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

FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended: December 31, 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

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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, 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 June 30, 2019, the aggregate market value of the registrant's common stock held by non-affiliates of the registrant was approximately $3.4 billion based on the closing sale price as reported on the NYSE on that date.

As of February 24, 2020, there were 273,627,275 shares of common stock, par value $.01 per share, issued and outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2020 Annual Meeting of Stockholders, which will be filed with the Securities and Exchange Commission under Regulation 14A within 120 days after the end of registrant's fiscal year covered by this Annual Report, are incorporated by reference into Part III.

TWO HARBORS INVESTMENT CORP.
2019 ANNUAL REPORT ON FORM 10-K

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PART I

Item 1. Business

Overview

Our Company

Two Harbors Investment Corp. is a Maryland corporation focused on investing in, financing 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. The terms "Two Harbors," "we," "our," "us" and the "company" refer to Two Harbors Investment Corp. and its subsidiaries as a consolidated entity.

We were 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 our wholly owned indirect subsidiary as a result of the merger. Our common stock is listed on the New York Stock Exchange, or NYSE, under the symbol "TWO".

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, 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);
- Non-Agency 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 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**.**

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, and we may form additional TRSs in the future. 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.

Our Manager

We are externally managed and advised by PRCM Advisers LLC, or PRCM Advisers, a wholly-owned subsidiary of Pine River Capital Management L.P, or Pine River. Pine River formed PRCM Advisers for the purpose of providing management services to us. PRCM Advisers is responsible for administering our business activities and day-to-day operations. Pursuant to the terms of the management agreement between us and PRCM Advisers, PRCM Advisers provides us with our management team, including our executive officers and support personnel. In addition, PRCM Advisers provides us with a dedicated team of investment professionals and other support. PRCM Advisers is at all times subject to the supervision and oversight of our board of directors. Each of our executive officers is an employee or partner of an affiliate of Pine River; we do not have any employees. We do not pay any of our executive officers cash compensation; rather, we pay PRCM Advisers a base management fee equal to 1.5% per annum of our stockholders' equity, adjusted to exclude any unrealized gains, losses or other items that do not affect realized net income, among other adjustments, as defined by the management agreement. We also reimburse PRCM Advisers for the allocable share of the compensation paid by Pine River to its personnel serving as our principal financial officer and general counsel and other reimbursable costs under the management agreement. We do not pay PRCM Advisers any incentive-based fees or other incentive-based compensation.

Our dedicated team of investment professionals has broad experience in managing our target assets and has demonstrated the ability to generate attractive risk-adjusted returns under different market conditions and cycles. We have extensive long-term relationships with financial intermediaries, including prime brokers, investment banks, broker-dealers and asset custodians. We believe these relationships enhance our ability to source, finance, protect and hedge our investments and, thus, enable us to succeed in various credit and interest rate environments. We also benefit from our dedicated risk management, accounting, operations, legal, compliance and information technology teams.

Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K 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 this Annual Report on Form 10-K 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 the SEC, including our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K. Forward-looking statements speak only as of the date they are made, and we undertake no obligation to update or revise any such forward-looking statements, whether as a result of new information, future events, or otherwise.

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

- changes in interest rates and the market value of our target assets;
- changes in prepayment rates of mortgages underlying our target assets;
- the occurrence, extent and timing of credit losses within our portfolio;
- our exposure to adjustable-rate and negative amortization mortgage loans underlying our target assets;
- the state of the credit markets and other general economic conditions, particularly as they affect the price of earning assets, the credit status of borrowers and home prices;
- the concentration of the credit risks to which we are exposed;
- legislative and regulatory actions affecting our business;
- the availability and cost of our target assets;
- the availability and cost of financing for our target assets, including repurchase agreement financing, revolving credit facilities, term notes, convertible notes and financing through the FHLB;
- increases in payment delinquencies and defaults on the mortgages comprising and underlying our target assets;
- changes in liquidity in the market for real estate securities, the re-pricing of credit risk in the capital markets, inaccurate ratings of securities by rating agencies, rating agency downgrades of securities, and increases in the supply of real estate securities available-for-sale;
- changes in the values of securities we own and the impact of adjustments reflecting those changes on our consolidated statements of comprehensive income (loss) and balance sheets, including our stockholders’ equity;
- our ability to generate cash flow from our target assets;
- our ability to effectively execute and realize the benefits of strategic transactions and initiatives 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 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 Annual Report on Form 10-K 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.

Our Business

Our Investment Strategy

Our investment 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 intend to achieve this objective by constructing a well-balanced portfolio consisting of Agency RMBS, non-Agency securities, MSR and other financial assets, with a focus on managing various associated risks, including interest rate, prepayment, credit, mortgage spread and financing risk. The preservation of book value is of paramount importance to our ability to generate total return on an ongoing basis. Consistent with the objective of achieving attractive risk-adjusted total return over various market cycles, we intend to maintain a balanced approach to these various risks.

Our dedicated investment team makes investment decisions based on a rigorous asset selection process that takes into consideration a variety of factors, including expected cash yield, risk-adjusted returns, current and projected credit fundamentals, current and projected macroeconomic considerations, current and projected supply and demand, credit and market risk concentration limits, liquidity, cost of financing and financing availability. It is our intention to select our assets in such a way as to maintain our REIT qualification and our exemption from registration under the 1940 Act.

Our Target Assets

Our portfolio can be categorized into two strategies based on investment characteristics, which embodies our hybrid investment approach. Both strategies are managed by our Co-Chief Investment Officers and our resources are allocated and financial performance is assessed on a consolidated basis. The categories and their respective target asset classes are as follows:

- *Rates Strategy* - Includes assets that are primarily sensitive to changes in interest rates, prepayments and mortgage spreads, including but not limited to Agency RMBS, MSR and related hedging transactions. These assets have minimal exposure to the underlying credit performance of the investments.

Agency RMBS	Agency RMBS collateralized by fixed rate mortgage loans, adjustable-rate mortgage (or ARM) loans or hybrid mortgage loans, or derivatives thereof, including: • mortgage pass-through certificates; • collateralized mortgage obligations; • uniform mortgage-backed securities; • Freddie Mac gold certificates; • Fannie Mae certificates; • Ginnie Mae certificates; • “to-be-announced” forward contracts, or TBAs, which are pools of mortgages with specific investment terms to be issued by government sponsored entities, or GSEs, at a future date; and • interest-only and inverse interest-only securities.
MSR	The right to control the servicing of mortgage loans, receive the servicing income therefrom and the obligation to service the loans in accordance with relevant standards; the actual servicing functions are outsourced to appropriately licensed third-party subservicers, which service the loans in their own names.

- *Credit Strategy* - Includes assets that are primarily sensitive to changes in the credit performance of the underlying collateral, including but not limited to non-Agency securities and related hedging transactions. These assets have interest rate and mortgage spread exposure, although such exposures are not viewed to be the main drivers of performance.

Non-Agency securities	Non-Agency securities collateralized by residential mortgage loans of varying borrower characteristics and payment type. Non-Agency securities includes both senior and mezzanine securities. Senior refers to non-Agency securities that represent the senior-most tranches (that is, the tranches which have the highest priority claim to cash flows from the related collateral pool) within the securities' structure. Mezzanine refers to subordinated tranches within the collateral pool. The non-Agency securities we purchase may include investment-grade and non-investment grade classes, including non-rated securities. Hybrid mortgage loans have terms with interest rates that are fixed for a specified period of time and, thereafter, generally adjust annually to an increment over a specified interest rate index. ARMs refer to hybrid and adjustable-rate mortgage loans which typically have interest rates that adjust annually to an increment over a specified interest rate index.

Other assets include financial and mortgage-related assets other than the target assets in our rates and credit strategies, including previously held commercial real estate assets, residential mortgage loans and certain non-hedging transactions that may produce non-qualifying income for purposes of the REIT gross income tests.

Our Investment Activities

The following is a summary of our investment activities related to the target assets in our rates and credit strategies for the year ended December 31, 2019. 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. Our capital allocation decisions factor 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, allocation among our target assets reflects management's flexible approach to investing in the marketplace.

Rates Strategy

Our Agency RMBS 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 are Fannie Mae or Freddie Mac mortgage pass-through certificates or collateralized mortgage obligations that carry an implied rating of "AAA," or Ginnie Mae mortgage pass-through certificates, which are backed by the guarantee of the U.S. government. The majority of these securities consist of whole pools in which we own all of the investment interests in the securities.

One of our wholly owned subsidiaries holds the requisite approvals from Fannie Mae and Freddie Mac to own and manage MSR, which represent a contractual right to service a mortgage loan and collect a fee for performing servicing activities, such as collecting principal and interest from a borrower and distributing those payments to the owner of the loan. 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 for the loans underlying our MSR.

We believe MSR are a natural fit for our portfolio over the long term. Our MSR business leverages our core competencies in prepayment and credit risk analytics and the MSR assets provide a hedge to our Agency RMBS, hedging both interest rate and mortgage spread risk. Our goal is to create long-lasting relationships with high quality originators in both flow and bulk acquisitions of MSR.

Credit Strategy

Within our non-Agency securities portfolio, we have a substantial emphasis on "legacy" securities, which consist of securities issued prior to 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. We also hold "new issue" non-Agency securities, which we believe have enabled us to find attractive returns and further diversify our non-Agency securities portfolio.

Our Investment Guidelines

Our board of directors has approved the following investment guidelines:

- no investment shall be made that would cause us to fail to qualify as a REIT for U.S. federal income tax purposes;
- no investment shall be made that would cause us to be regulated as an investment company under the 1940 Act;
- we will primarily invest within our target assets, consisting primarily of Agency RMBS, non-Agency securities, residential mortgage loans, MSR and commercial real estate assets, inclusive of commercial real estate loans, commercial real property, CMBS, commercial corporate debt and loans and other commercial real estate related investments in the U.S; approximately 5% to 10% of our portfolio may include other financial assets; and
- until appropriate investments can be identified, we will invest available cash in interest-bearing and short-term investments that are consistent with (i) our intention to qualify as a REIT and (ii) our exemption from investment company status under the 1940 Act.

These investment guidelines may be changed from time to time by our board of directors in its discretion without the approval of our stockholders.

Within the constraints of the foregoing investment guidelines, we have broad authority to select, finance and manage our investment portfolio. As a general matter, our investment strategy is designed to enable us to:

- build an investment portfolio consisting of Agency RMBS, non-Agency securities, MSR and other financial assets that will generate attractive returns while having a moderate risk profile;
- manage financing, interest, prepayment rate, credit and similar risks;
- capitalize on discrepancies in the relative valuations in the mortgage and housing markets; and
- provide regular quarterly dividend distributions to stockholders.

Within the requirements of the investment guidelines, we make determinations as to the percentage of our assets that will be invested in each of our target assets. Our investment decisions depend on prevailing market conditions and may change over time in response to opportunities available in different interest rate, economic and credit environments. As a result, we cannot predict the percentage of our assets that will be invested in any of our target asset classes at any given time. We believe that the diversification of our portfolio of assets and the flexibility of our strategy, combined with the expertise of our dedicated investment team, will enable us to achieve attractive risk-adjusted total return under a variety of market conditions and economic cycles.

Financing Strategy

We deploy moderate leverage to fund the acquisition of our target assets and increase potential returns to our stockholders. We are not required to maintain any particular leverage ratio. The amount of leverage we deploy for particular investments in our target assets depends upon a variety of factors, including without limitation: general economic, political and financial market conditions; the anticipated liquidity and price volatility of our assets; the gap between the duration of assets and liabilities, including hedges; the availability and cost of financing our assets; our opinion of the credit worthiness of financing counterparties; the health of the U.S. residential mortgage and housing markets; our outlook for the level, slope and volatility of interest rates; the credit quality of the loans underlying our Agency and non-Agency securities; the rating assigned to securities; and our outlook for asset spreads relative to the London Interbank Offered Rate, or LIBOR, curve and benchmark rate curves.

Our primary financing sources for Agency RMBS and non-Agency securities are repurchase agreements and FHLB advances. Repurchase agreements are financings pursuant to which one party, the seller/borrower, sells assets to the repurchase agreement counterparty, the buyer/lender, for an agreed price with the obligation to repurchase the assets from the buyer at a future date and at a price higher than the original purchase price. The amount of financing available under a repurchase agreement is limited to a specified percentage of the estimated market value of the assets. The difference between the sale price and repurchase price is the interest expense of financing under a repurchase agreement. Under repurchase agreement financing arrangements, if the value of the collateral decreases, the buyer could require the seller to provide additional cash collateral to re-establish the ratio of value of the collateral to the amount of borrowing (*i.e.*, a margin call). In the current economic climate, lenders under repurchase agreements generally advance approximately 90% to 97% of the market value of the Agency RMBS financed (a discount from market value, generally referred to as a haircut, of 3% to 10%) and 60% to 80% of the market value of the non-Agency securities financed (*i.e.*, a haircut of 20% to 40%).

To finance MSR, we enter into repurchase agreements, revolving credit facilities and securitization transactions collateralized by the value of the MSR pledged. If the value of our MSR pledged as collateral for the agreements decreases, the respective lender could require us to provide additional collateral to re-establish the ratio of value of the collateral to the amount of the debt outstanding. Due to certain GSE requirements, we may be restricted as to the frequency in which we are able to pledge additional MSR collateral to counterparties. As a result, we may choose to over-collateralize certain repurchase agreements and revolving credit facilities in order to avoid having to provide cash as additional collateral. Lenders generally advance approximately 65% to 70% of the market value of the MSR financed (*i.e.*, a haircut of 30% to 35%).

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 (i) an aggregate principal amount of $400.0 million in term notes to qualified institutional buyers and (ii) 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).

A significant decrease in the advance rate or an increase in the haircut could result in us having to sell assets in order to meet additional margin requirements by the lender. We expect to mitigate our risk of margin calls under financing arrangements by deploying leverage at an amount that is below what could be used under current advance rates.

In order to reduce our exposure to risks associated with lender counterparty concentration, we generally seek to diversify our exposure by entering into repurchase agreements with multiple counterparties. At December 31, 2019, we had $29.1 billion of outstanding balances under repurchase agreements with 24 counterparties, with a maximum net exposure (the difference between the amount loaned to us, including interest payable, and the value of the assets pledged by us as collateral, including accrued interest receivable on such assets) to any single lender of $310.1 million, or 6.2% of equity.

Our 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 currently has access to a variety of products and services offered by the FHLB, including secured advances. Eligible collateral may include conventional 1-4 family residential loans, commercial real estate loans, Agency RMBS and non-Agency securities with a rating of A and above.

We use FHLB advances to finance our Agency RMBS. Similar to repurchase agreements, if the value of our assets pledged to the FHLB as collateral for advances decreases, the FHLB could require us to provide additional collateral to re-establish the ratio of value of the collateral to the amount of advances outstanding. The FHLB generally advances approximately 90% to 95% of the market value of the Agency RMBS financed (*i.e.*, a haircut of 5% to 10%).

In January 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 ruling 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.

Interest Rate Hedging and Risk Management Strategy

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 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.

Management Agreement

Pursuant to the management agreement between us and PRCM Advisers, PRCM Advisers provides a dedicated team of investment and management professionals to carry out our business strategy as well as operational and administrative infrastructure to support our operations, subject to ongoing oversight by our board of directors. PRCM Advisers is responsible for, among other duties, (i) performing all of our day-to-day functions; (ii) determining investment criteria in conjunction with our board of directors; (iii) sourcing, analyzing and executing investments, asset sales and financings; and (iv) performing asset management duties. Our board of directors is responsible for the oversight and review of PRCM Advisers performance under the management agreement.

The current term of the management agreement expires on October 28, 2020, and will continue to automatically renew thereafter for successive one-year terms unless terminated in accordance with the agreement. The company may elect not to renew the management agreement upon a determination by at least two-thirds of the independent directors, or the holders of a majority of the outstanding shares of common stock (other than those shares held by Pine River or its affiliates), that (i) there has been unsatisfactory performance by PRCM Advisers that is materially detrimental to the company or (ii) the compensation payable to PRCM Advisers is unfair; provided, however, that we shall not have the right to terminate the agreement under clause (ii) if PRCM Advisers agrees to continue to provide the services under the agreement at a reduced fee that at least two-thirds of the independent directors determines to be fair. If we elect not to renew the management agreement pursuant to clauses (i) or (ii) above, notice of termination must be delivered to PRCM Advisers not less than 180 days prior to the expiration of the then existing term, and such notice shall designate an effective termination date that is not less than 180 days from the notice date. Upon the effectiveness of such a termination, we are required to pay a termination fee, or Termination Fee, equal to three times the sum of the average annual base management fee earned by PRCM Advisers during the 24-month period immediately preceding the date of termination, calculated as of the end of the most recently completed fiscal quarter prior to the effective termination date. We may also terminate the management agreement for cause, as such term is defined in the management agreement, without payment of any Termination Fee. Notice of termination for cause must be delivered not less than 30 days prior to the effective termination date.

PRCM Advisers may terminate the management agreement if we become required to register as an investment company under the 1940 Act, with such termination deemed to occur immediately before such event, and may also decline to renew the management agreement by providing us notice not less than 180 days prior to the expiration of the then existing term; in either case, we would not be required to pay the Termination Fee. PRCM Advisors may also terminate the management agreement for cause upon 60 days' prior notice upon our material breach of the agreement; in such case, we are required to pay the Termination Fee.

Base Management Fee

The base management fee paid to PRCM Advisers is 1.5% of our stockholders' equity per annum, calculated and payable quarterly in arrears.

For purposes of calculating the management fee, our stockholders' equity means the sum of the net proceeds from all issuances of our equity securities since inception (allocated on a pro rata daily basis for such issuances during the fiscal quarter of any such issuance), plus our retained earnings at the end of the most recently completed calendar quarter (without taking into account any non-cash equity compensation expense incurred in current or prior periods), less the consolidated stockholders' equity of Granite Point Mortgage Trust Inc., or Granite Point, during the time Granite Point was consolidated on our balance sheet (i.e. prior to spin off in 2017) the weighted average cost basis of Granite Point common stock purchased, the outstanding principal balance of the promissory note due from the sale of Granite Point preferred stock and any amount that we have paid for repurchases of our common stock since inception, and excluding any unrealized gains, losses or other items that do not affect realized net income (regardless of whether such items are included in other comprehensive income or loss, or in net income).

In connection with the acquisition of CYS Investments, Inc., or CYS, effective July 31, 2018, the management agreement was amended to (i) reduce the base management fee with respect to the additional equity under management resulting from the merger to 0.75% per annum 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 the base management fee for such quarter by $15.0 million and (iii) for the quarter in which the closing of the merger occurred, to make an additional downward adjustment of up to $3.3 million for certain transaction-related expenses.

The resulting amount of stockholders' equity to be used in the calculation of the base management fee will be adjusted to exclude one-time events pursuant to changes in accounting principles generally accepted in the United States of America, or U.S. GAAP, and certain non-cash items after discussions between PRCM Advisers and our independent directors and approval by a majority of our independent directors. To the extent asset impairments reduce our retained earnings at the end of any completed calendar quarter it will reduce the base management fee for such quarter. Our stockholders' equity for the purposes of calculating the base management fee could be greater than the amount of stockholders' equity shown on the consolidated financial statements.

Expense Reimbursement

We reimburse PRCM Advisers for (i) our allocable share of the compensation paid by Pine River to its personnel serving as our principal financial officer and general counsel as well as personnel employed by Pine River as in-house legal, tax, accounting, consulting, auditing, administrative, information technology, valuation, computer programming and development, and other back-office resources to us and (ii) any amounts for personnel of Pine River's affiliates arising under a shared facilities and services agreement. We also have certain costs allocated to us by PRCM Advisers for data services and technology, but most direct expenses with third-party vendors are paid directly by us.

Operating and Regulatory Structure

Our business is subject to extensive regulation by U.S. federal and state governmental authorities, and self-regulatory organizations. We are required to comply with numerous federal and state laws, including those described below. The laws, rules and regulations comprising this regulatory framework change frequently, as can the interpretation and enforcement of existing laws, rules and regulations. Some of the laws, rules and regulations to which we are subject are intended primarily to safeguard and protect consumers, rather than stockholders or creditors. From time to time, we may receive requests from U.S. federal and state agencies for records, documents and information regarding our policies, procedures and practices regarding our business activities. We incur significant ongoing costs to comply with these regulations.

REIT Qualification

We elected to be taxed as a REIT under the Code, commencing with our taxable period ended December 31, 2009. Our qualification as a REIT depends upon our ability to meet on a continuing basis, through actual investment and operating results, various complex requirements under the Code relating to, among other things, the sources of our gross income, the composition and value of our assets, our distribution levels and the diversity of ownership of our shares. We believe that we are organized in conformity with the requirements for qualification and taxation as a REIT under the Code, and we conduct our operations in a manner which will enable us to continue to meet the requirements for qualification and taxation as a REIT. Certain activities that we may perform may cause us to earn income that will not be qualifying income for REIT purposes. We have designated certain of our subsidiaries as TRSs to engage in such activities, and we may in the future form additional TRSs.

As long as we continue to qualify as a REIT, we generally will not be subject to U.S. federal income tax on the REIT taxable income we distribute currently to our stockholders. If we fail to qualify as a REIT in any taxable year and do not qualify for certain statutory relief provisions, we will be subject to U.S. federal income tax at regular corporate rates and may be precluded from qualifying as a REIT for the subsequent four taxable years following the year during which we lost our REIT qualification. Even if we qualify for taxation as a REIT, we may be subject to certain U.S. federal, state and local taxes on our income or property.

Investment Company Act of 1940

We conduct our operations so that we are not required to register as an investment company under the 1940 Act. If we were to fall within the definition of an investment company, we would be unable to conduct our business as described in this Annual Report on Form 10-K.

Section 3(a)(1)(A) of the 1940 Act defines an investment company as any issuer that "is or holds itself out as being engaged primarily in the business of investing, reinvesting or trading in securities." Section 3(a)(1)(C) of the 1940 Act also defines an investment company as any issuer that "is engaged or proposes to engage in the business of investing, reinvesting, owning, holding or trading in securities and owns or proposes to acquire investment securities having a value exceeding 40% of the value of the issuer's total assets (exclusive of U.S. government securities and cash items) on an unconsolidated basis." Excluded from the term "investment securities," among other things, are U.S. government securities and securities issued by majority-owned subsidiaries that are not themselves investment companies and are not relying on the exclusion from the definition of investment company set forth in Section 3(c)(1) or Section 3(c)(7) of the 1940 Act.

We are organized as a holding company that conducts business primarily through our subsidiaries. Any business conducted through our subsidiaries will be conducted in such a manner as to ensure that we do not meet the definition of "investment company" because less than 40% of the value of our total assets on an unconsolidated basis would consist of "investment securities."

To avoid registration as an investment company, certain of our subsidiaries rely on certain exemptions from the 1940 Act, including Section 3(c)(5)(C), which exempts entities that are "primarily engaged in the business of purchasing or otherwise acquiring mortgages and other liens on and interests in real estate." Under the SEC staff's current guidance, to qualify for this exemption, we must maintain (i) at least 55% of our assets in qualifying interests (referred to as the 55% Test) and (ii) at least 80% of our assets in qualifying interest plus other real estate related assets (referred to as the 80% Test). Qualifying interests for this purpose include mortgage loans and other assets, such as whole pool Agency and non-Agency RMBS, which are considered the functional equivalent of mortgage loans for the purposes of the 1940 Act. We expect each of our subsidiaries relying on Section 3(c)(5)(C) to invest at least 55% of its assets in qualifying interests in accordance with SEC staff guidance, and an additional 25% of its assets in either qualifying interests or other types of real estate related assets that do not constitute qualifying interests. We believe that we conduct our business so that we are exempt from the 1940 Act under Section 3(c)(5)(C), but rapid changes in the values of our assets could disrupt prior efforts to conduct our business to meet the 55% Test and the 80% Test. Our efforts to comply with the 55% Test and the 80% Test could require us to acquire or dispose of certain assets at unfavorable prices and limit our ability to pursue certain investment opportunities.

Mortgage Industry Regulation

Although we do not originate or service residential mortgage loans, we must comply with various federal and state laws, rules and regulations as a result of owning MSR. These rules generally focus on consumer protection and include, among others, rules promulgated under the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, and the Gramm-Leach-Bliley Financial Modernization Act of 1999, or the Gramm-Leach-Bliley Act. We are also required to maintain qualifications and licenses in certain states in order to own certain of our assets. These requirements can and do change as statutes and regulations are enacted, promulgated or amended, or as regulatory guidance or interpretations evolve or change, and the trend in recent years among federal and state lawmakers and regulators has been toward increasing laws, regulations and investigative proceedings in relation to the mortgage industry generally.

The Dodd-Frank Act significantly changed the regulation of financial institutions and the financial services industry, including the mortgage industry. The Dodd-Frank Act tasked many agencies with issuing a variety of new regulations, including rules related to mortgage origination, mortgage servicing, securitization transactions and derivatives. The Dodd-Frank Act also created the Consumer Financial Protection Bureau, or the CFPB, which has broad rulemaking authority with respect to many of the federal consumer protection laws applicable to the mortgage industry. In addition to its rulemaking authority, the CFPB has supervision, examination and enforcement authority over consumer financial products and services by certain non-depository institutions, including our company. The CFPB has issued a series of rules as part of ongoing efforts to effect reforms and create uniform standards for the mortgage lending and servicing industries. These mortgage lending rules include requirements addressing how lenders must evaluate a consumer's ability to repay a mortgage loan and what specific disclosures and communications must be made to consumers at various stages in the mortgage lending process. These rules have led to increased costs to originate and service loans across the mortgage industry, and given their complexity, it is anticipated the originators, servicers and other mortgage industry participants will be exposed to greater regulatory scrutiny from federal and state regulators and increased litigation and complaints from both consumers and government officials.

The Gramm-Leach-Bliley Act imposes obligations on us to safeguard the information we maintain on mortgage loan borrowers, requires that we provide mortgage borrowers with notices describing how we collect, use and share their personal information, and allows mortgage borrowers to "opt-out" of sharing certain information with third parties and affiliates. In addition, certain states have passed a variety of laws to further protect borrower information, including laws that regulate the use and storage of personally identifiable information, require notifications to borrowers if the security of their personal information is breached, or require us to encrypt personal information when it is transmitted electronically. These federal and state laws require ongoing review and changes to our operations, increased compliance costs, and affect our ability to use and share information with third parties.

We have implemented and will continue to implement policies and procedures in order to ensure ongoing compliance with the laws, rules and regulations applicable to our business. We have incurred and expect to incur ongoing operational costs to comply with such laws, rules and regulations.

Competition

Our net income depends, in large part, on our ability to acquire assets at favorable spreads over our borrowing costs. In acquiring our target assets, we compete with other REITs, specialty finance companies, savings and loan associations, banks, mortgage bankers, insurance companies, mutual funds, institutional investors, investment banking firms, financial institutions, governmental agencies, mortgage loan servicers, asset management firms and other entities. Some of these entities may not be subject to the same regulatory constraints that we are (*i.e.*, REIT compliance or maintaining an exemption under the 1940 Act). Many of our competitors are significantly larger than us, have access to greater capital and other resources and may have other advantages over us. In addition, some of our competitors may have higher risk tolerances or different risk assessments, which could allow them to consider a wider variety of investments and establish different counterparty relationships than us. Further, we may from time to time face competition from government agencies in connection with initiatives designed to stimulate the U.S. economy or the mortgage market. Market conditions may from time to time attract more competitors for certain of our target assets, which will not only affect the supply of assets but may also increase the competition for sources of financing for these assets. An increase in the competition for sources of funding could adversely affect the availability and cost of financing, and thereby adversely affect our financial results.

Available Information

Our website can be found at *www.twoharborsinvestment.com*. We make available, free of charge on our website (on the Investor Relations page under "SEC Filings"), our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and any amendments to those reports, as are filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as well as our proxy statement with respect to our annual meeting of stockholders, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Our Exchange Act reports filed with, or furnished to, the SEC are also available at the SEC's website at *www.sec.gov*. The content of any website referred to in this Annual Report on Form 10-K is not incorporated by reference into this Form 10-K unless expressly noted.

We also make available, free of charge, the charters for our Audit Committee, Compensation Committee, Nominating and Corporate Governance Committee and Risk Oversight Committee, as well as our Corporate Governance Guidelines, Code of Business Conduct and Ethics, Whistleblowing Procedures and Stockholder Communication Policy. Within the time period required by the SEC and the NYSE, we will post on our website any amendment to the Code of Ethics and any waiver applicable to any executive officer, director or senior officer (as defined in the Code of Ethics).

Our Investor Relations Department can be contacted at:

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Item 1A. Risk Factors

The following is a summary of the significant risk factors known to us that we believe could have a material adverse effect on our business, financial condition and results of operations. In addition to understanding the key risks described below, investors should understand that it is not possible to predict or identify all risk factors and, consequently, the following is not a complete discussion of all potential risks or uncertainties.

Risks Related to Our Business and Operations

The value of your investment is subject to the significant risks affecting our business described below. If any of the events described below occur, our business, financial condition, liquidity and/or results of operations could be adversely affected in a material way.

Difficult conditions in the residential mortgage and real estate markets, the financial markets and the economy generally may adversely impact our business, results of operations and financial condition.

Our results of operations are materially affected by conditions in the residential mortgage and real estate markets, the financial markets and the economy generally. In past years, concerns about the mortgage market, declines in home prices, increases in home foreclosures, high unemployment, the availability and cost of credit and rising government debt levels, as well as inflation, energy costs, global economic lethargy, geopolitical unrest across various regions worldwide, European sovereign debt issues, U.S. budget debates, federal government shutdowns and international trade disputes, have from time to time contributed to increased volatility and uncertainty in the economy and financial markets. More recently, home prices increased modestly in 2019 and are expected to gradually appreciate over the next several years. Credit standards in the mortgage market have eased in recent years, though the availability of credit remains well below levels prior to the 2008 financial crisis. Employment market conditions remain solid as jobless claims, unemployment and payroll data continue to show improvement at this state of the business cycle, although new job creation has yet to generate meaningful wage growth. Adverse developments with respect to any of these market conditions may have an impact on new demand for homes, which may compress the home ownership rates and weigh heavily on future home price performance. There is a strong correlation between home price growth rates (or losses) and mortgage loan delinquencies. Any stagnation in or deterioration of the residential mortgage or real estate markets may limit our ability to acquire our target assets on attractive terms or cause us to experience losses related to our assets. Declines in the market values of our investments may adversely affect our results of operations and credit availability and cost, which may reduce earnings and, in turn, cash available for distribution to our stockholders.

Actions of the U.S. government, including the U.S. Congress, U.S. Federal Reserve, U.S. Treasury and other governmental and regulatory bodies, to stabilize or reform the financial markets may not achieve their intended effects and may adversely affect our business.

The U.S. government, including the U.S. Congress, U.S. Federal Reserve, U.S. Treasury and other governmental and regulatory bodies have from time to time taken actions designed to stabilize and reform the financial markets. In recent years, these activities have included the Federal Reserve providing liquidity to the overnight lending market as well as purchasing Treasury and mortgage bonds in connection with its quantitative easing programs. There can be no assurance as to how, in the long term, actions by the U.S. government will impact the efficiency and stability of the mortgage markets or U.S. financial markets. To the extent the mortgage or financial markets do not respond favorably to any of these actions or such actions do not function as intended, our business may be harmed. In addition, because the programs may be designed, in part, to improve the markets for certain of our target assets, the establishment of these programs may result in increased competition to acquire our target assets or, in the case of government-backed mortgage refinancing and modification programs, may have the effect of reducing the revenues associated with certain of our target assets. We cannot predict whether or when additional government actions or initiatives may occur or the potential impact to our business, operations and financial condition.

Our business model depends in part upon the continuing viability of Fannie Mae and Freddie Mac, or similar institutions, and any significant changes to their structure or creditworthiness could have an adverse impact on us.

We purchase Agency RMBS that are protected from the risk of default on the underlying mortgages by guarantees from Fannie Mae, Freddie Mac or, in the case of the Ginnie Mae, the U.S. government. Fannie Mae and Freddie Mac have from time to time reported substantial losses and a need for significant amounts of additional capital. In 2008, in response to the deteriorating financial condition of Fannie Mae and Freddie Mac, the U.S. government and U.S. Treasury undertook a series of actions designed to stabilize these GSEs, including placing them into a federal conservatorship, under which the Federal Housing Finance Agency, or FHFA, operates Fannie Mae and Freddie Mac. In December 2009, the U.S. government committed virtually unlimited capital to ensure the continued existence of Fannie Mae and Freddie Mac. Despite projections that the U.S. Treasury will continue to provide financing, there is no assurance that such capital will continue to be available or that the GSEs will honor their guarantees or other obligations. If these GSEs fail to honor their guarantees, the value of any Agency RMBS that we hold would decline.

The continued flow of residential mortgage-backed securities from the GSEs is essential to the operation of the mortgage markets in their current form, and crucial to our business model. In the wake of the 2008 Financial Crisis, Fannie Mae and Freddie Mac became the dominant, and in some cases, the only source of mortgage financing in the U.S. Although any reform would be expected to take several years to implement, if the structure of Fannie Mae or Freddie Mac were altered, or if they were eliminated altogether, the amount and type of Agency RMBS and other mortgage-related assets available for investment would be significantly affected. A reduction in supply of Agency RMBS and other mortgage-related assets would result in increased competition for those assets and likely lead to a significant increase in the price we would have to pay for such assets.

A number of legislative proposals have been introduced in recent years that would phase out or reform the GSEs. In 2019, the FHFA for the first time released formal objectives calling for the return of Fannie Mae and Freddie Mac to the private sector. It was also announced during the year that Fannie Mae and Freddie Mac will be permitted to retain a combined $45 billion worth of earnings (Fannie Mae will be allowed to retain $25 billion and Freddie Mac $20 billion). This is a modification of the so-called “net worth sweep” provision that has required Fannie Mae and Freddie Mac to deliver nearly all of their profits to the Treasury; the result being that each organization will have the opportunity to build its net worth. It is not possible to predict the scope and nature of the actions that the U.S. government will ultimately take with respect to the GSEs. As a result, market uncertainty with respect to the treatment of the GSEs, including that which may be created by proposed legislation or the eventual adoption of laws affecting the GSEs, could have the effect of reducing the actual or perceived quality of, and therefore the market value for, the Agency RMBS that we currently hold in our portfolio. Moreover, if the guarantee obligations of Freddie Mac or Fannie Mae were repudiated by FHFA, payments of principal and/or interest to holders of Freddie Mac or Fannie Mae securities would be reduced in the event of any borrower's late payments or failure to pay, or a servicer's failure to remit, borrower payments to the trust. In that case, trust administration and servicing fees could be paid from mortgage payments prior to distributions to holders of agency securities. Any actual direct compensatory damages owed due to the repudiation of Freddie Mac or Fannie Mae's guarantee obligations may not be sufficient to offset any shortfalls experienced by holders of agency securities.

All of the foregoing could materially adversely affect the availability, pricing, liquidity, market value and financing of our target assets and materially adversely affect our business, operations and financial condition.

We operate in a highly regulated environment and may be adversely affected by changes in federal and state laws and regulations.

We operate in a highly regulated environment and are subject to the rules, regulations, approvals, licensing, reporting and examination requirements of various federal and state authorities. Any change in applicable federal or state laws, rules and regulations, or the interpretation or enforcement thereof, could have a substantial impact on our assets, operating expenses, business strategies and results of operations. Our inability or failure to comply with the rules, regulations or reporting requirements, to obtain or maintain approvals and licenses applicable to our businesses, or to satisfy annual or periodic examinations may impact our ability to do business and expose us to fines, penalties or other claims and, as a result, could harm our business. Additionally, legislation and regulations may be enacted or adopted in the future that could significantly affect our business and operations, which could have a material adverse effect on our financial condition and results of operations.

The Dodd-Frank Act and regulations implementing such legislation have had a substantial impact on the mortgage industry and the MBS markets; these regulations as well as new or modified regulations implemented under Dodd-Frank may have an adverse impact on our business, results of operations and financial condition.

On July 21, 2010, President Obama signed into law the Dodd-Frank Act, which changed the regulation of financial institutions and the financial services industry, including the mortgage industry. The Dodd-Frank Act tasked many agencies with issuing a variety of new regulations, including rules related to mortgage origination, mortgage servicing, securitization transactions and derivatives. In 2018, President Trump signed into law legislation that rolled back key provisions of the Act, easing mortgage regulations on small- and medium-sized lenders. It is not possible to predict how additional regulatory changes under or the further repeal of any provisions of the Dodd-Frank Act will affect our business, and there can be no assurance that new or revised rules and regulations will not have an adverse effect on our business, results of operations and financial condition.

The Dodd-Frank Act created the CFPB, which is responsible for regulating the offering and provision of financial products and services for personal, family and household purposes. In addition to exercising consumer financial protection functions under certain enumerated financial protection statutes, such as the Truth in Lending Act (TILA) and Real Estate Settlement Procedures Act (RESPA), the CFPB has broad rule-making and enforcement authority to protect consumers from unfair, deceptive or abusive acts and practices. The CFPB has issued a series of rules as part of ongoing efforts to effect reforms and create uniform standards for the mortgage lending and servicing industries. These mortgage lending rules include requirements addressing how lenders must evaluate a consumer's ability to repay a mortgage loan and what specific disclosures and communications must be made to consumers at various stages in the mortgage lending process.

Mortgage servicing rules promulgated by the CFPB include provisions relating to periodic billing statements and disclosures, responding to borrower inquiries and complaints, maintenance of consumer account records, lender-placed insurance, and adjustable rate mortgage interest rate adjustment notices. Further, the mortgage servicing rules require servicers to, among other things, make good faith early intervention efforts to notify delinquent borrowers of loss mitigation options, to implement specified loss mitigation procedures, and if feasible, exhaust all loss mitigation options before proceeding to foreclosure. They also impact the manner in which servicers are required to communicate with borrowers who are in bankruptcy or have applied for loss mitigation, and also provide additional protections for successors in interest. In addition, in May 2019, the CFPB published proposed regulations to implement the Fair Debt Collection Practices Act ("FDCPA"). Although the FDCPA was passed in 1977, until the Dodd-Frank Act became effective, no federal agency had explicit authority to promulgate regulations under the FDCPA. The proposed regulations are not yet final, however, they are expected to impact mortgage servicers in multiple ways, including by specifying how newer communications technologies such as text, email, voice and chat messages may and may not be used to communicate with consumers, requiring additional disclosures and limiting consumer contact in specific ways.

The foregoing rules have led to or will lead to increased costs to originate and service loans across the mortgage industry, and given their complexity, originators, servicers and other mortgage industry participants have been exposed to greater regulatory scrutiny from federal and state regulators, as well as increased litigation and complaints from consumers and government officials.

We have incurred and expect to incur in the future operational and system costs necessary to maintain processes to ensure compliance with the rules and regulations applicable to us as well as to monitor compliance by our business partners. Additional rules and regulations implemented by the CFPB, as well as any changes to existing rules as a result of the CFPB's periodic reassessment of established regulations, could lead to changes in the way we conduct our business and increased costs of compliance, both of which may have an adverse impact on our business and financial condition.

If we were required to register with the CFTC as a Commodity Pool Operator, it could adversely affect our business model, our financial condition and our results of operations.

Under the Dodd-Frank Act, the U.S. Commodity Futures Trading Commission, or CFTC, was given jurisdiction over the regulation of swaps. Under rules implemented by the CFTC, companies that utilize swaps as part of their business model, including many mortgage REITs, are deemed to fall within the statutory definition of Commodity Pool Operator, or CPO, and are required to register with the CFTC as a CPO. On December 7, 2012, the CFTC issued no-action relief that permits a CPO to receive relief from registration requirements if it meets certain criteria. While we believe we meet the criteria for such relief, there can be no assurance that the CFTC will not withdraw the no-action letter in the future or that we will continue to satisfy the criteria to qualify for relief from CPO registration. If we were required to register as a CPO in the future or change our business model to ensure we can continue to satisfy the criteria to qualify for the no-action relief, it could impact our ability to operate our business and adversely affect our financial condition and results of operations.

We operate in a highly competitive market and we may not be able to compete successfully.

We operate in a highly competitive market. Our profitability depends, in large part, on our ability to acquire a sufficient supply of our target assets at favorable prices. In acquiring assets, we compete with a variety of investors, including other mortgage REITs, specialty finance companies, public and private investment funds, asset managers, commercial and investment banks, broker-dealers, commercial finance and insurance companies, the GSEs, mortgage servicers and other financial institutions. Many of our competitors are substantially larger and have greater financial, technical, marketing and other resources than we do. Certain competitors may also have a broader investment mandate or higher risk tolerance, which may allow them to consider a wider variety of potential investments. Additionally, we may face competition from governmental actions and initiatives designed to stimulate the U.S. economy and mortgage market. Competition for our target assets may lead to the price of such assets increasing and their availability decreasing, which may limit our ability to generate desired returns, reduce our earnings and, in turn, decrease the cash available for distribution to our stockholders.

We may change any of our strategies, policies or procedures without stockholder consent.

We may change any of our strategies, policies or procedures with respect to investments, asset allocation, growth, operations, indebtedness, financing strategy and distributions at any time without the consent of stockholders, which could result in our making investments that are different from, and possibly riskier than, the types of investments described in this Annual Report on Form 10-K. Changes in strategy could also result in the elimination of certain investments and business activities that we no longer view as attractive or in alignment with our business model. Shifts in strategy may increase our exposure to credit risk, interest rate risk, financing risk, default risk, regulatory risk and real estate market fluctuations. We also cannot assure you that we will be able to effectively execute or to realize the potential benefits of changes in strategy. Any such changes could adversely affect our financial condition, risk profile, results of operations, the market price of our common stock and our ability to make distributions to stockholders.

We have invested in and may in the future invest in a variety of mortgage-related and other financial assets that may or may not be closely related to our current business. Additionally, we may enter other operating businesses that may or may not be closely related to our current business. These new assets or business operations may have new, different or increased risks than what we are currently exposed to in our business and we may not be able to manage these risks successfully. Additionally, when investing in new assets or businesses we will be exposed to the risk that those assets, or income generated by those assets or businesses, will affect our ability to meet the requirements to maintain our REIT status or our status as exempt from registration under the 1940 Act. If we are not able to successfully manage the risks associated with new assets types or businesses, it could have an adverse effect on our business, results of operations and financial condition.

Our risk management policies and procedures may not be effective.

We have established and maintain risk management policies and procedures designed to identify, monitor and mitigate financial risks, such as credit risk, interest rate risk, prepayment risk and liquidity risk, as well as operational and compliance risks related to our business, assets and liabilities. These policies and procedures may not sufficiently identify all of the risks to which we are or may become exposed or mitigate the risks we have identified. Any expansion of our business activities may result in our being exposed to risks to which we have not previously been exposed or may increase our exposure to certain types of risks. Alternatively, any narrowing of our business activities may increase the concentration of our exposure to certain types of risk. Any failure to effectively identify and mitigate the risks to which we are exposed could have an adverse effect on our business, results of operations and financial condition.

Maintaining our exemptions from registration as an investment company under the 1940 Act imposes limits on our operations.

We intend to conduct our operations so as not to become required to register as an investment company under the 1940 Act. Section 3(a)(1)(A) of the 1940 Act defines an investment company as any issuer that is or holds itself out as being engaged primarily in the business of investing, reinvesting or trading in securities. Section 3(a)(1)(C) of the 1940 Act defines an investment company as any issuer that is engaged or proposes to engage in the business of investing, reinvesting, owning, holding or trading in securities and owns or proposes to acquire investment securities having a value exceeding 40% of the value of the issuer's total assets (exclusive of U.S. government securities and cash items) on an unconsolidated basis. Excluded from the term "investment securities," among other things, are U.S. government securities and securities issued by majority-owned subsidiaries that are not themselves investment companies and are not relying on the exception from the definition of investment company set forth in Section 3(c)(1) or Section 3(c)(7) of the 1940 Act.

