 4,868,774	$ 4,254,489

Results of Operations

The following analysis focuses on financial results during the three and six months ended June 30, 2019 and 2018.

Interest Income

Interest income increased from $187.4 million and $381.4 million for the three and six months ended June 30, 2018, respectively, to $261.0 million and $506.5 million for the same periods in 2019 due to the growth of our AFS securities portfolio as a result of the acquisition of CYS and purchases of Agency securities with higher yields.

Interest Expense

Interest expense increased from $108.4 million and $205.0 million for the three and six months ended June 30, 2018, respectively, to $192.4 million and $356.0 million for the same periods in 2019 due to increased financing on AFS securities as a result of the acquisition of CYS and on MSR due to portfolio growth, and increases in the borrowing rates offered by counterparties.

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 six months ended June 30, 2019 and 2018:

	Three Months Ended June 30, 2019			Six Months Ended June 30, 2019		
(dollars in thousands)	**Average Balance [1]**	**Interest Income/Expense**	**Net Yield/Cost of Funds [2]**	**Average Balance [1]**	**Interest Income/Expense**	**Net Yield/Cost of Funds [2]**
Interest-earning assets						
Agency available-for-sale securities	$ 24,290,433	$ 204,344	3.4%	$ 22,295,878	$ 385,859	3.5%
Non-Agency available-for-sale securities	3,299,003	49,463	6.0%	3,268,541	103,834	6.4%
Other	15,365	7,222	5.4%	21,729	16,819	4.7%
Total interest income/net asset yield	$ 27,604,801	$ 261,029	3.8%	$ 25,586,148	$ 506,512	4.0%
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	$ 23,525,574	$ 158,492	2.7%	$ 21,368,642	$ 285,119	2.7%
Non-Agency available-for-sale securities	2,073,953	19,088	3.7%	2,288,707	42,384	3.7%
Agency derivatives [3]	46,666	405	3.5%	46,492	805	3.5%
Mortgage servicing rights [4]	710,502	9,734	5.5%	663,236	18,201	5.5%
Other unassignable						
Convertible senior notes	284,254	4,724	6.6%	284,138	9,459	6.7%
Total interest expense/cost of funds	$ 26,640,949	192,443	2.9%	$ 24,651,215	355,968	2.9%
Net interest income/spread [5]		$ 68,586	0.9%		$ 150,544	1.1%

(dollars in thousands)	Three Months Ended June 30, 2018 Average Balance (1)	Interest Income/Expense	Net Yield/Cost of Funds (2)	Six Months Ended June 30, 2018 Average Balance (1)	Interest Income/Expense	Net Yield/Cost of Funds (2)
Interest-earning assets						
Agency available-for-sale securities	$ 17,067,057	$ 128,396	3.0%	$ 17,687,641	$ 269,125	3.0%
Non-Agency available-for-sale securities	2,730,396	55,071	8.1%	2,622,799	105,058	8.0%
Other	30,742	3,893	4.5%	31,417	7,196	4.2%
Total interest income/net asset yield	$ 19,828,195	$ 187,360	3.8%	$ 20,341,857	$ 381,379	3.7%
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	$ 16,219,241	$ 79,591	2.0%	$ 16,912,380	$ 152,575	1.8%
Non-Agency available-for-sale securities	2,242,447	19,570	3.5%	2,131,286	35,167	3.3%
Agency derivatives (3)	58,376	424	2.9%	61,860	819	2.6%
Mortgage servicing rights (4)	320,110	4,122	5.2%	270,222	6,988	5.2%
Other unassignable						
Convertible senior notes	283,197	4,707	6.6%	283,089	9,425	6.7%
Other		—			—	
Total interest expense/cost of funds	$ 19,123,371	108,414	2.3%	$ 19,658,837	204,974	2.1%
Net interest income/spread (5)		$ 78,946	1.5%		$ 176,405	1.6%

(1) Average asset balance represents average amortized cost on AFS securities and Agency Derivatives.
(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. For the three and six months ended June 30, 2019, 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 2.5% and 2.5%, respectively, compared to 2.0% and 1.9% for the same periods in 2018.
(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.
(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 (loss) gain on interest rate swap, cap and swaption agreements in the condensed consolidated statements of comprehensive income. For the three and six months ended June 30, 2019, 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 1.2% and 1.3%, respectively, compared to 1.7% and 1.8% for the same periods in 2018.

The increase in yields on Agency AFS securities for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was predominantly driven by purchases of pools with higher yields and sales of pools with lower yields. The increase in cost of funds associated with the financing of Agency AFS securities for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was the result of increases in the borrowing rates offered by financing counterparties.

The decrease in yields on non-Agency securities for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was driven by purchases of non-Agency securities at lower yields than our existing portfolio and the sale of higher yield bonds that had realized their upside potential. The increase in cost of funds associated with the financing of non-Agency AFS securities for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was the result of increases in the borrowing rates offered by counterparties.

The increase in cost of funds associated with the financing of Agency Derivatives for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was the result of increases in the borrowing rates offered by counterparties.

The increase in cost of funds associated with the financing of MSR for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was the result of higher amortization of deferred debt issuance costs on new financing arrangements, offset by decreases in the borrowing rates 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 six months ended June 30, 2019, as compared to the same periods in 2018, was consistent.

The following tables present the components of the yield earned by investment type on our AFS securities portfolio as a percentage of our average amortized cost of securities for the three and six months ended June 30, 2019 and 2018:

	Three Months Ended June 30, 2019			Six Months Ended June 30, 2019		
	Agency [1]	Non-Agency	Total	Agency [1]	Non-Agency	Total
Gross yield/stated coupon	4.2 %	4.8%	4.3 %	4.3 %	4.8%	4.3 %
Net (premium amortization) discount accretion	(0.8)%	1.2%	(0.6)%	(0.8)%	1.6%	(0.5)%
Net yield [2]	3.4 %	6.0%	3.7 %	3.5 %	6.4%	3.8 %

	Three Months Ended June 30, 2018			Six Months Ended June 30, 2018		
	Agency [1]	Non-Agency	Total	Agency [1]	Non-Agency	Total
Gross yield/stated coupon	4.1 %	4.8%	4.2 %	4.1 %	4.6%	4.1 %
Net (premium amortization) discount accretion	(1.1)%	3.3%	(0.5)%	(1.1)%	3.4%	(0.4)%
Net yield [2]	3.0 %	8.1%	3.7 %	3.0 %	8.0%	3.7 %

(1) Excludes Agency Derivatives. For the three and six months ended June 30, 2019, the average annualized net yield on total Agency RMBS, including Agency Derivatives, was 3.4% and 3.5%, respectively, compared to 3.0% and 3.1% for the same periods in 2018.
(2) These yields have not been adjusted for cost of delay and cost to carry purchase premiums.