We are organized as a holding company that conducts its businesses primarily through our subsidiaries. We intend to conduct the operations of Two Harbors and its subsidiaries so that they do not come within the definition of an investment company, either because less than 40% of the value of their total assets on an unconsolidated basis will consist of "investment securities" or because they meet certain other exceptions or exemptions set forth in the 1940 Act based on the nature of their business purpose and activities, such as the Rule 3a-7 structured finance exemption for issuers of asset-backed securities or the Section 3(c)(3) exemption for insurance companies.

Certain of our subsidiaries intend to rely upon the exemption set forth in Section 3(c)(5)(C) of the 1940 Act, which is available for entities "primarily engaged in the business of purchasing or otherwise acquiring mortgages and other liens on and interests in real estate." This exemption generally means that at least 55% of each such subsidiary's portfolio must be comprised of qualifying assets and at least 80% of its portfolio must be comprised of qualifying assets and real estate-related assets under the 1940 Act. Qualifying assets for this purpose include mortgage loans and other assets, such as whole pool Agency and non-Agency RMBS, which are considered the functional equivalent of mortgage loans for the purposes of the 1940 Act. We expect each of our subsidiaries relying on Section 3(c)(5)(C) to invest at least 55% of its assets in whole pool Agency and non-Agency RMBS and other interests in real estate that constitute qualifying assets in accordance with SEC staff guidance and an additional 25% of its assets in either qualifying assets and other types of real estate related assets that do not constitute qualifying assets.

As a result of the foregoing restrictions, we are limited in our ability to make or dispose of certain investments. To the extent the SEC publishes new or different guidance with respect to these matters, we may be required to adjust our strategy accordingly. In addition, we may be limited in our ability to make certain investments, which could result in a subsidiary holding assets that we might wish to sell or selling assets that we might wish to hold. Although we monitor the portfolios of our subsidiaries relying on the Section 3(c)(5)(C) exemption periodically and prior to each acquisition or disposition of assets, there can be no assurance that such subsidiaries will be able to maintain this exemption.

We make the determination as to whether a subsidiary is considered a majority-owned subsidiary. The 1940 Act defines a majority-owned subsidiary of a person as a company 50% or more of the outstanding voting securities of which are owned by such person, or by another company which is a majority-owned subsidiary of such person. The 1940 Act further defines voting securities as any security presently entitling the owner or holder thereof to vote for the election of directors of a company. We treat companies in which we own at least a majority of the outstanding voting securities as majority-owned subsidiaries for purposes of the 40% test. We have not requested the SEC staff to approve our treatment of any company as a majority-owned subsidiary and the SEC staff has not done so. If the SEC or its staff were to disagree with our treatment of one or more companies as majority-owned subsidiaries, we may need to adjust our strategy and our assets in order to continue to pass the 40% test. Any such adjustment in our strategy could have a material adverse effect.

Qualification for exemptions from registration under the 1940 Act limits our ability to make certain investments. For example, these restrictions limit the ability of our subsidiaries to invest directly in mortgage-backed securities that represent less than the entire ownership in a pool of mortgage loans, debt and equity tranches of securitizations and certain asset backed securities and real estate companies or in assets not related to real estate.

Loss of our 1940 Act exemptions would adversely affect us, the market price of shares of our common stock and our ability to distribute dividends, and could result in the termination of our management agreement with PRCM Advisers and certain of our financing or other agreements.

As described above, we intend to conduct operations so that we are not required to register as an investment company under the 1940 Act. Although we monitor our portfolio and our activities periodically, there can be no assurance that we will be able to maintain our exemption from investment company registration under the 1940 Act. The SEC has previously solicited public comment on a wide range of issues relating to the exemptions set forth in Section 3(c)(5)(C) of the 1940 Act, including what types of assets should be deemed qualifying interests and whether REITs that invest in RMBS should be regulated in a manner similar to investment companies. Although we believe that we are properly relying on Section 3(c)(5)(C) to exempt us from regulation under the 1940 Act, any modifications to the 1940 Act exemption rules or interpretations may require us to change our business and operations in order for us to continue to rely on such exemption. Additionally, any uncertainty regarding our 1940 Act exemption could negatively impact our ability to raise capital, borrow money, or engage in certain other types of business transactions, which could materially and adversely affect our business, operations and financial condition. There can be no assurance that the rules, regulations and interpretations governing the exemptions available under the 1940 Act will not change in a manner that adversely affects our operations. If we were no longer able to qualify for exemptions from registration under the 1940 Act, we could be required to restructure our activities or the activities of our subsidiaries, including effecting sales of assets in a manner that, or at a time when, we would not otherwise choose, which could negatively affect the value of our common stock, the sustainability of our business model, and our ability to make distributions. Such sales could occur during adverse market conditions, and we could be forced to accept prices below that which we believe are appropriate. The loss of our 1940 Act exemptions may also result in a default under or permit certain of our counterparties to terminate the many repurchase agreements, financing facilities or other agreements we have in place, including permitting PRCM Advisers to terminate our management agreement. The termination of any of these agreements could result in a material adverse effect on our business and results of operations.

Rapid changes in the values of our assets may make it more difficult for us to maintain our qualification as a REIT or our exemption from the 1940 Act.

If the market value or income potential of our assets declines as a result of increased interest rates, prepayment rates, general market conditions, government actions or other factors, we may need to increase our real estate assets and income or liquidate our non-qualifying assets in order to maintain our REIT qualification or our exemption from the 1940 Act. If the decline in real estate asset values or income occurs quickly, this may be difficult to accomplish. This difficulty may be exacerbated by the illiquid nature of certain assets we own, including MSR. We may have to make decisions that we otherwise would not make absent the REIT and 1940 Act considerations.

The lack of liquidity of our assets may adversely affect our business, including our ability to value, finance and sell our assets.

We have and may in the future acquire assets or other instruments with limited or no liquidity, including securities, MSR and other instruments that are not publicly traded. Market conditions could also significantly and negatively affect the liquidity of our assets. It may be difficult or impossible to obtain third-party pricing on such illiquid assets and validating third-party pricing for illiquid assets may be more subjective than more liquid assets. Illiquid assets typically experience greater price volatility, as a ready market may not exist for such assets, and such assets can be more difficult to value.

Any illiquidity in our assets may make it difficult for us to sell such assets if the need or desire arises. Unlike equity securities, bonds or other exchange-traded instruments with highly liquid markets, the ability to quickly sell certain of our target assets, such as certain securities and MSR, may be constrained by a number of factors, including a small number of willing buyers, lack of transparency as to current market terms and price, and time delays resulting from the buyer's desire to conduct due diligence on the assets, negotiation of a purchase and sale agreement, compliance with any applicable contractual or regulatory requirements, and for certain assets like MSR, operational and compliance considerations, including the need for certain approvals from the investor in the underlying mortgage loan (*e.g.*, Fannie Mae or Freddie Mac), all of which can result in a sale process that takes several weeks or months. Moreover, certain of our assets may not be registered under the relevant securities laws, resulting in prohibitions against their transfer, sale, pledge or their disposition except in transactions that are exempt from registration requirements or are otherwise in accordance with such laws. Consequently, even if we identify a buyer for certain of our securities and MSR, there is no assurance that we would be able to sell such assets in a timely manner if the need or desire arises. In addition, if we are required to liquidate all or a portion of our portfolio quickly, we may be forced to sell our assets at a price that is significantly less than the value at which we previously attributed to such assets.

Assets that are illiquid are typically more difficult and costly to finance. As a result, we may be required to finance the assets at unattractive rates or hold them on our balance sheet without the use of leverage. Assets tend to become less liquid during times of financial stress, which is often the time that liquidity is most needed. To the extent that we use leverage to finance assets that later become illiquid, we may lose that leverage if the financing counterparty determines that the collateral is no longer sufficient to secure the financing, or the counterparty could reduce the amount of money that it is willing to lend against the asset.

The illiquidity of certain of our assets may, therefore, adversely impact our ability to manage our portfolio and adversely affect our financial condition and results of operations.

We use leverage in executing our business strategy, which may adversely affect the return on our assets and may reduce cash available for distribution to our stockholders, as well as increase losses when economic conditions are unfavorable.

We use leverage to finance many of our investments and to enhance our financial returns. Our primary source of leverage is short-term repurchase agreement financing for our Agency RMBS and non-Agency securities. We also use revolving credit facilities, repurchase agreements and term notes payable to finance MSR. Other sources of leverage may include credit facilities (including term loans, revolving facilities and FHLB advances) as well as the public issuance of debt securities.

Through the use of leverage, we may acquire positions with market exposure significantly greater than the amount of capital committed to the transaction. For example, by entering into repurchase agreements with advance rates, or haircut levels, of 5% (which is not an atypical haircut for Agency RMBS), we could leverage capital allocated to Agency RMBS by a ratio of as much as 20 to 1. It is not uncommon for investors in Agency RMBS to obtain leverage equal to ten or more times equity through the use of repurchase agreement financing. Subject to market conditions, we anticipate that we may deploy, on a debt-to-equity basis, up to ten times leverage on our Agency RMBS and up to two times on our non-Agency securities; however, there is no specific limit on the amount of leverage that we may use.

Leverage will magnify both the gains and the losses of our positions. Leverage will increase our returns as long as we earn a greater return on investments purchased with borrowed funds than our cost of borrowing such funds. However, if we use leverage to acquire an asset and the value of the asset decreases, the leverage will increase our losses. Even if the asset increases in value, if the asset fails to earn a return that equals or exceeds our cost of borrowing, the leverage will decrease our returns.

We may be required to post large amounts of cash as collateral or margin to secure our leveraged positions. In the event of a sudden, precipitous drop in value of our financed assets, we might not be able to liquidate assets quickly enough to repay our borrowings, further magnifying losses. Even a small decrease in the value of a leveraged asset may require us to post additional margin or cash collateral. This may adversely affect our financial condition and results of operations and decrease the cash available to us for distributions to stockholders.

We may not be able to raise the capital required to finance our assets and grow our business.

The operation of our business may require access to debt and equity capital that may or may not be available on favorable terms or at the desired times, or at all. In addition, we invest in certain assets, including MSR, for which financing has historically been difficult or costly to obtain and is otherwise subject to the consent of and the terms and conditions required by the GSEs. Any limitation on our ability to obtain financing for our target assets could require us to seek equity or debt capital that may be more costly or unavailable to us. We cannot assure you that we will have access to any debt or equity capital on favorable terms or at the desired times, or at all. Our inability to raise such capital or obtain financing on favorable terms could materially adversely impact our business, operations, financial condition, liquidity, and our ability to make distributions to stockholders.

We depend on repurchase agreements and other credit facilities to execute our business plan and any limitation on our ability to access funding through these sources could have a material adverse effect on our results of operations, financial condition and business.

Our ability to purchase and hold assets is affected by our ability to secure repurchase agreements and other credit facilities on acceptable terms. We currently have repurchase agreements, revolving credit facilities and other credit facilities in place with several counterparties, including national banks and the FHLB. In the future, we may enter into additional or increase commitment amounts under our existing repurchase agreements, revolving credit facilities and credit facilities, but we can provide no assurance that lenders will be willing or able to provide us with sufficient financing through the repurchase markets or otherwise. In addition, with respect to MSR financing, there can be no assurance that the GSEs will consent to such transactions. Because repurchase agreements and similar credit facilities are generally short-term commitments of capital, changes in conditions in the financing markets may make it more difficult for us to secure continued financing during times of market stress. During certain periods of a credit cycle, lenders may lose their ability or curtail their willingness to provide financing. If we are not able to arrange for replacement financing on acceptable terms, or if we default on our covenants or are otherwise unable to access funds under any of our repurchase agreements and credit facilities, we may have to curtail our asset acquisition activities and/or dispose of assets.

Our ability to efficiently access financing through our repurchase agreements may be adversely impacted by counterparty requirements regarding the type of assets that may be sold and the timing and process for such sales. In order for us to borrow funds under our repurchase agreements, counterparties must first review the assets for which we are seeking financing and approve such assets in their sole discretion. This review and approval process may delay the timing in which funding may be provided, or preclude funding altogether. For MSR, delays may also occur due to the need to obtain GSE approval of the collateral to be posted, the need for third-party valuations of the MSR collateral or the agreement of the relevant servicing party to be party to the financing agreement.

It is possible that the lenders that provide us with financing could experience changes in their ability to advance funds to us, independent of our creditworthiness or the value of our assets. For example, the Basel III regulatory capital reform rules or other regulatory changes, may have the effect of significantly changing or eliminating the sources of financing that are customarily available to us. If regulatory requirements imposed on our lenders change, they may be required to significantly increase the cost of the financing that they provide to us or eliminate it altogether. Our lenders also may revise their eligibility requirements for the types of assets they are willing to finance or the terms of such financings, based on, among other factors, the regulatory environment and their management of perceived risk.

In January 2016, the FHFA issued a final rule that excluded captive insurers from ongoing FHLB membership. Our subsidiary, TH Insurance Holdings Company LLC, or TH Insurance, is a licensed captive insurer and has been a member of the FHLB of Des Moines since 2013. Pursuant to the final rule, TH Insurance will be allowed to remain an FHLB member through February 19, 2021. During this grace period, any 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 TH Insurance maintains good standing with the FHLB. If any new advances or renewals occur, TH Insurance’s outstanding advances will be limited to forty percent of its assets. While our reliance upon the FHLB as a source of financing has diminished in recent years relative to alternative sources of funding, we cannot assure you that, in the future, we will be able to obtain financing on terms similar to the FHLB, if at all, which could have material adverse impact on our business.

Changes in the financing markets could adversely affect the marketability of the assets in which we invest, and this could negatively affect the value of our assets. If our lenders are unwilling or unable to provide us with financing, or if the financing is only available on terms that are uneconomical or otherwise not satisfactory to us, we could be forced to sell assets when prices are depressed. The amount of financing we receive under our repurchase agreements, revolving credit facilities or other credit facilities will be directly related to the lenders’ valuation of the assets that secure the outstanding borrowings. Typically, repurchase agreements and similar lending arrangements grant the respective lender the right to reevaluate the market value of the assets that secure outstanding borrowings at any time. If a lender determines that the value of the assets has decreased, it has the right to initiate a margin call, requiring us to transfer additional assets to such lender or repay a portion of the outstanding borrowings. Any such margin call could have a material adverse effect on our results of operations, financial condition, business, liquidity and ability to make distributions to stockholders, and could cause the value of our common stock to decline. We may be forced to sell assets at significantly depressed prices to meet margin calls and to maintain adequate liquidity, which could cause us to incur losses. Moreover, to the extent that we are forced to sell assets because of availability of financing or changes in market conditions, other market participants may face similar pressures, which could exacerbate a difficult market environment and result in significantly greater losses on the sale of such assets. In an extreme case of market duress, a market may not exist for certain of our assets at any price.

Although we generally seek to reduce our exposure to lender concentration-related risk by entering into repurchase agreements and other credit facilities with multiple counterparties, we are not required to observe specific diversification criteria, except as may be set forth in the investment guidelines adopted by our board of directors. To the extent that the number of or net exposure under our lending arrangements may become concentrated with one or more lenders, the adverse impacts of defaults or terminations by such lenders may be significantly greater. As of December 31, 2019, lenders for whom our net exposure (generally, the value of assets sold under repurchase agreements or posted as loan collateral, less the amount of the associated liabilities) exceeded 5% of stockholders’ equity included the Royal Bank of Canada. See Note 10 - *Repurchase Agreements* and Note 12 - *Federal Home Loan Bank of Des Moines Advances* to the consolidated financial statements, included in this Annual Report on Form 10-K, for additional information.

Our inability to meet certain financial covenants related to our repurchase agreements, revolving credit facilities or other credit facilities could adversely affect our financial condition, results of operations and cash flows.

In connection with certain of our repurchase agreements, revolving credit facilities and other credit facilities, we are required to comply with certain financial covenants, the most restrictive of which are disclosed within Item 7, “*Management’s Discussion and Analysis of Financial Conditions and Results of Operations*” of this Annual Report on Form 10-K. Compliance with these financial covenants will depend on market factors and the strength of our business and operating results. Various risks, uncertainties and events beyond our control could affect our ability to comply with the financial covenants. Failure to comply with our financial covenants could result in an event of default, termination of the lending facility, acceleration of all amounts owing under the lending facility, and may give the counterparty the right to exercise certain other remedies under the lending agreement, including without limitation the sale of the asset subject to repurchase at the time of default, unless we were able to negotiate a waiver. Any such waiver could be conditioned on an amendment to the lending agreement and any related guaranty agreement on terms that may be unfavorable to us. If we are unable to negotiate a covenant waiver or replace or refinance our assets under a new lending facility on favorable terms or at all, our financial condition, results of operations, cash flows and ability to pay dividends could be adversely affected.

If a counterparty to a repurchase agreement defaults on its obligation to resell the underlying security back to us at the end of the purchase agreement term, or if the value of the underlying asset has declined as of the end of that term, or if we default on our obligations under the repurchase agreement, we may incur losses.

When we enter into repurchase agreements, we sell the assets to lenders (*i.e.*, repurchase agreement counterparties) and receive cash from the lenders. The lenders are obligated to resell the same assets back to us at the end of the term of the repurchase agreement. Because the cash that we receive from the lender when we initially sell the assets to the lender is less than the value of those assets (the difference being the “haircut”), if the lender defaults on its obligation to resell the same assets back to us, we would incur a loss on the repurchase agreement equal to the amount of the haircut (assuming there was no change in the value of the securities). We would also incur losses on a repurchase agreement if the value of the underlying assets has declined as of the end of the repurchase agreement term, because we would have to repurchase the assets for their initial value but would receive assets worth less than that amount. Further, if we default on our obligations under a repurchase agreement, the lender will be able to terminate the repurchase agreement and cease entering into any other repurchase agreements with us. If a default occurs under any of our repurchase agreements and a lender terminates one or more of its repurchase agreements, we may need to enter into replacement repurchase agreements with different lenders. There can be no assurance that we will be successful in entering into such replacement repurchase agreements on the same terms as the repurchase agreements that were terminated or at all. Any losses that we incur on our repurchase agreements could adversely affect our earnings and thus our cash available for distribution to stockholders.

Our rights under our repurchase agreements are subject to the effects of bankruptcy laws in the event of the bankruptcy or insolvency of us or our lenders under the repurchase agreements.

In the event of our insolvency or bankruptcy, certain repurchase agreements may qualify for special treatment under the U.S. Bankruptcy Code, the effect of which, among other things, would be to allow the lender under the applicable repurchase agreement to avoid the automatic stay provisions of the U.S. Bankruptcy Code and to foreclose on the collateral agreement without delay. In the event of the insolvency or bankruptcy of a lender during the term of a repurchase agreement, the lender may be permitted, under applicable insolvency laws, to repudiate the contract, and our claim against the lender for damages may be treated simply as an unsecured creditor. In addition, if the lender is a broker or dealer subject to the Securities Investor Protection Act of 1970, or an insured depository institution subject to the Federal Deposit Insurance Act, our ability to exercise our rights to recover our assets under a repurchase agreement or to be compensated for any damages resulting from the lender's insolvency may be further limited by those statutes. These claims would be subject to significant delay and, if and when received, may be substantially less than the damages we actually incur.

The impairment or negative performance of other financial institutions could adversely affect us.

We have exposure to and routinely execute transactions with counterparties in the financial services industry, including broker-dealers, commercial banks, investment banks, investment funds and other institutions. The operations of U.S. and global financial services institutions are highly interconnected and a decline in the financial condition of one or more financial services institutions may expose us to credit losses or defaults, limit our access to liquidity or otherwise disrupt the operations of our businesses. While we regularly assess our exposure to different counterparties, the performance and financial strength of specific institutions are subject to rapid change, the timing and extent of which cannot be known.

Downgrades in the credit or financial strength ratings assigned to the counterparties with whom we transact or other adverse reputational impacts to such counterparties could create the perception that our business or financial condition will be adversely impacted as a result of potential future defaults by such counterparties. Additionally, we could be adversely affected by a general, negative perception of financial institutions caused by the downgrade or other adverse impact to the reputation of other financial institutions. Accordingly, ratings downgrades or other adverse reputational impacts for other financial institutions could adversely affect our business and financial condition and could limit access to or increase our cost of capital.

We may not have the ability to raise funds necessary to pay principal amounts owed upon maturity of our outstanding convertible senior notes or to purchase such notes upon a fundamental change.

In January 2017, we issued through an underwritten public offering $287.5 million in aggregate principal amount of 6.25% convertible senior notes due January 2022. To the extent these notes are not converted by the noteholders prior to their maturity date, we will be obligated to repay the principal amount of all outstanding notes upon maturity. In addition, if a fundamental change occurs (as described in the First Supplemental Indenture governing the notes) noteholders have the right to require us to purchase for cash any or all of their notes. The fundamental change purchase price will equal 100% of the principal amount of the notes to be purchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change purchase date. We may not have sufficient funds available at the time we are required to repay principal amounts or to purchase the notes upon a fundamental change, and we may not be able to arrange necessary financing for such payments on acceptable terms, if at all. In addition, our ability to purchase the notes may be limited by law, by regulatory authority or by the agreements governing our other indebtedness outstanding at the time. If we fail to pay any amounts associated with the notes when due, we may be in default under the indenture governing the notes. A default under the indenture or a fundamental change itself could also constitute a default under the agreements governing our other existing and future indebtedness, which would further restrict our ability to make required payments under the notes. As a consequence of the foregoing matters, our business, financial condition and results of operations may be adversely affected.

An increase in our borrowing costs relative to the interest that we receive on our leveraged assets may adversely affect our profitability and our cash available for distribution to stockholders.

As our repurchase agreements and other short-term borrowings mature, we must enter into new borrowings, find other sources of liquidity or sell assets. An increase in short-term interest rates at the time that we seek to enter into new borrowings would reduce the spread between the returns on our assets and the cost of our borrowings. This would adversely affect the returns on our assets, which might reduce earnings and, in turn, cash available for distribution to stockholders.

We are highly dependent on information technology and security breaches or systems failures could significantly disrupt our business, which may, in turn, negatively affect the market price of our common stock and our ability to pay dividends.

Our business is highly dependent on information technology. In the ordinary course of our business, we may store sensitive data, including our proprietary business information and that of our business partners, and personally identifiable information of mortgage borrowers, on our networks. The secure maintenance and transmission of this information is critical to our operations.

Computer malware, viruses, hacking and phishing attacks have become more prevalent and sophisticated in recent years and we are from time to time the target of attempted cyber threats. We continuously monitor and develop our information technology networks and infrastructure to prevent, detect, address and mitigate the risk of unauthorized access, misuse, computer viruses and other events that could have a security impact. Despite these security measures, our information technology and infrastructure may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, regulatory penalties, disrupt our operations, disrupt our trading activities or damage our reputation, which could have a material adverse effect on our financial results and negatively affect the market price of our common stock and our ability to pay dividends to stockholders.

The resources required to protect our information technology and infrastructure, and to comply with the laws and regulations related to data and privacy protection, are subject to uncertainty. Even in circumstances where we are able to successfully protect such technology and infrastructure from attacks, we may incur significant expenses in connection with our responses to such attacks. In addition, recent well-publicized security breaches have led to enhanced government and regulatory scrutiny of the measures taken by companies to protect against cyber-security attacks, and may in the future result in heightened cyber-security requirements and/or additional regulatory oversight. As cyber-security threats and government and regulatory oversight of associated risks continue to evolve, we may be required to expend additional resources to enhance or expand upon the security measures we currently maintain. Any such actions may adversely impact our results of operations and financial condition.

Natural disasters, terrorist attacks, other acts of violence or war, or other unexpected events may affect the value of our investments, the markets in which we operate and our results of operations.

Natural disasters, terrorist attacks, other acts of violence or war, or other unexpected events may negatively affect our operations, the market price of our capital stock and the value of our investments. There can be no assurance that events like these will not occur or have a direct impact on our business. Such events could materially interrupt our business operations, cause consumer confidence and spending to decrease or result in increased volatility in the U.S. and worldwide financial markets and economy. They also could result in or prolong an economic recession in the U.S. or abroad. Any of these occurrences could have a significant adverse impact on our operating results and revenues and on the market price of our capital stock and on the value of our investments.

The occurrence of natural disasters, terrorist attacks or a significant adverse climate changes may cause a sudden decrease in the value of real estate in the area or areas affected and would likely reduce the value of the properties securing the mortgages collateralizing our non-Agency securities or underlying our MSR. Because certain natural disasters may not be covered by the standard hazard insurance policies maintained by borrowers (such as hurricanes or certain flooding), or the proceeds payable under any such policy may not be sufficient to cover the related repairs, the affected borrowers may have to pay for any repairs themselves. Under these circumstances, borrowers may decide not to repair their property or may stop paying their mortgages. This would likely cause defaults and credit loss severities to increase and would negatively impact our securities and MSR portfolios.

We enter into hedging transactions that expose us to contingent liabilities in the future, which may adversely affect our financial results or cash available for distribution to stockholders.

We engage in transactions intended to hedge against various risks to our portfolio, including the exposure to changes in interest rates. The extent of our hedging activity varies in scope based on, among other things, the level and volatility of interest rates, the type of assets held and other market conditions. Although these transactions are intended to reduce our exposure to various risks, hedging may fail to adequately protect or could adversely affect us because, among other things:

- available hedges may not correspond directly with the risks for which protection is sought;
- the duration of the hedge may not match the duration of the related liability;
- the amount of income that a REIT may earn from certain hedging transactions (other than through our TRSs) is limited by U.S. federal income tax provisions;
- the credit quality of a hedging counterparty may be downgraded to such an extent that it impairs our ability to sell or assign our side of the hedging transaction; and
- the hedging counterparty may default on its obligations.

Subject to maintaining our qualification as a REIT and satisfying the criteria for no-action relief from the CFTC's CPO registration rules, there are no current limitations on the hedging transactions that we may undertake. Our hedging transactions could require us to fund large cash payments in certain circumstances (*e.g.*, the early termination of the hedging instrument caused by an event of default or other early termination event, or a demand by a counterparty that we make increased margin payments).

Our ability to fund these obligations will depend on the liquidity of our assets and our access to capital at the time. The need to fund these obligations could adversely affect our financial condition. Further, hedging transactions, which are intended to limit losses, may actually result in losses, which would adversely affect our earnings and could in turn reduce cash available for distribution to stockholders.

The Dodd-Frank Act regulates derivative transactions, including certain hedging instruments we use in our risk management activities. Rules implemented by the CFTC pursuant to the Dodd-Frank Act require, among other things, that certain derivatives be cleared through a registered clearing facility and traded on a designated exchange or swap execution facility. These regulations could increase the operational and transactional cost of derivatives contracts and affect the number and/or creditworthiness of available counterparties. Furthermore, the enforceability of agreements underlying hedging transactions may depend on compliance with applicable statutory and commodity and other regulatory requirements and, depending on the identity of the counterparty, applicable international requirements. The business failure of a hedging counterparty will most likely result in its default. Default by a hedging counterparty may result in the loss of unrealized profits and force us to cover our commitments, if any, at the then current market price. Although generally we seek to reserve the right to terminate our hedging positions, it may not always be possible to dispose of or close out a hedging position without the consent of the hedging counterparty and we may not be able to enter into an offsetting contract in order to cover our risk. We cannot assure you that a liquid secondary market will exist for hedging instruments purchased or sold, and we may be required to maintain a position until exercise or expiration, which could result in losses.

Our results may experience greater fluctuations due to our decision not to elect hedge accounting treatment on our derivative instruments.

We have elected to not qualify for hedge accounting treatment under Accounting Standards Codification (ASC) 815, *Derivatives and Hedging,* or ASC 815, for our current derivative instruments. The economics of our derivative hedging transactions are not affected by this election; however, our earnings (losses) for U.S. GAAP purposes, or GAAP net income (loss), may be subject to greater fluctuations from period to period as a result of this accounting treatment for changes in fair value of derivative instruments or for the accounting of the underlying hedged assets or liabilities in our financial statements, as it does not necessarily align with the accounting used for derivative instruments.

We depend on third-party service providers, including mortgage loan servicers, for a variety of services related to our business. We are, therefore, subject to the risks associated with third-party service providers.

We depend on a variety of services provided by third-party service providers related to our investments in Agency RMBS, non-Agency securities and MSR as well as for general operating purposes. For example, we rely on the mortgage servicers who service the mortgage loans underlying our Agency RMBS, non-Agency securities and MSR to, among other things, collect principal and interest payments on such mortgage loans and perform loss mitigation services in accordance with applicable laws and regulations. Mortgage servicers and other service providers, such as trustees, bond insurance providers, due diligence vendors and document custodians, may fail to perform or otherwise not perform in a manner that promotes our interests.

For example, any legislation or regulation intended to reduce or prevent foreclosures through, among other things, loan modifications may reduce the value of mortgage loans, including those underlying our Agency RMBS, non-Agency securities and MSR. Mortgage servicers may be required or otherwise incentivized by the Federal or state governments to pursue actions designed to assist mortgagors, such as loan modifications, forbearance plans and other actions intended to prevent foreclosure, even if such loan modifications and other actions are not in the best interests of the beneficial owners of the mortgage loans. Similarly, legislation delaying the initiation or completion of foreclosure proceedings on specified types of residential mortgage loans or otherwise limiting the ability of mortgage servicers to take actions that may be essential to preserve the value of the mortgage loans may also reduce the value of mortgage loans underlying our Agency RMBS and non-Agency securities. Any such limitations are likely to cause delayed or reduced collections from mortgagors and generally increase servicing costs. As a consequence of the foregoing matters, our business, financial condition and results of operations may be adversely affected.

In addition, in connection with our ownership of MSR, we possess personally identifiable information that is shared with third-party service providers, including our mortgage servicers, as required or permitted by law. In the event the information technology networks and infrastructure of our third-party service providers is breached, we may be liable for losses suffered by individuals whose personal information is stolen as a result of such breach and any such liability could be material. Even if we are not liable for such losses, any breach of these third-party systems could expose us to material costs related to notifying affected individuals or other parties and providing credit monitoring services, as well as to regulatory fines or penalties. In addition, any breach of these systems could disrupt our normal business operations and expose us to reputational damage or adversely impact our financial condition and results of operations.

We may be subject to fines, penalties or other enforcement actions based on the conduct of third-party mortgage loan servicers who service the loans underlying the MSR we acquire or our failure to conduct appropriate oversight of these servicers, which could adversely impact our results of operations, financial condition and business.

We contract with third-party mortgage loan servicers to perform the actual day-to-day servicing obligations on the mortgage loans underlying our MSR. We and the mortgage loan servicers operate in a highly regulated industry and are required to comply with various federal, state and local laws and regulations, including the obligation to oversee our third-party mortgage servicers to assess their compliance with these laws and regulations. Although the servicing activity is conducted primarily in the name of the mortgage loan servicers, to the extent these servicers fail to comply with applicable laws and regulations, we could be subject to governmental actions such as denial, suspension or revocation of licenses, be fined or otherwise subject to regulatory enforcement action, or incur losses or be subject to lawsuits, any of which could adversely impact our business, financial condition, results of operations and our ability to make distributions to our stockholders. While some of these laws and regulations may not explicitly hold us responsible for the legal violations of third-party servicers, federal and state agencies have increasingly sought to impose such liability. Accordingly, the conduct of third-party mortgage loan servicers or our failure to adequately oversee their compliance with these laws and regulations may subject us to increased regulatory risk and could result in regulatory fines, penalties, civil liabilities or other limitations in our ability to acquire and manage MSR. Further, it is possible that a third-party servicer's failure to comply with new and evolving servicing rules or standards could adversely affect the value of our MSR.

A failure to protect our reputation could adversely affect our businesses.

Our reputation is critical to the success of our business. Damage to our reputation may arise from numerous sources, including legal or regulatory actions, failing to deliver minimum or required standards of service, compliance failures, perceived or actual weakness in our financial condition, technological or other security breaches or misconduct on the part of our manager or third-party service providers. In addition, adverse developments with respect to our industry generally or with respect to one or more of our competitors may also, by association, negatively impact our reputation. Negative perceptions or publicity regarding the foregoing matters could lead to difficulties in developing and maintaining relationships with our business counterparties, limit the sources of available funding and/or result in additional legal and regulatory scrutiny, all of which could adversely impact our business and results of operations.

Our ability to own and manage MSR is subject to terms and conditions established by the GSEs, which are subject to change.

Our subsidiary's continued approval from the GSEs to own and manage MSR is subject to compliance with each of their respective selling and servicing guidelines, minimum capital requirements and other conditions they may impose from time to time at their discretion. Failure to meet such guidelines and conditions could result in the unilateral termination of our subsidiary's approved status by one or more GSEs. In addition, the implementation of more restrictive or operationally intensive guidance may increase the costs associated with owning and managing MSR as well as our ability to finance MSR.

GSEs generally require mortgage servicers to be paid a minimum servicing fee for the services provided. Changes in minimum servicing fee amounts for loans purchased or guaranteed by government-related entities could occur at any time and could negatively impact the value of the income derived from MSR on new origination that we may acquire in the future under our flow agreements or through bulk transactions.

We may not be able to acquire MSR.

MSR is a critical component of our overall portfolio management strategy, and our ability to source a sufficient amount of MSR may be adversely impacted for many reasons. We may be unable to locate originators or other sellers that are able or willing to sell MSR that meet our standards or on acceptable terms and conditions. Additionally, competition for MSR may drive down supply or drive up prices, making it uneconomical to purchase. General economic factors, such as recession, declining home values, unemployment and high interest rates, may limit the supply of available MSR. As a result, we may incur additional costs to acquire a sufficient volume of MSR or be unable to acquire MSR at a reasonable price. If we cannot source an adequate volume of MSR on desirable terms, our results of operations may be adversely impacted.

Our securitization activities expose us to risk of litigation, which may materially and adversely affect our business and financial condition.

In connection with our securitization transactions, we prepare disclosure documentation, including term sheets and offering memorandums, which contain disclosures regarding the securitization transactions and the assets securitized. If our disclosure documentation is alleged or found to contain inaccuracies or omissions, we may be liable under federal securities laws, state securities laws or other applicable laws for damages to third parties that invest in these securitization transactions, including in circumstances in which we relied on a third party in preparing accurate disclosures, or we may incur other expenses and costs in connection with disputing these allegations or settling claims. We have also sold or contributed residential mortgage loans to third parties who, in turn, securitize those loans. In these circumstances, we may have also prepared disclosure documentation, including documentation that is included in term sheets and offering memorandums relating to those securitization transactions. We could be liable under federal securities laws, state securities laws, or other applicable laws for damages to third parties that invest in these securitization transactions, including liability for disclosures prepared by third parties or with respect to loans that we did not sell or contribute to the securitization.

We may be subject to representation and warranty risk in our capacity as an owner of MSR as well as in connection with our prior securitization transactions and our sales of MSR and other assets.

The MSR we acquire may be subject to existing representations and warranties made to the applicable investor (including, without limitation, the GSEs) regarding, among other things, the origination and prior servicing of those mortgage loans, as well as future servicing practices following our acquisition of such MSR. If such representations and warranties are inaccurate, we may be obligated to repurchase certain mortgage loans or indemnify the applicable investor for any losses suffered as a result of the origination or prior servicing of the mortgage loans, either of which may result in a loss. As such, the applicable investor will have direct recourse to us for such origination and/or prior servicing issues.

In connection with our prior securitization transactions and with the sales of our MSR and other assets from time to time, we may have been or may be required to make representations and warranties to the purchasers of the assets regarding certain characteristics of those assets. If our representations and warranties are inaccurate, we may be obligated to repurchase the assets, which may result in a loss. Even if we obtain representations and warranties from the parties from whom we acquired the asset, as applicable, they may not correspond with the representations and warranties we make or may otherwise not protect us from losses. Additionally, the loan originator or other parties from whom we acquired the MSR may be insolvent or otherwise unable to honor their respective indemnification or repurchase obligations for breaches of representation and warranties. For example, if representations and warranties we obtain from those parties do not exactly align with the representations and warranties we make, or if the representations and warranties made to us are not enforceable or if we cannot collect damages for a breach (*e.g.*, due to the financial condition of the party that made the representation or warranty to us or statutes of limitations), we may incur losses.

Risks Related To Our Assets

Declines in the market values of our assets may adversely affect our results of operations and financial condition.

A substantial portion of our assets are classified for accounting purposes as “available-for-sale.” Changes in the market values of those assets will be directly charged or credited to stockholders’ equity. As a result, a decline in values may result in connection with factors that are out of our control and adversely affect our book value. Moreover, if the decline in value of an available-for-sale security is other than temporary, such decline will reduce our earnings.

We may not realize gains or income from our assets.

We seek to generate current income and capital appreciation for our stockholders. However, the assets that we acquire may not appreciate in value and, in fact, may decline in value. Additionally, the securities that we acquire, or the loans underlying certain of our assets, may experience defaults of interest and/or principal payments, which could result in significant losses related to such assets. Accordingly, we may not be able to realize gains or income from our assets. Any gains that we do realize may not be sufficient to offset other losses that we experience. Any income that we realize may not be sufficient to offset our expenses.

Changes in mortgage prepayment rates may adversely affect the value of our assets.

The value of our assets is affected by prepayment rates on mortgage loans, and our investment strategy includes making investments based on our expectations regarding prepayment rates. A prepayment rate is the measurement of how quickly borrowers pay down the unpaid principal balance of their loans or how quickly loans are otherwise brought current, modified, liquidated or charged off.

With respect to our securities portfolio, typically the value of a mortgage-backed security includes market assumptions regarding the speed at which the underlying mortgages will be prepaid. Faster than expected prepayments could adversely affect our profitability, including in the following ways:

- We may purchase securities that have a higher interest rate than the market interest rate at the time. In exchange for this higher interest rate, we may pay a premium over the par value to acquire the security. In accordance with U.S. GAAP, we may amortize this premium over the estimated term of the security. If the security is prepaid in whole or in part prior to its maturity date, however, we may be required to expense the premium that was prepaid at the time of the prepayment.
- A substantial portion of our adjustable-rate Agency RMBS and non-Agency securities may bear interest rates that are lower than their fully indexed rates, which are equivalent to the applicable index rate plus a margin. If an adjustable-rate security is prepaid prior to or soon after the time of adjustment to a fully-indexed rate, we will have held that security while it was least profitable and lost the opportunity to receive interest at the fully indexed rate over the remainder of its expected life.
- If we are unable to acquire new Agency RMBS and non-Agency securities similar to the prepaid security, our financial condition, results of operations and cash flows would suffer.

Prepayment rates also significantly affect the value of MSR because such rights are priced on an assumption of a stable repayment rate. If the prepayment rate is significantly greater than expected, the fair value of the MSR could decline and we may be required to record a non-cash charge, which would have a negative impact on our financial results. Furthermore, a significant increase in the prepayment rate could materially reduce the ultimate cash flows we receive from MSR, and we could ultimately receive substantially less than what we paid for such assets.

Prepayment rates may be affected by a number of factors including the availability of mortgage credit, the relative economic vitality of the area in which the related properties are located, the average remaining life of the loans, the average size of the remaining loans, the servicing of the mortgage loans, changes in tax laws, other opportunities for investment, homeowner mobility and other economic, social, geographic, demographic and legal factors. Consequently, prepayment rates cannot be predicted with certainty. In making investment decisions, we depend on certain assumptions based upon historical trends with respect to the relationship between interest rates and prepayments under normal market conditions. If dislocations in the residential mortgage market or other developments change the way that prepayment trends have historically responded to interest rate changes, our ability to (i) assess the market value of target assets, (ii) implement hedging strategies and (iii) implement techniques to hedge prepayment risks would be significantly affected, which could materially adversely affect our financial position and results of operations. If we make erroneous assumptions regarding prepayment rates, we may experience significant investment losses.

A prolonged economic slowdown, a lengthy or severe recession or declining real estate values could impair our assets and harm our operations.

The risks associated with our business are more severe during periods of economic slowdown or recession, especially if these periods are accompanied by declining real estate values. The ability of a borrower to repay a loan secured by a residential property typically is dependent upon the income or assets of the borrower. During an economic slowdown, unemployment rises and increasing numbers of borrowers have difficulty in making payments on their debts, including on mortgage loans. When a recession is combined with declining real estate values, as was the case following the 2008 financial crisis, defaults on mortgages may increase dramatically.

Owners of Agency RMBS are protected from the risk of default on the underlying mortgages by guarantees from Fannie Mae, Freddie Mac or, in the case of the Ginnie Mae, the U.S. government. However, we also own non-Agency securities, which are backed by residential real property but, in contrast to Agency RMBS, the principal and interest payments are not guaranteed by GSEs or the U.S. government. Our non-Agency securities are therefore particularly sensitive to recessions and declining real estate values.

In the event of a default on a mortgage loan that we hold in our portfolio or a mortgage loan underlying a non-Agency security in our portfolio, we bear the risk of loss as a result of the potential deficiency between the value of the collateral and the debt owed on the mortgage, as well as the costs and delays of foreclosure or other remedies, and the costs of maintaining and ultimately selling a property after foreclosure. Delinquencies and defaults on mortgage loans for which we own the servicing rights will adversely affect the amount of servicing fee income we receive and may result in increased servicing costs and operational risks due to the increased complexity of servicing delinquent and defaulted mortgage loans. If an investor in the mortgage loans for which we own the servicing rights determines that the rate of delinquencies or defaults for the loans it owns is unacceptable, we bear the risk of losing the right to service the related mortgage loans which could adversely affect our revenues, business prospects and financial condition.

Any sustained period of increased payment delinquencies, defaults, foreclosures or losses on our non-Agency securities, mortgage loans, mortgage loans for which we own the servicing rights could adversely affect our revenues, results of operations, financial condition, business prospects and ability to make distributions to stockholders.

Changes in inter-bank lending rate reporting practices or the method pursuant to which LIBOR is determined may adversely affect the value of our assets and financial obligations that are linked to LIBOR.

LIBOR and other "benchmark" indices have been the subject of recent national, international and other regulatory guidance and proposals for reform. These reforms may cause such benchmarks to perform differently than in the past, or have other consequences which cannot be predicted. In particular, regulators and law enforcement agencies in the U.K. and elsewhere are conducting criminal and civil investigations into whether the banks that contributed information to the British Bankers' Association, or BBA, in connection with the daily calculation of LIBOR may have been under-reporting or otherwise manipulating or attempting to manipulate LIBOR. A number of BBA member banks have entered into settlements with their regulators and law enforcement agencies with respect to this alleged manipulation of LIBOR. Actions by the regulators or law enforcement agencies may result in changes to the manner in which LIBOR is determined or the establishment of alternative reference rates. For example, in July 2017, the U.K. Financial Conduct Authority announced that it intends to stop persuading or compelling banks to submit LIBOR rates after 2021.

At this time, it is not possible to predict the effect of any such changes, any establishment of alternative reference rates or any other reforms to LIBOR that may be implemented in the U.K. or elsewhere. Uncertainty as to the nature of such potential changes, alternative reference rates or other reforms may adversely affect the market for or value of any securities on which the interest or dividend is determined by reference to LIBOR, loans, derivatives and other financial obligations or on our overall financial condition or results of operations. More generally, any of the above changes or any other consequential changes to LIBOR or any other "benchmark" index as a result of international, national or other proposals for reform or other initiatives or investigations, or any further uncertainty in relation to the timing and manner of implementation of such changes, could have a material adverse effect on the value of and return on any of our securities based on or linked to such a "benchmark."

Our delayed delivery transactions, including TBAs, subject us to certain risks, including price risks and counterparty risks.

We may purchase Agency RMBS through delayed delivery transactions, including TBAs. In a delayed delivery transaction, we enter into a forward purchase agreement with a counterparty to purchase either (i) an identified Agency RMBS, or (ii) a to-be-issued (or "to-be-announced") Agency RMBS with certain terms. As with any forward purchase contract, the value of the underlying Agency RMBS may decrease between the contract date and the settlement date. Furthermore, a transaction counterparty may fail to deliver the underlying Agency RMBS at the settlement date. If any of the above risks were to occur, our financial condition and results of operations may be materially adversely affected.