Other-Than-Temporary Impairments

We review each of our securities on a quarterly basis to determine if an OTTI charge is necessary. During the three and six months ended June 30, 2019, we recorded $4.8 million and $5.1 million in other-than-temporary credit impairments on a total of eight non-Agency securities where the future expected cash flows for each security were less than its amortized cost. During the three and six months ended June 30, 2018, we recorded $0.2 million and $0.3 million in other-than-temporary credit impairments on two non-Agency securities where the future expected cash flows for the security were less than their amortized cost. For further information about evaluating AFS securities for OTTI, refer to Note 4 - *Available-for-Sale Securities, at Fair Value* of the notes to the condensed consolidated financial statements.

Loss on Investment Securities

During the three and six months ended June 30, 2019, we sold AFS securities for $3.1 billion and $8.0 billion with an amortized cost of $3.1 billion and $7.9 billion, for net realized gains of $23.6 million and $6.1 million, respectively. During the three and six months ended June 30, 2018, we sold AFS securities for $1.7 billion and $3.7 billion with an amortized cost of $1.7 billion and $3.8 billion, for net realized losses of $39.0 million and $58.6 million, respectively. 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.

For the three and six months ended June 30, 2019, Agency interest-only mortgage-backed securities experienced a change in unrealized losses of $1.1 million and $3.0 million, respectively. For the three and six months ended June 30, 2018, Agency interest-only mortgage-backed securities experienced a change in unrealized gains of $3.5 million and $3.7 million, respectively. The increase in change in unrealized losses (decrease in gains) for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was due to interest rates generally falling during the three and six months ended June 30, 2019, as compared to interest rates generally rising during the three and six months ended June 30, 2018.

For the three and six months ended June 30, 2018, we recognized $0.7 million and $1.3 million in dividend income on equity securities and experienced a change in unrealized gains of $3.0 million and $1.0 million, respectively, due to increases in the market price of the securities. We did not hold any equity securities during the three and six months ended June 30, 2019.

Servicing Income

For the three and six months ended June 30, 2019, we recognized total servicing income from our MSR portfolio of $130.9 million and $247.9 million, respectively. These amounts include servicing fee income of $114.5 million and $220.5 million, ancillary and other fee income of $0.5 million and $0.8 million, and float income of $15.9 million and $26.6 million, respectively. For the three and six months ended June 30, 2018, we recognized total servicing income of $77.7 million and $148.9 million, respectively. These amounts include servicing fee income of $70.9 million and $137.3 million, ancillary and other fee income of $0.3 million and $0.6 million, and float income of $6.5 million and $10.9 million, respectively. The increase in servicing income for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was the result of an increase in the size of our MSR portfolio. Additionally, the increase in float income was the result of both the increased size of our MSR portfolio and increased float earning rates.

(Loss) Gain on Servicing Asset

For the three and six months ended June 30, 2019, we recognized loss on servicing asset of $252.4 million and $441.4 million, respectively, which included a decrease in fair value of MSR due to changes in valuation inputs or assumptions of $182.0 million and $333.6 million, respectively, and a decrease in fair value of MSR due to realization of cash flows (runoff) of $70.4 million and $108.1 million, respectively. Additionally, we recognized gains on sales of MSR of $0.3 million for the six months ended June 30, 2019. For the three and six months ended June 30, 2018, gain on servicing asset of $9.9 million and $81.7 million, respectively, includes an increase in fair value of MSR due to changes in valuation inputs or assumptions of $46.2 million and $146.9 million, respectively, offset by a decrease in fair value of MSR due to realization of cash flows (runoff) of $36.5 million and $65.7 million, respectively. The increase in loss (decrease in gain) on servicing asset for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was predominantly driven by decreases in interest rates, an increase in prepayment speed assumptions, and higher portfolio runoff on a larger MSR portfolio during the three and six months ended June 30, 2019.

(Loss) Gain on Interest Rate Swap, Cap and Swaption Agreements

For the three and six months ended June 30, 2019, we recognized $22.9 million and $46.6 million of income, respectively, for the accrual and/or settlement of the net interest expense associated with our interest rate swaps and caps. The income results from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on an average $40.7 billion and $39.1 billion notional, respectively, held to economically hedge/mitigate portfolio interest rate exposure (or duration) risk. For the three and six months ended June 30, 2018, we recognized $13.8 million and $17.6 million of income for the accrual and/or settlement of the net interest expense associated with our interest rate swaps and caps. The income results from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on an average $25.4 billion and $23.3 billion notional, respectively, held to economically hedge/mitigate portfolio interest rate exposure (or duration) risk.

During the three and six months ended June 30, 2019, we terminated, had agreements mature or had options expire on 28 and 39 interest rate swap, cap and swaption positions of $14.5 billion and $19.5 billion notional, respectively. Upon settlement of the terminations, we received $7.2 million and $7.3 million in full settlement of our net interest spread asset/liability and recognized $55.5 million and $21.0 million in realized gains on the swaps, caps and swaptions for the three and six months ended June 30, 2019, respectively, including early termination penalties. During the three and six months ended June 30, 2018, we terminated, had agreements mature or had options expire on 20 and 83 interest rate swap, cap and swaption positions of $14.8 billion and $54.6 billion notional, respectively. Upon settlement of the terminations, we received $0.5 million and paid $6.4 million in full settlement of our net interest spread liability and recognized $20.4 million in realized losses and $72.0 million in realized gains on the swaps, caps and swaptions for the three and six months ended June 30, 2018, respectively, including early termination penalties. We elected to terminate certain swaps, caps and swaptions during these periods to align with our investment portfolio.

Also included in our financial results for the three and six months ended June 30, 2019, was the recognition of a change in unrealized valuation losses of $167.2 million and $239.6 million, respectively, on our interest rate swap, cap and swaption agreements that were accounted for as trading instruments, compared to a change in unrealized valuation gains of $35.7 million and $90.0 million for the same periods in 2018. The change in fair value of interest rate swaps and caps was a result of changes to LIBOR, the swap curve and corresponding counterparty borrowing rates during the three and six months ended June 30, 2019 and 2018. Since these swaps, caps and swaptions are used for purposes of hedging our interest rate exposure, their unrealized valuation gains and losses are generally offset by unrealized losses and gains in our Agency RMBS AFS portfolio, which are recorded either directly to stockholders' equity through other comprehensive income (loss), net of tax, or to gain (loss) on investment securities, in the case of Agency interest-only securities.