It may be uneconomical to roll our TBA dollar roll transactions or we may be unable to meet margin calls on our TBA contracts, which could negatively affect our financial condition and results of operations.

We utilize TBA dollar roll transactions as a means of investing in and financing Agency RMBS. TBA contracts enable us to purchase or sell, for future delivery, Agency RMBS with certain principal and interest terms and certain types of collateral, but the specific securities to be delivered are not identified until shortly before the TBA settlement date. Prior to settlement of the TBA contract we may choose to move the settlement of the securities to a later date by entering into an offsetting position (referred to as a "pair off"), net settling the paired off positions for cash, and simultaneously purchasing a similar TBA contact for a later settlement date, collectively referred to as a "dollar roll". The Agency RMBS purchased for a forward settlement date under the TBA contracts are typically priced at a discount to Agency RMBS for settlement in the current month. This difference (or discount) is referred to as the "price drop." The price drop is the economic equivalent of net interest carry income on the underlying Agency RMBS over the roll period (interest income less implied financing cost) and is commonly referred to as a "dollar roll income." Consequently, dollar roll transactions and such forward purchase of Agency RMBS represent a form of off-balance sheet financing and increase our "at-risk" leverage.

Under certain market conditions, TBA dollar roll transactions may result in negative carry income whereby the Agency RMBS purchase for a forward settlement date under TBA contract are priced at a premium to Agency RMBS for settlement in the current month. Under such conditions, it may be uneconomical to roll our TBA positions prior to the settlement date and we could have to take physical delivery of the underlying securities and settle our obligations for cash. We may not have sufficient funds or alternative financing sources available to settle such obligations. In addition, pursuant to the margin provisions established by the Mortgage-Backed Securities Division ("MBSD") of the FICC, we are subject to margin calls on our TBA contracts. Further, our prime brokerage agreements may require us to post additional margin above the levels established by the MBSD. Negative carry income on TBA dollar roll transactions or failure to procure adequate financing to settle our obligations or meet margin calls under our TBA contracts could result in defaults or force us to sell assets under adverse market conditions or through foreclosure and adversely affect our financial condition and results of operations.

We acquire RMBS collateralized by subprime mortgage loans, which are subject to increased risks.

Among other assets, we acquire RMBS backed by collateral pools of subprime mortgage loans, which are mortgage loans that have been originated using underwriting standards that are less conservative than those used in underwriting prime mortgage loans (mortgage loans that generally conform to GSE underwriting guidelines) and Alt-A mortgage loans (mortgage loans made to borrowers whose qualifying mortgage characteristics do not conform to GSE underwriting guidelines and generally allow homeowners to qualify for a mortgage loan with reduced or alternate forms of documentation). These lower standards include mortgage loans made to borrowers having imperfect or impaired credit histories, mortgage loans where the amount of the loan at origination is 80% or more of the value of the mortgage property, mortgage loans made to borrowers with low credit scores, mortgage loans made to borrowers who have other debt that represents a large portion of their income and mortgage loans made to borrowers whose income is not required to be disclosed or verified. Due to economic conditions, including increased interest rates and lower home prices, as well as aggressive lending practices, subprime mortgage loans have in the past experienced increased rates of delinquency, foreclosure, bankruptcy and loss, and may in the future experience delinquency, foreclosure, bankruptcy and loss rates that may be substantially higher, than those experienced by mortgage loans underwritten in a more traditional manner. In acquiring these assets, we endeavor to factor the risk of losses on the underlying mortgages into the purchase price of the asset. If we underestimate those losses, however, the performance of RMBS backed by subprime mortgage loans that we acquire could be adversely affected, which could adversely affect our results of operations, financial condition and business.

Our portfolio of assets may be concentrated in terms of credit risk.

Although as a general policy we seek to acquire and hold a diverse portfolio of assets, we are not required to observe specific diversification criteria, except as may be set forth in the investment guidelines adopted by our board of directors. Therefore, our asset portfolio may at times be concentrated in certain property types that are subject to higher risk of foreclosure, or secured by properties concentrated in a limited number of geographic locations. To the extent that our portfolio is concentrated in any one region or type of asset, downturns relating generally to such region or type of asset may result in defaults on a number of our assets within a short time period, which may reduce our net income and the value of our shares and accordingly reduce our ability to pay dividends to our stockholders. The portfolio may contain other concentrations of risk, and we may fail to identify, detect or hedge against those risks, resulting in large or unexpected losses.

Our subordinated RMBS may be in the "first loss" position, subjecting us to greater risk of losses.

We invest in certain tranches of RMBS that are only entitled to a portion of the principal and interest payments made on mortgage loans underlying the securities issued by the trust. In general, losses on a mortgage loan included in such a trust will be borne first by the equity holder of the issuing trust, and then by the "first loss" subordinated security holder and then by the "second loss" mezzanine holder. We may acquire securities at every level of such a trust, from the equity holder to the most senior tranche. In the event of default and the exhaustion of any classes of securities junior to those which we acquire, our securities will suffer losses as well. In addition, if we overvalue the underlying mortgage portfolio, or if the values subsequently decline and, as a result, less collateral is available to satisfy interest and principal payments due on the related RMBS, the securities which we acquire may effectively become the "first loss" position behind the more senior securities, which may result in significant losses. The prices of lower credit quality securities are generally less sensitive to interest rate changes than more highly rated securities, but more sensitive to adverse economic downturns or individual issuer developments. A projection of an economic downturn could cause a decline in the value of lower credit quality securities because the ability of obligors of mortgages underlying RMBS to make principal and interest payments may be impaired. In such event, existing credit support in the securitization structure may be insufficient to protect us against loss of our principal on these securities.

Increases in interest rates could adversely affect the value of our assets and cause our interest expense to increase, which could result in reduced earnings or losses and negatively affect our profitability as well as the cash available for distribution to stockholders.

Our operating results will depend in large part on the difference between the income from our assets, net of credit losses, and financing costs. We anticipate that, in many cases, the income from our assets will respond more slowly to interest rate fluctuations than the cost of our borrowings. Consequently, changes in interest rates, particularly short-term interest rates, may significantly influence our financial results.

Interest rates are highly sensitive to many factors, including governmental monetary and tax policies, domestic and international economic and political considerations and other factors beyond our control. For example, the Federal Reserve made several cuts to the federal funds target rate in 2019, following several years of gradual increases. We cannot predict the impact that recent rate cuts, or any future actions or non-actions with respect to the federal funds rate, may have on the markets or the economy. Interest rate fluctuations present a variety of risks, including the risk of a narrowing of the difference between asset yields and borrowing rates, flattening or inversion of the yield curve and fluctuating prepayment rates.

In a normal yield curve environment, fixed income assets, including many Agency RMBS and non-Agency securities, decline in value if interest rates increase. If long-term rates increased significantly, not only will the market value of these assets be expected to decline, but the duration and weighted-average life of the assets could increase as well because borrowers are less likely to prepay mortgages. Further, an increase in short-term interest rates would increase the rate of interest payable on any repurchase agreements required to finance these securities.

We endeavor to hedge our exposure to changes in interest rates, but there can be no assurances that our hedges will be successful, or that we will be able to enter into or maintain such hedges. As a result, interest rate fluctuations can cause significant losses, reductions in income, and limitations on our cash available for distribution to stockholders.

An increase in interest rates may cause a decrease in the availability of certain of our target assets, which could adversely affect our ability to acquire target assets that satisfy our investment objectives and to generate income and pay dividends.

Rising interest rates generally reduce the demand for mortgage loans due to the higher cost of borrowing. A reduction in the volume of mortgage loans originated may affect the volume of certain target assets available to us, which could adversely affect our ability to acquire assets that satisfy our investment and business objectives. Rising interest rates may also cause certain target assets that were issued prior to an interest rate increase to provide yields that are below prevailing market interest rates. If rising interest rates cause us to be unable to acquire a sufficient volume of our target assets with a yield that is above our borrowing cost, our ability to satisfy our investment objectives and to generate income and pay dividends may be materially and adversely affected.

The assets in our portfolio are recorded at fair value, but there may be substantial uncertainty as to the value of certain assets.

Some of the assets in our portfolio are not publicly traded. The fair value of securities and other assets that are not publicly traded may not be readily determinable. We value these assets quarterly at fair value, as determined in accordance with ASC 820, *Fair Value Measurements and Disclosures*, which may include unobservable inputs. Because such valuations are subjective, the fair value of certain of our assets may fluctuate over short periods of time and our determinations of fair value may differ materially from the values that would have been used if a ready market for these securities existed. The value of our common stock could be adversely affected if our determinations regarding the fair value of these assets are materially higher than the values that we ultimately realize upon their disposal.

Our MSR are recorded at fair value on our consolidated balance sheets based upon significant estimates and assumptions. The determination of the fair value of MSR requires our management to make numerous estimates and assumptions. Such estimates and assumptions include, without limitation, estimates of future cash flows associated with MSR based upon assumptions involving interest rates as well as the prepayment rates, delinquencies and foreclosure rates of the underlying mortgage loans. The ultimate realization of the value of MSR may be materially different than the fair values of such MSR as may be reflected in our consolidated balance sheets as of any particular date. The use of different estimates or assumptions in connection with the valuation of these assets could produce materially different fair values for such assets, which could have a material adverse effect on our business, financial condition, results of operations and cash flows. Accordingly, there may be material uncertainty about the fair value of any MSR we acquire.

The value of our Agency RMBS, non-Agency securities and MSR may be adversely affected by deficiencies in servicing and foreclosure practices, as well as related delays in the foreclosure process.

Deficiencies in servicing and foreclosure practices among servicers of residential mortgage loans have raised and may in the future raise concerns relating to such practices, including the improper execution of the documents used in foreclosure proceedings (so-called “robo signing”), inadequate documentation of transfers and registrations of mortgages and assignments of loans, improper handling of loss mitigation for mortgagors who fall behind in their payments, violations of representations and warranties at the date of securitization and failure to enforce put-backs. The integrity of the servicing and foreclosure processes is critical to the value of our Agency RMBS, non-Agency securities and MSR, and our financial results could be adversely affected by deficiencies in the conduct of those processes. For example, delays in the foreclosure process that may result from improper servicing practices may adversely affect the values of, and our losses on, our mortgage-related assets. Foreclosure delays may also increase the administrative expenses of the securitization trusts for non-Agency securities or result in the curtailment of payments to the GSEs, thereby resulting in additional expense and reducing the amount of funds available for distribution to investors. In addition, the subordinate classes of securities issued by the securitization trusts may continue to receive interest payments while the defaulted loans remain in the trusts, rather than absorbing the default losses. This may reduce the amount of credit support available for any senior classes we own, thus possibly adversely affecting these securities.

While we believe that our servicers would be in violation of their servicing contracts to the extent that they have improperly serviced mortgage loans or improperly executed documents in foreclosure or bankruptcy proceedings, or do not comply with the terms of servicing contracts and applicable laws and regulations when assessing loss mitigation options for affected borrowers, it may be difficult, expensive, and time consuming for us to enforce our contractual rights. Such failure to comply may also expose us to regulatory risks. We continue to monitor and review the issues raised by improper servicing practices. While we cannot predict exactly how servicing, loss mitigation and foreclosure matters or any resulting litigation, regulatory actions or settlement agreements will affect our business, there can be no assurance that these matters will not have an adverse impact on our results of operations and financial condition.

Risks Related to our Management and Relationship with PRCM Advisers and Pine River

We are dependent on PRCM Advisers and Pine River and may not find a suitable replacement if we or PRCM Advisers terminates the management agreement.

We have no employees. Instead, we are reliant on the employees provided to us by PRCM Advisers, which has significant discretion as to the implementation and execution of our business strategies and risk management practices. PRCM Advisers may not have sufficient access to Pine River's employees, systems and facilities in order to comply with its obligations under the management agreement. We are also subject to the risk that PRCM Advisers will terminate the management agreement and that no suitable replacement will be found.

The current term of the management agreement expires on October 28, 2020 and will automatically renew for successive one-year terms unless terminated by us or PRCM Advisers as set forth in the management agreement. If the management agreement is terminated and no suitable replacement is found to manage Two Harbors or we are unable to hire our own qualified employees, we may not be able to continue to execute our business plan.

We will have no recourse to Pine River if it does not fulfill its obligations under the shared facilities and services agreement with PRCM Advisers.

Neither we nor PRCM Advisers has any employees, and PRCM Advisers does not have separate facilities. As a result, PRCM Advisers has entered into a shared facilities and services agreement with Pine River pursuant to which PRCM Advisers is provided with the personnel, services and resources necessary for PRCM Advisers to perform its obligations and responsibilities under the management agreement in exchange for certain amounts payable by PRCM Advisers. Because we are not a party to the shared facilities and services agreement, we will not have any recourse to Pine River if it does not fulfill its obligations under the shared facilities and services agreement, or if Pine River and PRCM Advisers choose to amend or terminate the shared facilities and services agreement.

There are conflicts of interest in our relationship with Pine River and its affiliates, including PRCM Advisers, which could result in decisions that are not in the best interests of our stockholders.

We are subject to conflicts of interest arising out of our relationship with Pine River and its affiliates, including PRCM Advisers. PRCM Advisers is wholly owned by Pine River. Thomas Siering (a director, and our Chief Executive Officer and President) is a partner and owner of equity interests in Pine River. All of our other executive officers are employees of Pine River. The management agreement with PRCM Advisers was negotiated between related parties, and its terms, including fees payable to PRCM Advisers, may not be as favorable to us as if they had been negotiated with an unaffiliated third party. In addition, we may choose not to enforce, or to enforce less vigorously, our rights under the management agreement because of our desire to maintain our ongoing relationship with PRCM Advisers.

The management agreement with PRCM Advisers does not prevent PRCM Advisers and its affiliates from engaging in additional management or investment opportunities. Pine River and its affiliates, including PRCM Advisers, may engage in additional management or investment opportunities that have overlapping objectives with us, and thus face conflicts in the allocation of resources between us, any other funds they manage and for their own accounts. For example, Pine River serves as the external manager for Granite Point Mortgage Trust Inc. (NYSE: GPMT) ("Granite Point"). In 2017, we contributed our commercial real estate business to Granite Point and subsequently distributed to our common stockholders the shares of Granite Point common stock that we received in connection with that contribution. Thomas Siering serves as a director of Granite Point, and a number of Pine River non-investment personnel who provide services to Two Harbors have also continued to provide support to Granite Point's operations.

The ability of PRCM Advisers, Pine River and the officers and employees providing services to Two Harbors under the management agreement to engage in other business activities reduces the time PRCM Advisers spends managing Two Harbors. While there are a number of employees of Pine River who allocate 100% of their time to Two Harbors, certain employees who provide services to Two Harbors allocate some, or a material portion, of their time to other businesses and activities of Pine River. Under the management agreement, none of these individuals is required to devote a specific amount of time to Two Harbors' affairs. Accordingly, we compete with Pine River, its existing funds, investment vehicles and other ventures, including Granite Point, for the time and attention of these officers and other personnel.

We may enter into additional transactions with Pine River, its affiliates or the investment vehicles that it manages. In particular, we may purchase assets from Pine River or its affiliates or make co-purchases alongside Pine River or its affiliates. These transactions may not be the result of arm's length negotiations and may involve conflicts between our interests and the interests of Pine River and/or its affiliates. There can be no assurance that any procedural protections will be sufficient to assure that these transactions will be made on terms that will be at least as favorable to us as those that would have been obtained in an arm's length transaction.

We compete with current and future investment entities affiliated with Pine River for access to certain of the benefits that our relationship with Pine River provides to us, including access to investment opportunities.

There may be conflicts of interest in allocating investment opportunities among Two Harbors and other funds, investment vehicles and ventures managed by Pine River, including Granite Point. There may be overlap in the assets and investment strategies of Two Harbors and Pine River's private funds, and additional areas of overlap may develop in the future. Although PRCM Advisers and Pine River have a dedicated team of trading and investment personnel to serve Two Harbors full-time, in some cases certain non-investment personnel may provide services to both entities as well as Granite Point. Additionally, there are other members of the Pine River investment team that are dedicated full-time to other Pine River strategies and clients and, therefore, do not devote any of their time to Two Harbors and its trading activities. Pine River and its affiliates may in the future form additional funds or sponsor additional investment vehicles and ventures that have overlapping objectives with Two Harbors and therefore may compete with us for investment opportunities and Pine River resources. Pine River has an allocation policy that addresses the manner in which investment opportunities are allocated among the various entities and strategies for which they provide investment management services. However, we cannot assure you that Pine River and PRCM Advisers will always allocate investment opportunities in a manner that is advantageous for us; indeed, we may expect that the allocation of investment opportunities will at times result in our receiving only a portion of, or none of, certain investment opportunities.

The loss of our access to Pine River's investment professionals and principals may adversely affect our ability to achieve our investment objectives and to execute our business plan.

We depend on PRCM Advisers' access, through a shared facilities and services agreement, to the investment professionals and principals of Pine River and the information opportunities generated by Pine River's investment professionals and principals. These investment professionals and principals evaluate, negotiate, structure, close and monitor our investments and our financing activities and we depend on their continued service. The loss of access to these investment professionals or principals, whether through their departure from Pine River or the termination of our management agreement, could have a material adverse effect on our ability to achieve our investment objectives and to execute our business plan. In addition, the individual agreements these investment professionals and principals have with Pine River contain non-solicitation, confidentiality and, with respect to our Chief Executive Officer, non-competition provisions that may prohibit or otherwise restrict their ability to support Two Harbors in the event of a termination of our management agreement. We cannot assure you that PRCM Advisers will remain as Two Harbors' manager, that Pine River will continue to be able to support our business and operations consistent with historical practice or that we will continue to have access to Pine River's investment professionals or principals.

Our board of directors has approved very broad investment guidelines for Two Harbors and will not review or approve each investment decision made by PRCM Advisers.

Our board of directors periodically reviews and updates our investment guidelines and also reviews our investment portfolio but does not review or approve specific investments. PRCM Advisers has great latitude within the broad parameters of the investment guidelines set by our board of directors in determining our investments and investment strategies, which could result in investment returns that are substantially below expectations or that result in material losses.

The manner of determining the management fee may not provide sufficient incentive to PRCM Advisers to maximize risk-adjusted returns on our investment portfolio because it is based on our stockholders' equity and not on our financial performance.

PRCM Advisers is entitled to receive a management fee that is based on our stockholders' equity at the end of each quarter, regardless of our financial performance. Accordingly, significant management fees will be payable to PRCM Advisers even if we have a net loss during a quarter. PRCM Advisers' right to such compensation may not provide sufficient incentive to PRCM Advisers to devote sufficient time and effort to maximize risk-adjusted returns on our investment portfolio, which could, in turn, adversely affect our financial results. Further, the management fee structure gives PRCM Advisers the incentive to maximize stockholders' equity by the issuance of new common or preferred stock or the retention of existing equity, regardless of the effect of these actions on existing stockholders. In other words, the management fee structure rewards PRCM Advisers primarily based on the size of Two Harbors, and not on our returns to stockholders.

Termination of the management agreement may be difficult and costly, which may adversely affect our inclination to end our relationship with PRCM Advisers.

Termination of the management agreement with PRCM Advisers may be difficult and costly. We have the right to terminate for cause; however, the term "cause" is limited to certain specifically described circumstances. In the absence of cause, we may elect not to renew the management agreement upon the vote of at least two-thirds of all of our independent directors or by a vote of the holders of a majority of the outstanding shares of our common stock, and only for the reasons set forth in the management contract. Additionally, in the event we elect not to renew the management agreement (or upon a termination by PRCM Advisers due to our material breach), the management agreement requires us to pay PRCM Advisers a termination payment equal to three times the sum of the average annual base management fee received by PRCM Advisers during the 24-month period before such termination, calculated as of the end of the most recently completed fiscal quarter. Further, in the event of a termination of the management agreement whether for cause or our election not to renew, it may be difficult or costly to replace certain intellectual property, systems, facilities or other services that have been historically provided by or contracted through Pine River that are necessary or desirable to execute our business plan.

The liability of PRCM Advisers and Pine River is limited under the management agreement, and we have agreed to indemnify PRCM Advisers and its affiliates and advisers, including Pine River, against certain liabilities. As a result, we could experience poor performance or losses for which PRCM Advisers and Pine River would not be liable.

Pursuant to the management agreement, PRCM Advisers does not assume any responsibility other than to render the services called for thereunder and will not be responsible for any action of our board of directors in following or declining to follow its advice or recommendations. PRCM Advisers and its officers, stockholders, members, managers, personnel and directors, any person controlling or controlled by PRCM Advisers and any person providing sub-advisory services to PRCM Advisers will not be liable to Two Harbors, any of our subsidiaries, any of our directors, stockholders or partners or any subsidiary's stockholders, members or partners for acts or omissions performed in accordance with or pursuant to the management agreement, except by reason of acts constituting reckless disregard of PRCM Advisers' duties under the management agreement which has a material adverse effect on Two Harbors, willful misconduct or gross negligence, as determined by a final non-appealable order of a court of competent jurisdiction. We have agreed to indemnify PRCM Advisers and its affiliates and sub-advisers, including Pine River, with respect to all expenses, losses, damages, liabilities, demands, charges and claims arising from willful misconduct, gross negligence or acts or omissions of such indemnified parties not constituting reckless disregard of PRCM Advisers' duties under the management agreement which has a material adverse effect on Two Harbors. As a result, if we experience poor performance or losses, PRCM Advisers would not be liable.

Risks Related to Our Organization and Structure

Certain provisions of Maryland law could inhibit changes in control.

Certain provisions of the Maryland General Corporation Law, or MGCL, may have the effect of deterring a third party from making a proposal to acquire us or of impeding a change in control under circumstances that otherwise could provide the holders of shares of our common stock with the opportunity to realize a premium over the then-prevailing market price of such shares.

We are subject to the "business combination" provisions of the MGCL that, subject to limitations, prohibit certain business combinations (including a merger, consolidation, share exchange, or, in circumstances specified in the statute, an asset transfer or issuance or reclassification of equity securities) between our company and an "interested stockholder" (defined generally as any person who beneficially owns 10% or more of our then outstanding voting stock or an affiliate or associate of our company who, at any time within the two-year period immediately prior to the date in question, was the beneficial owner of 10% or more of the voting power of our then outstanding stock) or an affiliate thereof for five years after the most recent date on which the stockholder becomes an interested stockholder. After the five-year prohibition, any business combination between our company and an interested stockholder generally must be recommended by our board of directors and approved by the affirmative vote of at least (1) 80% of the votes entitled to be cast by holders of outstanding shares of our voting stock; and (2) two-thirds of the votes entitled to be cast by holders of voting stock of the corporation other than shares held by the interested stockholder with whom or with whose affiliate the business combination is to be effected or held by an affiliate or associate of the interested stockholder. These super-majority vote requirements do not apply if our common stockholders receive a minimum price, as defined under Maryland law, for their shares in the form of cash or other consideration in the same form as previously paid by the interested stockholder for its shares. These provisions of the MGCL do not apply to business combinations that are approved or exempted by a board of directors prior to the time that the interested stockholder becomes an interested stockholder. Pursuant to the statute, our board of directors has by resolution exempted business combinations (1) between our company and any person, provided that such business combination is first approved by our board of directors (including a majority of our directors who are not affiliates or associates of such person) and (2) between our company and Pine River or its affiliates. Consequently, the five-year prohibition and the super-majority vote requirements will not apply to any business combination between our company and any person if such combination is approved in accordance with the foregoing procedures. As a result, any person, including Pine River, may be able to enter into business combinations with Two Harbors that may not be in the best interests of our stockholders, without compliance with the super-majority vote requirements and the other provisions of the statute.

The “control share” provisions of the MGCL provide that “control shares” of a Maryland corporation (defined as voting shares of stock which, if aggregated with all other shares of stock owned by the acquirer or in respect of which the acquirer is able to exercise or direct the exercise of voting power (except solely by virtue of a revocable proxy), would entitle the acquirer to exercise one of three increasing ranges of voting power in electing directors) acquired in a “control share acquisition” (defined as the direct or indirect acquisition of ownership or control of “control shares”) have no voting rights except to the extent approved by our stockholders by the affirmative vote of at least two-thirds of all the votes entitled to be cast on the matter, excluding votes entitled to be cast by the acquirer of control shares, our officers and employees who are also our directors. Our bylaws contain a provision exempting from the control share acquisition statute any and all acquisitions by any person of shares of our stock. There can be no assurance that this provision will not be amended or eliminated at any time in the future.

The “unsolicited takeover” provisions of the MGCL (Title 3, Subtitle 8 of the MGCL) permit our board of directors, without stockholder approval and regardless of what is currently provided in our charter or bylaws, to implement takeover defenses, some of which (for example, a classified board) we do not currently have. These provisions may have the effect of inhibiting a third party from making an acquisition proposal for our company or of delaying, deferring or preventing a change in control of our company under circumstances that otherwise could provide the holders of shares of our common stock with the opportunity to realize a premium over the then current market price. Our charter contains a provision whereby our company has elected to be subject to the provisions of Title 3, Subtitle 8 of the MGCL relating to the filling of vacancies on its board of directors.

Our authorized but unissued shares of common and preferred stock and the ownership limitations contained in our charter may prevent a change in control.

Our charter authorizes Two Harbors to issue additional authorized but unissued shares of common or preferred stock. In addition, our board of directors may, with the approval of a majority of the entire board and without stockholder approval, amend our charter to increase or decrease the aggregate number of shares of our stock or the number of shares of stock of any class or series that Two Harbors has the authority to issue and classify or reclassify any unissued shares of common or preferred stock and set the terms of the classified or reclassified shares. As a result, our board may establish a series of shares of common or preferred stock that could delay or prevent a transaction or a change in control that might involve a premium price for shares of our common stock or otherwise be in the best interests of stockholders.

In addition, our charter contains restrictions limiting the ownership and transfer of shares of our common stock and other outstanding shares of capital stock. The relevant sections of our charter provide that, subject to certain exceptions, ownership of shares of our common stock by any person is limited to 9.8% by value or by number of shares, whichever is more restrictive, of our outstanding shares of common stock (the common share ownership limit), and no more than 9.8% by value or number of shares, whichever is more restrictive, of our outstanding capital stock (the aggregate share ownership limit). The common share ownership limit and the aggregate share ownership limit are collectively referred to herein as the “ownership limits.” These charter provisions will restrict the ability of persons to purchase shares in excess of the relevant ownership limits.

Our charter contains provisions that make removal of our directors difficult, which could make it difficult for stockholders to effect changes in management.

Our charter provides that, subject to the rights of any series of preferred stock, a director may be removed only by the affirmative vote of at least two-thirds of all the votes entitled to be cast generally in the election of directors. Our charter and bylaws provide that vacancies generally may be filled only by a majority of the remaining directors in office, even if less than a quorum. These requirements make it more difficult to change management by removing and replacing directors and may prevent a change in control that is in the best interests of stockholders.

Our rights and stockholders’ rights to take action against directors and officers are limited, which could limit recourse in the event of actions not in the best interests of stockholders.

As permitted by Maryland law, our charter eliminates the liability of its directors and officers to Two Harbors and its stockholders for money damages, except for liability resulting from:

- actual receipt of an improper benefit or profit in money, property or services; or
- a final judgment based upon a finding of active and deliberate dishonesty by the director or officer that was material to the cause of action adjudicated.

In addition, pursuant to our charter we have agreed contractually to indemnify our present and former directors and officers for actions taken by them in those capacities to the maximum extent permitted by Maryland law. Further, our bylaws require us to indemnify each present or former director or officer, to the maximum extent permitted by Maryland law, who is made, or threatened to be made, a party to any proceeding because of his or her service to Two Harbors. As part of these indemnification obligations, we may be obligated to fund the defense costs incurred by our directors and officers.

Our amended and restated bylaws designate certain Maryland courts as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Circuit Court for Baltimore City, Maryland, or, if that Court does not have jurisdiction, the United States District Court for the District of Maryland, Baltimore Division, shall be the sole and exclusive forum for the following: any derivative action or proceeding brought on behalf of the corporation; any action asserting a claim of breach of any duty owed by any of our directors, officers or other employees to the corporation or to our stockholders; any action asserting a claim against the corporation or any of our directors, officers or other employees arising pursuant to any provision of the MGCL or our charter or bylaws; or any action asserting a claim against the corporation or any of our directors, officers or other employees that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that the stockholder believes is favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

Risks Related to Our Securities

Future issuances and sales of shares of our common stock may depress the market price of our common stock or have adverse consequences for our stockholders.

We have 450,000,000 authorized shares of common stock and we may increase our authorized common stock without stockholder approval. As of December 31, 2019, 272,935,731 shares of common stock were issued and outstanding. In May 2015, our stockholders approved our Second Restated 2009 Equity Incentive Plan, or the Plan, which provides for grants of restricted common stock and other equity-based awards, subject to a ceiling of 6,500,000 shares available for issuance under the Plan. As of December 31, 2019, an aggregate of 1,713,651 shares of common stock remained available for issuance to our independent directors and Pine River employees pursuant to the Plan. Additionally, shares of our common stock have also been reserved for issuance in connection with the conversion of our 6.25% convertible senior notes due January 2022 and our Series A, Series B, Series C, Series D and Series E preferred stock.

We cannot predict the effect, if any, of future issuances or sales of our common stock on the market price of our common stock. We also cannot predict the amounts and timing of restricted stock awards to be issued pursuant to the Plan, nor can we predict the amount and timing of any conversions of our 6.25% convertible senior notes due January 2022 or our Series A, Series B Series C, Series D and Series E preferred stock into shares of our common stock. Any stock awards or conversions resulting in the issuance of substantial amounts of common stock, or the perception that such awards or conversions could occur, may adversely affect the market price for our common stock.

Also, we may issue additional shares in subsequent public offerings or private placements to raise capital, acquire new assets or for other purposes. We are not required to offer any such shares to existing stockholders on a preemptive basis. Therefore, it may not be possible for existing stockholders to participate in such future share issuances, which may dilute the existing stockholders' interests.

Any future offerings of our securities could dilute our existing stockholders and may rank senior for purposes of dividend and liquidating distributions.

In order to grow our business, we may rely on additional issuances of securities which may rank senior and/or be dilutive to our stockholders. For example, our senior unsecured notes due January 2022 are convertible into shares of our common stock at the election of the noteholder, and our Series A, Series B Series C, Series D and Series E preferred shares may be converted into shares of our common stock following the occurrence of certain events, as set forth in the Articles Supplementary for each series. Any election by noteholders or preferred stockholders to convert their notes or preferred shares into shares of our common stock will dilute the interests of other common stockholders. In addition, upon liquidation, holders of our debt securities would receive a distribution of our available assets before holders of our shares.

In the future, we may again elect to raise capital through the issuance of convertible or non-convertible debt or common or preferred equity securities. Upon liquidation, holders of our debt securities and preferred stock, if any, and lenders with respect to other borrowings will be entitled to our available assets prior to the holders of our common stock. Convertible debt and convertible preferred stock may have anti-dilution provisions which are unfavorable to our common stockholders. Additional equity offerings may dilute the holdings of our existing stockholders or reduce the market price of our common stock, or both. Any preferred stock could have a preference on liquidating distributions or a preference on dividend payments that could limit our ability to pay dividends to our stockholders or favorable conversion rights. Sales of substantial amounts of our common stock or the sale of securities which have rights and preferences that are superior to our common stock, or the perception that these sales could occur, may have a material adverse effect on the price of our common stock. Because our decision to issue debt or equity securities in any future offering will depend on market conditions and other factors beyond our control, we cannot predict or estimate the amount, timing or nature of our future offerings. Thus, our stockholders bear the risk of our future offerings reducing the market price of our common stock and diluting the value of their holdings.

We have not established a minimum distribution payment level and we cannot assure you of our ability to pay distributions in the future.

We intend to continue to pay quarterly distributions and to make distributions to our stockholders in an amount such that we distribute all or substantially all of our REIT taxable income in each year, subject to certain adjustments. We have not established a minimum distribution payment level and our ability to pay distributions may be adversely affected by a number of factors, including the risk factors described herein. All distributions will be made, subject to Maryland law, at the discretion of our board of directors and will depend on our earnings, our financial condition, any debt covenants, maintenance of our REIT qualification and other factors as our board of directors may deem relevant from time to time. We cannot assure you that we will achieve results that will allow us to make a specified level of cash distributions and distributions in future periods may be significantly lower than in prior quarterly periods.

The market price of our common stock could fluctuate and could cause you to lose a significant part of your investment.

The market price of our common stock may be highly volatile and subject to wide fluctuations. In addition, the trading volume in our common stock may fluctuate and cause significant price variations to occur. The stock market has experienced and may in the future experience extreme price and volume fluctuations that have affected the market price of many companies in industries similar or related to ours and that have been unrelated to these companies' operating performances. If the market price of our common stock declines significantly, you may be unable to resell your shares of our common stock at a gain. Further, fluctuations in the trading price of our common stock may adversely affect the liquidity of the trading market for our common stock and, in the event that we seek to raise capital through future equity financings, our ability to raise such equity capital. We cannot assure you that the market price of our common stock will not fluctuate or decline significantly in the future.

The market price of our common stock may be influenced by many factors, some of which are beyond our control, including those described above and the following:

- changes in financial estimates by analysts;
- fluctuations in our results of operations or financial condition or the results of operations or financial condition of companies perceived to be similar to us;
- general economic and financial and real estate market conditions;
- changes in market valuations of similar companies;
- monetary policy and regulatory developments in the U.S.; and
- additions or departures of key personnel at Pine River.

Resulting fluctuations in the market price of our common stock could cause you to lose a significant part of your investment.

Tax Risks

Our failure to qualify as a REIT would subject us to U.S. federal income tax and potentially increased state and local taxes, which would reduce the amount of our income available for distribution to our stockholders.

We operate in a manner that will enable us to qualify as a REIT and have elected to be taxed as a REIT for U.S. federal income tax purposes commencing with our taxable year ended December 31, 2009. We have not requested and do not intend to request a ruling from the Internal Revenue Service, or IRS, that we qualify as a REIT. The U.S. federal income tax laws governing REITs and the assets they hold are complex, and judicial and administrative interpretations of the U.S. federal income tax laws governing REIT qualification are limited. To continue to qualify as a REIT, we must meet, on an ongoing basis, various tests regarding the nature of our assets and income, the ownership of our outstanding shares, and the amount of our distributions. Moreover, new legislation, court decisions, administrative guidance or actions by federal agencies or others to modify or re-characterize our assets, as a whole or in part, as other than real estate assets, in each case possibly with retroactive effect, may make it more difficult or impossible for us to qualify as a REIT. Thus, while we intend to operate so that we qualify as a REIT, given the highly complex nature of the rules governing REITs, the ongoing importance of factual determinations, and the possibility of future changes in our circumstances, no assurance can be given that we will so qualify for any particular year. These considerations also might restrict the types of assets that we can acquire in the future.

If we fail to qualify as a REIT in any taxable year, and do not qualify for certain statutory relief provisions, we would be required to pay U.S. federal income tax on our taxable income, and distributions to our stockholders would not be deductible by us in determining our taxable income. In such a case, we might need to borrow money or sell assets in order to pay taxes. Our payment of income tax would decrease the amount of income available for distribution to stockholders. Furthermore, if we fail to maintain our qualification as a REIT, we no longer would be required to distribute substantially all of our net taxable income to stockholders. In addition, unless we were eligible for certain statutory relief provisions, we could not re-elect to be taxed as a REIT until the fifth calendar year following the year in which we failed to qualify.

Complying with REIT requirements may cause us to forego otherwise attractive investment opportunities or financing or hedging strategies.

In order to qualify as a REIT for U.S. federal income tax purposes, we must continually satisfy various tests on an annual and quarterly basis regarding the sources of our income, the nature and diversification of our assets, the amounts we distribute to stockholders and the ownership of our stock. To meet these tests, we may be required to forego investments we might otherwise make. We may be required to make distributions to stockholders at disadvantageous times or when we do not have funds readily available for distribution, and may be unable to pursue investments that would be otherwise advantageous to us in order to satisfy the source of income or asset diversification requirements for qualifying as a REIT. Thus, compliance with the REIT requirements may hinder our investment performance.

Complying with REIT requirements may force us to liquidate otherwise profitable assets.

In order to continue to qualify as a REIT, we must ensure that at the end of each calendar quarter, at least 75% of the value of our assets consists of cash, cash items, government securities and designated real estate assets, including certain mortgage loans and shares in other REITs. Subject to certain exceptions, our ownership of securities, other than government securities and securities that constitute real estate assets, generally cannot include more than 10% of the outstanding voting securities of any one issuer or more than 10% of the total value of the outstanding securities of any one issuer. In addition, in general, no more than 5% of the value of our total assets, other than government securities and securities that constitute real estate assets, can consist of the securities of any one issuer, no more than 20% of the value of our total assets can be represented by securities of one or more TRSs, and no more than 25% of the value of our total assets can consist of debt of “publicly offered” REITs (i.e., REITs that are required to file annual and periodic reports with the SEC under the Exchange Act) that is not secured by real property or interests in real property. If we fail to comply with these requirements at the end of any calendar quarter, we must generally correct such failure within 30 days after the end of such calendar quarter to avoid losing our REIT qualification. As a result, we may be required to liquidate otherwise profitable assets prematurely, which could reduce our return on assets, which could adversely affect our results of operations and financial condition.

Potential characterization of distributions or gain on sale may be treated as unrelated business taxable income to tax exempt investors.

If (i) all or a portion of our assets are subject to the rules relating to taxable mortgage pools, (ii) we are a “pension held REIT,” (iii) a tax exempt stockholder has incurred debt to purchase or hold our common stock, or (iv) we purchase residual REMIC interests that generate “excess inclusion income,” then a portion of the distributions to and, in the case of a stockholder described in clause (iii), gains realized on the sale of common stock by such tax exempt stockholder may be subject to U.S. federal income tax as unrelated business taxable income under the Code.

Complying with REIT requirements may limit our ability to hedge effectively.

The REIT provisions of the Code may limit our ability to hedge our assets and liabilities. Any income from a hedging transaction will not constitute gross income for purposes of the 75% or 95% gross income test if we properly identify the transaction as specified in applicable Treasury Regulations and we enter into such transaction (i) in the normal course of our business primarily to manage risk of interest rate or price changes or currency fluctuations with respect to borrowings made or to be made, or ordinary obligations incurred or to be incurred, to acquire or carry real estate assets or (ii) primarily to manage risk of currency fluctuations with respect to any item of income or gain that would be qualifying income under the 75% or 95% gross income tests. In addition, income from certain new hedging transactions that counteract prior qualifying hedging transactions described in (i) and (ii) above may not constitute gross income for purposes of the 75% and 95% gross income tests if we properly identify the new hedging transaction as specified in applicable Treasury Regulations. To the extent that we enter into other types of hedging transactions, the income from those transactions is likely to be treated as non-qualifying income for purposes of both of these gross income tests. As a result of these rules, we intend to limit our use of advantageous hedging techniques or implement those hedges through a TRS. This could increase the cost of our hedging activities because our TRSs would be subject to tax on gains or expose us to greater risks associated with changes in interest rates than we would otherwise want to bear. In addition, losses in our TRSs, generally, will not provide any tax benefit, except for being carried forward against future taxable income in the TRSs.

The failure of our Agency RMBS and non-Agency securities that are subject to a repurchase agreement to qualify as real estate assets would adversely affect our ability to qualify as a REIT.

We may enter into repurchase agreements under which we will nominally sell certain of our Agency RMBS or non-Agency securities to a counterparty and simultaneously enter into an agreement to repurchase the sold assets. We believe that we will be treated for U.S. federal income tax purposes as the owner of the securities that are the subject of any such agreement notwithstanding that such agreement may transfer record ownership of the assets to the counterparty during the term of the agreement. It is possible, however, that the IRS could assert that we did not own the securities during the term of the repurchase agreement, in which case we could fail to qualify as a REIT.

REIT distribution requirements could adversely affect our ability to execute our business plan and may require us to incur debt, sell assets or take other actions to make such distributions.

In order to continue to qualify as a REIT, we must distribute to stockholders, each calendar year, at least 90% of our REIT taxable income (including certain items of non-cash income), determined without regard to the deduction for dividends paid and excluding net capital gain. To the extent that we satisfy the 90% distribution requirement, but distribute less than 100% of our taxable income, we will be subject to U.S. federal corporate income tax on our undistributed income. In addition, we will incur a 4% nondeductible excise tax on the amount, if any, by which our distributions in any calendar year are less than a minimum amount specified under U.S. federal income tax law.

We intend to distribute our net income to stockholders in a manner intended to satisfy the 90% distribution requirement and to avoid both corporate income tax and the 4% nondeductible excise tax. Our taxable income may substantially exceed our net income as determined by U.S. GAAP or differences in timing between the recognition of taxable income and the actual receipt of cash may occur in which case we may have taxable income in excess of cash flow from our operating activities. In such event, we may generate less cash flow than taxable income in a particular year and find it difficult or impossible to meet the REIT distribution requirements in certain circumstances. In such circumstances, in order to satisfy the distribution requirement and to avoid U.S. federal corporate income tax and the 4% nondeductible excise tax in that year, we may be required to: (i) sell assets in adverse market conditions, (ii) borrow on unfavorable terms, (iii) distribute amounts that would otherwise be invested in future acquisitions, capital expenditures or repayment of debt or (iv) make a taxable distribution of our shares as part of a distribution in which stockholders may elect to receive shares or (subject to a limit measured as a percentage of the total distribution) cash, in order to comply with the REIT distribution requirements. Thus, compliance with the REIT distribution requirements may require us to take actions that may not otherwise be advisable given existing market conditions and hinder our ability to grow, which could adversely affect the value of our common stock.

Even though we have elected to be taxed as a REIT, we may be required to pay certain taxes.

Even though we have elected to be taxed as a REIT, we may be subject to certain U.S. federal, state and local taxes on our income and assets, including taxes on any undistributed income, prohibited transactions, tax on income from some activities conducted as a result of a foreclosure, and state or local income, franchise, property and transfer taxes, including mortgage recording taxes. In addition, we will hold some of our assets through wholly owned TRSs. Our TRSs and any other taxable corporations in which we own an interest will be subject to U.S. federal, state and local corporate taxes. Payment of these taxes generally would reduce our cash flow and the amount available to distribute to stockholders.

Our qualification as a REIT may depend on the accuracy of legal opinions or advice rendered or given or statements by the issuers of assets we acquire, including with respect to the treatment of our TBA securities and transactions for tax purposes and the inaccuracy of any such opinions, advice or statements may adversely affect our REIT qualification and result in significant corporate-level tax..

When purchasing securities, we may rely on opinions or advice of counsel for the issuer of such securities, or statements made in related offering documents, for purposes of determining, among other things, whether such securities represent debt or equity securities for U.S. federal income tax purposes, the value of such securities, and also to what extent those securities constitute qualified real estate assets for purposes of the REIT asset tests and produce qualified income for purposes of the 75% gross income test. In addition, we may from time to time obtain and rely upon opinions of counsel regarding the qualification of certain assets and income as real estate assets. The inaccuracy of any such opinions, advice or statements may adversely affect our ability to qualify as a REIT and result in significant corporate-level tax.

We may utilize TBAs as a means of investing and financing Agency RMBS. There is no direct authority with respect to the qualification of TBAs as real estate assets or U.S. government securities for purposes of the 75% asset test or the qualification of income or gains from dispositions of TBAs as gains from the sale of real property (including interests in real property and interests in mortgages on real property) or other qualifying income for purposes of the 75% gross income test. 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 TBAs should be treated as ownership of the underlying Agency RMBSs, 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. Such opinions of counsel are not binding on the IRS, and there can be no assurance that the IRS will not successfully challenge the conclusions set forth therein. In addition, the opinion of Sidley Austin LLP is based on various assumptions relating to our TBAs and is conditioned upon fact-based representations and covenants made by our management regarding our TBAs. If the IRS were to successfully challenge the opinion of Sidley Austin LLP, we could be subject to a penalty tax or we could fail to remain qualified as a REIT if a sufficient portion of our assets consists of TBAs or a sufficient portion of our income consists of income or gains from the disposition of TBAs.