The following table provides the net interest spread and gains and losses associated with our interest rate swap, cap and swaption positions:

(in thousands)	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Net interest spread	$ 22,886	$ 13,840	$ 46,595	$ 17,649
Early termination, agreement maturation and option expiration gains (losses)	55,513	(20,449)	21,014	72,030
Change in unrealized (loss) gain on interest rate swap, cap and swaption agreements, at fair value	(167,174)	35,742	(239,643)	89,999
(Loss) gain on interest rate swap, cap and swaption agreements	$ (88,775)	$ 29,133	$ (172,034)	$ 179,678

Gain on Other Derivative Instruments

Included in our financial results for the three and six months ended June 30, 2019, was the recognition of $80.7 million and $184.9 million of gains, respectively, 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. Included within these results for the three and six months ended June 30, 2019, was the recognition of $1.3 million and $2.6 million of interest income, net of accretion on inverse interest-only securities on an average amortized cost basis of $67.9 million and $68.0 million, respectively, and interest expense on short U.S. treasuries of $1.3 million for the six months ended June 30, 2019. We did not hold any short U.S. treasuries during the three months ended June 30, 2019. The remainder represented realized and unrealized net gains (losses) on other derivative instruments.

Included in our financial results for the three and six months ended June 30, 2018, was the recognition of $7.7 million and $15.7 million of gains, respectively, 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 and inverse interest-only securities. Included within these results for the three and six months ended June 30, 2018, was the recognition of $1.6 million and $4.1 million of interest income, net of accretion on inverse interest-only securities on an average amortized cost basis of $80.5 million and $83.1 million, respectively. The remainder represented realized and unrealized net gains (losses) on other derivative instruments. As these derivative instruments are considered trading instruments, our financial results include both realized and unrealized gains (losses) associated with these instruments.

Other Income

For the three and six months ended June 30, 2019, we recorded other loss of $0.3 million and $0.2 million. For the three and six months ended June 30, 2018, we recorded other income of $0.7 million and $1.8 million. The increase in other loss (decrease in other income) for the three and six months ended June 30, 2019, as compared to the same periods in 2018, was driven by decreases in interest rates during the three and six months ended June 30, 2019 as well as losses on extinguishment of debt and lower dividend income on our FHLB stock due to a decrease in the average balance held.

Management Fees

We incurred management fees of $13.6 million and $25.7 million for the three and six months ended June 30, 2019 and $11.5 million and $23.2 million for the three and six months ended June 30, 2018, respectively, which are payable to PRCM Advisers, our external manager, under our management agreement. The management fee is calculated based on our stockholders' equity with certain adjustments outlined in the management agreement.

In connection with the acquisition of CYS, the management agreement was amended to (i) 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 and (ii) for the fiscal quarter in which closing of the merger occurs, to make a one-time downward adjustment of Pine River's management fees payable by Two Harbors for such quarter by $15.0 million to offset the cash consideration payable to stockholders of CYS, plus an additional downward adjustment of up to $3.3 million for certain transaction-related expenses. For the year ended December 31, 2018, the total downward adjustment to management fees was $17.5 million. We do not anticipate any further downward adjustments to management fees for transaction-related expenses.

Servicing Expenses

For the three and six months ended June 30, 2019, we recognized $16.7 million and $36.7 million, respectively, in servicing expenses generally related to the subservicing of MSR and residential mortgage loans, compared to $11.5 million and $26.1 million for the same periods in 2018. The increase in servicing expenses during the three and six months ended June 30, 2019, as compared to the same periods in 2018, was largely the result of an increase in the size of our MSR portfolio.

Other Operating Expenses

For the three and six months ended June 30, 2019, we recognized $14.0 million and $29.6 million of other operating expenses, which represents an annualized expense ratio of 1.2% and 1.3% of average equity, respectively. Excluding non-cash equity compensation expenses (amortization of restricted stock) of $2.4 million and $4.3 million, our annualized expense ratio was 1.0% and 1.1% of average equity for the three and six months ended June 30, 2019, respectively. For the three and six months ended June 30, 2018, we recognized $15.5 million and $30.0 million of other operating expenses, which represents an annualized expense ratio of 1.8% and 1.7% of average common equity for the three and six months ended June 30, 2018, respectively. Excluding non-cash equity compensation expenses of $3.5 million and $5.9 million, our annualized expense ratio was 1.4% and 1.4% of average equity for the three and six months ended June 30, 2018, respectively.

Included in other operating expenses are direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us. For the three and six months ended June 30, 2019, these direct and allocated costs totaled approximately $5.1 million and $18.3 million, respectively, compared to $4.2 million and $15.5 million for the same periods in 2018. Included in these reimbursed costs was compensation paid to employees of Pine River serving as our principal financial officer and general counsel of $0.1 million and $2.8 million for the three and six months ended June 30, 2019 and $0.2 million and $1.3 million for the three and six months ended June 30, 2018, respectively. The allocation of compensation paid to employees of Pine River serving as our principal financial officer and general counsel is based on time spent overseeing our company’s activities in accordance with the management agreement; we do not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or chief investment officer. Equity based compensation expense for the three and six months ended June 30, 2019 also includes the amortization of restricted stock awarded to our executive officers, including our chief executive officer, chief investment officer, principal financial officer and general counsel of $0.8 million and $1.3 million, compared to $1.9 million and $3.2 million for the three and six months ended June 30, 2018, respectively.

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

Income Taxes

During the three and six months ended June 30, 2019, our TRSs recognized a provision for income taxes of $2.4 million and a benefit from income taxes of $7.6 million, respectively. The provision recognized for the three months ended June 30, 2019 was primarily due to net gains recognized on derivative instruments, offset by losses recognized on MSR held in our TRSs. The benefit recognized for the six months ended June 30, 2019 was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in our TRSs. During the three and six months ended June 30, 2018, our TRSs recognized a benefit from income taxes of $6.1 million and $2.3 million, which was primarily due to net losses recognized on derivative instruments, offset by gains recognized on MSR held in the TRSs. We currently intend to distribute 100% of our REIT taxable income and comply with all requirements to continue to qualify as a REIT.

Financial Condition

Available-for-Sale Securities, at Fair Value

Agency RMBS

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

The table below summarizes certain characteristics of our Agency RMBS AFS at June 30, 2019:

(dollars in thousands, except purchase price)	Principal/ Current Face	Net (Discount) Premium	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value	Weighted Average Coupon Rate	Weighted Average Purchase Price
	June 30, 2019							
P&I securities								
Fixed	$ 24,752,389	$ 1,013,261	$ 25,765,650	$ 388,254	$ (21,732)	$ 26,132,172	4.19%	$ 104.30
Hybrid ARM	15,366	783	16,149	370	(13)	16,506	6.02%	$ 108.21
Total P&I securities	24,767,755	1,014,044	25,781,799	388,624	(21,745)	26,148,678	4.19%	$ 104.31
Interest-only securities								
Fixed	702,667	49,291	49,291	6,592	(184)	55,699	2.89%	$ 34.35
Fixed Other (1)	2,185,730	138,718	138,718	11,139	(45,791)	104,066	1.58%	$ 8.76
Total	$ 27,656,152	$ 1,202,053	$ 25,969,808	$ 406,355	$ (67,720)	$ 26,308,443		

(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 June 30, 2019, on an annualized basis, was 10.1%.

Non-Agency Securities

Our non-Agency securities portfolio is comprised of senior and mezzanine tranches of mortgage-backed and asset-backed securities. The following table provides investment information on our non-Agency securities as of June 30, 2019:

(in thousands)	Principal/Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value
	June 30, 2019							
P&I securities								
Senior	$ 4,847,435	$ 5,518	$ (457,094)	$ (1,526,732)	$ 2,869,127	$ 359,010	$ (17,038)	$ 3,211,099
Mezzanine	719,388	227	(132,277)	(113,323)	474,015	102,171	(940)	575,246
Total P&I	5,566,823	5,745	(589,371)	(1,640,055)	3,343,142	461,181	(17,978)	3,786,345
Interest-only securities	4,912,069	88,917	—	—	88,917	4,530	(2,156)	91,291
Total	$ 10,478,892	$ 94,662	$ (589,371)	$ (1,640,055)	$ 3,432,059	$ 465,711	$ (20,134)	$ 3,877,636

The majority of our non-Agency securities were rated at June 30, 2019. Note that credit ratings are based on the par value of the non-Agency securities, whereas the distressed non-Agency securities in our portfolio were acquired at heavily discounted prices. The following table summarizes the credit ratings of our non-Agency securities portfolio, based on the Bloomberg Index Rating, a composite of each of the four major credit rating agencies (*i.e.*, DBRS Ltd., Moody's Investors Services, Inc., Standard & Poor's Corporation and Fitch, Inc.), as of June 30, 2019:

	June 30, 2019
AAA	0.5%
AA	—%
A	—%
BBB	—%
BB	1.7%
B	3.2%
Below B	77.2%
Not rated	17.4%
Total	100.0%

Within our non-Agency securities portfolio, we have a substantial emphasis on "legacy" securities, which include securities issued up to and including 2009, many of which are subprime. We believe these deeply discounted securities can add relative value as the economy and housing markets continue to improve, as there remains upside optionality to lower delinquencies, higher recoveries and faster prepays.

Due to acquisitions of "legacy" non-Agency securities, our designated credit reserve as a percentage of total discount increased from June 30, 2018 to June 30, 2019 (as disclosed in Note 4 - *Available-for-Sale Securities, at Fair Value* of the notes to the condensed consolidated financial statements). From June 30, 2018 to June 30, 2019, our designated credit reserve as a percentage of total discount increased from 58.1% to 73.6%.

A subprime bond may generally be considered higher risk; however, if purchased at a discount that reflects a high expectation of credit losses, it could be viewed as less risky than a prime bond, which is subject to unanticipated credit loss performance. Accordingly, we believe our risk profile in owning a heavily discounted subprime bond with known delinquencies affords us the ability to assume a higher percentage of expected credit loss with comparable risk-adjusted returns to a less discounted prime bond with a lower percentage of expected credit loss.

The following tables present certain information by investment type and their respective underlying loan characteristics for our senior and mezzanine non-Agency securities, excluding our non-Agency interest-only portfolio, at June 30, 2019:

	June 30, 2019		
Non-Agency P&I Securities	**Senior**	**Mezzanine**	**Total**
Carrying value (in thousands)	$ 3,211,099	$ 575,246	$ 3,786,345
% of total	84.8%	15.2%	100.0%
Average purchase price [(1)]	$ 61.12	$ 64.95	$ 61.70
Average coupon	3.2%	3.1%	3.2%
Average fixed coupon	5.8%	5.4%	5.7%
Average floating coupon	3.0%	2.9%	3.0%
Average hybrid coupon	4.1%	—%	4.1%
Collateral attributes			
Average loan age (months)	154	162	155
Average loan size (in thousands)	$ 372	$ 426	$ 380
Average original loan-to-value	66.7%	64.8%	66.4%
Average original FICO [(2)]	578	597	581
Current performance			
60+ day delinquencies	18.3%	16.2%	18.1%
Average credit enhancement [(3)]	3.8%	10.6%	4.8%
3-month CPR [(4)]	5.0%	7.6%	5.3%

(1) Average purchase price utilized carrying value for weighting purposes. If current face were utilized for weighting purposes, the average purchase price for senior, mezzanine, and total non-Agency securities, excluding our non-Agency interest-only portfolio, would be $58.07, $61.38 and $58.50, respectively, at June 30, 2019.
(2) FICO represents a mortgage industry accepted credit score of a borrower, which was developed by Fair Isaac Corporation.
(3) Average credit enhancement remaining on our non-Agency P&I securities portfolio, which is the average amount of protection available to absorb future credit losses due to defaults on the underlying collateral.
(4) Three-month CPR is reflective of the prepayment speed on the underlying securitization; however, it does not necessarily indicate the proceeds received on our investment tranche. Proceeds received for each security are dependent on the position of the individual security within the structure of each deal.