Our ownership of, and relationship with, our TRSs will be restricted and a failure to comply with the restrictions would jeopardize our REIT status and may result in the application of a 100% excise tax.

A REIT may own up to 100% of the stock of one or more TRSs. A TRS may earn income that would not be qualifying REIT income if earned directly by the parent REIT. Both the TRS and the REIT must jointly elect to treat the subsidiary as a TRS. A corporation of which a TRS directly or indirectly owns more than 35% of the voting power or value of the stock will automatically be treated as a TRS. Overall, no more than 20% of the value of a REIT’s total assets may consist of stock or securities of one or more TRSs. The value of our interests in and thus the amount of assets held in a TRS may also be restricted by our need to qualify for an exclusion from regulation as an investment company under the Investment Company Act.

Any domestic TRS we own or may form will pay U.S. federal, state and local income tax at regular corporate rates on any income that it earns. In addition, the TRS rules limit the deductibility of interest paid or accrued by a TRS to its parent REIT to assure that the TRS is subject to an appropriate level of corporate taxation. The rules also impose a 100% excise tax on certain transactions between a TRS and its parent REIT that are not conducted on an arm’s-length basis.

We expect that the aggregate value of all TRS stock and securities owned by us should be less than 20% of the value of our total assets. Although we monitor our investments in and transactions with TRSs, there can be no assurance that we will be able to comply with the limitation on the value of our TRSs discussed above or to avoid application of the 100% excise tax discussed above.

We may be required to report taxable income with respect to certain of our investments in excess of the economic income we ultimately realize from them.

We may acquire interests in debt instruments in the secondary market for less than their face amount. The discount at which such interests in debt instruments are acquired may reflect doubts about their ultimate collectability rather than current market interest rates. The amount of such discount may nevertheless be treated as “market discount” for U.S. federal income tax purposes. Market discount on a debt instrument may accrue based on the assumption that all future payments on the debt instrument will be made. Accrued market discount is reported as income when, and to the extent that, any payment of principal of the debt instrument is made. In the case of residential mortgage loans, principal payments are ordinarily made monthly, and consequently, accrued market discount may have to be included in income each month as if the debt instrument were assured of ultimately being collected in full. If we collect less on a debt instrument than its purchase price plus the market discount we had previously reported as income, we may not be able to benefit from any offsetting loss deduction in a subsequent taxable year.

Similarly, some of the mortgage-backed securities that we purchase will likely have been issued with original issue discount, or OID. We may be required to report such OID based on a constant yield method and income would accrue over the period we own the underlying security. This may lead to an accrual of OID income in excess of the amount that is collected. An offsetting loss deduction will become available only in the later year in which uncollectability is provable or ultimate disposition; and may be subject to limitation.

Finally, in the event that any debt instruments or mortgage-backed securities acquired by us are delinquent as to mandatory principal and interest payments, or in the event a borrower with respect to a particular debt instrument acquired by us encounters financial difficulty rendering it unable to pay stated interest as due, we may nonetheless be required to continue to recognize the unpaid interest as taxable income as it accrues, despite doubt as to its ultimate collectability. Similarly, we may be required to accrue interest income with respect to subordinate mortgage-backed securities at their stated rate regardless of whether corresponding cash payments are received or are ultimately collectible. In each case, while we would in general ultimately have an offsetting loss deduction available to us when such interest was determined to be uncollectable; the utility of that deduction would depend on our having taxable income in that later year or thereafter subject to carryforward limitations.

Dividends payable by REITs generally do not qualify for the reduced tax rates on dividend income from regular corporations, which could adversely affect the value of our shares.

The maximum U.S. federal income tax rate for dividends payable to domestic stockholders that are individuals, trusts and estates is 20%. Dividends payable by REITs, however, are generally not eligible for these reduced rates. Although the reduced U.S. federal income tax rate applicable to dividend income from regular corporate dividends does not adversely affect the taxation of REITs or dividends paid by REITs, the more favorable rates applicable to regular corporate dividends could cause investors who are individuals, trusts and estates to perceive investments in REITs to be relatively less attractive than investments in the stocks of non-REIT corporations that pay dividends, which could adversely affect the value of the shares of REITs, including our shares of common stock.

The Tax Cuts and Jobs Act of 2017, or TCJA made many significant changes to the U.S. federal income tax laws applicable to businesses and their owners, including REITs and their stockholders. Pursuant to the TCJA, as of January 1, 2018, the highest marginal individual income tax rate is reduced to 37%. In addition, individuals, estates and trusts may deduct up to 20% of certain pass-through income, including ordinary REIT dividends that are not “capital gain dividends” or “qualified dividend income,” subject to complex limitations. For taxpayers qualifying for the full deduction, the effective maximum tax rate on ordinary REIT dividends would be 29.6% (through taxable years ending in 2025). The maximum rate of withholding with respect to our distributions to non-U.S. stockholders that are treated as attributable to gains from the sale or exchange of U.S. real property interests is also reduced from 35% to 21%. There can be no assurance as to how these or any other tax rate changes in the future will impact the attractiveness of an investment in our shares or the value of our securities.

We may be subject to adverse legislative or regulatory tax changes that could reduce the market price of our shares.

At any time, the U.S. federal income tax laws or regulations governing REITs or the administrative interpretations of those laws or regulations may be changed. We cannot predict if or when any new U.S. federal income tax law, regulation or administrative interpretation, or any amendment to any existing U.S. federal income tax law, regulation or administrative interpretation, will be adopted, promulgated or become effective or whether any such law, regulation or interpretation may take effect retroactively. We and our stockholders could be adversely affected by any such change in, or any new, U.S. federal income tax law, regulation or administrative interpretation.

The TCJA made many significant changes to the U.S. federal income tax laws applicable to businesses, including REITs, and may lessen the relative competitive advantage of operating as a REIT rather than as a C corporation. Pursuant to the TCJA, as of January 1, 2018, the federal income tax rate applicable to corporations was reduced to 21% and the corporate alternative minimum tax was repealed. In addition, the deduction of net interest expense is limited for all businesses; provided that certain businesses, including real estate businesses, may elect not to be subject to such limitations and instead to depreciate their real property related assets over longer depreciable lives. This limitation could adversely affect our TRSs.

Additional changes to the tax laws are likely to continue to occur, and we cannot assure you that any such changes will not adversely affect the taxation of us or our stockholders. Any such changes could have an adverse effect on an investment in our shares or on the market value or the resale potential of our assets. You are urged to consult with your tax advisor with respect to the impact of any legislative, regulatory or administrative developments or proposals and their potential effect on an investment in our shares.

REIT limitations may affect our ability to dispose of real properties we may acquire in the course of our MSR business, or in meeting our obligations under prior securitization transactions.

The provisions of the Code relating to REITs may limit our ability to sell properties at a profit without incurring unfavorable tax consequences. Generally, sales of property within two years of acquisition, and sale of multiple properties within one year, may result in the gains from such sales being subject to 100% taxation. To the extent we own real property within the REIT, we may face significant restrictions in our ability to dispose of this property.

We could incur adverse tax consequences if CYS failed to qualify as a REIT for U.S. federal income tax purposes.

In connection with our acquisition of CYS, we assumed, based on public filings, that CYS has qualified as a REIT for U.S. federal income tax purposes prior to the completion of the merger pursuant to that certain Agreement and Plan of Merger, dated April 25, 2018, by and among us, Eiger Merger Subsidiary LLC, or Merger Sub, and CYS pursuant to which, on July 31, 2018, Merger Sub merged with and into CYS, with CYS continuing as the surviving corporation. This merger resulted in CYS becoming our indirect, wholly owned subsidiary. However, if CYS failed to qualify as a REIT, we generally would succeed to or incur significant tax liabilities (including the significant tax liability that would result from the deemed sale of assets by CYS pursuant to the merger), and we could possibly lose our REIT status should disqualifying activities continue after the acquisition.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease and/or sublease administrative office space in New York, Minnesota, Florida and Massachusetts. We do not own, lease or utilize any physical properties that would be considered material to our business and operations.

Item 3. 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 4. Mine Safety Disclosures

None.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Market Information

Our common stock is listed on the NYSE under the symbol “TWO”. As of February 24, 2020, 273,627,275 shares of common stock were issued and outstanding.

Holders

As of February 20, 2020, there were 621 registered holders and approximately 119,567 beneficial owners of our common stock.

Dividends

We have historically paid dividends on our common stock. All dividend distributions are authorized by our board of directors, in its discretion, and will depend on such items as our REIT taxable earnings, financial condition, maintenance of REIT status, and other factors that the board of directors may deem relevant from time to time. The holders of our common stock share proportionally on a per share basis in all declared dividends on our common stock. Dividends cannot be paid on our common stock unless we have paid full cumulative dividends on all classes of our preferred stock. We have paid full cumulative dividends on all classes of our preferred stock from the respective dates of issuance through December 31, 2019. We intend to continue to pay quarterly dividends on our common stock and to distribute to our common stockholders as dividends 100% of our REIT taxable income,on an annual basis.

We have not established a minimum dividend distribution level for our common stock. See Item 1A, “*Risk Factors*” and Item 7, “*Management’s Discussion and Analysis of Financial Conditions and Results of Operations*” of this Annual Report on Form 10-K for information regarding the sources of funds used for dividends and for a discussion of factors, if any, which may adversely affect our ability to pay dividends in 2020 and thereafter.

Our stock transfer agent and registrar is Equiniti Trust Company. Requests for information from Equiniti Trust Company can be sent to Equiniti Trust Company, P.O. Box 64856, St. Paul, MN 55164-0856 and their telephone number is 1-800-468-9716.

Securities Authorized for Issuance under Equity Compensation Plans

Our Second Restated 2009 Equity Incentive Plan was adopted by our board of directors and approved by our stockholders for the purpose of enabling us to provide equity compensation to attract and retain qualified directors, officers, advisers, consultants and other personnel, including affiliates and personnel of PRCM Advisers and its affiliates, and any joint venture affiliates of ours. The Plan is administered by the compensation committee of our board of directors and permits the granting of restricted shares of common stock, phantom shares, dividend equivalent rights and other equity-based awards. For a detailed description of the Plan, see Note 18 - *Equity Incentive Plan* of the consolidated financial statements included under Item 8 of this Annual Report on Form 10-K.

The following table presents certain information about the Plan as of December 31, 2019:

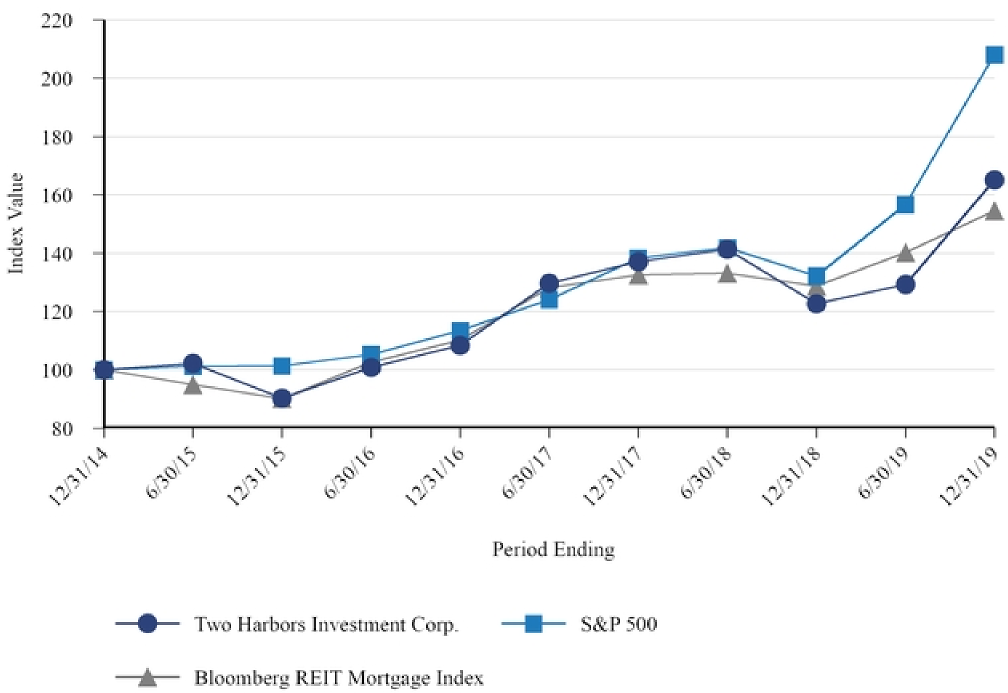
	December 31, 2019		
Plan Category	**Number of securities to be issued upon exercise of outstanding options, warrants and rights**	**Weighted-average exercise price of outstanding options, warrants and rights**	**Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column of this table)**
Equity compensation plans approved by stockholders [1]	—	$ —	1,713,651
Equity compensation plans not approved by stockholders	—	—	—
Total	—	$ —	1,713,651

(1) For a detailed description of the Plan, see Note 18 - *Equity Incentive Plan* of the consolidated financial statements included under Item 8 of this Annual Report on Form 10-K.

Performance Graph

The following graph compares the stockholder's cumulative total return, assuming $100 invested at December 31, 2014, with all reinvestment of dividends, as if such amounts had been invested in: (i) our common stock; (ii) the stocks included in the Standard and Poor's 500 Stock Index, or S&P 500; and (iii) the stocks included in the Bloomberg REIT Mortgage Index.

COMPARISON OF CUMULATIVE TOTAL RETURN
Among Two Harbors Investment Corp.,
S&P 500 and Bloomberg REIT Mortgage Index



	December 31,				
Index	**2019**	**2018**	**2017**	**2016**	**2015**
Two Harbors Investment Corp.	$ 165.05	$ 122.72	$ 137.09	$ 108.40	$ 90.23
S&P 500	$ 208.05	$ 132.19	$ 138.26	$ 113.49	$ 101.37
Bloomberg REIT Mortgage Index	$ 154.54	$ 128.65	$ 132.51	$ 110.18	$ 90.11

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Our board of directors has adopted a share repurchase program that allows for the repurchase of up to an aggregate of 37,500,000 shares of our 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 December 31, 2019, a total of 12,069,000 shares had been repurchased under the program for an aggregate cost of $200.4 million. We did not repurchase shares during the three months ended December 31, 2019.

Item 6. Selected Financial Data

Our selected financial data set forth below should be read in conjunction with our consolidated financial statements and the accompanying notes included under Item 8 of this Annual Report on Form 10-K. Certain amounts for prior periods have been reclassified to conform to the 2019 presentation. All per share amounts and common shares outstanding for all periods presented have been adjusted on a retroactive basis to reflect the one-for-two reverse stock split effected on November 1, 2017.

(in thousands)	For the Years Ended December 31,				
	2019	2018	2017	2016	2015
Interest income:					
Available-for-sale securities	$ 962,283	$ 847,325	$ 631,853	$ 414,050	$ 458,515
Residential mortgage loans held-for-investment in securitization trusts	—	—	102,886	133,993	95,740
Other	32,407	22,707	10,350	27,037	38,624
Total interest income	994,690	870,032	745,089	575,080	592,879
Interest expense:					
Repurchase agreements	654,280	469,437	210,430	88,850	72,653
Collateralized borrowings in securitization trusts	—	—	82,573	97,729	57,216
Federal Home Loan Bank advances	10,920	20,417	36,911	26,101	11,921
Revolving credit facilities	19,354	10,820	2,341	604	—
Term notes payable	10,708	—	—	—	—
Convertible senior notes	19,067	18,997	17,933	—	—
Total interest expense	714,329	519,671	350,188	213,284	141,790
Net interest income	280,361	350,361	394,901	361,796	451,089
Other-than-temporary impairment losses	(14,312)	(470)	(789)	(1,822)	(535)
Other income (loss):					
Gain (loss) on investment securities	280,118	(341,312)	(34,695)	(107,374)	363,379
Servicing income	501,612	343,096	209,065	143,579	127,398
Loss on servicing asset	(697,659)	(69,033)	(91,033)	(83,531)	(99,584)
(Loss) gain on interest rate swap, cap and swaption agreements	(108,289)	16,043	(9,753)	45,371	(210,621)
Gain (loss) on other derivative instruments	259,998	(54,857)	(70,159)	99,379	(5,049)
Other income (loss)	337	3,037	30,141	9,964	(7,686)
Total other income (loss)	236,117	(103,026)	33,566	107,388	167,837
Expenses:					
Management fees	60,102	30,272	40,472	39,261	49,116
Servicing expenses	74,607	61,136	35,289	32,119	28,028
Securitization deal costs	—	—	—	6,152	8,971
Other operating expenses	57,055	62,983	54,160	56,605	56,764
Acquisition transaction costs	—	86,703	—	—	—
Restructuring charges	—	8,238	—	2,990	—
Total expenses	191,764	249,332	129,921	137,127	142,879
Income (loss) from continuing operations before income taxes	310,402	(2,467)	297,757	330,235	475,512
(Benefit from) provision for income taxes	(13,560)	41,823	(10,482)	12,314	(16,560)
Net income (loss) from continuing operations	323,962	(44,290)	308,239	317,921	492,072
Income from discontinued operations, net of tax	—	—	44,146	35,357	138
Net income (loss)	323,962	(44,290)	352,385	353,278	492,210
Income from discontinued operations attributable to noncontrolling interest	—	—	3,814	—	—
Net income (loss) attributable to Two Harbors Investment Corp.	323,962	(44,290)	348,571	353,278	492,210
Dividends on preferred stock	75,801	65,395	25,122	—	—
Net income (loss) attributable to common stockholders	$ 248,161	$ (109,685)	$ 323,449	$ 353,278	$ 492,210

(in thousands, except share data)	For the Years Ended December 31, 2019	2018	2017	2016	2015
Basic earnings (loss) per weighted average share:					
Continuing operations	$ 0.93	$ (0.53)	$ 1.62	$ 1.83	$ 2.70
Discontinued operations	—	—	0.23	0.20	—
Net income (loss)	$ 0.93	$ (0.53)	$ 1.85	$ 2.03	$ 2.70
Diluted earnings (loss) per weighted average share:					
Continuing operations	$ 0.93	$ (0.53)	$ 1.60	$ 1.83	$ 2.70
Discontinued operations	—	—	0.21	0.20	—
Net income (loss)	$ 0.93	$ (0.53)	$ 1.81	$ 2.03	$ 2.70
Dividends declared per common share	$ 1.67	$ 1.88	$ 2.01	$ 1.86	$ 2.08
Weighted average number of shares of common stock:					
Basic	267,826,739	206,020,502	174,433,999	174,036,852	182,623,869
Diluted	267,826,739	206,020,502	188,133,341	174,036,852	182,623,869
Comprehensive income (loss):					
Net income (loss)	$ 323,962	$ (44,290)	$ 352,385	$ 353,278	$ 492,210
Other comprehensive income (loss), net of tax:					
Unrealized gain (loss) on available-for-sale securities, net	578,583	(233,914)	135,586	(159,834)	(496,728)
Other comprehensive income (loss)	578,583	(233,914)	135,586	(159,834)	(496,728)
Comprehensive income (loss)	902,545	(278,204)	487,971	193,444	(4,518)
Comprehensive income attributable to noncontrolling interest	—	—	3,814	—	—
Comprehensive income (loss) attributable to Two Harbors Investment Corp.	902,545	(278,204)	484,157	193,444	(4,518)
Dividends on preferred stock	75,801	65,395	25,122	—	—
Comprehensive income (loss) attributable to common stockholders	$ 826,744	$ (343,599)	$ 459,035	$ 193,444	$ (4,518)

(in thousands)	At December 31, 2019	2018	2017	2016	2015
Available-for-sale securities	$ 31,406,328	$ 25,552,604	$ 21,220,819	$ 13,116,171	$ 7,825,320
Mortgage servicing rights	$ 1,909,444	$ 1,993,440	$ 1,086,717	$ 693,815	$ 493,688
Total assets	$ 35,921,622	$ 30,132,479	$ 24,789,313	$ 20,112,056	$ 14,575,772
Repurchase agreements	$ 29,147,463	$ 23,133,476	$ 8,865,184	$ 8,865,184	$ 4,948,926
Federal Home Loan Bank advances	$ 210,000	$ 865,024	$ 1,215,024	$ 4,000,000	$ 3,785,000
Total stockholders' equity	$ 4,970,466	$ 4,254,489	$ 3,571,424	$ 3,401,112	$ 3,576,561

Item 7. 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 Annual Report on Form 10-K. This section of this Form 10-K generally discusses 2019 and 2018 items and year-to-year comparisons between 2019 and 2018. Discussions of 2017 items and year-to-year comparisons between 2018 and 2017 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal 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 primarily sensitive to changes in interest rates and prepayment speeds, specifically Agency RMBS and MSR. Our credit strategy includes assets that are primarily sensitive to changes in inherent credit risk, including non-Agency securities. Other assets include financial and mortgage-related assets other than the target assets in our rates and credit strategies, including certain non-hedging transactions that may produce non-qualifying income for purposes of the REIT gross income tests.

Within our MSR business, we purchase the right to control the servicing of residential mortgage loans and the obligation to service the loans in accordance with relevant standards from high-quality originators. We do not directly service the mortgage loans underlying the MSR we acquire; rather, we contract with appropriately licensed third-party subservicers to handle substantially all servicing functions in the name of the subservicer.

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 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 December 31, 2019 and the four immediately preceding quarter-ends:

	Capital Allocations(1) as of				
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019	December 31, 2018
Rates strategy	78%	79%	76%	77%	74%
Credit strategy	22%	21%	24%	23%	26%

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

As our capital allocation shifts, our annualized yields and cost of financing will also shift. At December 31, 2019, our capital allocation was 78% to our rates strategy and 22% to our credit strategy. Going forward, 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 December 31, 2019, our net yield realized on the portfolio was slightly higher than the prior quarter, but lower than recent periods due to purchases of lower coupon/sales of higher coupon Agency RMBS and higher prepays on Agency RMBS, offset by a decrease in our cost of financing due to decreases in LIBOR. The following table provides the average annualized yield on our assets, including Agency RMBS, non-Agency securities and MSR for the three months ended December 31, 2019, and the four immediately preceding quarters:

	Three Months Ended				
	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019	December 31, 2018
Average annualized portfolio yield (1)	3.54%	3.67%	3.93%	4.25%	4.14%
Cost of financing (2)	2.35%	2.51%	2.55%	2.47%	2.53%
Net portfolio yield	1.19%	1.16%	1.38%	1.78%	1.61%

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

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

Our Agency RMBS, given their liquidity and high credit quality, are eligible for higher levels of leverage, while non-Agency securities and MSR, with less liquidity and/or more exposure to credit risk and prepayment, utilize lower levels of leverage. As a result, our debt-to-equity ratio is determined by our portfolio mix as well as many additional factors, including the liquidity of our portfolio, the availability and price of our financing, the diversification of our counterparties and their available capacity to finance our assets, and anticipated regulatory developments. Over the past several quarters, we have generally maintained a debt-to-equity ratio range of 5.0 to 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 Item 7, "*Management's Discussion and Analysis of Financial Condition and Results of Operations - Financial Condition - Repurchase Agreements*" for further discussion.

We recognize that investing in our target assets is competitive and we compete with other entities for attractive investment opportunities. We rely on our management team and our dedicated team of investment professionals 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.

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 consolidated balance sheets and statements of comprehensive income (loss) are significantly affected by fluctuations in market prices. At December 31, 2019, approximately 93.3% of our total assets, or $33.5 billion, consisted of financial instruments recorded at fair value. See Note 10 - *Fair Value* to the consolidated financial statements, included in this Annual Report on Form 10-K, 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 certain Agency interest-only mortgage-backed securities, is recorded as a component of accumulated other comprehensive income and does not impact our earnings. Our reported earnings (loss) for U.S. GAAP purposes, or GAAP net income (loss), 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 vendors. 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 receive three vendor quotes for the MSR in our investment portfolio. For Agency RMBS, the third-party pricing vendors and brokers use pricing models that commonly incorporate such factors as coupons, primary and secondary mortgage rates, rate reset periods, issuer, prepayment speeds, credit enhancements and expected life of the security. For non-Agency securities, the third-party pricing vendors utilize both observable and unobservable inputs such as pool-specific characteristics (*e.g.*, loan age, loan size, credit quality of borrowers, vintage, servicer quality), floating rate indices, prepayment and default assumptions, and recent trading of the same or similar securities. For MSR, vendors use pricing models that generally incorporate observable inputs such as principal balance, note rate, geographical location, loan-to-value (LTV) ratios, FICO, appraised value and other loan characteristics, along with observed market yields and trading levels. Pricing vendors will customarily incorporate loan servicing cost, servicing fee, ancillary income, and earnings rate on escrow as observable inputs. Unobservable or model-driven inputs include forecast cumulative defaults, default curve, forecast loss severity and forecast voluntary prepayment.

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

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

Considerable judgment is used in forming conclusions and estimating inputs to our Level 3 fair value measurements. Level 3 inputs such as interest rate movements, prepayments speeds, credit losses and discount rates are inherently difficult to estimate. Changes to these inputs can have a significant effect on fair value measurements. Accordingly, there is no assurance that our estimates of fair value are indicative of the amounts that would be realized on the ultimate sale or exchange of these assets. The Company classified 6.0% of its total assets as Level 3 fair value assets at December 31, 2019.

Critical Accounting Estimates

The preparation of financial statements in accordance with U.S. GAAP requires us to make certain judgments and assumptions, based on information available at the time of our preparation of the financial statements, in determining accounting estimates used in preparation of the statements. Our significant accounting policies are described in Note 2 to the consolidated financial statements, included under Item 8 of this Annual Report on Form 10-K.

Accounting estimates are considered critical if the estimate requires us to make assumptions about matters that were highly uncertain at the time the accounting estimate was made and if different estimates reasonably could have been used in the reporting period or changes in the accounting estimate are reasonably likely to occur from period to period that would have a material impact on our financial condition, results of operations or cash flows.

The methods used by us to estimate fair value for AFS securities and MSR may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while we believe that our valuation methods are appropriate and consistent with other market participants, the use of different methodologies, or assumptions, to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date. We use inputs that are current as of the measurement date, which in periods of market dislocation, may have reduced transparency.

Classification and Valuation of Available-for-Sale Securities

Our securities investments consist primarily of Agency RMBS and non-Agency securities that we classify as available-for-sale, or AFS. All assets classified as AFS, excluding certain Agency interest-only mortgage-backed securities, are reported at estimated fair value with changes in fair value included in accumulated other comprehensive income, a separate component of stockholders’ equity, on an after-tax basis. On July 1, 2015, we elected the fair value option for Agency interest-only securities acquired on or after such date. All Agency interest-only securities acquired on or after July 1, 2015 are carried at estimated fair value with changes in fair value recorded as a component of gain (loss) on investment securities in the consolidated statements of comprehensive income (loss).

When the estimated fair value of an AFS security is less than amortized cost, we consider whether there is an other-than-temporary impairment in the value of the security that is required to be recognized in GAAP net income (loss). The determination of whether a security is other-than-temporarily impaired involves judgments and assumptions based on subjective and objective factors. Consideration is given to whether we (i) have the intent to sell the investment securities, (ii) are more likely than not to be required to sell the investment securities before recovery, or (iii) do not expect to recover the entire amortized cost basis of the investment securities. Investments with unrealized losses are not considered other-than-temporarily impaired if we have the ability and intent to hold the investments for a period of time, to maturity if necessary, sufficient for a forecasted market price recovery up to or beyond the amortized cost basis of the investments. If an impairment is determined to be solely driven by the inability to fully recover the entire amortized cost basis over the remaining life of the security, the security is further analyzed for credit loss (the difference between the present value of cash flows expected to be collected and the amortized cost basis). The credit loss, if any, is then recognized in GAAP net income (loss), while the balance of impairment related to other factors is recognized in other comprehensive income (loss).

Classification and Valuation of Mortgage Servicing Rights

We account for our MSR at fair value, with changes in fair value recorded in GAAP net income (loss), rather than at amortized cost. Fair value is generally determined based on prices obtained from third-party pricing vendors. Although MSR transactions are observable in the marketplace, the details of those transactions are not necessarily reflective of the value of our MSR portfolio. Third-party vendors use both observable market data and unobservable market data (including prepayment speeds, delinquency levels, discount rates and cost to service) as inputs into models, which help to inform their best estimates of fair value market price.

Interest Income Recognition

Our interest income on our Agency RMBS and non-Agency securities is accrued based on the actual coupon rate and the outstanding principal balance of such securities. Premiums and discounts are amortized or accreted into interest income over the lives of the securities using the effective yield method, as adjusted for actual prepayments. We estimate prepayments for our Agency interest-only securities, which represent our right to receive a specified portion of the contractual interest flows of specific Agency and collateralized mortgage obligations, or CMO, securities. As a result, if prepayments increase (or are expected to increase), we will accelerate the rate of amortization on the premiums. Conversely, if prepayments decrease (or are expected to decrease), we will decelerate the rate of amortization on the premiums.

Our interest income on our non-Agency securities rated below AA, including unrated securities, is recognized in accordance with estimated cash flows. Cash flows from a security are estimated by applying assumptions used to determine the fair value of such security and the excess of the future cash flows over the investment are recognized as interest income under the effective yield method. We review and, if appropriate, make adjustments to our cash flow projections at least quarterly and monitor these projections based on input and analysis received from external sources, internal models, and our judgment about interest rates, prepayment rates, the timing and amount of credit losses, and other factors. Changes in cash flows from those originally projected, or from those estimated at the last evaluation, may result in a prospective change in interest income recognized on, or the carrying value of, such securities.

For non-Agency securities purchased at a discount, we account for differences between contractual cash flows and cash flows expected to be collected from our initial investment in debt securities acquired if those differences are attributable, at least in part, to credit quality. We limit the yield that may be accreted (accretable yield) to the excess of an estimate of undiscounted expected principal, interest, and other cash flows (cash flows expected at acquisition to be collected) over the initial investment. The excess of contractual cash flows over cash flows expected to be collected (nonaccretable difference or designated credit reserve) is not recognized as an adjustment of yield, loss accrual, or valuation allowance. Subsequent increases in cash flows expected to be collected is recognized prospectively through adjustment of the yield over the remaining life of the security. Decreases in cash flows expected to be collected are recognized as impairments.

Derivative Financial Instruments and Hedging Activities

We apply the provisions of ASC 815, which requires the recognition of all derivatives as either assets or liabilities on our consolidated balance sheets and to measure those instruments at fair value. The fair value adjustments of our current derivative instruments affect net income as the hedge for accounting purposes is being treated as an economic, or trading, hedge and not as a qualifying hedging instrument.

Derivatives are primarily used for hedging purposes rather than speculation. We utilize third-party pricing vendors and broker quotes to value our financial derivative instruments. If our hedging activities do not achieve their desired results, our reported GAAP net income (loss) may be adversely affected.

Income Taxes

Our financial results are generally not expected to reflect provisions for current or deferred income taxes, except for those taxable benefits or provisions recognized by our TRSs. We estimate, based on existence of sufficient evidence, the ability to realize the remainder of any deferred tax asset our TRSs recognize. Any adjustments to such estimates will be made in the period such determination is made. We plan to operate in a manner that will allow us to qualify for taxation as a REIT. As a result of our expected REIT qualification, we do not generally expect to pay U.S. federal corporate level taxes. However, many of the REIT requirements are highly technical and complex. If we were to fail to meet the REIT requirements, we would be subject to U.S. federal, state and local income taxes.

The Tax Cuts and Jobs Act of 2017 ("TCJA") significantly changed how the U.S. taxes corporations. The TCJA requires complex computations to be performed that were not previously required in U.S. tax law, significant judgments to be made in interpretation of the provisions of the TCJA and significant estimates in calculations, and the preparation and analysis of information not previously relevant or regularly produced. Technical corrections or other amendments of the TCJA or administrative guidance interpreting the TCJA may be forthcoming at any time. While we do not anticipate a material effect on our operations, we continue to analyze and monitor the application of the TCJA to our business, our peers and the economic environment.

Market Conditions and Outlook

2019 delivered a significant drop in interest rates across the curve. In addition, the Federal Reserve, or Fed, cut interest rates three times during the year, moving from a stance of patience and neutrality to one more concerned with sustaining economic expansion. Worries about a global slowdown in GDP growth and the effect of trade wars were present throughout the year, and realized and implied volatilities increased sharply. Primary mortgage rates also moved lower, which had multiple effects on Agency RMBS including increased prepayment expectations and current coupon spread widening. At the same time, higher coupon RMBS performed well, as did prepay-protected securities.

The repo markets made headlines during the last half of the year. In response to the spike in overnight rates in September, the Fed established a series of term and overnight repo operations, and also began a series of Treasury bill purchases to rebuild its balance sheet and add reserves to the system. While rates remained elevated during the fourth quarter of 2019, the Fed's actions clearly stabilized the market. This was on display on the final day of the year, when overnight repo rates cleared below the Fed's target, which is highly unusual. Given the Fed's strong response, our expectation is that the funding markets will normalize over time.

In mortgage credit, home price appreciation has remained solid with around 3-4% growth year-over-year, and expectations are for continued slow but increasing home prices. We believe that increasing housing affordability can be a significant driver of total return performance for our legacy assets. While 10-year Treasury rates have fluctuated in a 200 basis point range since 2014, the effects of mortgage rates and income growth have conspired to keep overall affordability in a narrow range.

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.

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

(dollars in thousands)	December 31, 2019		December 31, 2018	
Agency				
Fixed Rate	$ 27,763,471	83.2%	$ 21,665,960	78.5%
Hybrid ARM	14,584	—%	19,073	0.1%
Total Agency	27,778,055	83.2%	21,685,033	78.6%
Agency Derivatives	68,925	0.2%	70,257	0.2%
Non-Agency				
Senior	3,073,098	9.2%	2,854,731	10.3%
Mezzanine	480,765	1.5%	928,632	3.4%
Interest-only securities	74,410	0.2%	84,208	0.3%
Total Non-Agency	3,628,273	10.9%	3,867,571	14.0%
Mortgage servicing rights	1,909,444	5.7%	1,993,440	7.2%
Total	$ 33,384,697		$ 27,616,301	

Prepayment speeds and volatility due to interest rates

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

The following table provides the three-month weighted average constant prepayment rate, or CPR, on our investment portfolio by type for the three months ended December 31, 2019, and the four immediately preceding quarters:

	Three Months Ended				
Weighted Average CPR	December 31, 2019	September 30, 2019	June 30, 2019	March 31, 2019	December 31, 2018
Agency RMBS	14.3%	13.4%	10.1%	6.5%	6.8%
Non-Agency securities	6.4%	5.9%	5.3%	4.9%	5.1%
Mortgage servicing rights	20.8%	20.5%	13.7%	7.7%	7.3%

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

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

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

	December 31, 2019							
(dollars in thousands)	Principal/ Current Face	Carrying Value	% of Agency Portfolio	Weighted Average CPR	% Prepayment Protected	Gross Weighted Average Coupon Rate	Amortized Cost	Weighted Average Loan Age (months)
Agency RMBS AFS:								
30-Year Fixed								
3.0%	$ 6,034,075	$ 6,168,095	22.1%	3.3%	98.3%	3.8%	$ 6,169,224	3
3.5%	6,174,872	6,451,660	23.2%	7.0%	100.0%	4.3%	6,386,051	7
4.0%	8,455,585	8,993,011	32.3%	19.4%	100.0%	4.6%	8,808,458	25
4.5%	4,714,844	5,082,166	18.3%	25.2%	100.0%	5.0%	4,942,234	20
≥ 5%	741,000	813,503	2.9%	23.5%	100.0%	5.8%	786,727	48
	26,120,376	27,508,435	98.8%	14.4%	99.6%	4.5%	27,092,694	16
Other P&I	119,168	133,436	0.5%	7.3%	0.3%	6.7%	133,174	210
Interest-only	2,601,693	136,184	0.5%	10.9%	—%	4.4%	169,811	104
Agency Derivatives	397,137	68,925	0.2%	12.3%	—%	6.7%	56,959	184
Total Agency RMBS	$ 29,238,374	$ 27,846,980	100.0%		98.4%		$ 27,452,638	

	December 31, 2018							
(dollars in thousands)	Principal/ Current Face	Carrying Value	% of Agency Portfolio	Weighted Average CPR	% Prepayment Protected	Gross Weighted Average Coupon Rate	Amortized Cost	Weighted Average Loan Age (months)
Agency RMBS AFS:								
30-Year Fixed								
3.0%	$ 3,255	$ 3,200	—%	2.0%	100.0%	3.6%	$ 3,314	47
3.5%	231,068	231,321	1.1%	6.6%	100.0%	4.1%	232,200	19
4.0%	8,640,859	8,846,367	40.7%	7.2%	83.0%	4.4%	9,047,282	22
4.5%	10,237,108	10,686,699	49.1%	6.3%	99.0%	5.0%	10,765,144	16
≥ 5%	1,367,700	1,452,170	6.7%	7.1%	74.4%	5.8%	1,449,256	24
	20,479,990	21,219,757	97.6%	6.7%	90.7%	4.8%	21,497,196	19
Other P&I	295,800	289,860	1.3%	9.6%	0.3%	5.7%	291,290	151
Interest-only	3,115,967	175,416	0.8%	9.3%	—%	4.5%	209,901	92
Agency Derivatives	476,299	70,257	0.3%	11.9%	—%	6.7%	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:

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

	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 any single counterparty.

As of December 31, 2019, we had entered into repurchase agreements with 47 counterparties, 24 of which had outstanding balances at December 31, 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 December 31, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 6.1:1.0.

As of December 31, 2019, we held $558.1 million in cash and cash equivalents, approximately $1.3 million of unpledged Agency securities and derivatives and $1.6 billion of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on our unpledged securities of approximately $1.2 billion. As of December 31, 2019, we held approximately $354.6 million of unpledged MSR. Overall, we had unused borrowing capacity on MSR financing facilities of $1.2 billion. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. If borrowing rates and collateral requirements change in the near term, we believe we are subject to less earnings volatility than if we carried higher leverage.

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

Proposed changes to LIBOR

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

Summary of Results of Operations and Financial Condition

Our GAAP net income attributable to common stockholders was $115.8 million and $248.2 million ($0.41 and $0.93 per diluted weighted average share) for the three and twelve months ended December 31, 2019, as compared to GAAP net loss attributable to common stockholders of $573.5 million and $109.7 million ($(2.31) and $(0.53) per diluted weighted average share) for the three and twelve months ended December 31, 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 income (loss) or taxable income but are recognized on our consolidated balance sheets as a change in stockholders' equity under "accumulated other comprehensive income." For the three and twelve months ended December 31, 2019, net unrealized losses on AFS securities recognized as other comprehensive loss, net of tax, were $59.0 million and net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were $578.6 million, respectively. This, combined with GAAP net income attributable to common stockholders of $115.8 million and $248.2 million, resulted in comprehensive income attributable to common stockholders of $56.8 million and $826.7 million for the three and twelve months ended December 31, 2019, respectively. For the three and twelve months ended December 31, 2018, net unrealized gains on AFS securities recognized as other comprehensive income, net of tax, were $265.5 million and net unrealized losses on AFS securities recognized as other comprehensive loss, net of tax were $233.9 million, respectively. This, combined with GAAP net loss attributable to common stockholders of $573.5 million and $109.7 million, resulted in comprehensive loss attributable to common stockholders of $307.9 million and $343.6 million for the three and twelve months ended December 31, 2018, respectively.

Our book value per common share for U.S. GAAP purposes was $14.54 at December 31, 2019, an increase from $13.11 book value per common share at December 31, 2018. During this twelve month period, we issued 24,439,436 shares of common stock for net proceeds of $336.3 million and recognized comprehensive income attributable to common stockholders of $826.7 million, which drove the overall increase in book value in excess of the total distributions paid to common and preferred stockholders during the year.

The following tables present the components of our comprehensive income (loss) for the three and twelve months ended December 31, 2019 and 2018, and the twelve months ended December 31, 2017:

(in thousands, except share data) **Income Statement Data:**	Three Months Ended December 31,		Year Ended December 31,		
	2019	2018	2019	2018	2017
	(unaudited)				
Interest income:					
Available-for-sale securities	$ 230,567	$ 242,535	$ 962,283	$ 847,325	$ 631,853
Residential mortgage loans held-for-investment in securitization trusts	—	—	—	—	102,886
Other	7,871	9,420	32,407	22,707	10,350
Total interest income	238,438	251,955	994,690	870,032	745,089
Interest expense:					
Repurchase agreements	152,919	146,702	654,280	469,437	210,430
Collateralized borrowings in securitization trusts	—	—	—	—	82,573
Federal Home Loan Bank advances	514	5,762	10,920	20,417	36,911
Revolving credit facilities	4,038	5,044	19,354	10,820	2,341
Term notes payable	5,002	—	10,708	—	—
Convertible senior notes	4,811	4,793	19,067	18,997	17,933
Total interest expense	167,284	162,301	714,329	519,671	350,188
Net interest income	71,154	89,654	280,361	350,361	394,901
Other-than-temporary impairment losses	(3,308)	(107)	(14,312)	(470)	(789)
Other income (loss):					
Gain (loss) on investment securities	28,141	(245,763)	280,118	(341,312)	(34,695)
Servicing income	127,690	104,623	501,612	343,096	209,065
Loss on servicing asset	(21,739)	(171,284)	(697,659)	(69,033)	(91,033)
(Loss) gain on interest rate swap, cap and swaption agreements	(6,875)	(239,492)	(108,289)	16,043	(9,753)
(Loss) gain on other derivative instruments	(10,800)	(39,122)	259,998	(54,857)	(70,159)
Other income	60	342	337	3,037	30,141
Total other income (loss)	116,477	(590,696)	236,117	(103,026)	33,566
Expenses:					
Management fees	17,546	12,152	60,102	30,272	40,472
Servicing expenses	20,253	18,610	74,607	61,136	35,289
Other operating expenses	14,142	15,943	57,055	62,983	54,160
Acquisition transaction costs	—	—	—	86,703	
Restructuring charges	—	—	—	8,238	—
Total expenses	51,941	46,705	191,764	249,332	129,921
Income (loss) before income taxes	132,382	(547,854)	310,402	(2,467)	297,757
(Benefit from) provision for income taxes	(2,372)	6,681	(13,560)	41,823	(10,482)
Net income (loss) from continuing operations	134,754	(554,535)	323,962	(44,290)	308,239
Income from discontinued operations, net of tax	—	—	—	—	44,146
Net income (loss)	134,754	(554,535)	323,962	(44,290)	352,385
Income from discontinued operations attributable to noncontrolling interest	—	—	—	—	3,814
Net income (loss) attributable to Two Harbors Investment Corp.	134,754	(554,535)	323,962	(44,290)	348,571
Dividends on preferred stock	18,950	18,950	75,801	65,395	25,122
Net income (loss) attributable to common stockholders	$ 115,804	$ (573,485)	$ 248,161	$ (109,685)	$ 323,449

(in thousands) **Income Statement Data:**	**Three Months Ended December 31,**		**Year Ended December 31,**		
	2019	**2018**	**2019**	**2018**	**2017**
	(unaudited)				
Basic earnings (loss) per weighted average share:					
Continuing operations	$ 0.42	$ (2.31)	$ 0.93	$ (0.53)	$ 1.62
Discontinued operations	—	—	—	—	0.23
Net income (loss)	$ 0.42	$ (2.31)	$ 0.93	$ (0.53)	$ 1.85
Diluted earnings (loss) per weighted average share:					
Continuing operations	$ 0.41	$ (2.31)	$ 0.93	$ (0.53)	$ 1.60
Discontinued operations	—	—	—	—	0.21
Net income (loss)	$ 0.41	$ (2.31)	$ 0.93	$ (0.53)	$ 1.81
Dividends declared per common share	$ 0.40	$ 0.47	$ 1.67	$ 1.88	$ 2.01
Weighted average number of shares of common stock:					
Basic	272,906,815	248,081,168	267,826,739	206,020,502	174,433,999
Diluted	291,070,864	248,081,168	267,826,739	206,020,502	188,133,341
Comprehensive income (loss):					
Net income (loss)	$ 134,754	$ (554,535)	$ 323,962	$ (44,290)	$ 352,385
Other comprehensive (loss) income, net of tax:					
Unrealized (loss) gain on available-for-sale securities	(58,954)	265,546	578,583	(233,914)	135,586
Other comprehensive (loss) income	(58,954)	265,546	578,583	(233,914)	135,586
Comprehensive income (loss)	75,800	(288,989)	902,545	(278,204)	$ 487,971
Comprehensive income attributable to noncontrolling interest	—	—	—	—	3,814
Comprehensive income (loss) attributable to Two Harbors Investment Corp.	75,800	(288,989)	902,545	(278,204)	484,157
Dividends on preferred stock	18,950	18,950	75,801	65,395	25,122
Comprehensive income (loss) attributable to common stockholders	$ 56,850	$ (307,939)	$ 826,744	$ (343,599)	$ 459,035

(in thousands) **Balance Sheet Data:**	**December 31, 2019**	**December 31, 2018**
Available-for-sale securities	$ 31,406,328	$ 25,552,604
Mortgage servicing rights	$ 1,909,444	$ 1,993,440
Total assets	$ 35,921,622	$ 30,132,479
Repurchase agreements	$ 29,147,463	$ 23,133,476
Federal Home Loan Bank advances	$ 210,000	$ 865,024
Revolving credit facilities	$ 300,000	$ 310,000
Term notes payable	$ 394,502	$ —
Convertible senior notes	$ 284,954	$ 283,856
Total stockholders’ equity	$ 4,970,466	$ 4,254,489

Results of Operations

The following analysis focuses on financial results during the three and twelve months ended December 31, 2019 and 2018. The analysis of our financial results during the three and twelve months ended December 31, 2018 and 2017 is omitted from this Form 10-K and included in Part II Item 7 of our Annual Report on Form 10-K for the year ended December 31, 2018.