	June 30, 2019					
	Non-Agency P&I Securities					
(dollars in thousands)	**Senior**		**Mezzanine**		**Total**	
Collateral Type	**Carrying Value**	**% of Senior**	**Carrying Value**	**% of Mezzanine**	**Carrying Value**	**% of Total**
Prime	$ 28,097	0.9%	$ 13,427	2.3%	$ 41,524	1.1%
Alt-A	377,347	11.7%	87,131	15.2%	464,478	12.3%
POA	204,219	6.4%	165,801	28.8%	370,020	9.8%
Subprime	2,596,923	80.9%	308,887	53.7%	2,905,810	76.7%
Other	4,513	0.1%	—	—%	4,513	0.1%
Total	$ 3,211,099	100.0%	$ 575,246	100.0%	$ 3,786,345	100.0%

	June 30, 2019					
	Non-Agency P&I Securities					
(dollars in thousands)	**Senior**		**Mezzanine**		**Total**	
Coupon Type	**Carrying Value**	**% of Senior**	**Carrying Value**	**% of Mezzanine**	**Carrying Value**	**% of Total**
Fixed rate	$ 250,028	7.8%	$ 27,474	4.8%	$ 277,502	7.3%
Hybrid or floating	2,961,071	92.2%	547,772	95.2%	3,508,843	92.7%
Total	$ 3,211,099	100.0%	$ 575,246	100.0%	$ 3,786,345	100.0%

(dollars in thousands)	June 30, 2019					
	Non-Agency P&I Securities					
	Senior		Mezzanine		Total	
Origination Year	Carrying Value	% of Senior	Carrying Value	% of Mezzanine	Carrying Value	% of Total
2006 and thereafter	$ 2,995,404	93.3%	$ 283,010	49.2%	$ 3,278,414	86.6%
2002-2005	210,217	6.5%	290,668	50.5%	500,885	13.2%
Pre-2002	5,478	0.2%	1,568	0.3%	7,046	0.2%
Total	$ 3,211,099	100.0%	$ 575,246	100.0%	$ 3,786,345	100.0%

Mortgage Servicing Rights, at Fair Value

One of our wholly owned subsidiaries has approvals from Fannie Mae and Freddie Mac to own and manage MSR, which represent the right to control the servicing of mortgage loans. We do not directly service mortgage loans, and instead contract with appropriately licensed subservicers to handle substantially all servicing functions in the name of the subservicer for the loans underlying our MSR. As of June 30, 2019, our MSR had a fair market value of $1.8 billion.

As of June 30, 2019, our MSR portfolio included MSR on 753,312 loans with an unpaid principal balance of approximately $169.6 billion. The following table summarizes certain characteristics of the loans underlying our MSR at June 30, 2019:

	June 30, 2019
Unpaid principal balance (in thousands)	$ 169,643,681
Number of loans	753,312
Average coupon	4.1%
Average loan age (months)	32
Average loan size (in thousands)	$ 225
Average original loan-to-value	75.0%
Average original FICO	751
60+ day delinquencies	0.3%
3-month CPR	13.7%

Financing

Our borrowings consist primarily of repurchase agreements, FHLB advances, revolving credit facilities and term notes payable 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 the majority of our non-Agency securities have been pledged as collateral, either through repurchase agreements or FHLB advances.

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

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

At June 30, 2019, borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes had the following characteristics:

(dollars in thousands)	June 30, 2019		
Collateral Type	Amount Outstanding	Weighted Average Borrowing Rate	Weighted Average Haircut on Collateral Value
Agency RMBS	$ 25,807,734	2.63%	4.1%
Non-Agency securities	2,063,550	3.58%	24.0%
Agency Derivatives	46,760	3.40%	26.4%
Mortgage servicing rights	694,061	4.75%	33.5%
Other (1)	284,331	6.25%	NA
Total	$ 28,896,436	2.71%	6.0%

(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 June 30, 2019, we had outstanding $28.2 billion of repurchase agreements, and the term to maturity ranged from two days to over 23 months. Repurchase agreements had a weighted average borrowing rate of 2.70% and weighted average remaining maturities of 88 days as of June 30, 2019.

As of June 30, 2019, we had outstanding $50.0 million of FHLB advances with a weighted average term to maturity of 15.3 years. The weighted average cost of funds for our advances was 3.20% at June 30, 2019.

As of June 30, 2019, we had outstanding $394.1 million of term notes payable with a weighted average borrowing rate of 5.20% and weighted average remaining maturities of 5.0 years.

As of June 30, 2019, the outstanding amount due on convertible senior notes was $284.3 million, net of deferred issuance costs. These notes are unsecured, pay interest semiannually at a rate of 6.25% per annum and mature in January 2022.

As of June 30, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 5.9:1.0. We believe our debt-to-equity ratio provides unused borrowing capacity and, thus, improves 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 June 30, 2019, 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)
June 30, 2019	$ 26,640,949	$ 28,896,436	$ 29,132,756	5.9:1.0	$ 9,422,000	7.8:1.0
March 31, 2019	$ 22,661,656	$ 21,254,108	$ 23,685,031	4.5:1.0	$ 10,168,000	6.5:1.0
December 31, 2018	$ 23,276,768	$ 24,592,356	$ 24,592,356	5.8:1.0	$ 6,484,000	7.2:1.0
September 30, 2018	$ 23,921,989	$ 25,265,210	$ 27,528,323	5.4:1.0	$ 9,324,000	7.3:1.0
June 30, 2018	$ 19,123,370	$ 18,524,115	$ 19,237,474	5.3:1.0	$ 3,049,000	6.2:1.0

(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 March 31, 2019 to June 30, 2019 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 March 31, 2019	$ 3,773.0	272.8	$ 13.83
Core Earnings, including dollar roll income, net of tax expense of $1.6 million [(1)(2)]	125.0		
Dividends on preferred stock	(19.0)		
Core Earnings attributable to common stockholders, including dollar roll income, net of tax expense of $1.6 million [(1)(2)]	106.0		
Realized and unrealized gains and losses, net of tax expense of $0.8 million	(215.5)		
Other comprehensive income, net of tax	310.5		
Dividend declaration	(109.2)		
Other	2.5	0.1	
Issuance of common stock, net of offering costs	0.2	—	
Common stockholders' equity at June 30, 2019	$ 3,867.5	272.9	$ 14.17
Total preferred stock liquidation preference	1,001.3		
Total equity at June 30, 2019	$ 4,868.8		

(in millions)	Three Months Ended June 30, 2019
Comprehensive income attributable to common stockholders	$ 201.0
Adjustment for other comprehensive income attributable to common stockholders:	
Unrealized gains on available-for-sale securities	(310.5)
Net loss attributable to common stockholders	(109.5)
Adjustments for non-Core Earnings:	
Other-than-temporary impairments and loss recovery adjustments	12.9
Realized gain on investment securities	(23.6)
Unrealized loss on investment securities	1.1
Realized and unrealized losses on mortgage servicing rights	174.2
Realized gain on termination or expiration of interest rate swaps, caps and swaptions	(55.5)
Unrealized loss on interest rate swaps, caps and swaptions	167.2
Gains on other derivative instruments	(64.0)
Other loss	0.9
Change in servicing reserves	(0.9)
Non-cash equity compensation expense	2.4
Net provision for income taxes on non-Core Earnings	0.8
Core Earnings attributable to common stockholders, including dollar roll income [(1)(2)]	$ 106.0

(1) Core Earnings, including dollar roll income, is a non-U.S. GAAP measure that we define as comprehensive income attributable to common stockholders, excluding "realized and unrealized gains and losses" (impairment losses, realized and unrealized gains and losses on the aggregate portfolio, reserve expense for representation and warranty obligations on MSR and non-cash compensation expense related to restricted common stock). As defined, Core Earnings, including dollar roll income, includes interest income or expense and premium income or loss on derivative instruments and servicing income, net of estimated amortization on MSR. Dollar roll income is the economic equivalent to holding and financing Agency RMBS using short-term repurchase agreements.

(2) Beginning with this reporting period, the company has refined the MSR amortization method utilized in the calculation of Core Earnings, including dollar roll income. The new method includes an adjustment for any gain or loss on the capital used to purchase the MSR and allows Core Earnings to better reflect how the carry earned on MSR varies as a function of prepayment rates. If the updated method was applied retroactively to the period ended March 31, 2019, it would have resulted in an additional $0.1 million expense, net of tax, which would have resulted in no change to Core Earnings, including dollar roll income, per weighted average share for that period.

Liquidity and Capital Resources

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

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

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

To the extent that we raise additional equity capital through capital market transactions, we anticipate using cash proceeds from such transactions to purchase additional Agency RMBS, non-Agency securities, MSR and other target assets and for other general corporate purposes.

As of June 30, 2019, we held $433.6 million in cash and cash equivalents available to support our operations; $32.2 billion of AFS securities, MSR, and derivative assets held at fair value; and $28.9 billion of outstanding debt in the form of repurchase agreements, FHLB advances, borrowings under revolving credit facilities, term notes payable and convertible senior notes. During the three and six months ended June 30, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, increased from 4.5:10 to 5.9:1.0 and increased from 5.8:1.0 to 5.9:1.0, respectively. The increase was driven by increased financing on Agency RMBS purchases. During the three and six months ended June 30, 2019, our economic debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes and implied debt on net TBA notional, increased from 6.5:10 to 7.8:1.0 and increased from 7.2:1.0 to 7.8:1.0, respectively.

As of June 30, 2019, we held approximately $269.3 million of unpledged Agency securities and derivatives and $1.1 billion of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on unpledged securities of approximately $1.1 billion. As of June 30, 2019, we held approximately $410.8 million of unpledged MSR and had an overall estimated unused borrowing capacity on MSR financing facilities of $490.0 million. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. On a daily basis, we monitor and forecast our available, or excess, liquidity. Additionally, we frequently perform shock analyses against various market events to monitor the adequacy of our excess liquidity. If borrowing rates and/or collateral requirements change in the near term, we believe we are subject to less earnings volatility than a more leveraged organization.

During the six months ended June 30, 2019, we did not experience any restrictions to our funding sources, although balance sheet capacity of counterparties have tightened due to compliance with the Basel III regulatory capital reform rules as well as management of perceived risk in the volatile interest rate environment. We expect ongoing sources of financing to be primarily repurchase agreements, FHLB advances, 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 June 30, 2019, we had master repurchase agreements in place with 47 counterparties (lenders), the majority of which are U.S. domiciled financial institutions, and we continue to evaluate additional counterparties to manage and reduce 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 June 30, 2019 and December 31, 2018:

(dollars in thousands)	June 30, 2019 Amount Outstanding	June 30, 2019 Net Counterparty Exposure[(1)]	June 30, 2019 Percent of Funding	December 31, 2018 Amount Outstanding	December 31, 2018 Net Counterparty Exposure[(1)]	December 31, 2018 Percent of Funding
North America	$ 13,086,684	$ 1,013,420	51.8%	$ 12,061,693	$ 1,120,101	55.4%
Europe [(2)]	9,607,309	662,265	33.8%	6,728,245	646,000	31.9%
Asia [(2)]	5,474,051	281,078	14.4%	4,343,538	255,973	12.7%
Total	$ 28,168,044	$ 1,956,763	100.0%	$ 23,133,476	$ 2,022,074	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. An overview of the facilities is presented in the table below:

(dollars in thousands)

June 30, 2019					
Expiration Date [(1)]	Committed	Amount Outstanding	Unused Capacity	Total Capacity	Eligible Collateral
December 1, 2020	Yes [(2)]	$ 300,000	$ 100,000	$ 400,000	Mortgage servicing rights [(3)]
March 12, 2021	Yes [(2)]	$ —	$ 350,000	$ 350,000	Mortgage servicing rights
December 16, 2019	No	$ —	$ 40,000	$ 40,000	Mortgage servicing rights

(1) The facilities are set to mature on the stated expiration date, unless extended pursuant to their terms.
(2) Commitment fee charged on unused capacity.
(3) This repurchase facility is secured by MSR notes, which are collateralized by our MSR.

Our wholly owned subsidiary, TH Insurance, is a member of the FHLB. As a member of the FHLB, TH Insurance has access to a variety of products and services offered by the FHLB, including secured advances. As of June 30, 2019, TH Insurance had $50.0 million in outstanding secured advances with a weighted average borrowing rate of 3.20%, and an additional $4.0 billion of available uncommitted capacity for borrowings insofar as TH Insurance holds adequate total assets to support a new advance. To the extent TH Insurance has uncommitted capacity, it may be adjusted at the sole discretion of the FHLB.

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 conventional 1-4 family residential mortgage loans, 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 June 30, 2019:

- Total indebtedness to net worth must be less than a specified threshold ratio in a repurchase agreement. As of June 30, 2019, our debt to net worth, as defined, was 6.0:1.0 while our threshold ratio, as defined, was 7.1:1.0.
- Cash liquidity must be greater than $100.0 million. As of June 30, 2019, our liquidity, as defined, was $433.6 million.
- 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 June 30, 2019, 50% of the highest net worth during the 24 calendar months prior was $2.4 billion and our net worth, as defined, was $4.9 billion.

We are also subject to additional financial covenants in connection with various other agreements we enter into in the normal course of our business. We intend to continue to operate in a manner which complies with all of our financial covenants.