Interest Income

Interest income decreased from $252.0 million for the three months ended December 31, 2018 to $238.4 million for the same period in 2019 due to purchases of lower coupon Agency RMBS, sales of higher coupon Agency RMBS and higher prepayments on Agency RMBS with unamortized premium. Interest income increased from $870.0 million for the year ended December 31, 2018 to $994.7 million for the same period in 2019 due to the growth of our Agency RMBS portfolio.

Interest Expense

Interest expense increased from $162.3 million and $519.7 million for the three and twelve months ended December 31, 2018, respectively, to $167.3 million and $714.3 million for the same periods in 2019 due to increased financing on AFS securities and on MSR due to portfolio growth, and the MSR securitization completed in 2019.

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 twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31, 2019			Year Ended December 31, 2019		
(dollars in thousands)	**Average Balance (1)**	**Interest Income/Expense**	**Net Yield/Cost of Funds (2)**	**Average Balance (1)**	**Interest Income/Expense**	**Net Yield/Cost of Funds (2)**
Interest-earning assets						
Agency available-for-sale securities	$ 24,694,426	$ 178,621	2.9%	$ 23,593,771	$ 763,601	3.2%
Non-Agency available-for-sale securities	3,300,836	51,946	6.3%	3,278,228	198,682	6.1%
Other	9,308	7,871	4.2%	15,530	32,407	4.6%
Total interest income/net asset yield	$ 28,004,570	$ 238,438	3.4%	$ 26,887,529	$ 994,690	3.7%
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	$ 24,728,724	$ 137,919	2.2%	$ 23,018,643	$ 583,646	2.5%
Non-Agency available-for-sale securities	1,598,573	12,179	3.0%	1,909,564	67,442	3.5%
Agency derivatives (3)	50,263	359	2.9%	47,824	1,556	3.3%
Mortgage servicing rights (4)	956,985	12,016	5.0%	807,486	42,618	5.3%
Other unassignable						
Convertible senior notes	284,848	4,811	6.8%	284,413	19,067	6.7%
Total interest expense/cost of funds	$ 27,619,393	167,284	2.4%	$ 26,067,930	714,329	2.7%
Net interest income/spread (5)		$ 71,154	1.0%		$ 280,361	1.0%

(dollars in thousands)	Three Months Ended December 31, 2018			Year Ended December 31, 2018		
	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	$ 21,401,757	$ 176,997	3.3%	$ 19,782,775	$ 620,581	3.1%
Non-Agency available-for-sale securities	3,405,550	65,538	7.7%	2,935,601	226,743	7.7%
Other	28,551	9,420	4.0%	30,148	22,707	4.2%
Total interest income/net asset yield	$ 24,835,858	$ 251,955	4.1%	$ 22,748,524	$ 870,031	3.8%
Interest-bearing liabilities						
Repurchase agreements, FHLB advances, revolving credit facilities and term notes payable collateralized by:						
Agency available-for-sale securities	$ 19,796,348	$ 125,014	2.5%	$ 18,603,631	$ 396,786	2.1%
Non-Agency available-for-sale securities	2,569,298	23,802	3.7%	2,278,651	79,772	3.5%
Agency derivatives (3)	48,018	404	3.4%	56,393	1,650	2.9%
Mortgage servicing rights (4)	579,348	8,288	5.7%	407,085	22,466	5.5%
Other unassignable						
Convertible senior notes	283,755	4,793	6.8%	283,347	18,997	6.7%
Total interest expense/cost of funds	$ 23,276,767	162,301	2.8%	$ 21,629,107	519,671	2.4%
Net interest income/spread (5)		$ 89,654	1.3%		$ 350,360	1.4%

(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 consolidated statements of comprehensive income (loss). For the three and twelve months ended December 31, 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 2.4% and 2.5%, respectively, compared to 2.5% and 2.2% for the same periods in 2018.
(3) Yields on Agency Derivatives not shown as interest income is included in gain (loss) on other derivative instruments in the consolidated statements of comprehensive income (loss).
(4) Yields on mortgage servicing rights not shown as these assets do not earn interest.
(5) Net interest spread does not include the accrual and settlement of interest associated with interest rate swaps and caps. In accordance with U.S. GAAP, those costs are included in gain (loss) on interest rate swap, cap and swaption agreements in the consolidated statements of comprehensive income (loss). For the three and twelve months ended December 31, 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 0.9% and 1.1%, respectively, compared to 1.4% and 1.6% for the same periods in 2018.

As previously discussed, our yields and cost of funds are impacted by changes in market interest rates and spreads as well as changes in the mix of our portfolio and financing sources. Interest rates steadily increased throughout the year ended December 31, 2018 and remained generally flat throughout the first quarter of 2019. In the second quarter of 2019, interest rates began decreasing in anticipation of a rate cut by the Fed, which made its first rate cut of the year in August. The Fed subsequently made two more rate cuts in 2019 until rates stabilized toward the end of the year.

The decrease in yields on Agency AFS securities for the three and twelve months ended December 31, 2019, as compared to the same periods in 2018, was predominantly driven by purchases of pools with lower yields and sales of pools with higher yields. The decrease in cost of funds associated with the financing of Agency AFS securities for the three months ended December 31, 2019, as compared to the same period in 2018, was the result of a decrease in average LIBOR through the respective periods. The increase in cost of funds associated with the financing of Agency AFS securities for the year ended December 31, 2019, as compared to the same period in 2018, was primarily the result of the elevated repo/LIBOR spreads that persisted throughout the latter half of 2019.

The decrease in yields on non-Agency securities for the three and twelve months ended December 31, 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 we believed had realized their upside potential. The decrease in cost of funds associated with the financing of non-Agency AFS securities for the three and twelve months ended December 31, 2019, as compared to the same periods in 2018, was the result of lower borrowing spreads on the lower yielding securities.

The decrease in cost of funds associated with the financing of Agency Derivatives for the three months ended December 31, 2019, as compared to the same period in 2018, was the result of a decrease in average LIBOR through the respective periods. The increase in cost of funds associated with the financing of Agency Derivatives for the year ended December 31, 2019, as compared to the same period in 2018, was primarily the result of the elevated repo/LIBOR spreads that persisted throughout the latter half of 2019.

The decrease in cost of funds associated with the financing of MSR for the three and twelve months ended December 31, 2019, as compared to the same periods in 2018, was the result of the issuance of term notes payable in June 2019, which incur lower amortization of deferred debt issuance costs due to their longer term to maturity and the write off of unamortized issuance costs related to the termination of a financing facility and generally better financing terms offered by counterparties.

Our convertible senior notes 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 twelve months ended December 31, 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 twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31, 2019			Year Ended December 31, 2019		
	Agency [(1)]	Non-Agency	Total	Agency [(1)]	Non-Agency	Total
Gross yield/stated coupon	3.9 %	4.4%	4.0 %	4.1 %	4.7%	4.2 %
Net (premium amortization) discount accretion	(1.0)%	1.9%	(0.7)%	(0.9)%	1.4%	(0.6)%
Net yield [(2)]	2.9 %	6.3%	3.3 %	3.2 %	6.1%	3.6 %

	Three Months Ended December 31, 2018			Year Ended December 31, 2018		
	Agency [(1)]	Non-Agency	Total	Agency [(1)]	Non-Agency	Total
Gross yield/stated coupon	4.1 %	4.8%	4.2 %	4.1 %	4.7%	4.1 %
Net (premium amortization) discount accretion	(0.8)%	2.9%	(0.3)%	(1.0)%	3.0%	(0.4)%
Net yield [(2)]	3.3 %	7.7%	3.9 %	3.1 %	7.7%	3.7 %

(1) Excludes Agency Derivatives. For the three and twelve months ended December 31, 2019, the average annualized net yield on total Agency RMBS, including Agency Derivatives, was 2.9% and 3.3%, respectively, compared to 3.3% and 3.2% 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 twelve months ended December 31, 2019, we recorded the following other-than-temporary credit impairments on non-Agency securities where the future expected cash flows for each security were less than its amortized cost:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands)	**2019**	**2018**	**2019**	**2018**
Other-than-temporary impairment losses	$ (3,308)	$ (107)	$ (14,312)	$ (470)
Number of non-Agency securities	6	1	18	3

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 consolidated financial statements.

Gain (Loss) On Investment Securities

The following tables present the components of gain (loss) on investment securities for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31, 2019			Year Ended December 31, 2019		
(in thousands)	Available-For-Sale Securities	Equity Securities	Total	Available-For-Sale Securities	Equity Securities	Total
Proceeds from sales	$ 1,814,250	$ —	$ 1,814,250	$ 15,879,823	$ —	$ 15,879,823
Amortized cost of securities sold	(1,786,635)	—	(1,786,635)	(15,595,809)	—	(15,595,809)
Total realized gains	27,615	—	27,615	284,014	—	284,014
Change in unrealized gains (losses) (1)	526	—	526	(3,896)	—	(3,896)
Dividend income	—	—	—	—	—	—
Gain (loss) on investment securities	$ 28,141	$ —	$ 28,141	$ 280,118	$ —	$ 280,118

	Three Months Ended December 31, 2018			Year Ended December 31, 2018		
(in thousands)	Available-For-Sale Securities	Equity Securities	Total	Available-For-Sale Securities	Equity Securities	Total
Proceeds from sales	$ 6,045,720	$ —	$ 6,045,720	$ 15,202,406	$ 31,276	$ 15,233,682
Amortized cost of securities sold	(6,294,564)	—	(6,294,564)	(15,551,968)	(30,054)	(15,582,022)
Total realized (losses) gains	(248,844)	—	(248,844)	(349,562)	1,222	(348,340)
Change in unrealized gains(1)	3,081	—	3,081	5,094	641	5,735
Dividend income	—	—	—	—	1,293	1,293
(Loss) gain on investment securities	$ (245,763)	$ —	$ (245,763)	$ (344,468)	$ 3,156	$ (341,312)

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

We do not expect to sell assets on a frequent basis, but may sell assets to reallocate capital into new assets that we believe have higher risk-adjusted returns. The decrease in change in unrealized gains on Agency interest-only mortgage-backed securities for the three months ended December 31, 2019, as compared to the same period in 2018, was due to lower prepayment expectations relative to prepayment expectations in the previous quarter. The increase in change in unrealized losses (decrease in gains) on Agency interest-only mortgage-backed securities for the year ended December 31, 2019, as compared to the same period in 2018, was due to interest rates generally falling throughout the year ended December 31, 2019, as compared to interest rates generally rising throughout the year ended December 31, 2018, resulting in slower prepayment expectations.

Servicing Income

The following table presents the components of servicing income for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands)	2019	2018	2019	2018
Servicing fee income	$ 109,403	$ 94,078	$ 436,587	$ 312,100
Ancillary and other fee income	499	276	1,801	1,280
Float income	17,788	10,269	63,224	29,716
Total	$ 127,690	$ 104,623	$ 501,612	$ 343,096

The increase in servicing income for the three and twelve months ended December 31, 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 on Servicing Asset

The following table presents the components of loss on servicing asset for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands)	**2019**	**2018**	**2019**	**2018**
Changes in fair value due to changes in valuation inputs or assumptions used in the valuation model	$ 87,561	$ (129,401)	$ (390,149)	$ 80,209
Changes in fair value due to realization of cash flows (runoff)	(109,333)	(42,125)	(307,918)	(149,879)
Gains on sales	33	242	408	637
Loss on servicing asset	$ (21,739)	$ (171,284)	$ (697,659)	$ (69,033)

The decrease in loss on servicing asset for the three months ended December 31, 2019, as compared to the same period in 2018, was driven by a decrease in expected prepayment speed assumptions used in the fair valuation of MSR, offset by higher portfolio runoff on a larger MSR portfolio during the three months ended December 31, 2019. The increase in loss on servicing asset for the year ended December 31, 2019, as compared to the same period in 2018, was driven by decreases in interest rates, an increase in prepayment speed assumptions used in the fair valuation of MSR, and higher portfolio runoff on a larger MSR portfolio during the year ended December 31, 2019.

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

The following table summarizes the net interest spread and gains and losses associated with our interest rate swap, cap and swaption positions recognized during the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands)	**2019**	**2018**	**2019**	**2018**
Net interest spread	$ 4,768	$ 15,331	$ 70,514	$ 49,217
Early termination, agreement maturation and option expiration (losses) gains	(1,495)	(35,757)	94,929	(3,593)
Change in unrealized loss on interest rate swap, cap and swaption agreements, at fair value	(10,148)	(219,066)	(273,732)	(29,581)
(Loss) gain on interest rate swap, cap and swaption agreements	$ (6,875)	$ (239,492)	$ (108,289)	$ 16,043

Net interest spread recognized for the accrual and/or settlement of the net interest expense associated with our interest rate swaps and caps results from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on positions held to economically hedge/mitigate portfolio interest rate exposure (or duration) risk. We may elect to terminate certain swaps, caps and swaptions to align with our investment portfolio, agreements may mature or options may expire resulting in full settlement of our net interest spread asset/liability and the recognition of realized gains and losses, including early termination penalties. The change in fair value of interest rate swaps, caps and swaptions during the three and twelve months ended December 31, 2019 and 2018 was a result of changes to LIBOR, the swap curve and corresponding counterparty borrowing rates. Since swaps, caps and swaptions are used for purposes of hedging our interest rate exposure, their unrealized valuation gains and losses are generally offset by unrealized losses and gains in our Agency RMBS AFS portfolio, which are recorded either directly to stockholders’ equity through other comprehensive income (loss), net of tax, or to gain (loss) on investment securities, in the case of Agency interest-only mortgage-backed securities.

(Loss) Gain on Other Derivative Instruments

The following table provides a summary of the total (loss) gain recognized on other derivative instruments we hold for purposes of both hedging and non-hedging activities, principally TBAs, put and call options for TBAs, Markit IOS total return swaps, short U.S. treasuries, U.S. Treasury futures and inverse interest-only securities during the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands)	**2019**	**2018**	**2019**	**2018**
Interest income, net of accretion, on inverse interest-only securities	$ 1,702	$ 1,437	$ 5,586	$ 6,463
Interest expense on short U.S. treasuries	—	(5,592)	(1,315)	(9,302)
Realized and unrealized net gains (losses) on other derivative instruments (1)	(12,502)	(34,967)	255,727	(52,018)
(Loss) gain on other derivative instruments	$ (10,800)	$ (39,122)	$ 259,998	$ (54,857)

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

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

Other Income

We recorded other income of $0.1 million and $0.3 million for the three and twelve months ended December 31, 2019 and $0.3 million and $3.0 million for the three and twelve months ended December 31, 2018, respectively. The decrease in other income for the three and twelve months ended December 31, 2019, as compared to the same periods in 2018, was driven by losses on extinguishment of debt and lower dividend income on our FHLB stock due to a decrease in the average balance held.

Expenses

The following table presents the components of expenses, excluding nonrecurring transaction expenses, for the three and twelve months ended December 31, 2019 and 2018:

	Three Months Ended December 31,		Year Ended December 31,	
(in thousands, except share data)	**2019**	**2018**	**2019**	**2018**
Management fees	$ 17,546	$ 12,152	$ 60,102	$ 30,272
Servicing expenses	$ 20,253	$ 18,610	$ 74,607	$ 61,136
Other operating expenses:				
Officers' compensation incurred by PRCM Advisers on our behalf and reimbursed by us (1)	$ 141	$ 242	$ 3,054	$ 1,785
Other direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us	4,423	5,263	24,548	24,512
Non-cash equity compensation expenses				
Amortization of executive officers' restricted stock (2)	1,221	1,791	3,395	6,791
Amortization of other restricted stock	1,202	1,420	5,265	5,501
Total non-cash equity compensation expenses	2,423	3,211	8,660	12,292
All other operating expenses	7,155	7,227	20,793	24,394
Total other operating expenses	$ 14,142	$ 15,943	$ 57,055	$ 62,983
Annualized other operating expense ratio	1.1%	1.4%	1.2%	1.6%
Annualized other operating expense ratio, excluding non-cash equity compensation expenses	0.9%	1.1%	1.0%	1.3%

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

Management fees are payable to PRCM Advisers, our external manager, under our management agreement. The management fee is calculated based on our stockholders' equity with certain adjustments outlined in the management agreement. In connection with the acquisition of CYS effective July 31, 2018, the management agreement was amended to (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 one-time downward adjustment to management fees was $17.5 million. Effective July 31, 2019, the management fee reduction on the equity acquired in the CYS transaction expired. We do not anticipate any further downward adjustments to management fees for transaction-related expenses.

We also incur servicing expenses generally related to the subservicing of MSR and other operating expenses. The increase in servicing expenses during the three and twelve months ended December 31, 2019, as compared to the same periods in 2018, was largely the result of an increase in the size of our MSR portfolio. Included in other operating expenses are direct and allocated costs incurred by PRCM Advisers on our behalf and reimbursed by us, including compensation paid to employees of Pine River serving as our principal financial officer and general counsel. The allocation of compensation paid to employees of Pine River serving as our principal financial officer and general counsel is based on time spent overseeing our activities in accordance with the management agreement; we do not reimburse PRCM Advisers for any expenses related to the compensation of our chief executive officer or chief investment officer.

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.

Acquisition Transaction Costs

The acquisition of CYS was treated as an asset purchase under U.S. GAAP. Given there were no meaningful nonfinancial assets and non-current assets acquired in the merger with CYS and no identified intangible assets to assign value, the excess consideration and costs associated with the transaction were recognized in the consolidated statements of comprehensive income (loss) as acquisition transaction costs. For the year ended December 31, 2018, these acquisition transaction costs totaled approximately $86.7 million.

Restructuring Charges

In connection with the acquisition of CYS, we incurred restructuring charges, including termination benefits, contract terminations and other associated costs, of $8.2 million for the year ended December 31, 2018.

Income Taxes

During the three and twelve months ended December 31, 2019, our TRSs recognized a benefit from income taxes of $2.4 million and $13.6 million, respectively, which was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in the Company's TRSs. During the three and twelve months ended December 31, 2018, our TRSs recognized a provision for income taxes of $6.7 million and $41.8 million, which was primarily due to realized gains on sales of AFS securities and gains recognized on MSR held in the TRSs as well as the write-down of net deferred tax assets resulting from the deemed liquidation of one of our TRSs due to its TRS election revocation, offset by net losses incurred on derivative instruments 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 tables below summarize certain characteristics of our Agency RMBS AFS at December 31, 2019 and December 31, 2018:

	December 31, 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
P&I securities								
Fixed	$ 26,225,918	$ 985,699	$ 27,211,617	$ 424,428	$ (8,758)	$ 27,627,287	3.80%	$ 103.96
Hybrid ARM	13,626	625	14,251	390	(57)	14,584	5.81%	$ 107.58
Total P&I securities	26,239,544	986,324	27,225,868	424,818	(8,815)	27,641,871	3.80%	$ 103.96
Interest-only securities								
Fixed	609,012	44,970	44,970	3,482	(676)	47,776	3.13%	$ 34.16
Fixed Other (1)	1,992,681	124,841	124,841	10,242	(46,675)	88,408	1.68%	$ 8.72
Total	$ 28,841,237	$ 1,156,135	$ 27,395,679	$ 438,542	$ (56,166)	$ 27,778,055		

(dollars in thousands, except purchase price)	December 31, 2018 Principal/ Current Face	Net (Discount) Premium	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value	Weighted Average Coupon Rate	Weighted Average Purchase Price
Principal and interest securities:								
Fixed	$ 20,757,850	$ 1,011,781	$ 21,769,631	$ 60,819	$ (339,906)	$ 21,490,544	4.33%	$ 105.19
Hybrid ARM	17,940	915	18,855	309	(91)	19,073	5.12%	$ 107.63
Total P&I Securities	20,775,790	1,012,696	21,788,486	61,128	(339,997)	21,509,617	4.33%	$ 105.20
Interest-only securities								
Fixed	794,144	58,886	58,886	4,880	(403)	63,363	2.84%	$ 33.15
Fixed Other (1)	2,321,823	151,015	151,015	9,290	(48,252)	112,053	1.55%	$ 8.82
Total	$ 23,891,757	$ 1,222,597	$ 21,998,387	$ 75,298	$ (388,652)	$ 21,685,033		

(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 December 31, 2019 and December 31, 2018, on an annualized basis, was 14.3% and 6.8%, respectively.

Non-Agency Securities

Our non-Agency securities portfolio is comprised of senior and mezzanine tranches of mortgage-backed and asset-backed securities. The following tables provide investment information on our non-Agency securities as of December 31, 2019 and December 31, 2018:

(in thousands)	December 31, 2019 Principal/Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value
P&I securities								
Senior	$ 4,861,854	$ 8,966	$ (445,566)	$ (1,594,480)	$ 2,830,774	$ 262,527	$ (20,203)	$ 3,073,098
Mezzanine	636,800	14	(114,574)	(117,471)	404,769	79,056	(3,060)	480,765
Total P&I	5,498,654	8,980	(560,140)	(1,711,951)	3,235,543	341,583	(23,263)	3,553,863
Interest-only securities	4,356,603	79,935	—	—	79,935	3,039	(8,564)	74,410
Total	$ 9,855,257	$ 88,915	$ (560,140)	$ (1,711,951)	$ 3,315,478	$ 344,622	$ (31,827)	$ 3,628,273

(in thousands)	December 31, 2018 Principal/Current Face	Un-amortized Premium	Accretable Purchase Discount	Credit Reserve Purchase Discount	Amortized Cost	Unrealized Gain	Unrealized Loss	Carrying Value
P&I securities								
Senior	$ 4,227,631	$ 5,381	$ (477,682)	$ (1,204,325)	$ 2,551,005	$ 343,358	$ (39,632)	$ 2,854,731
Mezzanine	1,132,493	1,301	(216,437)	(118,437)	798,920	134,737	(5,025)	928,632
Total P&I	5,360,124	6,682	(694,119)	(1,322,762)	3,349,925	478,095	(44,657)	3,783,363
Interest-only securities	5,137,169	83,846	—	—	83,846	3,655	(3,293)	84,208
Total	$ 10,497,293	$ 90,528	$ (694,119)	$ (1,322,762)	$ 3,433,771	$ 481,750	$ (47,950)	$ 3,867,571

The majority of our non-Agency securities were rated at December 31, 2019 and December 31, 2018. These 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 December 31, 2019 and December 31, 2018:

	December 31, 2019	**December 31, 2018**
AAA	0.4%	0.5%
AA	—%	—%
A	—%	0.1%
BBB	—%	2.1%
BB	—%	0.6%
B	1.3%	5.3%
Below B	78.5%	73.3%
Not rated	19.8%	18.1%
Total	100.0%	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 December 31, 2018 to December 31, 2019 (as disclosed in Note 4 - *Available-for-Sale Securities, at Fair Value* of the notes to the consolidated financial statements). From December 31, 2018 to December 31, 2019, our designated credit reserve as a percentage of total discount increased from 65.6% to 75.3%.

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, if applicable, their respective underlying loan characteristics for our senior and mezzanine non-Agency securities, excluding our non-Agency interest-only portfolio, at December 31, 2019 and December 31, 2018:

	December 31, 2019		
Non-Agency P&I Securities	**Senior**	**Mezzanine**	**Total**
Carrying value (in thousands)	$ 3,073,098	$ 480,765	$ 3,553,863
% of total	86.5%	13.5%	100.0%
Weighted average purchase price [1]	$ 63.63	$ 65.36	$ 63.86
Weighted average coupon	2.9%	2.5%	2.8%
Weighted average fixed coupon	5.8%	5.5%	5.8%
Weighted average floating coupon	2.5%	2.3%	2.5%
Weighted average hybrid coupon	4.6%	5.4%	4.6%
Collateral attributes			
Weighted average loan age (months)	160	167	161
Weighted average current loan size (in thousands)	$ 207	$ 255	$ 214
Weighted average current loan-to-value	60.5%	58.3%	60.2%
Current performance			
60+ day delinquencies	18.1%	16.5%	17.9%
Average credit enhancement [2]	1.9%	8.1%	2.8%
3-month CPR [3]	6.1%	8.5%	6.4%
CDR [4]	5.0%	4.5%	4.9%
Severity [5]	48.6%	33.2%	46.6%
Cumulative loss [6]	36.3%	21.9%	34.3%

Non-Agency P&I Securities	December 31, 2018 Senior		Mezzanine		Total P&I	
Carrying value (in thousands)	$	2,854,731	$	928,632	$	3,783,363
% of total		75.5%		24.5%		100.0%
Weighted average purchase price (1)	$	60.79	$	67.51	$	62.44
Weighted average coupon		3.4%		3.2%		3.3%
Weighted average fixed coupon		5.7%		4.0%		5.0%
Weighted average floating coupon		3.1%		3.1%		3.1%
Weighted average hybrid coupon		4.6%		—%		4.6%
Collateral Attributes						
Weighted average loan age (months)		147		144		147
Weighted average current loan size (in thousands)	$	215	$	180	$	206
Weighted average current loan-to-value		64.4%		55.0%		62.2%
Current Performance						
60+ day delinquencies		19.5%		15.9%		18.6%
Average credit enhancement (2)		5.1%		15.0%		7.5%
3-month CPR (3)		5.0%		5.7%		5.1%
CDR (4)		4.8%		4.2%		4.7%
Severity (5)		48.5%		39.7%		46.4%
Cumulative loss (6)		34.9%		17.4%		30.8%

(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 $59.53, $60.13 and $59.60, respectively, at December 31, 2019 and $58.17, $64.90 and $59.59, respectively at December 31, 2018.
(2) 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.
(3) 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.
(4) Constant default rate, or CDR, represents the percentage of outstanding principal balances in the pool that are in default.
(5) Severity rates reflect the amount of loss expected from a foreclosure and liquidation of the underlying collateral in the mortgage loan pool.
(6) Represents the percentage of cumulative losses to date on the underlying loans.

(dollars in thousands)	December 31, 2019 — Non-Agency P&I Securities								
	Senior			Mezzanine			Total		
Collateral Type	Carrying Value		% of Senior	Carrying Value		% of Mezzanine	Carrying Value		% of Total
Prime	$	26,840	0.9%	$	3,482	0.7%	$	30,322	0.9%
Alt-A		385,414	12.5%		72,434	15.1%		457,848	12.9%
Pay-option ARM		234,603	7.6%		166,777	34.7%		401,380	11.3%
Subprime		2,421,860	78.9%		238,072	49.5%		2,659,932	74.8%
Other		4,381	0.1%		—	—%		4,381	0.1%
Total	$	3,073,098	100.0%	$	480,765	100.0%	$	3,553,863	100.0%

(dollars in thousands)	December 31, 2018					
	Non-Agency P&I Securities					
	Senior		Mezzanine		Total	
Collateral Type	Carrying Value	% of Senior	Carrying Value	% of Mezzanine	Carrying Value	% of Total
Prime	$ 35,519	1.2%	$ 13,797	1.5%	$ 49,316	1.3%
Alt-A	367,985	12.9%	89,785	9.7%	457,770	12.1%
Pay-option ARM	214,683	7.5%	171,348	18.4%	386,031	10.2%
Subprime	2,232,166	78.2%	525,009	56.5%	2,757,175	72.9%
Other	4,378	0.2%	128,693	13.9%	133,071	3.5%
Total	$ 2,854,731	100.0%	$ 928,632	100.0%	$ 3,783,363	100.0%

(dollars in thousands)	December 31, 2019					
	Non-Agency P&I Securities					
	Senior		Mezzanine		Total	
Coupon Type	Carrying Value	% of Senior	Carrying Value	% of Mezzanine	Carrying Value	% of Total
Fixed rate	$ 250,189	8.1%	$ 27,387	5.7%	$ 277,576	7.8%
Hybrid or floating	2,822,909	91.9%	453,378	94.3%	3,276,287	92.2%
Total	$ 3,073,098	100.0%	$ 480,765	100.0%	$ 3,553,863	100.0%

(dollars in thousands)	December 31, 2018					
	Non-Agency P&I Securities					
	Senior		Mezzanine		Total	
Coupon Type	Carrying Value	% of Senior	Carrying Value	% of Mezzanine	Carrying Value	% of Total
Fixed rate	$ 228,939	8.0%	$ 149,089	16.1%	$ 378,028	10.0%
Hybrid or floating	2,625,792	92.0%	779,543	83.9%	3,405,335	90.0%
Total	$ 2,854,731	100.0%	$ 928,632	100.0%	$ 3,783,363	100.0%

(dollars in thousands)	December 31, 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	$ 2,848,895	92.7%	$ 260,819	54.3%	$ 3,109,714	87.5%
2002-2005	223,597	7.3%	219,848	45.7%	443,445	12.5%
Pre-2002	606	—%	98	—%	704	—%
Total	$ 3,073,098	100.0%	$ 480,765	100.0%	$ 3,553,863	100.0%

(dollars in thousands)	December 31, 2018					
	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	$ 2,630,095	92.1%	$ 444,007	47.8%	$ 3,074,102	81.2%
2002-2005	219,183	7.7%	483,061	52.0%	702,244	18.6%
Pre-2002	5,453	0.2%	1,564	0.2%	7,017	0.2%
Total	$ 2,854,731	100.0%	$ 928,632	100.0%	$ 3,783,363	100.0%

The underlying mortgage loans collateralizing our non-Agency securities are located across the U.S. The following table presents the five largest geographic concentrations of the mortgages and assets collateralizing these securities at December 31, 2019 and December 31, 2018:

	December 31, 2019		December 31, 2018	
(dollars in thousands)	Carrying Value	% of Total Non-Agency Securities	Carrying Value	% of Total Non-Agency Securities
California	$ 1,051,536	29.0%	$ 1,041,464	26.9%
New York	545,407	15.0%	393,936	10.2%
Florida	360,696	9.9%	529,738	13.7%
New Jersey	165,501	4.6%	153,687	4.0%
Texas	157,307	4.3%	176,265	4.6%
Total	$ 2,280,447	62.8%	$ 2,295,090	59.4%

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 December 31, 2019 and December 31, 2018, our MSR had a fair market value of $1.9 billion and $2.0 billion, respectively.

As of December 31, 2019 and December 31, 2018, our MSR portfolio included MSR on 793,470 and 717,167 loans with an unpaid principal balance of approximately $175.9 billion and $163.1 billion, respectively. The following tables summarize certain characteristics of the loans underlying our MSR by gross weighted average coupon rate types and ranges at December 31, 2019 and December 31, 2018:

	December 31, 2019										
(dollars in thousands)	Number of Loans	Unpaid Principal Balance	Fair Value	% Fannie Mae	Gross Weighted Average Coupon Rate	Weighted Average Loan Age (months)	Weighted Average Original FICO	Weighted Average Original LTV	60+ Day Delinquencies	3-Month CPR	Net Servicing Fee (bps)
30-Year Fixed											
≤ 3.75%	106,097	$ 27,627,966	$ 329,685	71.3%	3.5%	47	771	70.5%	0.1%	10.5%	26.4
> 3.75 - 4.25%	241,274	59,172,782	672,441	64.5%	3.9%	39	761	76.3%	0.2%	16.1%	26.9
> 4.25 - 4.75%	194,543	43,611,524	454,666	65.2%	4.4%	33	745	78.9%	0.4%	26.4%	26.3
> 4.75 - 5.25%	95,468	19,780,323	206,745	65.9%	4.9%	26	732	80.4%	0.5%	32.9%	28.0
> 5.25%	34,524	5,987,442	61,447	70.5%	5.5%	24	709	80.2%	1.0%	30.8%	30.8
	671,906	156,180,037	1,724,984	66.3%	4.2%	37	753	76.7%	0.3%	21.4%	26.9
15-Year Fixed											
≤ 2.75%	2,325	464,650	4,263	80.8%	2.6%	46	778	59.7%	—%	8.6%	26.1
> 2.75 - 3.25%	39,977	6,893,458	63,318	79.9%	2.9%	48	772	62.2%	0.1%	11.2%	25.8
> 3.25 - 3.75%	40,052	6,311,291	61,207	74.0%	3.4%	40	760	65.0%	0.1%	15.0%	27.6
> 3.75 - 4.25%	21,243	2,990,294	29,517	64.2%	3.9%	32	747	66.0%	0.2%	19.2%	29.4
> 4.25%	11,644	1,423,018	13,774	61.9%	4.5%	23	734	66.6%	0.2%	24.8%	31.4
	115,241	18,082,711	172,079	73.9%	3.4%	40	761	64.0%	0.1%	15.0%	27.5
Total ARMs	6,323	1,619,394	12,381	69.9%	3.6%	44	762	65.8%	0.3%	27.3%	25.2
Total	793,470	$ 175,882,142	$ 1,909,444	67.1%	4.1%	37	754	75.3%	0.3%	20.8%	27.0

(dollars in thousands)	December 31, 2018										
	Number of Loans	Unpaid Principal Balance	Fair Value	% Fannie Mae	Gross Weighted Average Coupon Rate	Weighted Average Loan Age (months)	Weighted Average Original FICO	Weighted Average Original LTV	60+ Day Delinquencies	3-Month CPR	Net Servicing Fee (bps)
30-Year Fixed											
≤ 3.75%	87,201	$ 22,717,526	$ 298,599	76.6%	3.5%	43	770	69.4%	0.2%	5.6%	25.1
> 3.75 - 4.25%	205,718	50,363,220	648,969	69.8%	3.9%	34	760	75.8%	0.3%	6.9%	25.4
> 4.25 - 4.75%	190,095	44,614,930	545,197	66.7%	4.4%	24	745	79.0%	0.4%	7.5%	25.6
> 4.75 - 5.25%	93,283	20,802,919	247,663	65.3%	4.9%	15	732	80.7%	0.5%	7.5%	26.7
> 5.25%	31,535	5,911,778	66,482	70.2%	5.5%	14	709	80.5%	0.6%	9.5%	29.1
	607,832	144,410,373	1,806,910	69.3%	4.2%	29	751	76.7%	0.3%	7.0%	25.8
15-Year Fixed											
≤ 2.75%	2,271	505,880	5,174	83.5%	2.6%	35	777	59.3%	0.1%	5.7%	26.1
> 2.75 - 3.25%	36,431	6,505,051	63,300	87.0%	2.9%	42	771	61.5%	0.1%	7.2%	25.3
> 3.25 - 3.75%	37,409	6,144,286	62,870	79.4%	3.4%	33	758	64.4%	0.2%	8.6%	26.5
> 3.75 - 4.25%	18,608	2,781,505	29,387	68.6%	3.9%	25	746	65.8%	0.2%	9.1%	28.7
> 4.25%	8,209	1,102,846	11,426	63.8%	4.5%	14	739	67.1%	0.3%	9.4%	31.3
	102,928	17,039,568	172,157	79.6%	3.4%	34	760	63.6%	0.2%	8.1%	26.7
Total ARMs	6,407	1,652,367	14,373	72.1%	3.6%	40	763	65.5%	0.4%	17.1%	25.2
Total	717,167	$ 163,102,308	$ 1,993,440	70.4%	4.1%	29	752	75.2%	0.3%	7.3%	25.9

Financing

Our borrowings consist primarily of repurchase agreements, FHLB advances, revolving credit facilities and term notes payable. These borrowings are collateralized by our pledge of AFS securities, derivative instruments, MSR and certain cash balances. Substantially all of our Agency RMBS are currently pledged as collateral, and 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 December 31, 2019 and December 31, 2018, borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes had the following characteristics:

(dollars in thousands)	December 31, 2019			December 31, 2018		
Borrowing Type	**Amount Outstanding**	**Weighted Average Borrowing Rate**	**Weighted Average Years to Maturity**	**Amount Outstanding**	**Weighted Average Borrowing Rate**	**Weighted Average Years to Maturity**
Repurchase agreements	$ 29,147,463	2.14%	0.2	$ 23,133,476	2.68%	0.2
Federal Home Loan Bank advances	210,000	2.00%	3.5	865,024	2.53%	1.3
Revolving credit facilities	300,000	4.26%	1.2	310,000	5.60%	4.2
Term notes payable	394,502	4.59%	4.5	—	—%	—
Convertible senior notes (1)	284,954	6.25%	2.0	283,856	6.25%	3.0
Total	$ 30,336,919	2.23%	3.9	$ 24,592,356	2.76%	3.7

(dollars in thousands)	December 31, 2019			December 31, 2018		
Collateral Type	**Amount Outstanding**	**Weighted Average Borrowing Rate**	**Weighted Average Haircut on Collateral Value**	**Amount Outstanding**	**Weighted Average Borrowing Rate**	**Weighted Average Haircut on Collateral Value**
Agency RMBS	$ 27,512,526	2.08%	4.1%	$ 20,954,730	2.53%	4.6%
Non-Agency securities	1,531,608	2.90%	24.9%	2,697,254	3.65%	24.2%
Agency Derivatives	50,714	2.70%	26.4%	46,516	3.34%	26.4%
Mortgage servicing rights	957,117	4.19%	31.7%	610,000	5.06%	40.6%
Other (1)	284,954	6.25%	NA	283,856	6.25%	NA
Total	$ 30,336,919	2.23%	6.0%	$ 24,592,356	2.76%	7.6%

(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 December 31, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, was 6.1:1.0. We believe the current degree of leverage within our portfolio helps ensure that we have access to unused borrowing capacity, thus supporting our liquidity and the strength of our balance sheet.

The following table provides a summary of our borrowings under repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and convertible senior notes, our net TBA notional amounts and our debt-to-equity ratios for the three months ended December 31, 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)
December 31, 2019	$ 27,619,393	$ 30,336,919	$ 30,336,919	6.1:1.0	$ 7,427,000	7.5:1.0
September 30, 2019	$ 27,349,719	$ 26,596,006	$ 28,168,892	5.3:1.0	$ 9,863,000	7.2:1.0
June 30, 2019	$ 26,640,949	$ 28,896,436	$ 29,132,756	5.9:1.0	$ 9,422,000	7.8:1.0
March 31, 2019	$ 22,661,656	$ 21,254,108	$ 23,685,031	4.5:1.0	$ 10,168,000	6.5:1.0
December 31, 2018	$ 23,276,768	$ 24,592,356	$ 24,592,356	5.8:1.0	$ 6,484,000	7.2:1.0

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

Equity

The tables below provide details of our changes in stockholders' equity from December 31, 2018 to December 31, 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 December 31, 2018	$ 3,253.2	248.1	$ 13.11
Reconciliation of non-GAAP measures to GAAP net income and Comprehensive income:			
Core Earnings, including dollar roll income, net of tax expense of $6.8 million (1)	437.2		
Dividends on preferred stock	(75.8)		
Core Earnings attributable to common stockholders, including dollar roll income, net of tax expense of $6.8 million (1)(2)	361.4		
Realized and unrealized gains and losses, net of tax benefit of $20.3 million	(113.3)		
Other comprehensive income, net of tax	578.6		
Dividend declaration	(455.7)		
Other	8.7	0.4	
Issuance of common stock, net of offering costs	336.3	24.4	
Common stockholders' equity at December 31, 2019	$ 3,969.2	272.9	$ 14.54
Total preferred stock liquidation preference	1,001.3		
Total stockholders' equity at December 31, 2019	$ 4,970.5		

(in millions)		Year Ended December 31, 2019
Comprehensive income attributable to common stockholders	$	826.7
Adjustment for other comprehensive income attributable to common stockholders:		
Unrealized gains on available-for-sale securities		(578.6)
Net income attributable to common stockholders		248.1
Adjustments for non-Core Earnings:		
Other-than-temporary impairments and loss recovery adjustments		22.6
Realized gain on investment securities		(284.0)
Unrealized loss on investment securities		3.9
Realized and unrealized losses on mortgage servicing rights		408.6
Realized gain on termination or expiration of interest rate swaps, caps and swaptions		(94.9)
Unrealized loss on interest rate swaps, caps and swaptions		273.7
Gains on other derivative instruments		(205.6)
Other loss		1.3
Change in servicing reserves		(0.7)
Non-cash equity compensation expense		8.7
Net benefit for income taxes on non-Core Earnings		(20.3)
Core Earnings attributable to common stockholders, including dollar roll income [1][2]	$	361.4

(1) Core Earnings, including dollar roll income, is a non-U.S. GAAP measure that we define as comprehensive income (loss) attributable to common stockholders, excluding "realized and unrealized gains and losses" (impairment losses, 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. Core Earnings, including dollar roll income, provides supplemental information to assist investors in analyzing the Company's results of operations and helps facilitate comparisons to industry peers.

(2) Beginning with the period ended June 30, 2019, the Company 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.

U.S. GAAP to Estimated Taxable Income

The following tables provide reconciliations of our GAAP net income (loss) to our estimated taxable income (loss) split between our REIT and TRSs for the years ended December 31, 2019 and 2018:

	Year Ended December 31, 2019			
(dollars in millions)	**TRS**	**REIT**	**Eliminations**	**Consolidated**
GAAP net income (loss), pre-tax	$ (75.1)	$ 347.1	$ 38.4	$ 310.4
State taxes	(2.1)	(0.5)	—	(2.6)
Adjusted GAAP net income (loss), pre-tax	(77.2)	346.6	38.4	307.8
Permanent differences				
Intercompany RMBS sales	—	—	(38.4)	(38.4)
Dividends from TRSs	—	50.0	—	50.0
Other permanent differences	—	(8.3)	—	(8.3)
Temporary differences				
Net accretion of OID and market discount	(39.3)	45.8	—	6.5
Net unrealized gains and losses on derivatives	231.0	557.9	—	788.9
Other temporary differences	4.8	20.9	—	25.7
Capital loss carryforward (utilized) deferral	(0.1)	(490.6)	—	(490.7)
Net operating loss carryforward (utilized) deferral	(77.9)	(11.7)	—	(89.6)
Estimated taxable income	41.3	510.6	—	551.9
Prior year undistributed taxable income	—	—	—	—
Dividend declaration deduction	—	(510.6)	—	(510.6)
Estimated taxable income post-dividend deduction	$ 41.3	$ —	$ —	$ 41.3

	Year Ended December 31, 2018			
(dollars in millions)	**TRS**	**REIT**	**Eliminations**	**Consolidated**
GAAP net income (loss), pre-tax	$ 114.2	$ (59.4)	$ (57.3)	$ (2.5)
State taxes	—	—	—	—
Adjusted GAAP net income (loss), pre-tax	114.2	(59.4)	(57.3)	(2.5)
Permanent differences				
Intercompany RMBS sales	—	—	57.3	57.3
Other permanent differences	—	(0.8)	—	(0.8)
Temporary differences				
Acquisition transaction costs	—	82.4	—	82.4
Net accretion of OID and market discount	0.1	76.3	—	76.4
Net unrealized gains and losses on derivatives	(68.0)	(1.3)	—	(69.3)
Other temporary differences	(13.3)	(0.6)	—	(13.9)
Capital loss carryforward (utilized) deferral	(8.0)	393.7	—	385.7
Net operating loss carryforward (utilized) deferral	(15.3)	—	—	(15.3)
Estimated taxable income	9.7	490.3	—	500.0
Dividend declaration deduction	—	(490.3)	—	(490.3)
Estimated taxable income post-dividend deduction	$ 9.7	$ —	$ —	$ 9.7

The permanent tax differences recorded in 2019 include dividends paid from the Company's TRSs to the REIT. Additionally, permanent tax differences recorded in both 2019 and 2018 include a recurring difference related to the intercompany sales of RMBS and a recurring difference in compensation expense related to restricted stock dividends. Temporary differences are principally timing differences between U.S. GAAP and tax accounting related to unrealized gains and losses from derivative instruments, realized and unrealized gains and losses from MSR and accretion and amortization from Agency RMBS and non-Agency securities. Additionally, for the year ended December 31, 2018, there were both permanent and temporary tax differences resulting from the treatment of transaction costs and related expenses from the merger with CYS.