The 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 June 30, 2019 and December 31, 2018:

(in thousands)	June 30, 2019	December 31, 2018
Available-for-sale securities, at fair value	$ 28,776,252	$ 25,157,999
Mortgage servicing rights, at fair value	1,389,983	1,143,918
Restricted cash	177,079	416,696
Due from counterparties	844,347	110,695
Derivative assets, at fair value	76,139	70,191
U.S. Treasuries, at fair value (1)	—	6,457
Total	$ 31,263,800	$ 26,905,956

(1) U.S. Treasuries received as collateral and re-pledged.

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

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

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

The following table provides the maturities of our repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes as of June 30, 2019 and December 31, 2018:

(in thousands)	June 30, 2019	December 31, 2018
Within 30 days	$ 5,902,922	$ 7,488,869
30 to 59 days	4,412,716	5,077,598
60 to 89 days	5,683,330	5,655,060
90 to 119 days	4,088,488	1,938,859
120 to 364 days	7,780,588	3,508,114
One to three years	584,331	300,000
Three to five years	394,061	573,856
Five to ten years	—	—
Ten years and over	50,000	50,000
Total	$ 28,896,436	$ 24,592,356

For the three months ended June 30, 2019, our restricted and unrestricted cash balance increased approximately $12.8 million to $791.7 million at June 30, 2019. The cash movements can be summarized by the following:

- *Cash flows from operating activities.* For the three months ended June 30, 2019, operating activities increased our cash balances by approximately $361.7 million, primarily driven by our financial results for the quarter.
- *Cash flows from investing activities*. For the three months ended June 30, 2019, investing activities decreased our cash balances by approximately $7.8 billion, primarily driven by purchases, net of sales, of AFS securities as well as a decrease in payables due to broker counterparties for settling of securities purchases made in the first quarter.
- *Cash flows from financing activities.* For the three months ended June 30, 2019, financing activities increased our cash balance by approximately $7.5 billion, primarily driven by increased repurchase agreements on Agency RMBS purchases.

Inflation

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

Item 3. Quantitative and Qualitative Disclosures about Market Risk

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

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

Interest Rate Risk

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

We may enter into a variety of derivative and non-derivative instruments to economically hedge interest rate risk or "duration mismatch (or gap)" by adjusting the duration of our floating-rate borrowings into fixed-rate borrowings to more closely match the duration of our assets. This particularly applies to borrowing agreements with maturities or interest rate resets of less than six months. Typically, the interest receivable terms (*i.e.*, LIBOR) of certain derivatives match the terms of the underlying debt, resulting in an effective conversion of the rate of the related borrowing agreement from floating to fixed. The objective is to manage the cash flows associated with current and anticipated interest payments on borrowings, as well as the ability to roll or refinance borrowings at the desired amount by adjusting the duration. To help manage the adverse impact of interest rate changes on the value of our portfolio as well as our cash flows, we may, at times, enter into various forward contracts, including short securities, Agency to-be-announced securities, or TBAs, options, futures, swaps, caps, credit default swaps and total return swaps. In executing on the Company's current interest rate risk management strategy, the Company has entered into TBAs, put and call options for TBAs, interest rate swap, cap and swaption agreements, U.S. Treasury futures and Markit IOS total return swaps. In addition, because MSR are negative duration assets, they provide a natural 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 yields 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 severity of any such decline would depend on our asset/liability composition at the time, as well as the magnitude and duration of the interest rate increase. Further, an increase in short-term interest rates could also have a negative impact on the market value of our target assets. If any of these events happen, we could experience a decrease in net income or incur a net loss during these periods, which could adversely affect our liquidity and results of operations.

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

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

Interest Rate Mismatch Risk

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

The following table provides the indices of our variable rate Agency RMBS and non-Agency securities as of June 30, 2019 and December 31, 2018, respectively, based on carrying value (dollars in thousands).

	June 30, 2019				December 31, 2018			
Index Type	**Floating**	**Hybrid (1)**	**Total**	**Index %**	**Floating**	**Hybrid (1)**	**Total**	**Index %**
CMT	$ 8,693	$ 13,564	$ 22,257	1%	$ 9,502	$ 15,423	$ 24,925	1%
LIBOR	3,493,042	9,013	3,502,055	93%	3,374,141	9,278	3,383,419	93%
Other (2)	47,798	167,808	215,606	6%	50,597	165,054	215,651	6%
Total	$ 3,549,533	$ 190,385	$ 3,739,918	100%	$ 3,434,240	$ 189,755	$ 3,623,995	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. They rely 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 here 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 change in annualized net interest income does not reflect any potential changes to dollar roll income associated with our TBA positions. To the extent we hold long TBAs, we would expect dollar roll income to decrease as interest rates rise and vice versa. 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 June 30, 2019 financial position. All projected changes in annualized net interest income are measured as the change from the projected annualized net interest income based off current performance returns.

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

Computation of results for portfolio value involves a two-step process. The first is the use of models to project how the value of interest rate sensitive instruments will change in the scenarios considered. We use both recognized industry models and proprietary models to make these projections. 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 June 30, 2019. The preceding discussion shows that the results for the 25 bps move scenarios are the best representation of our interest rate exposure, followed by those for the 50 bps move scenarios. This hierarchy reflects our localized approach to managing interest rate risk: monitoring rates and rebalancing our hedges on a day to day basis, where rate moves only rarely exceed 25 bps in either direction.

	Changes in Interest Rates			
(dollars in thousands)	**-50 bps**	**-25 bps**	**+25 bps**	**+50 bps**
Change in annualized net interest income [(1)]:	$ (7,854)	$ (3,947)	$ 3,944	$ 7,887
% change in net interest income [(1)]	*(1.6)%*	*(0.8)%*	*0.8 %*	*1.6 %*
Change in value of financial position:				
Available-for-sale securities	$ 324,451	$ 154,484	$ (184,624)	$ (436,094)
As a % of common equity	*8.4 %*	*4.0 %*	*(4.8)%*	*(11.3)%*
Mortgage servicing rights	$ (329,860)	$ (166,761)	$ 163,109	$ 318,103
As a % of common equity	*(8.5)%*	*(4.3)%*	*4.2 %*	*8.2 %*
Derivatives, net	$ 110,516	$ 49,492	$ (52,259)	$ (97,618)
As a % of common equity	*2.9 %*	*1.3 %*	*(1.4)%*	*(2.5)%*
Reverse repurchase agreements	$ 23	$ 11	$ (11)	$ (23)
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Repurchase agreements	$ (33,079)	$ (16,540)	$ 16,540	$ 33,079
As a % of common equity	*(0.9)%*	*(0.4)%*	*0.4 %*	*0.9 %*
Federal Home Loan Bank advances	$ (10)	$ (5)	$ 5	$ 10
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Revolving credit facilities	$ —	$ —	$ —	$ —
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Term notes payable	$ (131)	$ (66)	$ 66	$ 131
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Convertible senior notes	$ (3,092)	$ (1,540)	$ 1,529	$ 3,046
As a % of common equity	*(0.1)%*	*— %*	*— %*	*0.1 %*
Total Net Assets	$ 68,818	$ 19,075	$ (55,645)	$ (179,366)
As a % of total assets	*0.2 %*	*0.1 %*	*(0.2)%*	*(0.5)%*
As a % of common equity	1.8 %	0.5 %	(1.4)%	(4.6)%

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

Certain assumptions have been made in connection with the calculation of the information set forth in the foregoing interest rate sensitivity table and, as such, there can be no assurance that assumed events will occur or that other events will not occur that would affect the outcomes. The base interest rate scenario assumes interest rates at June 30, 2019. As discussed, the analysis utilizes assumptions and estimates based on our experience and judgment. Furthermore, future purchases and sales of assets could materially change our interest rate risk profile.

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

Prepayment Risk

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

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

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

Market Risk

Market Value Risk. Our AFS securities are reflected at their estimated fair value, with the difference between amortized cost 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 an oversupply of housing); changes or continued weakness in specific industry segments; construction quality, age and design; demographic factors; retroactive changes to building or similar codes; and natural disasters and other catastrophes. Decreases in property values reduce the value of the collateral for residential mortgage loans and the potential proceeds available to borrowers to repay the loans, which could cause us to suffer losses on our non-Agency securities.

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, FHLB advances 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 the FHLB or 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, FHLB advances 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 Form 10-Q for further information about our liquidity and capital resource management.

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 our non-Agency securities. With respect to our non-Agency securities that are senior in the credit structure, credit support contained in deal structures provide a level of protection from losses. We seek to manage the remaining credit risk through our pre-acquisition due diligence process, which includes comprehensive underwriting, and by factoring assumed credit losses into the purchase prices we pay for non-Agency securities. In addition, with respect to any particular target asset, we evaluate relative valuation, supply and demand trends, shape of yield curves, prepayment rates, delinquency and default rates, recovery of various sectors and vintage of collateral. At times, we enter into credit default swaps or other derivative instruments in an attempt to manage our credit risk. Nevertheless, unanticipated credit losses could adversely affect our operating results.

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 June 30, 2019. 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 June 30, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

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

Item 1A. Risk Factors

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, 2018, 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.

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 June 30, 2019, we had repurchased 12,067,500 shares under the program for a total cost of $200.4 million. We did not repurchase shares during the three months ended June 30, 2019.

Item 3. Defaults Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

None.

Item 5. Other Information

None.

Item 6. Exhibits

(a) Exhibits

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

Exhibit Number	Exhibit Description
3.1	Articles of Amendment and Restatement of Two Harbors Investment Corp. (incorporated by reference to Exhibit 99.1 to Annex B filed with Amendment No. 4).
3.2	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. (incorporated by reference to Exhibit 99.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 19, 2012).
3.3	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp., effective as of 5:01 PM Eastern Time on November 1, 2017 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 2, 2017).
3.4	Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp., effective as of 5:02 PM Eastern Time on November 1, 2017 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on November 2, 2017).
3.5	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 8.125% Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.3 of the Registrant's Form 8-A filed with the SEC on March 13, 2017).
3.6	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.625% Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.4 of the Registrant's Form 8-A filed with the SEC on July 17, 2017).
3.7	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.25% Series C Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.7 of the Registrant's Form 8-A filed with the SEC on November 22, 2017).
3.8	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.75% Series D Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.8 of the Registrant's Form 8-A filed with the SEC on July 31, 2018).
3.9	Articles Supplementary to the Articles of Amendment to the Articles of Amendment and Restatement of Two Harbors Investment Corp. designating the shares of 7.50% Series E Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock, $0.01 par value per share (incorporated by reference to Exhibit 3.9 of the Registrant's Form 8-A filed with the SEC on July 31, 2018).
3.10	Amended and Restated Bylaws of Two Harbors Investment Corp. (incorporated by reference to Exhibit 3.4 to the Registrant's Current Report on Form 8-K filed with the SEC on April 6, 2017).
31.1	Certification of the Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
31.2	Certification of the Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. (filed herewith)
32.1	Certification of the Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. (furnished herewith)
32.2	Certification of the Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. (furnished herewith)
101	Financial statements from the Quarterly Report on Form 10-Q of Two Harbors Investment Corp. for the three months ended June 30, 2019, filed with the SEC on August 7, 2019, formatted in Inline XBRL: (i) the Condensed Consolidated Balance Sheets, (ii) the Condensed Consolidated Statements of Comprehensive Income, (iii) the Condensed Consolidated Statements of Stockholders' Equity, (iv) the Condensed Consolidated Statements of Cash Flows, and (v) the Notes to the Condensed Consolidated Financial Statements. (filed herewith)
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101). (filed herewith)

SIGNATURES

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

			TWO HARBORS INVESTMENT CORP.
Dated:	August 7, 2019	By:	/s/ Thomas E. Siering
			Thomas E. Siering Chief Executive Officer, President and Director (Principal Executive Officer)
Dated:	August 7, 2019	By:	/s/ Mary Riskey
			Mary Riskey Chief Financial Officer (Principal Financial and Accounting Officer)

EXHIBIT 31.1

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

I, Thomas E. Siering, certify that:

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

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

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

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

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

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

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

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

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

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

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

Date:	August 7, 2019	/s/ Thomas E. Siering
		Thomas E. Siering
		Chief Executive Officer and President

EXHIBIT 31.2

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

I, Mary Riskey, certify that:

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

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

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

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

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

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

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

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

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

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

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

Date: August 7, 2019

/s/ Mary Riskey

Mary Riskey

Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned officer of Two Harbors Investment Corp. (the "Registrant") hereby certifies that the Registrant's Quarterly Report on Form 10-Q for the three months ended June 30, 2019 (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:	August 7, 2019	/s/ Thomas E. Siering
		Thomas E. Siering
		Chief Executive Officer and President

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

EXHIBIT 32.2

CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned officer of Two Harbors Investment Corp. (the “Registrant”) hereby certifies that the Registrant’s Quarterly Report on Form 10-Q for the three months ended June 30, 2019 (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:	August 7, 2019	/s/ Mary Riskey
		Mary Riskey
		Chief Financial Officer

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