Change in Accumulated Other Comprehensive Income

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 consolidated balance sheets as a change in stockholders' equity under "accumulated other comprehensive income." As a result of this fair value accounting through stockholders' equity, we expect our net income 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.

Dividends

For the year ended December 31, 2019, we declared cash dividends totaling $1.67 per share. As a REIT, we are required to distribute at least 90% of our taxable income to stockholders, subject to certain distribution requirements. For the year ended December 31, 2019, our board of directors elected to distribute the majority of our taxable income to avoid U.S. Federal Income taxes. As such, temporary differences between GAAP net income (loss) and taxable income can generate deterioration in book value on a permanent and temporary basis as taxable income is distributed that has not been earned for U.S. GAAP purposes.

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 December 31, 2019, we held $558.1 million in cash and cash equivalents available to support our operations; $33.5 billion of AFS securities, MSR, and derivative assets held at fair value; and $30.3 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 twelve months ended December 31, 2019, the debt-to-equity ratio funding our AFS securities, MSR and Agency Derivatives, which includes unsecured borrowings under convertible senior notes, increased from 5.3:10 to 6.1:1.0 and increased from 5.8:1.0 to 6.1:1.0, respectively. The increase was driven by increased financing on Agency RMBS purchases. During the three and twelve months ended December 31, 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 7.2:10 to 7.5:1.0 for both periods.

As of December 31, 2019, we held approximately $1.3 million of unpledged Agency securities and derivatives and $1.6 billion of unpledged non-Agency securities. As a result, we had an overall estimated unused borrowing capacity on unpledged securities of approximately $1.2 billion. As of December 31, 2019, we held approximately $354.6 million of unpledged MSR. Overall, we had unused borrowing capacity on MSR financing facilities of $1.2 billion, which includes the repurchase facility pursuant to which the Company may finance the VFN issued in connection with the MSR securitization transaction completed on June 27, 2019. Generally, unused borrowing capacity may be the result of our election not to utilize certain financing, as well as delays in the timing in which funding is provided or the inability to meet lenders' eligibility requirements for specific types of asset classes. On a daily basis, we monitor and forecast our available, or excess, liquidity. Additionally, we frequently perform shock analyses against various market events to monitor the adequacy of our excess liquidity. If borrowing rates and/or collateral requirements change in the near term, we believe we are subject to less earnings volatility than a more leveraged organization.

During the year ended December 31, 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 current 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 December 31, 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 optimize counterparty risk. Under our repurchase agreements, we are required to pledge additional assets as collateral to our lenders when the estimated fair value of the existing pledged collateral under such agreements declines and such lenders, through a margin call, demand additional collateral. Lenders generally make margin calls because of a perceived decline in the value of our assets collateralizing the repurchase agreements. This may occur following the monthly principal reduction of assets due to scheduled amortization and prepayments on the underlying mortgages, or may be caused by changes in market interest rates, a perceived decline in the market value of the investments and other market factors. To cover a margin call, we may pledge additional assets or cash. At maturity, any cash on deposit as collateral is generally applied against the repurchase agreement balance, thereby reducing the amount borrowed. Should the value of our assets suddenly decrease, significant margin calls on our repurchase agreements could result, causing an adverse change in our liquidity position.

The following table summarizes our repurchase agreements and counterparty geographical concentration at December 31, 2019 and December 31, 2018:

	December 31, 2019			December 31, 2018		
(dollars in thousands)	Amount Outstanding	Net Counterparty Exposure(1)	Percent of Funding	Amount Outstanding	Net Counterparty Exposure(1)	Percent of Funding
North America	$ 16,165,067	$ 1,026,474	57.6%	$ 12,061,693	$ 1,120,101	55.4%
Europe (2)	7,519,258	521,804	29.3%	6,728,245	646,000	31.9%
Asia (2)	5,463,138	234,180	13.1%	4,343,538	255,973	12.7%
Total	$ 29,147,463	$ 1,782,458	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 two repurchase facilities and one revolving credit facility that provide short- and long-term financing for our MSR portfolio. An overview of the facilities is presented in the table below:

(dollars in thousands)

December 31, 2019					
Expiration Date (1)	**Committed**	**Amount Outstanding**	**Unused Capacity**	**Total Capacity**	**Eligible Collateral**
June 21, 2021	Yes (2)	$ —	$ 1,000,000	$ 1,000,000	Mortgage servicing rights (3)
December 1, 2020	Yes (2)	$ 262,615	$ 137,385	$ 400,000	Mortgage servicing rights (4)
March 12, 2021	Yes (2)	$ 300,000	$ 50,000	$ 350,000	Mortgage servicing rights

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

Our wholly owned subsidiary, TH Insurance, is a member of the FHLB. As a member of the FHLB, TH Insurance has access to a variety of products and services offered by the FHLB, including secured advances. As of December 31, 2019, TH Insurance had $210.0 million in outstanding secured advances with a weighted average borrowing rate of 2.00%.

The ability to borrow from the FHLB is subject to 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 December 31, 2019:

- Total indebtedness to tangible net worth must be less than 8.0:1.0. As of December 31, 2019, our total indebtedness to tangible net worth, as defined, was 6.2:1.0.
- Cash liquidity must be greater than $100.0 million. As of December 31, 2019, our liquidity, as defined, was $558.1 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 December 31, 2019, 50% of the highest net worth during the 24 calendar months prior was $2.6 billion and our net worth, as defined, was $5.0 billion.

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

The following table summarizes assets at carrying values that were pledged or restricted as collateral for the future payment obligations of repurchase agreements, FHLB advances, revolving credit facilities, term notes payable and derivative instruments at December 31, 2019 and December 31, 2018:

(in thousands)	December 31, 2019	December 31, 2018
Available-for-sale securities, at fair value	$ 29,802,456	$ 25,157,999
Mortgage servicing rights, at fair value	1,554,825	1,143,918
Restricted cash	919,010	416,696
Due from counterparties	102,365	110,695
Derivative assets, at fair value	68,874	70,191
U.S. Treasuries, at fair value (1)	—	6,457
Total	$ 32,447,530	$ 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 December 31, 2019 and December 31, 2018:

(in thousands)	December 31, 2019	December 31, 2018
Within 30 days	$ 5,465,916	$ 7,488,869
30 to 59 days	6,300,372	5,077,598
60 to 89 days	6,687,285	5,655,060
90 to 119 days	4,740,217	1,938,859
120 to 364 days	6,113,673	3,508,114
One to three years	584,954	300,000
Three to five years	394,502	573,856
Five to ten years	—	—
Ten years and over	50,000	50,000
Total	$ 30,336,919	$ 24,592,356

For the year ended December 31, 2019, our restricted and unrestricted cash balance increased approximately $519.1 million to $1.6 billion at December 31, 2019. The cash movements can be summarized by the following:

- *Cash flows from operating activities.* For the year ended December 31, 2019, operating activities increased our cash balances by approximately $1.1 billion, primarily driven by our financial results for the year.
- *Cash flows from investing activities*. For the year ended December 31, 2019, investing activities decreased our cash balances by approximately $6.1 billion, primarily driven by purchases of MSR and AFS securities.
- *Cash flows from financing activities.* For the year ended December 31, 2019, financing activities increased our cash balance by approximately $5.5 billion, primarily driven by increases in repurchase agreements as a result of purchases of AFS securities.

Off-Balance Sheet Arrangements

We have not participated in transactions that create relationships with unconsolidated entities or financial partnerships which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. Further, we have not guaranteed any obligations of unconsolidated entities or entered into any commitment or intent to provide funding to any such entities.

Aggregate Contractual Obligations

The following table summarizes the effect on our liquidity and cash flows from contractual obligations for repurchase agreements, FHLB advances, revolving credit facilities, convertible senior notes, interest expense on borrowings, our non-cancelable office leases, net of contractual subleases, and management fees payable under our management agreement:

	Due During the Year Ended December 31,						
(in thousands)	**2020**	**2021**	**2022**	**2023**	**2024**	**Thereafter**	**Total**
Repurchase agreements	$ 29,147,463	$ —	$ —	$ —	$ —	$ —	$ 29,147,463
Federal Home Loan Bank advances	160,000	—	—	—	—	50,000	210,000
Revolving credit facilities	—	300,000	—	—	—	—	300,000
Convertible senior notes	—	—	284,954	—	—	—	284,954
Interest expense on borrowings(1)	153,525	21,761	2,043	1,305	1,305	12,785	192,724
Long-term operating lease obligations	1,616	1,523	1,003	327	—	—	4,469
Management fee - PRCM Advisers(2)	245,826	—	—	—	—	—	245,826
Total	$ 29,708,430	$ 323,284	$ 288,000	$ 1,632	$ 1,305	$ 62,785	$ 30,385,436

(1) Interest expense on borrowings calculated based on rates at December 31, 2019.

(2) Contractual obligation for the management fee is estimated through the contract expiration date of October 28, 2020, inclusive of the termination fee as defined in the management agreement between us and PRCM Advisers. Disclosure assumes the agreement is not renewed pursuant to its terms and that the effective termination date is October 28, 2020.

We are party to a management agreement with PRCM Advisers, pursuant to which PRCM Advisers is entitled to receive a management fee and the reimbursement of certain expenses from us. We reimburse PRCM Advisers for (i) our allocable share of the compensation paid by PRCM Advisers to its personnel serving as our principal financial officer and general counsel and personnel employed by PRCM Advisers as in-house legal, tax, accounting, consulting, auditing, administrative, information technology, valuation, computer programming and development and back-office resources to us, and (ii) any amounts for personnel of PRCM Advisers' affiliates arising under a shared facilities and services agreement. We also have certain costs allocated to us by PRCM Advisers for data services and technology, but most direct expenses with third-party vendors are paid directly by us.

We are also party to contracts that contain a variety of indemnification obligations, principally with brokers, underwriters, counterparties to lending agreements and investors in the RMBS we issued in connection with our previous residential mortgage loan securitization transactions, the term notes we issued in connection with our MSR securitization and the loans underlying our MSR. The maximum potential future payment amount we could be required to pay under these indemnification obligations may be unlimited.

Recently Issued Accounting Standards

Refer to Note 2 of the notes to the consolidated financial statements included in Item 8 of this Form 10-K.

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.

Other Matters

We intend to conduct our business so as to maintain our exempt status under, and not to become regulated as, an investment company for purposes of the 1940 Act. If we failed to maintain our exempt status under the 1940 Act and became regulated as an investment company, our ability to, among other things, use leverage would be substantially reduced and, as a result, we would be unable to conduct our business as described in Item 1*,* "*Business - Other Business - Regulation*" of this Annual Report on Form 10-K. Accordingly, we monitor our compliance with both the 55% Test and the 80% Tests of the 1940 Act in order to maintain our exempt status. As of December 31, 2019, we determined that we maintained compliance with both the 55% Test and the 80% Test requirements.

We calculate that at least 75% of our assets were qualified REIT assets, as defined in the Code for the year ended December 31, 2019. We also calculate that our revenue qualifies for the 75% source of income test and for the 95% source of income test rules for the year ended December 31, 2019. Consequently, we met the REIT income and asset tests. We also met all REIT requirements regarding the ownership of our common stock and the distribution of our net income. Therefore, for the year ended December 31, 2019, we believe that we qualified as a REIT under the Code.

The TCJA made many significant changes to the U.S. federal income tax laws applicable to businesses, including REITs and TRSs. Pursuant to the TCJA, as of January 1, 2018, the federal income tax rate applicable to corporations was reduced to 21% and the corporate alternative minimum tax was repealed. In addition, the deduction of net interest expense is limited for all businesses; provided that certain businesses, including real estate businesses, may elect not to be subject to such limitations and instead to depreciate their real property related assets over longer depreciable lives. This limitation could adversely affect our TRSs.

Item 7A. 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 hedge to interest rate exposure on our Agency RMBS portfolio. In hedging interest rate risk, we seek to reduce the risk of losses on the value of our investments that may result from changes in interest rates in the broader markets, improve risk-adjusted returns and, where possible, obtain a favorable spread between the yield on our assets and the cost of our financing.

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

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

Interest Rate Effect on Net Interest Income

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

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

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

Interest Rate Mismatch Risk

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

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

	December 31, 2019				December 31, 2018			
Index Type	**Floating**	**Hybrid (1)**	**Total**	**Index %**	**Floating**	**Hybrid (1)**	**Total**	**Index %**
CMT	$ —	$ 11,884	$ 11,884	—%	$ 9,502	$ 15,423	$ 24,925	1%
LIBOR	3,247,387	8,400	3,255,787	94%	3,374,141	9,278	3,383,419	93%
Other (2)	44,824	164,635	209,459	6%	50,597	165,054	215,651	6%
Total	$ 3,292,211	$ 184,919	$ 3,477,130	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. The analysis is based on models which utilize estimates of fair value and interest rate sensitivity. Actual economic conditions or implementation of decisions may produce results that differ significantly from the estimates and assumptions used in our models.

We perform interest rate sensitivity analyses on various measures of our financial results and condition by examining how our assets, financing, and hedges will perform in various interest rate "shock" scenarios. Two of these measures are presented below in more detail. The first measure is change in annualized net interest income over the next 12 months, including interest spread from our interest rate swaps and caps and float income from custodial accounts associated with our MSR. The second measure is change in value of financial position, including the value of our derivative assets and liabilities. All changes in value are measured as the change from the December 31, 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. 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 December 31, 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)]:	$ (14,670)	$ (7,363)	$ 7,345	$ 14,690
% change in net interest income [(1)]	*(3.0)%*	*(1.5)%*	*1.5 %*	*3.0 %*
Change in value of financial position:				
Available-for-sale securities	$ 384,030	$ 190,968	$ (222,976)	$ (507,398)
As a % of common equity	*9.7 %*	*4.8 %*	*(5.6)%*	*(12.8)%*
Mortgage servicing rights	$ (270,100)	$ (135,821)	$ 130,899	$ 250,616
As a % of common equity	*(6.8)%*	*(3.4)%*	*3.3 %*	*6.3 %*
Derivatives, net	$ (100,978)	$ (40,174)	$ 46,526	$ 126,802
As a % of common equity	*(2.5)%*	*(1.0)%*	*1.2 %*	*3.2 %*
Reverse repurchase agreements	$ 46	$ 23	$ (23)	$ (46)
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Repurchase agreements	$ (30,532)	$ (15,266)	$ 15,266	$ 30,532
As a % of common equity	*(0.8)%*	*(0.4)%*	*0.4 %*	*0.8 %*
Federal Home Loan Bank advances	$ (44)	$ (22)	$ 22	$ 44
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Revolving credit facilities	$ (63)	$ (31)	$ 31	$ 63
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Term notes payable	$ (126)	$ (63)	$ 63	$ 126
As a % of common equity	*— %*	*— %*	*— %*	*— %*
Convertible senior notes	$ (2,518)	$ (1,255)	$ 1,248	$ 2,487
As a % of common equity	*(0.1)%*	*— %*	*— %*	*0.1 %*
Total Net Assets	$ (20,285)	$ (1,641)	$ (28,944)	$ (96,774)
As a % of total assets	*(0.1)%*	*— %*	*(0.1)%*	*(0.3)%*
As a % of common equity	(0.5)%	— %	(0.7)%	(2.4)%

(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 December 31, 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 the supply of housing); changes or continued weakness in specific industry segments; construction quality, age and design; demographic factors; retroactive changes to building or similar codes; and natural disasters and other catastrophes. Decreases in property values reduce the value of the collateral for residential mortgage loans and the potential proceeds available to borrowers to repay the loans, which could cause us to suffer losses on our non-Agency securities and may increase costs to service the residential mortgage loans underlying our MSR.

Liquidity Risk

Our liquidity risk is principally associated with our financing of long-maturity assets with shorter-term borrowings in the form of repurchase agreements, 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 7, "*Management's Discussion and Analysis of Financial Condition and Results of Operations - Liquidity and Capital Resources*" in this Annual Report on 10-K 10-K 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 8. Financial Statements and Supplementary Data

TWO HARBORS INVESTMENT CORP.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND SCHEDULES

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors
of Two Harbors Investment Corp.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Two Harbors Investment Corp. (the Company) as of December 31, 2019 and 2018, the related consolidated statements of comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 26, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

	Valuation of Level 3 Fair Value Measurement
Description of the Matter	At December 31, 2019, the Company held $33.5 billion of assets recorded at fair value on a recurring basis. Of this amount, $0.2 billion of available-for-sale securities and $1.9 billion of mortgage servicing rights are classified as Level 3 fair value measurements in accordance with Accounting Standards Codification (ASC) 820, Fair Value Measurements and Disclosures. As more fully described in Note 10 to the consolidated financial statements, the Company utilizes third-party pricing vendors or other applicable market data inputs in the fair value measurement of its Level 3 assets. For available-for-sale securities, significant unobservable market data inputs inherent in the prices obtained from third-party pricing vendors include prepayment speeds, delinquency levels, and credit losses. For mortgage servicing rights, significant unobservable market data inputs inherent in the prices obtained from third-party pricing vendors include prepayment speeds, delinquency levels, discount rates, and cost to service. Significant increases or decreases in these inputs in isolation may result in significantly lower or higher fair value measurements. Auditing the Company's valuation of Level 3 assets was especially challenging because the valuation involved significant judgement due to the unobservable inputs used in the valuation of these assets. These subjective assumptions consider a number of factors that are affected by market, economic, and asset-specific conditions.

How We Addressed the Matter in Our Audit	Our audit procedures related to the fair value of Level 3 assets included the following procedures, among others. We obtained an understanding of the Level 3 fair value measurements process, evaluated the design, and tested the operating effectiveness of internal controls. This included testing controls over management's review of the third-party pricing vendors' qualifications and methodologies applied. We also tested controls over management's evaluation of pricing information obtained from third-party pricing vendors, including the consideration of applicable market data. To test the fair value of the Company's Level 3 fair value measurements, our audit procedures included, among others, testing the completeness and accuracy of data used in the fair value measurement process and involving our internal valuation specialists to independently develop fair value estimates for a sample of assets classified as Level 3 fair value measurements using independently developed cash flow models and assumptions including consideration of market transactions. We compared our independently developed fair value estimates to the Company's valuations. In addition, to identify potential sources of contrary information, we performed back-testing of sales of these assets that occurred after December 31, 2019.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2009.

Minneapolis, Minnesota
February 26, 2020

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

	December 31, 2019	December 31, 2018
ASSETS		
Available-for-sale securities, at fair value	$ 31,406,328	$ 25,552,604
Mortgage servicing rights, at fair value	1,909,444	1,993,440
Cash and cash equivalents	558,136	409,758
Restricted cash	1,058,690	688,006
Accrued interest receivable	92,634	86,589
Due from counterparties	318,963	154,626
Derivative assets, at fair value	188,051	319,981
Reverse repurchase agreements	220,000	761,815
Other assets	169,376	165,660
Total Assets [(1)]	$ 35,921,622	$ 30,132,479
LIABILITIES AND STOCKHOLDERS' EQUITY		
Liabilities		
Repurchase agreements	$ 29,147,463	$ 23,133,476
Federal Home Loan Bank advances	210,000	865,024
Revolving credit facilities	300,000	310,000
Term notes payable	394,502	—
Convertible senior notes	284,954	283,856
Derivative liabilities, at fair value	6,740	820,590
Due to counterparties	259,447	130,210
Dividends payable	128,125	135,551
Accrued interest payable	149,626	160,005
Other liabilities	70,299	39,278
Total Liabilities [(1)]	30,951,156	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 272,935,731 and 248,085,721 shares issued and outstanding, respectively	2,729	2,481
Additional paid-in capital	5,154,764	4,809,616
Accumulated other comprehensive income	689,400	110,817
Cumulative earnings	2,655,891	2,332,371
Cumulative distributions to stockholders	(4,509,819)	(3,978,297)
Total Stockholders' Equity	4,970,466	4,254,489
Total Liabilities and Stockholders' Equity	$ 35,921,622	$ 30,132,479

(1) The consolidated balance sheets include assets and liabilities of consolidated variable interest entities, or VIEs. At December 31, 2019 and December 31, 2018, assets of the VIEs totaled $395,008 and $0, and liabilities of the VIEs totaled $395,008 and $0, respectively. See Note 3 - *Variable Interest Entities* for additional information.

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

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Interest income:			
Available-for-sale securities	$ 962,283	$ 847,325	$ 631,853
Residential mortgage loans held-for-investment in securitization trusts	—	—	102,886
Other	32,407	22,707	10,350
Total interest income	994,690	870,032	745,089
Interest expense:			
Repurchase agreements	654,280	469,437	210,430
Collateralized borrowings in securitization trusts	—	—	82,573
Federal Home Loan Bank advances	10,920	20,417	36,911
Revolving credit facilities	19,354	10,820	2,341
Term notes payable	10,708	—	—
Convertible senior notes	19,067	18,997	17,933
Total interest expense	714,329	519,671	350,188
Net interest income	280,361	350,361	394,901
Other-than-temporary impairments:			
Total other-than-temporary impairment losses	(14,312)	(470)	(789)
Other income (loss):			
Gain (loss) on investment securities	280,118	(341,312)	(34,695)
Servicing income	501,612	343,096	209,065
Loss on servicing asset	(697,659)	(69,033)	(91,033)
(Loss) gain on interest rate swap, cap and swaption agreements	(108,289)	16,043	(9,753)
Gain (loss) on other derivative instruments	259,998	(54,857)	(70,159)
Other income	337	3,037	30,141
Total other income (loss)	236,117	(103,026)	33,566
Expenses:			
Management fees	60,102	30,272	40,472
Servicing expenses	74,607	61,136	35,289
Other operating expenses	57,055	62,983	54,160
Acquisition transaction costs	—	86,703	—
Restructuring charges	—	8,238	—
Total expenses	191,764	249,332	129,921
Income (loss) from continuing operations before income taxes	310,402	(2,467)	297,757
(Benefit from) provision for income taxes	(13,560)	41,823	(10,482)
Net income (loss) from continuing operations	323,962	(44,290)	308,239
Income from discontinued operations, net of tax	—	—	44,146
Net income (loss)	323,962	(44,290)	352,385
Income from discontinued operations attributable to noncontrolling interest	—	—	3,814
Net income (loss) attributable to Two Harbors Investment Corp.	323,962	(44,290)	348,571
Dividends on preferred stock	75,801	65,395	25,122
Net income (loss) attributable to common stockholders	$ 248,161	$ (109,685)	$ 323,449

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

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Basic earnings (loss) per weighted average common share:			
Continuing operations	$ 0.93	$ (0.53)	$ 1.62
Discontinued operations	—	—	0.23
Net income (loss)	$ 0.93	$ (0.53)	$ 1.85
Diluted earnings (loss) per weighted average common share:			
Continuing operations	$ 0.93	$ (0.53)	$ 1.60
Discontinued operations	—	—	0.21
Net income (loss)	$ 0.93	$ (0.53)	$ 1.81
Weighted average number of shares of common stock:			
Basic	267,826,739	206,020,502	174,433,999
Diluted	267,826,739	206,020,502	188,133,341
Comprehensive income (loss):			
Net income (loss)	$ 323,962	$ (44,290)	$ 352,385
Other comprehensive income (loss), net of tax:			
Unrealized gain (loss) on available-for-sale securities	578,583	(233,914)	135,586
Other comprehensive income (loss)	578,583	(233,914)	135,586
Comprehensive income (loss)	902,545	(278,204)	487,971
Comprehensive income attributable to noncontrolling interest	—	—	3,814
Comprehensive income (loss) attributable to Two Harbors Investment Corp.	902,545	(278,204)	484,157
Dividends on preferred stock	75,801	65,395	25,122
Comprehensive income (loss) attributable to common stockholders	$ 826,744	$ (343,599)	$ 459,035

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

TWO HARBORS INVESTMENT CORP.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(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	Non-controlling Interest	Total Equity
Balance, December 31, 2016	$ —	$ 1,739	$ 3,661,711	$ 199,227	$ 2,038,033	$ (2,499,599)	$ 3,401,111	$ —	$ 3,401,111
Net income	—	—	—	—	348,571	—	348,571	3,814	352,385
Other comprehensive income before reclassifications, net of tax expense of $45,157	—	—	—	129,590	—	—	129,590	—	129,590
Amounts reclassified from accumulated other comprehensive income, net of tax benefit of $2,722	—	—	—	5,996	—	—	5,996	—	5,996
Other comprehensive income, net of tax expense of $42,435	—	—	—	135,586	—	—	135,586	—	135,586
Contribution of TH Commercial Holdings LLC to Granite Point	—	—	(13,771)	—	—	—	(13,771)	195,646	181,875
Acquisition of noncontrolling interests	—	—	182	—	—	—	182	(11,542)	(11,360)
Issuance of preferred stock, net of offering costs	702,537	—	—	—	—	—	702,537	—	702,537
Issuance of common stock, net of offering costs	—	—	449	—	—	—	449	—	449
Preferred dividends declared	—	—	—	—	—	(25,122)	(25,122)	—	(25,122)
Common dividends declared	—	—	—	—	—	(350,709)	(350,709)	(3,177)	(353,886)
Special dividend of Granite Point Mortgage Trust Inc. common stock	—	—	11,267	—	—	(650,848)	(639,581)	(184,741)	(824,322)
Non-cash equity award compensation	—	6	12,165	—	—	—	12,171	—	12,171
Balance, December 31, 2017	702,537	1,745	3,672,003	334,813	2,386,604	(3,526,278)	3,571,424	—	3,571,424
Cumulative effect of adoption of new accounting principle	—	—	25	9,918	(9,943)	—	—	—	—
Adjusted balance, January 1, 2018	702,537	1,745	3,672,028	344,731	2,376,661	(3,526,278)	3,571,424	—	3,571,424
Net loss	—	—	—	—	(44,290)	—	(44,290)	—	(44,290)
Other comprehensive loss before reclassifications, net of tax benefit of $14,890	—	—	—	(488,253)	—	—	(488,253)	—	(488,253)
Amounts reclassified from accumulated other comprehensive income, net of tax benefit of $0	—	—	—	254,339	—	—	254,339	—	254,339
Other comprehensive loss, net of tax benefit of $14,890	—	—	—	(233,914)	—	—	(233,914)	—	(233,914)
Acquisition of CYS Investments, Inc.	274,950	726	1,124,388	—	—	—	1,400,064	—	1,400,064
Issuance of preferred stock, net of offering costs	14	—	—	—	—	—	14	—	14
Issuance of common stock, net of offering costs	—	—	215	—	—	—	215	—	215
Preferred dividends declared	—	—	—	—	—	(65,395)	(65,395)	—	(65,395)
Common dividends declared	—	—	—	—	—	(386,624)	(386,624)	—	(386,624)
Non-cash equity award compensation	—	10	12,985	—	—	—	12,995	—	12,995
Balance, December 31, 2018	977,501	2,481	4,809,616	110,817	2,332,371	(3,978,297)	4,254,489	—	4,254,489
Cumulative effect of adoption of new accounting principle	—	—	—	—	(442)	—	(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	—	4,254,047
Net income	—	—	—	—	323,962	—	323,962	—	323,962
Other comprehensive income before reclassifications, net of tax expense of $39	—	—	—	796,346	—	—	796,346	—	796,346
Amounts reclassified from accumulated other comprehensive income, net of tax benefit of $0	—	—	—	(217,763)	—	—	(217,763)	—	(217,763)
Other comprehensive income, net of tax expense of $39	—	—	—	578,583	—	—	578,583	—	578,583
Issuance of common stock, net of offering costs	—	244	336,009	—	—	—	336,253	—	336,253
Repurchase of common stock	—	—	(19)	—	—	—	(19)	—	(19)
Preferred dividends declared	—	—	—	—	—	(75,801)	(75,801)	—	(75,801)
Common dividends declared	—	—	—	—	—	(455,721)	(455,721)	—	(455,721)
Non-cash equity award compensation	—	4	9,158	—	—	—	9,162	—	9,162
Balance, December 31, 2019	$ 977,501	$ 2,729	$ 5,154,764	$ 689,400	$ 2,655,891	$ (4,509,819)	$ 4,970,466	$ —	$ 4,970,466

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

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

	Year Ended December 31,		
	2019	2018	2017
Cash Flows From Operating Activities:			
Net income (loss) from continuing operations	$ 323,962	$ (44,290)	$ 308,239
Adjustments to reconcile net income (loss) from continuing operations to net cash provided by operating activities:			
Amortization of premiums and discounts on investment securities, net	167,097	93,830	67,651
Amortization of deferred debt issuance costs on term notes payable and convertible senior notes	1,680	1,029	714
Other-than-temporary impairment losses	14,312	470	789
Realized and unrealized (gains) losses on investment securities	(280,118)	344,468	35,401
Loss on servicing asset	697,659	69,033	91,033
Gain on residential mortgage loans held-for-investment and collateralized borrowings in securitization trusts	—	—	(22,683)
Realized and unrealized losses on interest rate swaps, caps and swaptions	178,803	33,174	930
Unrealized (gain) loss on other derivative instruments	(34,745)	23,489	50,099
Equity based compensation	9,162	12,995	11,330
Excess consideration in the acquisition of CYS Investments, Inc.	—	77,602	—
Net change in assets and liabilities:			
(Increase) decrease in accrued interest receivable	(6,045)	12,366	(24,689)
(Increase) decrease in deferred income taxes, net	(24,912)	41,988	(11,030)
(Decrease) increase in accrued interest payable	(10,379)	44,820	67,118
Change in other operating assets and liabilities, net	20,161	(8,104)	(229)
Net cash provided by operating activities from discontinued operations	—	—	32,108
Net cash provided by operating activities	1,056,637	702,870	606,781
Cash Flows From Investing Activities:			
Purchases of available-for-sale securities	(24,656,050)	(12,621,282)	(18,232,105)
Proceeds from sales of available-for-sale securities	15,879,823	15,202,406	8,708,941
Principal payments on available-for-sale securities	3,599,834	2,434,071	1,553,051
Purchases of mortgage servicing rights, net of purchase price adjustments	(611,765)	(976,393)	(484,261)
(Payments for) proceeds from sales of mortgage servicing rights	(1,898)	637	355
(Purchases) short sales of derivative instruments, net	(76,752)	(83,887)	(103,175)
(Payments for termination and settlement) proceeds from sales and settlement of derivative instruments, net	(749,226)	354,822	85,811
Proceeds from sales of beneficial interests in securitization trusts	—	—	190,160
Proceeds from repayment of residential mortgage loans held-for-investment in securitization trusts	—	—	332,085
Payments for reverse repurchase agreements	(2,056,825)	(4,085,482)	—
Proceeds from reverse repurchase agreements	2,598,640	4,085,127	—
Net cash paid for the acquisition of CYS Investments, Inc.	—	(13,552)	—
(Decrease) increase in due to counterparties, net	(35,100)	449,274	(805,158)
Change in other investing assets and liabilities, net	31,575	44,257	83,976
Net cash used in investing activities of discontinued operations	—	—	(813,939)
Net cash (used in) provided by investing activities	$ (6,077,744)	$ 4,789,998	$ (9,484,259)

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

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

	Year Ended December 31,		
	2019	**2018**	**2017**
Cash Flows From Financing Activities:			
Proceeds from repurchase agreements	$ 236,071,952	$ 151,887,922	$ 139,559,059
Principal payments on repurchase agreements	(230,057,965)	(156,949,180)	(128,973,036)
Principal payments on collateralized borrowings in securitization trusts	—	—	(328,978)
Proceeds from Federal Home Loan Bank advances	160,000	—	—
Principal payments on Federal Home Loan Bank advances	(815,024)	(350,000)	(2,784,976)
Proceeds from revolving credit facilities	450,000	397,400	123,000
Principal payments on revolving credit facilities	(460,000)	(107,400)	(173,000)
Proceeds from issuance of term notes payable	393,920	—	—
Proceeds from convertible senior notes	—	—	282,113
Proceeds from issuance of preferred stock, net of offering costs	—	(36)	702,537
Proceeds from issuance of common stock, net of offering costs	336,253	215	449
Repurchase of common stock	(19)	—	—
Dividends paid on preferred stock	(75,801)	(58,394)	(13,173)
Dividends paid on common stock	(463,147)	(270,626)	(422,885)
Net cash provided by financing activities from discontinued operations	—	—	1,146,168
Net cash provided by (used in) financing activities	5,540,169	(5,450,099)	9,117,278
Net increase in cash, cash equivalents and restricted cash	519,062	42,769	239,800
Cash, cash equivalents and restricted cash of continuing operations at beginning of period	1,097,764	1,054,995	758,916
Cash, cash equivalents and restricted cash of discontinued operations at beginning of period	—	—	56,279
Cash, cash equivalents and restricted cash at beginning of period	1,097,764	1,054,995	815,195
Cash, cash equivalents and restricted cash at end of period	$ 1,616,826	$ 1,097,764	$ 1,054,995

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

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

	Year Ended December 31, 2019	2018	2017
Supplemental Disclosure of Cash Flow Information:			
Cash paid for interest	$ 720,213	$ 419,878	$ 227,518
Cash paid (received) for taxes, net	$ 28,202	$ 397	$ (856)
Noncash Activities:			
Acquisition of the assets and liabilities of CYS Investments, Inc.			
Available-for-sale securities	$ —	$ 10,034,557	$ —
Cash and cash equivalents	$ —	$ 386	$ —
Restricted cash	$ —	$ 1,062	$ —
Accrued interest receivable	$ —	$ 30,646	$ —
Reverse repurchase agreements	$ —	$ 761,460	$ —
Other assets	$ —	$ 11,977	$ —
Repurchase agreements	$ —	$ (8,743,527)	$ —
Derivative liabilities, net	$ —	$ (451,026)	$ —
Due to counterparties, net	$ —	$ (279,715)	$ —
Accrued interest payable	$ —	$ (27,487)	$ —
Other liabilities	$ —	$ (821)	$ —
Issuance of preferred stock in connection with the acquisition of CYS Investments, Inc.	$ —	$ 275,000	$ —
Issuance of common stock in connection with the acquisition of CYS Investments, Inc.	$ —	$ 1,125,114	$ —
Deconsolidation of the assets and liabilities of variable interest entities			
Residential mortgage loans held-for-investment in securitization trusts	$ —	$ —	$ 2,894,507
Accrued interest receivable	$ —	$ —	$ 15,386
Collateralized borrowings in securitization trusts	$ —	$ —	$ 2,920,970
Accrued interest payable	$ —	$ —	$ 8,271
Accrued expenses and other liabilities	$ —	$ —	$ 10,826
Recognition of beneficial interests in securitization trusts	$ —	$ —	$ 59,826
Distribution of TH Commercial Holdings LLC to Granite Point Mortgage Trust Inc. in exchange for common shares	$ —	$ —	$ 651,000
Distribution of Granite Point Mortgage Trust Inc. common stock	$ —	$ —	$ 650,848
Cumulative-effect adjustment to equity for adoption of new accounting principle	$ 442	$ 9,918	$ —
Dividends declared but not paid at end of period	$ 128,125	$ 135,551	$ 12,552

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

TWO HARBORS INVESTMENT CORP.

Notes to the Consolidated Financial Statements

Note 1. Organization and Operations

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

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

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

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 accompanying consolidated financial statements include the accounts of all subsidiaries; inter-company accounts and transactions have been eliminated. The accounting and reporting policies of the Company conform to U.S. generally accepted accounting principles, or U.S. GAAP. Certain prior period amounts have been reclassified to conform to the current period presentation. All per share amounts, common shares outstanding and restricted shares for all prior periods presented have been adjusted on a retroactive basis to reflect the Company's one-for-two reverse stock split effected on November 1, 2017 (refer to Note 17 - *Stockholders' Equity* for additional information).

Due to its controlling ownership interest in Granite Point through November 1, 2017, the Company consolidated Granite Point on its financial statements. Effective November 1, 2017 (the date the 33.1 million shares of Granite Point common stock were distributed to the Company's common stockholders), the Company no longer had a controlling interest in Granite Point and, therefore, deconsolidated Granite Point and its subsidiaries from its financial statements and reclassified all of Granite Point's prior period assets, liabilities and results of operations to discontinued operations.

The Company retains debt securities and excess servicing rights purchased from securitization trusts sponsored by either third parties or the Company’s subsidiaries. The securitization trusts are considered variable interest entities, or VIEs, for financial reporting purposes and, thus, are 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. During the majority of 2017, the Company retained the most subordinate security in each of the securitization trusts, which gave the Company the power to direct the activities of the trusts that most significantly impact the trusts’ performance and the obligation to absorb losses or the right to receive benefits of the securitization trusts that could be significant. As a result, the Company consolidated all of the securitization trusts, including the underlying mortgage loans held by the trusts (residential mortgage loans held-for-investment) and the associated debt (collateralized borrowings), on its consolidated balance sheet. During the fourth quarter of 2017, the Company sold all of the retained subordinated securities thereby removing the Company’s power to direct the activities of the trusts and the obligation to absorb losses or the right to receive benefits of the securitization trusts. As a result, the securitization trusts are no longer consolidated on the Company’s consolidated balance sheet and the remaining retained securities are included within non-Agency available-for-sale, or AFS, securities.

Use of Estimates

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

Significant Accounting Policies

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 basis. The term notes bear interest at a rate equal to one-month LIBOR plus 2.80% per annum. The term notes will mature on June 25, 2024 or, if extended pursuant to the terms of the related indenture supplement, June 25, 2026 (unless earlier redeemed in accordance with their terms).

The Issuer Trust is considered a VIE for financial reporting purposes and, thus, was reviewed for consolidation under the applicable consolidation guidance. As the Company has both the power to direct the activities of the Issuer Trust that most significantly impact the entity’s performance, and the obligation to absorb losses or the right to receive benefits of the entity that could be significant, the Company consolidates the trust.

Available-for-Sale Securities, at Fair Value

The Company invests primarily in mortgage pass-through certificates, collateralized mortgage obligations and other residential mortgage-backed securities representing interests in or obligations backed by pools of mortgage loans issued by the Federal National Mortgage Association, or Fannie Mae, the Federal Home Loan Mortgage Corporation, or Freddie Mac, and the Government National Mortgage Association, or Ginnie Mae, or collectively, the government sponsored entities, or GSEs (collectively “Agency RMBS”). The Company also invests in securities that are not issued by the GSEs, or non-Agency securities, and, from time to time, U.S. Treasuries.

The Company classifies its Agency RMBS and non-Agency securities, excluding inverse interest-only Agency securities which are classified as derivatives for purposes of U.S. GAAP, as AFS, investments. Although the Company generally intends to hold most of its investment securities until maturity, it may, from time to time, sell any of its investment securities as part of its overall management of its portfolio. Accordingly, the Company classifies all of its securities as AFS, including its interest-only strips, which represent the Company’s right to receive a specified portion of the contractual interest flows of specific Agency or non-Agency securities. All assets classified as AFS, excluding certain Agency interest-only mortgage-backed securities, are reported at estimated fair value with unrealized gains and losses, excluding other-than-temporary impairments, included in accumulated other comprehensive income, on an after-tax basis.

TWO HARBORS INVESTMENT CORP.

Notes to the Consolidated Financial Statements

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

Fair value is determined under the guidance of Accounting Standards Codification (ASC) 820, *Fair Value Measurements and Disclosures,* or ASC 820. The Company determines the fair value of its RMBS that are issued or guaranteed as to principal and/or interest by a GSE, based upon prices obtained from third-party pricing vendors or broker quotes received using the bid price, which are both deemed indicative of market activity. In determining the fair value of its non-Agency securities, management judgment is used to arrive at fair value that considers prices obtained from third-party pricing vendors, broker quotes received and other applicable market data. If listed price data is not available or insufficient, 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. See Note 10 - *Fair Value* of these notes to the consolidated financial statements for details on fair value measurement.

Investment securities transactions are recorded on the trade date. The cost basis for realized gains and losses on sales of investment securities are determined on the first-in, first-out, or FIFO, method.

Interest income on securities is accrued based on the outstanding principal balance and their contractual terms. Premiums and discounts associated with Agency RMBS and non-Agency securities rated AA and higher at the time of purchase, are amortized into interest income over the life of such securities using the effective yield method. Adjustments to premium amortization are made for actual prepayment activity. The Company estimates prepayments for its Agency interest-only securities, which represent the Company's right to receive a specified portion of the contractual interest flows of specific Agency securities. As a result, if prepayments increase (or are expected to increase), the Company will accelerate the rate of amortization on the premiums.

Interest income on the non-Agency securities that were purchased at a discount to par value and were rated below AA at the time of purchase is recognized based on the security's effective interest rate. The effective interest rate on these securities is based on the projected cash flows from each security, which are estimated based on the Company's observation of current information and events and include assumptions related to interest rates, prepayment rates, and the timing and amount of credit losses. On at least a quarterly basis, the Company reviews and, if appropriate, makes adjustments to its cash flow projections based on input and analysis received from external sources, internal models, and its judgment about interest rates, prepayment rates, the timing and amount of credit losses, and other factors. Changes in cash flows from those originally projected, or from those estimated at the last evaluation, may result in a prospective change in the yield/interest income recognized on such securities. Actual maturities of the AFS securities are affected by the contractual lives of the associated mortgage collateral, periodic payments of principal, and prepayments of principal. Therefore actual maturities of AFS securities are generally shorter than stated contractual maturities. Stated contractual maturities are generally greater than ten years.

Based on the projected cash flows from the Company's non-Agency securities purchased at a discount to par value, a portion of the purchase discount may be designated as credit protection against future credit losses and, therefore, not accreted into interest income. The amount designated as credit discount may be adjusted over time, based on the actual performance of the security, its underlying collateral, actual and projected cash flow from such collateral, economic conditions, and other factors. If the performance of a security with a credit discount is more favorable than forecasted, a portion of the amount designated as credit discount may be accreted into interest income prospectively. Conversely, if the performance of a security with a credit discount is less favorable than forecasted, an impairment charge and write-down of such security to a new cost basis results.

TWO HARBORS INVESTMENT CORP.

Notes to the Consolidated Financial Statements

The Company evaluates its investment securities, on a quarterly basis, to assess whether a decline in the fair value of an AFS security below the Company's amortized cost basis is an other-than-temporary impairment, or OTTI. The presence of OTTI is based upon a fair value decline below a security's amortized cost basis and a corresponding adverse change in expected cash flows due to credit related factors as well as non-credit factors, such as changes in interest rates and market spreads. Impairment is considered other-than-temporary if an entity (i) intends to sell the security, (ii) will more likely than not be required to sell the security before it recovers in value, or (iii) does not expect to recover the security's amortized cost basis, even if the entity does not intend to sell the security. Under these scenarios, the impairment is other-than-temporary and the full amount of impairment should be recognized currently in earnings and the cost basis of the investment security is adjusted. However, if an entity does not intend to sell the impaired debt security and it is more likely than not that it will not be required to sell before recovery, the OTTI is separated into (i) the estimated amount relating to credit loss, or credit component, and (ii) the amount relating to all other factors, or non-credit component. Only the estimated credit loss amount is recognized currently in earnings, with the remainder of the loss amount recognized in other comprehensive income (loss). The difference between the new amortized cost basis and the cash flows expected to be collected is accreted as interest income in accordance with the effective interest method.

Mortgage Servicing Rights, at Fair Value

The Company's MSR represent the right to service 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. However, as an owner and manager of MSR, the Company may be obligated to fund advances of principal and interest payments due to third-party owners of the loans, but not yet received from the individual borrowers. These advances are reported as servicing advances within the other assets line item on the consolidated balance sheets.

MSR are reported at fair value on the consolidated balance sheets. Although MSR transactions are observable in the marketplace, the valuation includes unobservable market data inputs (prepayment speeds, delinquency levels, discount rates and cost to service). Changes in the fair value of MSR as well as servicing fee income and servicing expenses are reported on the consolidated statements of comprehensive income (loss).

Cash and Cash Equivalents

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

Restricted Cash

Restricted cash represents the Company's cash held by counterparties as collateral against the Company's securities, certain derivative instruments and/or repurchase agreements. Also included is the cash balance held pursuant to a letter of credit on the New York office lease. Cash held by counterparties as collateral, which resides in non-interest bearing accounts, is not available to the Company for general corporate purposes, but may be applied against amounts due to security, derivative or repurchase counterparties or returned to the Company when the collateral requirements are exceeded or, at the maturity of the derivative or repurchase agreement.

Accrued Interest Receivable

Accrued interest receivable represents interest that is due and payable to the Company. Cash interest is generally received within 30 days of recording the receivable.

Due from/to Counterparties, net

Due from counterparties includes cash held by counterparties for payment of principal and interest as well as cash held by counterparties as collateral against certain of the Company's derivatives and/or repurchase agreements but represents excess capacity and deemed unrestricted and a receivable from the counterparty as of the balance sheet date. Due from counterparties also includes cash receivable from counterparties for sales of MSR pending final transfer and settlement. Due to counterparties includes cash payable by the Company upon settlement of trade positions as well as cash deposited to and held by the Company as collateral against certain of the Company's derivatives and/or repurchase agreements but represents a payable to the counterparty as of the balance sheet date. Due to counterparties also includes purchase price holdbacks on MSR acquisitions for early prepayment or default provisions, collateral exceptions and other contractual terms.

Derivative Financial Instruments, at Fair Value

In accordance with ASC 815, *Derivatives and Hedging,* as amended and interpreted, or ASC 815, all derivative financial instruments, whether designated for hedging relationships or not, are recorded on the consolidated balance sheets as assets or liabilities and carried at fair value.

At the inception of a derivative contract, the Company determines whether the instrument will be part of a qualifying hedge accounting relationship or whether the Company will account for the contract as a trading instrument. Due to the volatility of the credit markets and difficulty in effectively matching pricing or cash flows, the Company has elected to treat all current derivative contracts as trading instruments. Changes in fair value as well as the accrual and settlement of interest associated with derivatives accounted for as trading instruments are reported in the consolidated statements of comprehensive income (loss) as (loss) gain on interest rate swap, cap and swaption agreements or gain (loss) on other derivative instruments depending on the type of derivative instrument.

The Company enters into interest rate derivative contracts for a variety of reasons, including minimizing fluctuations in earnings or market values on certain assets or liabilities that may be caused by changes in interest rates. The Company may, at times, enter into various forward contracts including short securities, Agency to-be-announced securities, or TBAs, options, futures, swaps, and caps. Due to the nature of these instruments, they may be in a receivable/asset position or a payable/liability position at the end of an accounting period. Amounts payable to and receivable from the same party under contracts may be offset as long as the following conditions are met: (a) each of the two parties owes the other determinable amounts; (b) the reporting party has the right to offset the amount owed with the amount owed by the other party; (c) the reporting party intends to offset; and (d) the right of offset is enforceable by law. If the aforementioned conditions are not met, amounts payable to and receivable from are presented by the Company on a gross basis in its consolidated balance sheets. 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 a settlement of the interest rate swap, as opposed to pledged collateral. Accordingly, beginning in the first quarter of 2018 and in subsequent periods, the Company accounts for the receipt or payment of variation margin on interest rate swaps as a direct reduction to the carrying value of the interest rate swap asset or liability. As of December 31, 2019 and December 31, 2018, variation margin pledged or received is netted on a counterparty basis and classified within restricted cash, due from counterparties, or due to counterparties on the Company's consolidated balance sheets.

The Company has provided specific disclosure regarding the location and amounts of derivative instruments in the consolidated financial statements and how derivative instruments and related hedged items are accounted for. See Note 7 - *Derivative Instruments and Hedging Activities* of these notes to the consolidated financial statements.

Reverse Repurchase Agreements

The Company may borrow U.S. Treasury securities through reverse repurchase transactions under its master repurchase agreements to cover short sales. The Company accounts for these reverse repurchase agreements as securities borrowing transactions and records them at their contractual amounts, as specified in the respective agreements.

Commercial Real Estate Assets (of Discontinued Operations)

Due to the Company's controlling ownership interest in Granite Point through November 1, 2017, its financial condition and results of operations through such date reflect Granite Point's commercial strategy, which includes as target assets first mortgages, mezzanine loans, B-notes and preferred equity. These commercial real estate assets have been reclassified to assets of discontinued operations on the consolidated balance sheets. Interest income on commercial real estate assets has been reclassified to income from discontinued operations on the consolidated statements of comprehensive income (loss).

The Company's commercial real estate assets were reported at cost, net of any unamortized acquisition premiums or discounts, loan fees and origination costs as applicable, unless the assets were deemed impaired. No impairments were recorded while these loans were held by the Company.

Interest income on commercial real estate assets was recognized at the loan coupon rate. Any premiums or discounts, loan fees and origination costs were amortized or accreted into interest income over the lives of the loans using the effective interest method. Loans were considered past due when they are 30 days past their contractual due date. Interest income recognition was suspended when loans are placed on nonaccrual status. Generally, commercial real estate loans were placed on nonaccrual status when delinquent for more than 60 days or when determined not to be probable of full collection. Interest accrued, but not collected, at the date loans were placed on nonaccrual is reversed and subsequently recognized only to the extent it was received in cash or until it qualified for return to accrual status. However, where there was doubt regarding the ultimate collectability of loan principal, all cash received was applied to reduce the carrying value of such loans. Commercial real estate loans were restored to accrual status only when contractually current or the collection of future payments was reasonably assured.

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Notes to the Consolidated Financial Statements

Repurchase Agreements

The Company finances certain of its investment securities and MSR through the use of repurchase agreements. These repurchase agreements are generally short-term debt, which expire within one year. As of December 31, 2019, certain of the Company's repurchase agreements had contractual terms of greater than one year, and were considered long-term debt. Borrowings under repurchase agreements generally bear interest rates of a specified margin over one-month LIBOR and are generally uncommitted. The repurchase agreements are treated as collateralized financing transactions and are carried at their contractual amounts, as specified in the respective agreements.

Federal Home Loan Bank of Des Moines Advances and Stock Holdings

The Company's wholly owned subsidiary, TH Insurance Holdings Company LLC, or TH Insurance, is a member of the Federal Home Loan Bank of Des Moines, or 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.

The Company's secured advances from the FHLB may have both short-term and long-term maturities. The advances with less than five-year terms generally bear interest rates of a spread over one- or three-month LIBOR and the advances with 20-year terms generally bear interest rates of or one- or three-month MOVR, or the FHLB member option variable-rate. FHLB advances are treated as secured financing transactions and are carried at their contractual amounts.

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. FHLB stock is considered a nonmarketable, 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. At its discretion, the FHLB may declare dividends on its stock.

Revolving Credit Facilities

To finance MSR, the Company enters into revolving credit facilities collateralized by pledged MSR. Borrowings under these revolving credit facilities that expire within one year are considered short-term debt. As of December 31, 2019, the Company's revolving credit facilities that had contractual terms of greater than one year were considered long-term debt. The Company's revolving credit facilities generally bear interest rates of a specified margin over one-month LIBOR. Borrowings under revolving credit facilities are treated as collateralized financing transactions and are carried at contractual amounts, as specified in the respective agreements.

Term Notes Payable

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

Convertible Senior Notes

Convertible senior notes include unsecured convertible debt that are carried at their unpaid principal balance, net of any unamortized deferred issuance costs, on the Company's consolidated balance sheet. Interest on the notes is payable semiannually until such time the notes mature or are converted into shares of the Company's common stock.

Accrued Interest Payable

Accrued interest payable represents interest that is due and payable to third parties. Interest is generally paid within 30 days to three months of recording the payable, based upon the Company's remittance requirements.

Deferred Tax Assets and Liabilities

Income recognition for U.S. GAAP and tax differ in certain respects. These differences often reflect differing accounting treatments for tax and U.S. GAAP, such as accounting for discount and premium amortization, credit losses, asset impairments, recognition of certain operating expenses and certain valuation estimates. Some of these differences are temporary in nature and create timing mismatches between when taxable income is earned and the tax is paid versus when the earnings (losses) for U.S. GAAP purposes, or GAAP net income (loss), are recognized and the tax provision is recorded. Some of these differences are permanent since certain income (or expense) may be recorded for tax purposes but not for U.S. GAAP purposes (or vice-versa). One such significant permanent difference is the Company's ability as a REIT to deduct dividends paid to stockholders as an expense for tax purposes, but not for U.S. GAAP purposes.

As a result of these temporary differences, the Company's TRSs may recognize taxable income in periods prior or subsequent to when it recognizes income for U.S. GAAP purposes. When this occurs, the TRSs pay or defer the tax liability and establish deferred tax assets or deferred tax liabilities, respectively, for U.S. GAAP purposes.

As the income is subsequently realized in future periods under U.S. GAAP, the deferred tax asset is recognized as an expense. Alternatively, as the TRSs realize the deferred taxable income, the deferred tax liability is recognized as a reduction to taxable income. The Company's deferred tax assets and/or liabilities are generated solely by differences in GAAP net income (loss) and taxable income (loss) at our taxable subsidiaries. U.S. GAAP and tax differences in the REIT may create additional deferred tax assets and/or liabilities to the extent the Company does not distribute all of its taxable income.

Income Taxes

The Company has elected to be taxed as a REIT under the Code and the corresponding provisions of state law. To qualify as a REIT, the Company must distribute at least 90% of its annual REIT taxable income to stockholders (not including taxable income retained in its taxable subsidiaries) within the time frame set forth in the tax Code and the Company must also meet certain other requirements. In addition, because certain activities, if performed by the Company, may cause the Company to earn income which is not qualifying for the REIT gross income tests, the Company has formed TRSs, as defined in the Code, to engage in such activities. These TRSs' activities are subject to income taxes as well as any REIT taxable income not distributed to stockholders.

The Company assesses its tax positions for all open tax years and determines whether the Company has any material unrecognized liabilities in accordance with ASC 740, *Income Taxes*, or ASC 740. The Company records these liabilities to the extent the Company deems them more likely than not to be incurred. The Company classifies interest and penalties on material uncertain tax positions as interest expense and operating expense, respectively, in its consolidated statements of comprehensive income (loss).

Tax effects of the Tax Cuts and Jobs Act of 2017 ("TCJA"), which was signed into law on December 22, 2017 significantly revised the U.S. corporate income tax by, among other things, lowering the federal income tax rate applicable to corporations from 35% to 21% and repealing the corporate alternative minimum tax. In addition, the deduction of net interest expense is limited for all businesses; provided that certain businesses, including real estate businesses, may elect not to be subject to such limitations and instead to depreciate their real property related assets over longer depreciable lives. This limitation could adversely affect our TRSs.

Other Comprehensive Income (Loss)

Current period net unrealized gains and losses on AFS securities, excluding Agency interest-only securities, are reported as components of accumulated other comprehensive income on the consolidated statements of stockholders' equity and in the consolidated statements of comprehensive income (loss). Net unrealized gains and losses on securities held by our taxable subsidiaries that are reported in accumulated other comprehensive income are adjusted for the effects of taxation and may create deferred tax assets or liabilities.

Earnings Per Share

Basic and diluted earnings (loss) per share are computed by dividing net income (loss) attributable to common stockholders by the weighted average number of common shares and potential common shares outstanding during the period. For both basic and diluted per share calculations, potential common shares represents issued and unvested shares of restricted stock, which have full rights to the common stock dividend declarations of the Company. If the assumed conversion of convertible notes into common shares is dilutive, diluted earnings (loss) per share is adjusted by adding back the periodic interest expense (net of any tax effects) associated with dilutive convertible notes to net income (loss) attributable to common stockholders and adding the shares issued in an assumed conversion to the diluted weighted average share count. All per share amounts, common shares outstanding and restricted shares for all periods presented reflect the Company's one-for-two reverse stock split effected on November 1, 2017 (refer to Note 17 - *Stockholders' Equity* for additional information).

Equity Incentive Plan

The Company's Second Restated 2009 Equity Incentive Plan, or the Plan, provides incentive compensation to attract and retain qualified directors, officers, advisors, consultants and other personnel, including PRCM Advisers and its affiliates. The Plan is administered by the compensation committee of the Company's board of directors. The Plan permits the granting of restricted shares of common stock, phantom shares, dividend equivalent rights and other equity-based awards. See Note 18 - *Equity Incentive Plan* for further details regarding the Plan.

The cost of equity-based compensation awarded to employees provided by our manager is measured on and fixed at the grant date, based on the price of the Company's stock as of period end and amortized over the vesting term. Prior to the early adoption of Accounting Standards Update (ASU) No. 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*, on July 1, 2018 (applied by recording a cumulative-effect adjustment to cumulative earnings as of January 1, 2018, which did not have a material impact on the Company's financial condition, results of operations or financial statement disclosures), the cost of equity-based compensation awarded to employees provided by our manager was measured at fair value at each reporting date based on the price of the Company's stock as of period end and amortized over the vesting term.

Asset Acquisition

In accordance with U.S. GAAP, the acquirer in a merger transaction is to evaluate whether substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets. If that threshold is met, the set of acquired assets and associated activities is not deemed a business and is required to be accounted for as an asset acquisition. Upon completion of the merger with CYS on July 31, 2018, approximately 89% of the CYS assets acquired were Agency RMBS. The Company concluded that they were similar identifiable assets to be grouped to evaluate whether the "substantially all" threshold was met as the Agency RMBS are financial assets with similar risk characteristics associated with managing these assets. Given the concentration of the fair value of the Agency RMBS of the gross assets acquired, the Company concluded that the fair value of the gross assets acquired was concentrated in a group of similar identifiable assets and, therefore, the merger was accounted for as an asset acquisition. The financial results of CYS since the closing date of the acquisition have been included in the Company's consolidated financial statements.

Asset acquisitions are generally accounted for by allocating the cost of the acquisition plus direct transaction costs to the individual assets acquired, including identified intangible assets, and liabilities assumed on a relative fair value basis. This allocation may cause identified assets to be recognized at amounts that are greater than their fair values. However, "non-qualifying" assets, which include financial assets and other current assets, should not be assigned an amount greater than their fair value. The gross assets acquired in the merger consisted most significantly of financial assets and other current assets. The cost of the acquisition of CYS plus direct transaction costs exceeded gross assets acquired less liabilities assumed in the merger. As there were no meaningful nonfinancial assets and non-current assets in this transaction and no identified intangible assets to assign value, the excess consideration and transaction costs were recognized in the consolidated statements of comprehensive income (loss) as an expense and an associated reduction in stockholders' equity.

Recently Issued and/or Adopted Accounting Standards

Lease Classification and Accounting

On January 1, 2019, the Company adopted 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 Company's adoption of this ASU was applied by recording a cumulative-effect adjustment to cumulative 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.

Measurement of Credit Losses on Financial Instruments

On January 1, 2020, the Company will adopt ASU No. 2016-13, *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*, 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.

The Company will use a discounted cash flow method to estimate and recognize an allowance for credit losses on AFS securities. The estimated allowance for credit losses will be equal to the difference between the prepayment adjusted contractual cash flows with no credit losses and the prepayment adjusted expected cash flows with credit losses, discounted at the effective interest rate on the AFS security that is in effect upon adoption of the standard. The contractual cash flows and expected cash flows will be based on management's best estimate and take into consideration current prepayment assumptions, lifetime expected losses based on past loss experience, current market conditions, and reasonable and supportable forecasts of future conditions. The allowance for credit losses is expected to increase the AFS security amortized cost and recognize an allowance for credit losses in the same amount. Any allowance for credit losses recognized in connection with adopting the guidance in Topic 326 that is different from the current credit reserve will be recognized as a cumulative effect adjustment to opening cumulative earnings. The Company has determined that the adoption will have no impact to cumulative earnings as of January 1, 2020.

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

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

The Company has evaluated the adoption of this ASU to determine the impact it may have on its consolidated financial statements, which at the date of adoption, will establish an allowance for credit losses on AFS securities accounted for as purchased credit-impaired assets under ASC 310-30 in an unrealized loss position and with no OTTI recognized in periods prior to transition. The effective interest rate on these debt securities will not be changed. On January 1, 2020, the $30.7 billion net amortized cost basis of AFS securities will be inclusive of a $244.9 million allowance for credit loss.

The Company will use prospective transition approach for debt securities for which OTTI had been recognized prior to January 1, 2020. As a result, the amortized cost basis remains the same before and after the effective date. The effective interest rate on these debt securities will not be changed. Amounts previously recognized in accumulated other comprehensive income as of January 1, 2020 relating to improvements in cash flows expected to be collected will be accreted into income over the remaining life of the asset. Recoveries of amounts previously written off relating to improvements in cash flows after January 1, 2020 will be recorded in earnings when received.

The Company has developed new processes, policies and controls to implement the standard and performed tests to validate the internally developed cash flow models. The processes, policies, controls and model validation were completed by the adoption date.

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.

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Notes to the Consolidated Financial Statements

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

(in thousands)	December 31, 2019	December 31, 2018
Note receivable [(1)]	$ 394,502	$ —
Cash and cash equivalents	200	—
Accrued interest receivable [(1)]	306	—
Total Assets	$ 395,008	$ —
Term notes payable	$ 394,502	$ —
Accrued interest payable	306	—
Other liabilities	200	—
Total Liabilities	$ 395,008	$ —

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

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

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

(in thousands)	December 31, 2019	December 31, 2018
Agency		
Federal National Mortgage Association	$ 21,252,575	$ 15,812,696
Federal Home Loan Mortgage Corporation	6,070,500	4,930,963
Government National Mortgage Association	454,980	941,374
Non-Agency	3,628,273	3,867,571
Total available-for-sale securities	$ 31,406,328	$ 25,552,604

At December 31, 2019 and December 31, 2018, the Company pledged AFS securities with a carrying value of $29.8 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 11 - *Repurchase Agreements* and Note 12 - *Federal Home Loan Bank of Des Moines Advances*.

At December 31, 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 Accounting Standards Codification (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 consolidated balance sheets. As of December 31, 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 $3.6 billion and $3.9 billion, respectively.

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

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

	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 December 31, 2019 and December 31, 2018:

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

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	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 December 31, 2019:

	December 31, 2019		
(in thousands)	**Agency**	**Non-Agency**	**Total**
< 1 year	$ 380	$ 41,192	$ 41,572
≥ 1 and < 3 years	57,403	191,255	248,658
≥ 3 and < 5 years	3,071,314	211,767	3,283,081
≥ 5 and < 10 years	24,357,478	2,780,858	27,138,336
≥ 10 years	291,480	403,201	694,681
Total	$ 27,778,055	$ 3,628,273	$ 31,406,328

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 OTTI for a portion of its investment in the security in an unrealized loss position 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 years ended December 31, 2019 and 2018 of the net unamortized discount/premium and designated credit reserves on non-Agency AFS securities.

	Year Ended December 31,					
	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	(568,146)	2,472	(565,674)	(737,765)	(60,894)	(798,659)
Accretion of net discount	—	43,674	43,674	—	89,111	89,111
Realized credit losses	23,517	—	23,517	26,457	—	26,457
Reclassification adjustment for other-than-temporary impairments	(10,155)	—	(10,155)	(470)	—	(470)
Transfers from (to)	140,703	(140,703)	—	42,629	(42,629)	—
Sales, calls, other	24,892	226,923	251,815	—	18,430	18,430
Ending balance at December 31	$ (1,711,951)	$ (471,225)	$ (2,183,176)	$ (1,322,762)	$ (603,591)	$ (1,926,353)

The following table presents the components comprising the carrying value of AFS securities not deemed to be other-than-temporarily impaired by length of time that the securities had an unrealized loss position as of December 31, 2019 and December 31, 2018. At December 31, 2019, the Company held 1,237 AFS securities, of which 122 were in an unrealized loss position for less than twelve consecutive months and 151 were in an unrealized loss position for more than twelve consecutive months. 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
December 31, 2019	$ 3,970,743	$ (25,061)	$ 735,727	$ (62,932)	$ 4,706,470	$ (87,993)
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 years ended December 31, 2019, 2018 and 2017, the Company recorded $14.3 million, $0.5 million and $0.8 million in OTTI on a total of eighteen, three and two non-Agency securities, respectively, where the future expected cash flows for each security were less than its amortized cost. As of December 31, 2019, impaired securities with a carrying value of $319.2 million had actual weighted average cumulative losses of 3.5%, weighted average three-month prepayment speed of 5.3%, weighted average 60+ day delinquency of 16.3% of the pool balance, and weighted average FICO score of 636. At December 31, 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 years ended December 31, 2019, 2018 and 2017:

	Year Ended December 31,		
(in thousands)	2019	2018	2017
Cumulative credit loss at beginning of period	$ (6,865)	$ (6,395)	$ (5,606)
Additions:			
Other-than-temporary impairments not previously recognized	(11,724)	(264)	(429)
Increases related to other-than-temporary impairments on securities with previously recognized other-than-temporary impairments	(2,588)	(206)	(360)
Reductions:			
Decreases related to other-than-temporary impairments on securities paid down	1,703	—	—
Decreases related to other-than-temporary impairments on securities sold	2,453	—	—
Cumulative credit loss at end of period	$ (17,021)	$ (6,865)	$ (6,395)

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 consolidated statements of comprehensive income (loss). The following table presents details around sales of AFS securities during the years ended December 31, 2019, 2018 and 2017:

	Year Ended December 31,		
(in thousands)	**2019**	**2018**	**2017**
Proceeds from sales of available-for-sale securities	$ 15,879,823	$ 15,202,406	$ 8,708,941
Amortized cost of available-for-sale securities sold	(15,595,809)	(15,551,968)	(8,741,432)
Total realized gains (losses) on sales, net	$ 284,014	$ (349,562)	$ (32,491)
Gross realized gains	$ 408,861	$ 70,076	$ 67,764
Gross realized losses	(124,847)	(419,638)	(100,255)
Total realized gains (losses) on sales, net	$ 284,014	$ (349,562)	$ (32,491)

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 years ended December 31, 2019, 2018 and 2017.

	Year Ended December 31,		
(in thousands)	**2019**	**2018**	**2017**
Balance at beginning of period	$ 1,993,440	$ 1,086,717	$ 693,815
Purchases of mortgage servicing rights	627,815	988,283	499,866
Additions from sales of residential mortgage loans	—	—	20
Sales of mortgage servicing rights	2,306	—	(946)
Changes in fair value due to:			
Changes in valuation inputs or assumptions used in the valuation model	(390,149)	80,209	6,339
Other changes in fair value (1)	(307,918)	(149,879)	(96,781)
Other changes (2)	(16,050)	(11,890)	(15,596)
Balance at end of period	$ 1,909,444	$ 1,993,440	$ 1,086,717

(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 December 31, 2019 and December 31, 2018, the Company pledged MSR with a carrying value of $1.6 billion and $1.1 billion, respectively, as collateral for repurchase agreements, revolving credit facilities and term notes payable. See Note 11 - *Repurchase Agreements*, Note 13 - *Revolving Credit Facilities* and Note 14 - *Term Notes Payable*.

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As of December 31, 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, except per loan data)	December 31, 2019	December 31, 2018
Weighted average prepayment speed:	14.8%	8.6%
Impact on fair value of 10% adverse change	$ (88,459)	(67,245)
Impact on fair value of 20% adverse change	$ (188,209)	(130,371)
Weighted average delinquency:	0.9%	1.3%
Impact on fair value of 10% adverse change	$ (7,470)	(6,911)
Impact on fair value of 20% adverse change	$ (15,020)	(13,688)
Weighted average discount rate:	7.2%	9.4%
Impact on fair value of 10% adverse change	$ (49,274)	(62,528)
Impact on fair value of 20% adverse change	$ (95,963)	(121,135)
Weighted average per loan annual cost to service:	$ 66.62	$ 69.34
Impact on fair value of 10% adverse change	$ (23,932)	$ (24,386)
Impact on fair value of 20% adverse change	$ (48,054)	$ (48,972)

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 consolidated statements of comprehensive income (loss) for the years ended December 31, 2019, 2018 and 2017:

(in thousands)	Year Ended December 31, 2019	2018	2017
Servicing fee income	$ 436,587	$ 312,100	$ 197,902
Ancillary and other fee income	1,801	1,280	1,009
Float income	63,224	29,716	10,154
Total	$ 501,612	$ 343,096	$ 209,065

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 $45.6 million and

$39.7 million and were included in other assets on the consolidated balance sheets as of December 31, 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 December 31, 2019 and December 31, 2018:

	December 31, 2019		December 31, 2018	
(dollars in thousands)	**Number of Loans**	**Unpaid Principal Balance**	**Number of Loans**	**Unpaid Principal Balance**
Mortgage servicing rights	793,470	$ 175,882,142	717,167	$ 163,102,308
Residential mortgage loans in securitization trusts	3,157	2,033,951	3,612	2,392,471
Other assets	71	12,511	220	34,374
Total serviced mortgage assets	796,698	$ 177,928,604	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 December 31, 2019 and December 31, 2018:

(in thousands)	**December 31, 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	94,570	219,900
As restricted collateral for repurchase agreements and Federal Home Loan Bank advances	919,010	416,696
Total restricted cash balances held by trading counterparties	1,058,630	687,946
Restricted cash balance pursuant to letter of credit on office lease	60	60
Total	$ 1,058,690	$ 688,006

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

(in thousands)	**December 31, 2019**	**December 31, 2018**
Cash and cash equivalents	$ 558,136	$ 409,758
Restricted cash	1,058,690	688,006
Total cash, cash equivalents and restricted cash	$ 1,616,826	$ 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 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 December 31, 2019 and December 31, 2018.

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

	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 (Loss) Statement Presentation

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

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

Derivative Instruments	Location of Gain (Loss) Recognized in Income	Amount of Gain (Loss) Recognized in Income					
(in thousands)		Year Ended December 31,					
		2019		2018		2017	
Interest rate risk management							
TBAs	Gain (loss) on other derivative instruments	$	214,414	$	(12,521)	$	(46,778)
Short U.S. Treasuries	Gain (loss) on other derivative instruments		(6,801)		(26,988)		—
U.S. Treasury futures	Gain (loss) on other derivative instruments		44,474		—		—
Put and call options for TBAs	Gain (loss) on other derivative instruments		(7,666)		(18,457)		(22,623)
Interest rate swaps - Payers	(Loss) gain on interest rate swap, cap and swaption agreements		(637,307)		48,995		67,124
Interest rate swaps - Receivers	(Loss) gain on interest rate swap, cap and swaption agreements		461,801		(74,407)		(17,677)
Swaptions	(Loss) gain on interest rate swap, cap and swaption agreements		74,901		45,954		(59,200)
Interest rate caps	(Loss) gain on interest rate swap, cap and swaption agreements		(7,684)		(4,499)		—
Markit IOS total return swaps	Gain (loss) on other derivative instruments		(1,213)		125		(870)
Non-risk management							
Inverse interest-only securities	Gain (loss) on other derivative instruments		16,790		2,984		112
Total		$	151,709	$	(38,814)	$	(79,912)

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Notes to the Consolidated Financial Statements

For the years ended December 31, 2019, 2018 and 2017, the Company recognized $70.5 million and $49.2 million of income and $8.8 million of expenses, respectively, for the accrual and/or settlement of the net interest expense associated with its interest rate swaps and caps. The income/expenses result from receiving either LIBOR interest or a fixed interest rate and paying either a fixed interest rate or LIBOR interest on an average $40.0 billion, $29.4 billion and $19.4 billion notional, respectively.

The following tables present information with respect to the volume of activity in the Company's derivative instruments during the years ended December 31, 2019 and 2018:

	Year Ended December 31, 2019					
(in thousands)	**Beginning of Period Notional Amount**	**Additions**	**Settlement, Termination, Expiration or Exercise**	**End of Period Notional Amount**	**Average Notional Amount**	**Realized Gain (Loss), net (1)**
Inverse interest-only securities	$ 476,299	$ —	$ (79,162)	$ 397,137	$ 437,039	$ —
Interest rate swap agreements	29,523,605	35,458,291	(25,279,426)	39,702,470	38,951,332	41,975
Interest rate cap contracts	2,500,000	—	(2,500,000)	—	1,060,000	(8,690)
Swaptions, net	63,000	14,457,000	(13,263,000)	1,257,000	2,846,660	61,644
TBAs, net	6,484,000	143,008,000	(142,065,000)	7,427,000	8,895,340	234,716
Short U.S. Treasuries	(800,000)	—	800,000	—	(45,697)	(23,172)
U.S. Treasury futures	—	8,957,000	(8,577,000)	380,000	684,647	43,977
Put and call options for TBAs, net	(1,767,000)	—	1,767,000	—	(110,401)	(32,962)
Markit IOS total return swaps	48,265	—	(6,375)	41,890	45,092	—
Total	$ 36,528,169	$ 201,880,291	$ (189,202,963)	$ 49,205,497	$ 52,764,012	$ 317,488

	Year Ended December 31, 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	$ 588,246	$ —	$ (111,947)	$ 476,299	$ 530,509	$ —
Interest rate swap agreements	28,482,125	49,269,781	(48,228,301)	29,523,605	28,317,793	(71,578)
Interest rate cap contracts	—	2,500,000	—	2,500,000	1,054,795	—
Swaptions, net	2,666,000	(35,000)	(2,568,000)	63,000	(1,495,421)	67,985
TBAs, net	(573,000)	64,988,000	(57,931,000)	6,484,000	4,502,888	(35,140)
Short U.S. Treasuries	—	(800,000)	—	(800,000)	(337,534)	—
Put and call options for TBAs, net	—	(451,000)	(1,316,000)	(1,767,000)	(804,997)	6,839
Markit IOS total return swaps	63,507	—	(15,242)	48,265	55,143	(765)
Total	$ 31,226,878	$ 115,471,781	$ (110,170,490)	$ 36,528,169	$ 31,823,176	$ (32,659)

(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 consolidated statements of cash flows. Realized gains and losses and derivative fair value adjustments are reflected within the realized and unrealized losses on interest rate swaps, caps and swaptions and unrealized (gain) loss on other derivative instruments line items within the operating activities section of the 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 consolidated statements of cash flows.

Interest Rate Sensitive Assets/Liabilities

The Company's Agency RMBS portfolio is generally subject to change in value when mortgage rates decline or increase, depending on the type of investment. Rising mortgage rates generally result in a decline in the value of the Company's fixed-rate Agency P&I RMBS. To mitigate the impact of this risk on the Company's fixed-rate Agency P&I RMBS portfolio, the Company maintains a portfolio of fixed-rate interest-only securities and MSR, which increase in value when interest rates increase. As of December 31, 2019 and December 31, 2018, the Company had $122.2 million and $147.6 million, respectively, of interest-only securities, and $1.9 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 consolidated balance sheets.

The Company monitors its borrowings under repurchase agreements, FHLB advances and revolving credit facilities, which are generally floating-rate debt, in relation to the rate profile of its portfolio. In connection with its risk management activities, the Company enters into a variety of derivative and non-derivative instruments to economically hedge interest rate risk or "duration mismatch (or gap)" by adjusting the duration of its floating-rate borrowings into fixed-rate borrowings to more closely match the duration of its assets. This particularly applies to borrowing agreements with maturities or interest rate resets of less than six months. Typically, the interest receivable terms (*e.g.*, LIBOR) of certain derivatives match the terms of the underlying debt, resulting in an effective conversion of the rate of the related borrowing agreement from floating to fixed. The objective is to manage the cash flows associated with current and anticipated interest payments on borrowings, as well as the ability to roll or refinance borrowings at the desired amount by adjusting the duration. To help manage the adverse impact of interest rate changes on the value of the Company's portfolio as well as its cash flows, the Company may, at times, enter into various forward contracts, including short securities, TBAs, options, futures, swaps, caps, credit default swaps and total return swaps. In executing on the Company's current interest rate risk management strategy, the Company has entered into TBAs, 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 December 31, 2019 and December 31, 2018:

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

(in thousands)	December 31, 2018				
				Net Carrying Value [4]	
	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 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 consolidated balance sheet as of December 31, 2018. The Company did not hold any short U.S. Treasuries as of December 31, 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 December 31, 2019, the Company had purchased U.S. Treasury futures with a notional amount of $380.0 million and a fair market value of $0.5 million included in derivative assets, at fair value, on the consolidated balance sheet as of December 31, 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 consolidated balance sheet as of December 31, 2018. The Company did not hold any put and call options for TBAs as of December 31, 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 December 31, 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)

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

(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 December 31, 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)

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

(notional in thousands)

December 31, 2018				
Swaps Maturities	Notional Amounts	Weighted Average Pay Rate	Weighted Average Fixed Receive Rate	Weighted Average Maturity (Years)
2019	$ —	—%	—%	0.00
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

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

(notional and dollars in thousands)	December 31, 2019							
	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	$ 24,700	$ 16,095	3.20	$ 7,525,000	2.27%	3M Libor	10.0
Total Payer		$ 24,700	$ 16,095	3.20	$ 7,525,000	2.27%	3M Libor	10.0
Receiver	< 6 Months	$ 4,100	$ 342	1.10	$ 500,000	3M Libor	1.55%	10.0
Total Receiver		$ 4,100	$ 342	1.10	$ 500,000	3M Libor	1.55%	10.0
Sale contracts:								
Receiver	< 6 Months	$ (20,800)	$ (8,636)	3.24	$ (6,768,000)	3M Libor	1.28%	10.0
Total Receiver		$ (20,800)	$ (8,636)	3.24	$ (6,768,000)	3M Libor	1.28%	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. The Company did not hold any interest rate caps as of December 31, 2019. 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

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 December 31, 2019 and December 31, 2018:

(notional and dollars in thousands)

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

(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 December 31, 2019, the fair value of derivative financial instruments as an asset and liability position was $188.1 million and $6.7 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. Reverse Repurchase Agreements

As of December 31, 2019, the Company had $215.6 million in amounts due to counterparties as collateral for reverse repurchase agreements that could be pledged, delivered or otherwise used, with a fair value of $220.0 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 9. Offsetting Assets and Liabilities

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

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

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 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 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 consolidated balance sheets.

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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 consolidated balance sheets as of December 31, 2019 and December 31, 2018:

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

	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 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 consolidated balance sheets.

Note 10. Fair Value

Fair Value Measurements

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

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

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

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

Available-for-sale securities. The Company holds a portfolio of AFS securities that are carried at fair value in the consolidated balance sheets and primarily comprised of Agency RMBS and non-Agency securities. The Company determines the fair value of its Agency RMBS based upon prices obtained from third-party brokers and pricing vendors received using bid price, which are deemed indicative of market activity. The third-party pricing vendors use pricing models that generally incorporate such factors as coupons, primary and secondary mortgage rates, rate reset period, issuer, prepayment speeds, credit enhancements and expected life of the security. In determining the fair value of its non-Agency securities, management judgment may be used to arrive at fair value that considers prices obtained from third-party pricing vendors and other applicable market data. If observable market prices are not available or insufficient to determine fair value due principally to illiquidity in the marketplace, then fair value is based upon 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 99.2% and 0.8% of its AFS securities as Level 2 and Level 3 fair value assets, respectively, at December 31, 2019. AFS securities account for 93.7% of all assets reported at fair value at December 31, 2019.

Mortgage servicing rights. The Company holds a portfolio of MSR that are carried at fair value on the consolidated balance sheets. The Company determines fair value of its MSR based on prices obtained from third-party pricing vendors. Although MSR transactions are observable in the marketplace, the details of those transactions are not necessarily reflective of the value of the Company's MSR portfolio. Third-party vendors use both observable market data and unobservable market data (including prepayment speeds, delinquency levels, discount rates and cost to service) as inputs into models, which help to inform their best estimates of fair value market price. As a result, the Company classified 100% of its MSR as Level 3 fair value assets at December 31, 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 brokers 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 December 31, 2019. The Company did not hold any interest rate caps or put and call options for TBAs at December 31, 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 third-party vendors to value TBAs, short U.S. Treasuries, U.S. Treasury futures and inverse interest-only securities. The Company classified 100% of its inverse interest-only securities at fair value as Level 2 at December 31, 2019. The Company reported 100% of its TBAs and U.S. Treasury futures as Level 1 as of December 31, 2019. The Company did not hold any short U.S. Treasuries at December 31, 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.

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

	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 December 31, 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 vendors and/or management. The third-party pricing vendors and/or management rely on inputs such as market price quotations from market makers (either market or indicative levels), original transaction price, recent transactions in the same or similar instruments, and changes in financial ratios or cash flows to determine fair value. Level 3 instruments may also be discounted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the third-party pricing vendors in the absence of market information. Assumptions used by the third-party pricing vendors due to lack of observable inputs may significantly impact the resulting fair value and therefore the Company's consolidated financial statements.

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

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

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

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

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

	Year Ended December 31, 2019				
(in thousands)	**Available-For-Sale Securities**		**Mortgage Servicing Rights**		
Beginning of period level 3 fair value	$	105,157	$	1,993,440	
Gains (losses) included in net income (loss):					
Realized (losses) gains, net		(22,055)		(313,402)	
Unrealized (losses) gains, net		—		(384,257)	(1)
Net gains (losses) included in net income (loss)		(22,055)		(697,659)	
Other comprehensive income (loss)		(934)		—	
Purchases		14,318		627,815	
Sales		—		1,898	
Settlements		—		(16,050)	
Gross transfers into level 3		550,695		—	
Gross transfers out of level 3		(398,007)		—	
End of period level 3 fair value	$	249,174	$	1,909,444	
Change in unrealized gains or losses for the period included in earnings for assets held at the end of the reporting period	$	—	$	(331,919)	(2)
Change in unrealized gains or losses for the period included in other comprehensive income (loss) for assets held at the end of the reporting period	$	8,389	$	—	

	Year Ended December 31, 2018	
(in thousands)	Available-For-Sale Securities	Mortgage Servicing Rights
Beginning of period level 3 fair value	$ 153,141	$ 1,086,717
Gains (losses) included in net income (loss):		
Realized gains and (losses), net	(2,538)	(149,242)
Unrealized gains and (losses), net	—	80,209 (1)
Net gains (losses) included in net income (loss)	(2,538)	(69,033)
Other comprehensive income (loss)	(1,960)	—
Purchases	17,861	988,283
Sales	—	(637)
Settlements	(153,000)	(11,890)
Gross transfers into level 3	91,653	—
Gross transfers out of level 3	—	—
End of period level 3 fair value	$ 105,157	$ 1,993,440
Change in unrealized gains or losses for the period included in earnings for assets held at the end of the reporting period	$ —	$ 68,518 (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	$ (1,818)	$ —

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

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 years ended December 31, 2019 and 2018. No additional AFS transfers between Level 1, Level 2 or Level 3 were made during the year ended December 31, 2019. Transfers between Levels are deemed to take place on the first day of the reporting period in which the transfer has taken place.

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

The Company also used multiple third-party pricing vendors in the fair value measurement of its Level 3 MSR. The tables below present information about the significant unobservable market data used by the third-party pricing vendors as inputs into models utilized to inform their best estimates of the fair value measurement of the Company's MSR classified as Level 3 fair value assets at December 31, 2019 and December 31, 2018:

December 31, 2019						
Valuation Technique	Unobservable Input (1)	Range				Weighted Average (2)
Discounted cash flow	Constant prepayment speed	12.6	-	16.4	%	14.8%
	Delinquency	0.7	-	1.0	%	0.9%
	Discount rate	6.4	-	7.8	%	7.2%
	Per loan annual cost to service	$63.38	-	$78.04		$66.62

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%
	Per loan annual cost to service	$66.10 - $77.32	$69.34

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

Fair Value Option for Financial Assets and Financial Liabilities

The Company elected the fair value option for its previously held residential mortgage loans held-for-investment in securitization trusts and the collateralized borrowings in securitization trusts. The fair value option was elected to better reflect the economics of the Company's retained interests. The Company's policy was to separately record interest income on the fair value elected loans and interest expense on the fair value elected borrowings. Upfront fees and costs were not deferred or capitalized. Fair value adjustments were reported in other income on the consolidated statements of comprehensive income (loss). During the fourth quarter of 2017, the Company sold all of these retained subordinated securities thereby causing the deconsolidation of the securitization trusts from the Company's consolidated balance sheet. The remaining retained securities are included within non-Agency AFS securities.

The following table summarizes the fair value option elections and information regarding the line items and amounts recognized in the consolidated statements of comprehensive income (loss) for each fair value option-elected item.

	Year Ended December 31, 2017			
(in thousands)	Interest income (expense)	Other income	Total included in net income (loss)	Change in fair value due to credit risk
Assets				
Residential mortgage loans held-for-investment in securitization trusts	102,886 [1]	45,275	148,161	— [2]
Liabilities				
Collateralized borrowings in securitization trusts	(82,573)	(22,592)	(105,165)	— [2]
Total	$ 20,313	$ 22,683	$ 42,996	$ —

(1) Interest income on residential mortgage loans held-for-investment in securitization trusts is measured by multiplying the unpaid principal balance on the loans by the coupon rate and the number of days of interest due.
(2) The change in fair value on residential mortgage loans held-for-investment in securitization trusts and collateralized borrowings in securitization trusts was due entirely to changes in market interest rates.

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 consolidated balance sheets, for which fair value can be estimated.

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

- AFS securities, MSR, and derivative assets and liabilities are recurring fair value measurements; carrying value equals fair value. See discussion of valuation methods and assumptions within the *Fair Value Measurements* section of this Note 10.
- Cash and cash equivalents and restricted cash have a carrying value which approximates fair value because of the short maturities of these instruments. The Company categorizes the fair value measurement of these assets as Level 1.

- Reverse repurchase agreements have a carrying value which approximates fair value due to their short-term nature. The Company categorizes the fair value measurement of these assets as Level 2.
- The carrying value of repurchase agreements, FHLB advances and revolving credit facilities that mature in less than one year generally approximates fair value due to the short maturities. As of December 31, 2019, the Company held $50.0 million of FHLB advances and $300.0 million of revolving credit facilities that are considered long-term. The Company's long-term 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 vendors, broker quotes received and other applicable market data. If observable market prices are not available or insufficient to determine fair value due principally to illiquidity in the marketplace, then fair value is based upon internally developed models that are primarily based on observable market-based inputs but also include unobservable market data inputs (including prepayment speeds, delinquency levels, and credit losses). The Company categorizes the fair value measurement of these liabilities as Level 2.
- Convertible senior notes are carried at their unpaid principal balance, net of any unamortized deferred issuance costs. The Company estimates the fair value of its convertible senior notes using the market transaction price nearest to December 31, 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 December 31, 2019 and December 31, 2018.

	December 31, 2019		December 31, 2018	
(in thousands)	**Carrying Value**	**Fair Value**	**Carrying Value**	**Fair Value**
Assets				
Available-for-sale securities	$ 31,406,328	$ 31,406,328	$ 25,552,604	$ 25,552,604
Mortgage servicing rights	$ 1,909,444	$ 1,909,444	$ 1,993,440	$ 1,993,440
Cash and cash equivalents	$ 558,136	$ 558,136	$ 409,758	$ 409,758
Restricted cash	$ 1,058,690	$ 1,058,690	$ 688,006	$ 688,006
Derivative assets	$ 188,051	$ 188,051	$ 319,981	$ 319,981
Reverse repurchase agreements	$ 220,000	$ 220,000	$ 761,815	$ 761,815
Other assets	$ 24,352	$ 24,352	74,412	74,412
Liabilities				
Repurchase agreements	$ 29,147,463	$ 29,147,463	$ 23,133,476	$ 23,133,476
Federal Home Loan Bank advances	$ 210,000	$ 210,000	$ 865,024	$ 865,024
Revolving credit facilities	$ 300,000	$ 300,000	$ 310,000	$ 310,000
Term notes payable	$ 394,502	$ 400,000	$ —	$ —
Convertible senior notes	$ 284,954	$ 299,147	$ 283,856	$ 281,951
Derivative liabilities	$ 6,740	$ 6,740	$ 820,590	$ 820,590

Note 11. Repurchase Agreements

As of December 31, 2019 and December 31, 2018, the Company had outstanding $29.1 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 2.14% and 2.68% and weighted average remaining maturities of 77 and 66 days as of December 31, 2019 and December 31, 2018, respectively.

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Notes to the Consolidated Financial Statements

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

(in thousands)	December 31, 2019	December 31, 2018
Short-term	$ 29,147,463	$ 22,833,476
Long-term	—	300,000
Total	$ 29,147,463	$ 23,133,476

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

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

	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%

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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)	December 31, 2019	December 31, 2018
Available-for-sale securities, at fair value	$ 29,575,948	$ 24,240,507
Mortgage servicing rights, at fair value	530,222	685,683
Restricted cash	919,010	416,696
Due from counterparties	102,365	110,695
Derivative assets, at fair value	68,874	70,191
U.S. Treasuries (1)	—	6,457
Total	$ 31,196,419	$ 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 December 31, 2019 and December 31, 2018:

	December 31, 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	$ 3,957,732	$ 310,116	6%	55	$ 2,504,438	$ 342,739	8%	94
Barclays Capital Inc.	2,437,598	216,279	4%	99	2,508,277	280,148	7%	50
All other counterparties (2)	22,752,133	1,256,063	25%	77	18,120,761	1,399,187	33%	64
Total	$ 29,147,463	$ 1,782,458			$ 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 22 and 28 counterparties at December 31, 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 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 December 31, 2019 and December 31, 2018, TH Insurance had $210.0 million and $865.0 million in outstanding secured advances with a weighted average borrowing rate of 2.00% 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 December 31, 2019 and December 31, 2018, FHLB advances had the following remaining maturities:

(in thousands)	December 31, 2019	December 31, 2018
≤ 1 year	$ 160,000	$ 815,024
> 1 and ≤ 3 years	—	—
> 3 and ≤ 5 years	—	—
> 5 and ≤ 10 years	—	—
> 10 years	50,000	50,000
Total	$ 210,000	$ 865,024

At December 31, 2019 and December 31, 2018, the Company pledged AFS securities with a carrying value of $226.5 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 December 31, 2019 and December 31, 2018, the Company had stock in the FHLB totaling $12.5 million and $40.8 million, respectively, which is included in other assets on the 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 December 31, 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, 2019 and December 31, 2018, the Company had outstanding short- and long-term borrowings under revolving credit facilities of $300.0 million and $310.0 million with a weighted average borrowing rate of 4.26% and 5.60% and weighted average remaining maturities of 1.20 and 4.25 years, respectively.

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

(in thousands)	December 31, 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	300,000	290,000
Total	$ 300,000	$ 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 December 31, 2019 and December 31, 2018, MSR with a carrying value of $449.5 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 consolidated balance sheets. As of December 31, 2019, the outstanding amount due on term notes payable was $394.5 million, net of deferred debt issuance costs, with a weighted average interest rate of 4.59% and weighted average remaining maturities of 4.5 years. At December 31, 2019, the Company pledged MSR with a carrying value of $575.1 million and weighted average underlying loan coupon of 4.25% 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 December 31, 2019 and December 31, 2018, the notes had a conversion rate of 63.1793 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 December 31, 2019 and December 31, 2018 was $285.0 million and $283.9 million, respectively, net of deferred issuance costs.

Note 16. Commitments and Contingencies

The following represent the material commitments and contingencies of the Company as of December 31, 2019:

Management agreement. The Company pays PRCM Advisers a management fee equal to 1.5% per annum, calculated and payable quarterly in arrears, of the Company's stockholders' equity. For purposes of calculating the management fee, the Company's stockholders' equity means the sum of the net proceeds from all issuances of the Company's equity securities since inception (allocated on a pro rata daily basis for such issuances during the fiscal quarter of any such issuance), plus the Company's retained earnings at the end of the most recently completed calendar quarter (without taking into account any non-cash equity compensation expense incurred in current or prior periods), less the consolidated stockholders' equity of Granite Point and its subsidiaries during the time Granite Point was consolidated on the Company's balance sheet, the weighted average cost basis of Granite Point common stock purchased, the outstanding principal balance of the promissory note due from the sale of Granite Point preferred stock and any amount that the Company has paid for repurchases of its common stock since inception, and excluding any unrealized gains, losses or other items that do not affect realized net income (regardless of whether such items are included in other comprehensive income or loss, or in net income). In connection with the acquisition of CYS effective July 31, 2018, 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 occured, 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 purposes of calculating the management fee, stockholders' equity will also be adjusted to exclude one-time events pursuant to changes in U.S. GAAP, and certain non-cash items after discussions between PRCM Advisers and the Company's independent directors and approval by a majority of the Company's independent directors. To the extent asset impairment reduces the Company's retained earnings at the end of any completed calendar quarter; it will reduce the management fee for such quarter. The Company's stockholders' equity for the purposes of calculating the management fee could be greater than the amount of stockholders' equity shown on the consolidated financial statements. The current term of the management agreement expires on October 28, 2020, and automatically renews for successive one-year terms annually until terminated in accordance with the terms of the agreement.

The Company reimburses PRCM Advisers for (i) the Company's allocable share of the compensation paid by PRCM Advisers to its personnel serving as the Company's principal financial officer and general counsel and personnel employed by PRCM Advisers as in-house legal, tax, accounting, consulting, auditing, administrative, information technology, valuation, computer programming and development and back-office resources to the Company, and (ii) any amounts for personnel of PRCM Adviser's affiliates arising under a shared facilities and services agreement.

Upon termination of the management agreement by the Company without cause or by PRCM Advisers due to the Company's material breach of the management agreement, the Company is required to pay a termination fee equal to three times the sum of the average annual base management fee earned by PRCM Advisers during the 24-month period immediately preceding the date of termination, calculated as of the end of the most recently completed fiscal quarter prior to the date of termination.

Employment contracts. The Company does not directly employ any personnel. Instead, the Company relies on the resources of PRCM Advisers to conduct the Company's operations. Expense reimbursements to PRCM Advisers are made in cash on a quarterly basis following the end of each quarter.

Legal and regulatory. From time to time, the Company may be subject to liability under laws and government regulations and various claims and legal actions arising in the ordinary course of business. Liabilities are established for legal claims when payments associated with the claims become probable and the costs can be reasonably estimated. The actual costs of resolving legal claims may be substantially higher or lower than the amounts established for those claims. Based on information currently available, management is not aware of any legal or regulatory claims that would have a material effect on the Company's consolidated financial statements and therefore no accrual is required as of December 31, 2019.

Note 17. Stockholders' Equity

Redeemable Preferred Stock

The following is a summary of the Company's series of cumulative redeemable preferred stock issued and outstanding as of December 31, 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 December 31, 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.

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

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Distributions to Preferred Stockholders

The following table presents cash dividends declared by the Company on its preferred stock during the years ended December 31, 2019, 2018 and 2017:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series A Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.507810
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.507810
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.507810
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.507810
December 18, 2018	January 11, 2019	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
December 14, 2017	January 12, 2018	January 29, 2018	$ 0.507810
September 14, 2017	October 12, 2017	October 27, 2017	$ 0.507810
June 15, 2017	July 12, 2017	July 27, 2017	$ 0.750430
Series B Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.476560
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.476560
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.476560
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.476560
December 18, 2018	January 11, 2019	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
December 14, 2017	January 12, 2018	January 29, 2018	$ 0.476560
September 14, 2017	October 12, 2017	October 27, 2017	$ 0.518920
Series C Preferred Stock:			
December 17, 2019	January 10, 2020	January 27, 2020	$ 0.453130
September 19, 2019	October 11, 2019	October 28, 2019	$ 0.453130
June 19, 2019	July 12, 2019	July 29, 2019	$ 0.453130
March 19, 2019	April 12, 2019	April 29, 2019	$ 0.453130
December 18, 2018	January 11, 2019	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
December 14, 2017	January 12, 2018	January 29, 2018	$ 0.302080

Declaration Date	Record Date	Payment Date	Cash Dividend Per Preferred Share
Series D Preferred Stock:			
December 17, 2019	January 1, 2020	January 15, 2020	$ 0.484375
September 19, 2019	October 1, 2019	October 15, 2019	$ 0.484375
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.484375
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.484375
December 18, 2018	January 1, 2019	January 28, 2019	$ 0.484375
September 20, 2018	October 1, 2018	October 15, 2018	$ 0.484375
Series E Preferred Stock:			
December 17, 2019	January 1, 2020	January 15, 2020	$ 0.468750
September 19, 2019	October 1, 2019	October 15, 2019	$ 0.468750
June 19, 2019	July 1, 2019	July 15, 2019	$ 0.468750
March 19, 2019	April 1, 2019	April 15, 2019	$ 0.468750
December 18, 2018	January 1, 2019	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 December 31, 2019, the Company had 272,935,731 shares of common stock outstanding. The following table presents a reconciliation of the common shares outstanding for the years ended December 31, 2019, 2018 and 2017:

	Number of common shares
Common shares outstanding, December 31, 2016	173,826,163
Issuance of common stock	26,950
Issuance of restricted stock [(1)]	643,474
Common shares outstanding, December 31, 2017	174,496,587
Issuance of common stock	72,616,483
Issuance of restricted stock [(1)]	972,651
Common shares outstanding, December 31, 2018	248,085,721
Issuance of common stock	24,439,436
Issuance of restricted stock [(1)]	412,074
Repurchase of common stock	(1,500)
Common shares outstanding, December 31, 2019	272,935,731

(1) Represents shares of restricted stock granted under the Second Restated 2009 Equity Incentive Plan, net of forfeitures, of which 1,062,901 restricted shares remained subject to vesting requirements at December 31, 2019.

Distributions to Common Stockholders

The following table presents cash dividends declared by the Company on its common stock during the years ended December 31, 2019, 2018 and 2017:

Declaration Date	Record Date	Payment Date	Cash Dividend Per Common Share
December 17, 2019	December 31, 2019	January 24, 2020	$ 0.400000
September 19, 2019	September 30, 2019	October 28, 2019	$ 0.400000
June 19, 2019	July 1, 2019	July 29, 2019	$ 0.400000
March 19, 2019	March 29, 2019	April 29, 2019	$ 0.470000
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
December 14, 2017	December 26, 2017	December 29, 2017	$ 0.470000
September 14, 2017	September 29, 2017	October 27, 2017	$ 0.520000
June 15, 2017	June 30, 2017	July 27, 2017	$ 0.520000
March 14, 2017	March 31, 2017	April 27, 2017	$ 0.500000

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 December 31, 2019, 269,988 shares have been issued under the plan for total proceeds of approximately $5.0 million, of which 42,136, 28,711 and 27,194 shares were issued for total proceeds of $0.6 million, $0.4 million and $0.5 million during the years ended December 31, 2019, 2018 and 2017, 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 December 31, 2019, a total of 12,069,000 shares had been repurchased by the Company under the program for an aggregate cost of $200.4 million; of these, 1,500 shares were repurchased for a total cost of $19.0 thousand during the year ended December 31, 2019. No shares were repurchased during the years ended December 31, 2018 and 2017.

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 year ended December 31, 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 December 31, 2019, 7,490,235 shares of common stock had been sold under the equity distribution agreements for total accumulated net proceeds of approximately $128.6 million, of which 3,697,300 shares were sold for net proceeds of $51.0 million during the year ended December 31, 2019. No shares were sold during the years ended December 31, 2018 and 2017.

Accumulated Other Comprehensive Income

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

(in thousands)	December 31, 2019	December 31, 2018
Available-for-sale securities		
Unrealized gains	$ 730,043	$ 498,744
Unrealized losses	(40,643)	(387,927)
Accumulated other comprehensive income	$ 689,400	$ 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 income (loss) upon the recognition of any other-than-temporary impairments and realized gains and losses on sales, net of income tax effects, as individual securities are impaired or sold. The following table summarizes reclassifications out of accumulated other comprehensive income for the years ended December 31, 2019, 2018 and 2017:

	Affected Line Item in the Statements of Comprehensive Income (Loss)	Amount Reclassified out of Accumulated Other Comprehensive Income		
		Year Ended December 31,		
(in thousands)		2019	2018	2017
Other-than-temporary impairments on AFS securities	Total other-than-temporary impairment losses	$ 14,312	$ 470	$ 789
Realized (gains) losses on sales of certain AFS securities, net of tax	Gain (loss) on investment securities	(232,075)	253,869	5,207
Total		$ (217,763)	$ 254,339	$ 5,996

Note 18. 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 years ended December 31, 2019, 2018 and 2017, the Company granted 60,108, 55,553 and 34,559 shares of common stock, respectively, to its independent directors pursuant to the Plan. The estimated fair value of these awards was $13.35, $15.48 and $19.82 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 and 2017 vested immediately.

Additionally, during the years ended December 31, 2019, 2018 and 2017, the Company granted 455,174, 941,371 and 637,286 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, $15.12 and $17.48 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 year ended December 31, 2019 and 2018:

	Year Ended December 31,			
	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	996,924	14.96
Vested	(942,874)	(14.63)	(673,118)	(17.12)
Forfeited	(103,208)	(15.52)	(14,115)	(15.59)
Outstanding at End of Period	1,062,901	$ 16.14	1,593,701	$ 15.81

For the years ended December 31, 2019, 2018 and 2017, the Company recognized compensation related to restricted common stock granted pursuant to the Plan of $9.2 million, $13.0 million and $11.3 million, respectively.

Note 19. Income Taxes

For the years ended December 31, 2019, 2018 and 2017, 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.

Certain activities the Company performs may produce income that will not be qualifying income for REIT purposes. These activities include the designated portion of MSR treated as normal mortgage servicing, residential mortgage loans, certain derivative financial instruments and other risk-management instruments. The Company has designated its TRSs to engage in these activities.

The following table summarizes the tax (benefit) provision from continuing operations recorded at the taxable subsidiary level for the years ended December 31, 2019, 2018 and 2017:

	Year Ended December 31,		
(in thousands)	2019	2018	2017
Current tax provision:			
Federal	$ 8,684	$ 52	$ 492
State	2,668	1	57
Total current tax provision	11,352	53	549
Deferred tax (benefit) provision	(24,912)	41,770	(11,031)
Total (benefit from) provision for income taxes	$ (13,560)	$ 41,823	$ (10,482)

During the year ended December 31, 2019, the Company's TRSs recognized a benefit from income taxes of $13.6 million, which was primarily due to losses recognized on MSR, offset by net gains recognized on derivative instruments held in the Company's TRSs. During the year ended December 31, 2018, the Company's TRSs recognized a provision for income taxes of $41.8 million, which was primarily due to realized gains on sales of AFS securities and gains recognized on MSR held in the TRSs as well as the write-down of net deferred tax assets resulting from the deemed liquidation of one of the Company's TRSs due to its TRS election revocation, offset by net losses incurred on derivative instruments held in the TRSs. During the year ended December 31, 2017, the Company's TRSs recognized a benefit from income taxes of $10.5 million, which was primarily due to the remeasurement of federal net deferred tax assets resulting from the permanent reduction in the U.S. statutory corporate tax rate from 35% to 21%, realized losses on sales of AFS securities and net losses incurred on derivative instruments held in the Company's TRSs.

The Company's taxable income before dividend distributions differs from its pre-tax net income for U.S. GAAP purposes primarily due to unrealized gains and losses, the recognition of credit losses for U.S. GAAP purposes but not tax purposes, differences in timing of income recognition due to market discount, and original issue discount and the calculations surrounding each. These book to tax differences in the REIT are not reflected in the consolidated financial statements as the Company intends to retain its REIT status.

The following is a reconciliation of the statutory federal and state rates to the effective rates, for the years ended December 31, 2019, 2018 and 2017:

	Year Ended December 31,					
	2019		2018		2017	
(dollars in thousands)	Amount	Percent	Amount	Percent	Amount	Percent
Computed income tax expense at federal rate	$ 65,184	21 %	$ (518)	21 %	$ 104,215	35 %
State taxes, net of federal benefit, if applicable	2,108	1 %	1	— %	37	— %
Permanent differences in taxable income from GAAP net income	702	— %	28,414	(1,152)%	1,208	— %
Dividends paid deduction	(81,554)	(26)%	13,926	(565)%	(115,942)	(39)%
(Benefit from) provision for income taxes/ Effective Tax Rate[(1)]	$ (13,560)	(4)%	$ 41,823	(1,696)%	$ (10,482)	(4)%

(1) The (benefit from) provision for income taxes is recorded at the taxable subsidiary level.

The Company's permanent differences in taxable income from GAAP net income (loss) in the year ended December 31, 2019 were primarily due to dividends paid from the Company's TRSs to the REIT, offset by permanent differences related to the intercompany sale of securities between the Company's TRSs and the REIT. The Company's permanent differences in taxable income from GAAP net income (loss) in the year ended December 31, 2018 were primarily due to the intercompany sales of securities between the Company's TRSs and the REIT, as well as the write-down of net deferred tax assets resulting from the deemed liquidation of three of the Company's TRSs due to their TRS election revocation, offset by the reversal of the valuation allowance upon TRS revocation. The Company's permanent differences in taxable income from GAAP net income (loss) in the year ended December 31, 2017 were primarily due to a provision of $17.5 million related to the effect of the federal tax reform statutory rate change from 35% to 21%, offset by net losses incurred by consolidated securitization trusts that were not subject to federal taxes and permanent differences related to discontinued operations. Additionally, the Company's recurring permanent differences in taxable income from GAAP net income (loss) in the years ended December 31, 2019, 2018 and 2017 were due to a difference in the dividends paid deduction for tax and compensation expense related to restricted stock dividends.

The Company's consolidated balance sheets, as of December 31, 2019 and December 31, 2018 contain the following current and deferred tax liabilities and assets, which are included in other assets, and are recorded at the taxable subsidiary level:

(in thousands)	December 31, 2019	December 31, 2018
Income taxes receivable		
Federal income taxes receivable	$ 17,539	$ 690
State and local income taxes receivable	—	—
Income taxes receivable, net	17,539	690
Deferred tax assets (liabilities)		
Deferred tax asset	23,756	17,196
Deferred tax liability	(19)	(18,333)
Total net deferred tax assets (liabilities)	23,737	(1,137)
Total tax assets (liabilities), net	$ 41,276	$ (447)

Deferred Tax Assets and Liabilities

Deferred income taxes reflect the net tax effect of temporary differences between the carrying amount of assets and liabilities for financial reporting and tax purposes at the TRS level. Components of the Company's deferred tax liabilities and assets as of December 31, 2019 and December 31, 2018 were as follows:

(in thousands)	December 31, 2019	December 31, 2018
Available-for-sale securities	$ (19)	$ 19
Mortgage servicing rights	23,110	(18,333)
Derivative assets and liabilities	67	33
Other assets	12	9
Other liabilities	463	652
Intangibles	90	101
Net operating loss carryforward	7	16,354
Capital loss carryforward	7	28
Total deferred tax assets (liabilities)	23,737	(1,137)
Valuation allowance	—	—
Total net deferred tax assets (liabilities)	$ 23,737	$ (1,137)

As of December 31, 2019 and December 31, 2018, the Company had not recorded a valuation allowance for any portion of its deferred tax assets as it did not believe, at a more likely than not level, that any portion of its deferred tax assets would not be realized.

Based on the Company's evaluation, it has been concluded that there are no significant uncertain tax positions requiring recognition in the Company's 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 consolidated financial statements.

Note 20. Earnings Per Share

The following table presents a reconciliation of the earnings (loss) and shares used in calculating basic and diluted earnings (loss) per share for the years ended December 31, 2019, 2018 and 2017:

	Year Ended December 31,		
(in thousands, except share data)	**2019**	**2018**	**2017**
Numerator:			
Net income (loss) from continuing operations	$ 323,962	$ (44,290)	$ 308,239
Income from discontinued operations, net of tax	—	—	44,146
Net income (loss)	$ 323,962	$ (44,290)	352,385
Income from discontinued operations attributable to noncontrolling interest	—	—	3,814
Net income (loss) attributable to Two Harbors Investment Corp.	323,962	(44,290)	348,571
Dividends on preferred stock	75,801	65,395	25,122
Net income (loss) attributable to common stockholders - basic	248,161	(109,685)	323,449
Interest expense attributable to convertible notes [1]	—	—	17,867
Net income (loss) attributable to common stockholders - diluted	$ 248,161	$ (109,685)	$ 341,316
Denominator:			
Weighted average common shares outstanding	266,594,154	204,409,853	173,063,178
Weighted average restricted stock shares	1,232,585	1,610,649	1,370,821
Basic weighted average shares outstanding	267,826,739	206,020,502	174,433,999
Effect of dilutive shares issued in an assumed conversion	—	—	13,699,342
Diluted weighted average shares outstanding	267,826,739	206,020,502	188,133,341
Basic Earnings (Loss) Per Share:			
Continuing operations	$ 0.93	$ (0.53)	$ 1.62
Discontinued operations	—	—	0.23
Net income (loss)	$ 0.93	$ (0.53)	$ 1.85
Diluted Earnings (Loss) Per Share:			
Continuing operations	$ 0.93	$ (0.53)	$ 1.60
Discontinued operations	—	—	0.21
Net income (loss)	$ 0.93	$ (0.53)	$ 1.81

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

For the year ended December 31, 2019, excluded from the calculation of diluted earnings per share is the effect of adding back $19.0 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 18,128,792 weighted average common share equivalents related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

For the year ended December 31, 2018, excluded from the calculation of diluted earnings per share is the effect of adding back $18.9 million of interest expense, net of a nondiscretionary adjustment for the assumed change in the management fee calculation, and 17,806,090 weighted average common share equivalents related to the assumed conversion of the Company's convertible senior notes, as their inclusion would be antidilutive.

Note 21. 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 $60.1 million, $47.8 million and $40.5 million as a management fee to PRCM Advisers for the years ended December 31, 2019, 2018 and 2017, which represents approximately 1.5% of stockholders' equity on an annualized basis as defined by the Management Agreement. For purposes of calculating the management fee, stockholders' equity is adjusted as discussed below, and to exclude the consolidated stockholders' equity of Granite Point and its subsidiaries previously included in the Company's consolidated balance sheet and any common stock repurchases, as well as any unrealized gains, losses or other items that do not affect realized net income (loss), among other adjustments, in accordance with 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 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 $27.6 million, $26.3 million and $27.9 million for the years ended December 31, 2019, 2018 and 2017, 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 $9.2 million, $13.0 million and $11.3 million of compensation during the years ended December 31, 2019, 2018 and 2017, respectively, related to restricted common stock issued to employees of PRCM Advisers and the Company's independent directors pursuant to the Plan. See Note 18 - *Equity Incentive Plan* for additional information.

Note 22. Subsequent Events

Events subsequent to December 31, 2019 were evaluated through the date these consolidated financial statements were issued and no other additional events were identified requiring further disclosure in these consolidated financial statements.

TWO HARBORS INVESTMENT CORP.

Notes to the Consolidated Financial Statements

Note 23. Quarterly Financial Data - Unaudited

	2019 Quarter Ended			
(in thousands, except share data)	**March 31**	**June 30**	**September 30**	**December 31**
Total interest income	$ 245,483	$ 261,029	$ 249,740	$ 238,438
Total interest expense	163,525	192,443	191,077	167,284
Net interest income	81,958	68,586	58,663	71,154
Other-than-temporary impairment losses	(206)	(4,848)	(5,950)	(3,308)
Total other (loss) income	(70,176)	(107,494)	297,310	116,477
Total expenses	47,550	44,394	47,879	51,941
(Benefit from) provision for income taxes	(10,039)	2,407	(3,556)	(2,372)
Dividends on preferred stock	18,950	18,950	18,951	18,950
Net (loss) income attributable to common stockholders	$ (44,885)	$ (109,507)	$ 286,749	$ 115,804
Basic (loss) earnings per weighted average common share	$ (0.18)	$ (0.40)	$ 1.05	$ 0.42
Diluted (loss) earnings per weighted average common share	$ (0.18)	$ (0.40)	$ 1.00	$ 0.41

	2018 Quarter Ended			
(in thousands, except share data)	**March 31**	**June 30**	**September 30**	**December 31**
Total interest income	$ 194,019	$ 187,360	$ 236,698	$ 251,955
Total interest expense	96,560	108,414	152,396	162,301
Net interest income	97,459	78,946	84,302	89,654
Other-than-temporary impairment losses	(94)	(174)	(95)	(107)
Total other income (loss)	281,982	93,174	112,514	(590,696)
Total expenses	40,754	38,507	123,366	46,705
Provision for (benefit from) income taxes	3,784	(6,051)	37,409	6,681
Dividends on preferred stock	13,747	13,747	18,951	18,950
Net income (loss) attributable to common stockholders	$ 321,062	$ 125,743	$ 16,995	$ (573,485)
Basic earnings (loss) per weighted average common share	$ 1.83	$ 0.72	$ 0.08	$ (2.31)
Diluted earnings (loss) per weighted average common share	$ 1.69	$ 0.68	$ 0.08	$ (2.31)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosures

None.

Item 9A. 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 Annual Report on Form 10-K. 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 December 31, 2019. Although our CEO and CFO have determined our disclosure controls and procedures were effective at the end of the period covered by this Annual Report on Form 10-K, 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 December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Report On Internal Control Over Financial Reporting

Management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the Company's principal executive and principal financial officers and effected by the Company's Board, management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risks that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

The Company's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment the Company's management used criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control-Integrated Framework (2013 framework).

Based on its assessment, the Company's management believes that, as of December 31, 2019, the Company's internal control over financial reporting was effective based on those criteria.

The Company's independent auditors, Ernst & Young LLP, have issued an attestation report on the effectiveness of the Company's internal control over financial reporting. This report appears on page 145 of this annual report on Form 10-K.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors
of Two Harbors Investment Corp.

Opinion on Internal Control over Financial Reporting

We have audited Two Harbors Investment Corp.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Two Harbors Investment Corp. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2019 and 2018, the related consolidated statements of comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and our report dated February 26, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report On Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Minneapolis, Minnesota
February 26, 2020

Item 9B. Other Information

None.

PART III

Items 10, 11, 12 and 13.

The information required by Items 10, 11, 12 and 13 of Part III of this Annual Report is incorporated by reference to information to be set forth in the Company's definitive Proxy Statement for its 2020 Annual Meeting of Stockholders, which will be filed with the SEC, pursuant to Regulation 14A, not later than 120 days after December 31, 2019.

Item 14. Principal Accounting Fees and Services

We retained Ernst & Young LLP, or EY, to audit our consolidated financial statements for the years ended December 31, 2019 and 2018. We also retained EY, as well as other accounting and consulting firms, to provide various other services in during the years ended December 31, 2019 and 2018.

The table below presents the aggregate fees billed to us for professional services performed by EY for the years ended December 31, 2019 and 2018:

	Year Ended December 31,	
	2019	2018
Audit fees [1]	$ 1,443,738	$ 1,301,476
Audit-related fees [2]	46,100	56,144
Tax fees [3]	224,726	536,267
Total principal accountant fees	$ 1,714,564	$ 1,893,887

(1) Audit fees pertain to the audit of our annual Consolidated Financial Statements, including review of the interim financial statements contained in our Quarterly Reports on Form 10-Q, comfort letters to underwriters in connection with our registration statements and common stock offerings, attest services, consents to the incorporation of the EY audit report in publicly filed documents and assistance with and review of documents filed with the SEC.

(2) Audit-related fees pertain to assurance and related services that are traditionally performed by the principal accountant, including accounting consultations and audits in connection with proposed or consummated acquisitions, internal control reviews and consultation concerning financial accounting and reporting standards.

(3) Tax fees pertain to services performed for tax compliance, including REIT compliance, tax planning and tax advice, including preparation of tax returns and claims for refund and tax-payment planning services. Tax planning and advice also includes assistance with tax audits and appeals, and tax advice related to specific transactions.

The services performed by EY in 2019 were pre-approved by our Audit Committee in accordance with the pre-approval policy set forth in our Audit Committee Charter. This policy requires that all engagement fees and the terms and scope of all auditing and non-auditing services be reviewed and approved by the Audit Committee in advance of their formal initiation.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Consolidated Financial Statements:

The consolidated financial statements of the Company, together with the independent registered public accounting firm's report thereon, are set forth in Part II, Item 8 on pages 84 through 93 of this Annual Report on Form 10-K and are incorporated herein by reference.

(2) Schedules to Consolidated Financial Statements:

All consolidated financial statement schedules not included have been omitted because they are either inapplicable or the information required is provided in the Company's Consolidated Financial Statements and Notes thereto, included in Part II, Item 8, of this Annual Report on Form 10-K.

(3) Exhibits:

The exhibits listed on the accompanying Exhibits Index are filed or incorporated by reference as part of this Annual Report on Form 10-K.

Item 16. Form 10-K Summary

None.

Exhibit Number	Exhibit Index
1.1	Equity Distribution Agreement between Two Harbors Investment Corp. and Credit Suisse Securities (USA) LLC dated February 8, 2019 (incorporated by reference to Exhibit 1.1 to the Registrant's Current Report on Form 8-K filed with the SEC on February 8, 2019).
2.1	Agreement and Plan of Merger, dated as of June 11, 2009, by and among Capitol Acquisition Corp., Two Harbors Investment Corp., Two Harbors Merger Corp. and Pine River Capital Management L.P. (incorporated by reference to Annex A filed with Pre Effective Amendment No. 4 to the Registrant's Registration Statement on Form S-4 (File No. 333-160199) filed with the Securities and Exchange Commission, or SEC, on October 8, 2009, or Amendment No. 4).
2.2	Amendment No. 1 to Agreement and Plan of Merger, dated as of August 17, 2009, by and among Capitol Acquisition Corp., Two Harbors Investment Corp., Two Harbors Merger Corp. and Pine River Capital Management L.P. (incorporated by reference to Annex A-2 filed with Amendment No. 4).
2.3	Amendment No. 2 to Agreement and Plan of Merger, dated as of September 20, 2009, by and among Capitol Acquisition Corp., Two Harbors Investment Corp., Two Harbors Merger Corp. and Pine River Capital Management L.P. (incorporated by reference to Annex A-3 filed with Amendment No. 4).
2.4	Agreement and Plan of Merger, by and among Two Harbors Investment Corp., Eiger Merger Subsidiary LLC and CYS Investments, Inc., dated as of April 25, 2018 (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on April 26, 2018).
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 Company'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 Company'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 Company'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 Company's Current Report on Form 8-K, filed with the SEC on April 6, 2017).
4.1	Specimen Common Stock Certificate of Two Harbors Investment Corp. (incorporated by reference to Exhibit 4.2 to Amendment No. 4).
4.2	Indenture, dated as of January 19, 2017, between Two Harbors Investment Corp. and The Bank of New York Mellon Trust Company, N.A. (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K file with the SEC on January 19, 2017).

Exhibit Number	Exhibit Index
4.3	Supplemental Indenture, dated as of January 19, 2017, between Two Harbors Investment Corp. and The Bank of New York Mellon Trust Company, N.A. (incorporated by reference to Exhibit 4.2 to the Registrant’s Current Report on Form 8-K file with the SEC on January 19, 2017).
4.4	Description of Securities. (filed herewith)
10.1	Management Agreement (incorporated by reference to Exhibit 10.1 to the Registrant’s Form 10-K for the year ended December 31, 2009, filed with the SEC on March 4, 2010).
10.2	Amendment to Management Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on December 19, 2012).
10.3	Second Amendment to Management Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on November 7, 2014).
10.4	Third Amendment to Management Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on June 28, 2017).
10.5	Fourth Amendment to Management Agreement, dated April 25, 2018 (incorporated by reference to Exhibit 10.1 to the Registrant’s Form 8-K filed with the SEC on April 26, 2018).
10.6	Shared Facilities and Services Agreement (incorporated by reference to Exhibit 10.4 to the Registrant’s Form 10-K for the year ended December 31, 2009, filed with the SEC on March 4, 2010).
10.7*	Second Restated 2009 Equity Incentive Plan (incorporated by reference to Appendix A to the Registrant’s Definitive Proxy Statement filed with the SEC on March 26, 2015).
10.8*	Form of Restricted Stock Agreement under the Second Restated 2009 Equity Incentive Plan (incorporated by reference to Exhibit 10.2 to the Registrant’s Quarterly Report on Form 10-Q filed with the SEC on August 5, 2015).
10.9*	Form of Phantom Share Award (incorporated by reference to Exhibit 10.10.2 to Amendment No. 4).
10.10	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on November 19, 2009).
21.1	Subsidiaries of registrant. (filed herewith)
23.1	Consent of Independent Registered Public Accounting Firm of Ernst & Young LLP. (filed herewith)
24.1	Powers of Attorney (included on signature page).
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. (filed 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. (filed herewith)
101	Financial statements from the Annual Report on Form 10-K of Two Harbors Investment Corp. for the year ended December 31, 2019, formatted in Inline XBRL: (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Comprehensive Income (Loss), (iii) the Consolidated Statements of Stockholders’ Equity, (iv) the Consolidated Statements of Cash Flows, and (v) the Notes to the Consolidated Financial Statements. (filed herewith)
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101). (filed herewith)

* Management or compensatory agreement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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:	February 26, 2020	By:	/s/ Thomas E. Siering
			Thomas E. Siering Chief Executive Officer, President and Director (principal executive officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Each of the undersigned hereby appoints Thomas E. Siering and Mary Riskey, and each of them (with full power to act alone), as attorneys and agents for the undersigned, with full power of substitution, for and in the name, place and stead of the undersigned, to sign and file with the Securities and Exchange Commission under the Securities Act of 1934, any and all amendments and exhibits to this annual report on Form 10-K and any and all applications, instruments, and other documents to be filed with the Securities and Exchange Commission pertaining to this annual report on Form 10-K or any amendments thereto, with full power and authority to do and perform any and all acts and things whatsoever requisite and necessary or desirable.

Signature	Title	Date
/s/ Thomas E. Siering Thomas E. Siering	Chief Executive Officer, President and Director (principal executive officer)	February 26, 2020
/s/ Mary Riskey Mary Riskey	Chief Financial Officer (principal financial and accounting officer)	February 26, 2020
/s/ Stephen G. Kasnet Stephen G. Kasnet	Chairman of the Board of Directors	February 26, 2020
/s/ E. Spencer Abraham E. Spencer Abraham	Director	February 26, 2020
/s/ James J. Bender James J. Bender	Director	February 26, 2020
/s/ Karen Hammond Karen Hammond	Director	February 26, 2020
/s/ W. Reid Sanders W. Reid Sanders	Director	February 26, 2020
/s/ James A. Stern James A. Stern	Director	February 26, 2020
/s/ Hope B. Woodhouse Hope B. Woodhouse	Director	February 26, 2020

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

The following is a summary of the rights and preferences of our capital stock. This summary is subject to, and qualified in its entirety by reference to, our charter and bylaws and the applicable provisions of the Maryland General Corporation Law, or the MGCL. While we believe that the following description covers the material terms of our capital stock, the description may not contain all of the information that is important to you. We encourage you to read carefully our charter and bylaws and the other documents we refer to for a more complete understanding of our capital stock.

General

Two Harbors Investment Corp. (the "Company," "us," "we" or "our") is incorporated under the laws of the state of Maryland. The rights of our stockholders, as well as our charter and bylaws, are governed by Maryland law.

Our charter authorizes us to issue up to 450,000,000 shares of common stock, $0.01 par value per share, and 50,000,000 shares of preferred stock, $0.01 par value per share. Our charter authorizes our board of directors to amend our charter to increase or decrease the aggregate number of authorized shares of stock or the number of shares of stock of any class or series without stockholder approval. Under Maryland law, stockholders are generally not liable for our debts or obligations.

Our common stock has been approved for listing on the New York Stock Exchange ("NYSE") under the symbol "TWO." Each series of our preferred stock has also been approved for listing on the NYSE, as follows:

- Our 8.125% Series A Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock is listed on the NYSE under the symbol "TWO PRA" (the "Series A Preferred Stock");
- Our 7.625% Series B Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock is listed on the NYSE under the symbol "TWO PRB" (the "Series B Preferred Stock");
- Our 7.25% Series C Fixed-to-Floating Rate Cumulative Redeemable Preferred Stock is listed on the NYSE under the symbol "TWO PRC" (the "Series C Preferred Stock");
- Our 7.75% Series D Cumulative Redeemable Preferred Stock is listed on the NYSE under the symbol "TWO PRD" (the "Series D Preferred Stock"); and
- Our 7.50% Series E Cumulative Redeemable Preferred Stock is listed on the NYSE under the symbol "TWO PRE" (the "Series E Preferred Stock").

We have appointed Equiniti Trust Company as the transfer agent and registrar for our shares of common stock and each series of shares of preferred stock.

Our charter authorizes our board of directors to classify and reclassify any unissued shares of common or preferred stock into other classes or series of shares of stock. Prior to issuance of shares of each other class or series, our board of directors will be required by Maryland law and by our charter to set, subject to our charter restrictions on transfer and ownership of shares of our stock, the terms, preferences, conversion or other rights, voting powers, restrictions, limitations as to dividends or other distributions, qualifications and terms or conditions of redemption for each class or series. Therefore, among other things, our board of directors could authorize the issuance of shares of common or preferred stock with terms and conditions that could have the effect of delaying, deferring or preventing a change in control or other transaction that might involve a premium price for shares of our common stock or otherwise be in the best interest of our stockholders.

Restrictions on Ownership and Transfer

In order for us to qualify as a REIT under the Internal Revenue Code of 1986, as amended, or the Code, shares of our stock must be beneficially owned by 100 or more persons during at least 335 days of a taxable year of 12 months (other than the first year for which an election to be a REIT has been made) or during a proportionate part of a shorter taxable year. Also, not more than 50% of the value of the outstanding shares of stock may be owned, directly or indirectly, by five or fewer individuals (as defined in the Code to include certain entities) during the last half of a taxable year (other than the first year for which an election to be a REIT has been made).

Our charter contains restrictions limiting the ownership and transfer of shares of our common stock and other outstanding shares of stock. The relevant sections of our charter provide that, subject to the exceptions described below, no person or entity may own, or be deemed to own by virtue of the applicable constructive ownership provisions of the Code, more than 9.8% by value or number of shares, whichever is more restrictive, of our outstanding shares of common stock (the common share ownership limit), or 9.8% by value or number of shares, whichever is more restrictive, of the aggregate of the outstanding shares of our capital stock (the aggregate share ownership limit). The common share ownership limit and the aggregate share ownership limit are collectively referred to herein as the “ownership limits.” A person or entity that becomes subject to the ownership limits by virtue of a violative transfer that results in a transfer to a trust, as set forth below, is referred to as a “purported beneficial transferee” if, had the violative transfer been effective, the person or entity would have been a record owner and beneficial owner or solely a beneficial owner of shares of our stock, or is referred to as a “purported record transferee” if, had the violative transfer been effective, the person or entity would have been solely a record owner of shares of our stock.

The constructive ownership rules under the Code are complex and may cause shares of stock owned actually or constructively by a group of related individuals and/or entities to be owned constructively by one individual or entity. As a result, the acquisition of less than 9.8% by value or number of shares, whichever is more restrictive, of our outstanding shares of common stock, or 9.8% by value or number of shares, whichever is more restrictive, of our outstanding capital stock (or the acquisition of an interest in an entity that owns, actually or constructively, shares of our stock) by an individual or entity, could, nevertheless, cause that individual or entity, or another individual or entity, to own constructively in excess of 9.8% by value or number of shares, whichever is more restrictive, of our outstanding shares of common stock, or 9.8% by value or number of shares, whichever is more restrictive, of our outstanding capital stock and thereby subject the shares of common stock or total shares of stock to the applicable ownership limit.

Our board of directors may, in its sole discretion, exempt a person from the above-referenced ownership limits. However, the board of directors may not exempt any person whose ownership of our outstanding stock would result in our being “closely held” within the meaning of Section 856(h) of the Code or otherwise would result in our failing to qualify as a REIT. In order to be considered by the board of directors for exemption, a person also must not own, directly or indirectly, an interest in any tenant (or a tenant of any entity which we own or control) that would cause us to own, directly or indirectly, more than a 9.9% interest in the tenant. The person seeking an exemption must represent to the satisfaction of our board of directors that such person will not violate these two restrictions. The person also must agree that any violation or attempted violation of these restrictions will result in the automatic transfer of the shares of stock causing the violation to a trust for the benefit of a charitable beneficiary. As a condition of its waiver, our board of directors may require an opinion of counsel or IRS ruling satisfactory to the board of directors with respect to our qualification as a REIT.

In connection with an exemption from the ownership limits or at any other time, our board of directors may from time to time increase the ownership limits for one or more persons or entities and decrease the ownership limits for all others; provided, however, that any decrease will be effective as to existing holders who own common stock or total shares of stock, as applicable, in excess of such decreased ownership limit as described below; and provided further that the ownership limit may not be increased if, after giving effect to such increase, five or fewer individuals could own or constructively own in the aggregate, more than 49.9% in value of the shares then outstanding. Prior to the modification of the ownership limit, our board of directors may require such opinions of counsel, affidavits, undertakings or agreements as the board may deem necessary or advisable in order to determine or ensure our qualification as a REIT. A reduced ownership limit will not apply to any person or entity whose percentage ownership in shares of our common stock or total shares of stock, as applicable, is in excess of such decreased ownership limit until such time as such person’s or entity’s percentage of shares of our common stock or total shares of stock, as applicable, equals or falls below the decreased ownership limit, but any further acquisition of shares of our common stock or total shares of stock, as applicable, in excess of such percentage ownership of shares of our common stock or total shares of stock will be in violation of such ownership limit.

Our charter provisions further prohibit:

- any person from beneficially or constructively owning, applying certain attribution rules of the Code, shares of our stock that would result in our being "closely held" under Section 856(h) of the Code or otherwise cause us to fail to qualify as a REIT; and

- any person from transferring shares of our stock if such transfer would result in shares of our stock being beneficially owned by fewer than 100 persons (determined without reference to any rules of attribution).

Any person who acquires or attempts or intends to acquire beneficial or constructive ownership of shares of our stock that will or may violate any of the foregoing restrictions on transferability and ownership will be required to give written notice of such event to us immediately or, in the case of a proposed or attempted transaction, at least 15 days prior to such proposed or attempted transaction, and provide us with such other information as we may request in order to determine the effect of such transfer on our qualification as a REIT. The foregoing provisions on transferability and ownership will not apply if our board of directors determines that it is no longer in our best interests to attempt to qualify, or to continue to qualify, as a REIT.

Pursuant to our charter, if any transfer of shares of our stock would result in shares of our stock being beneficially owned by fewer than 100 persons, such transfer will be null and void and the intended transferee will acquire no rights in such shares. In addition, if any purported transfer of shares of our stock or any other event would otherwise result in any person violating the ownership limits or such other limit established by our board of directors or in our being "closely held" under Section 856(h) of the Code or otherwise failing to qualify as a REIT, then that number of shares (rounded up to the nearest whole share) that would cause such person to violate such restrictions will be automatically transferred to, and held by, a trust for the exclusive benefit of one or more charitable organizations selected by us and the intended transferee will acquire no rights in such shares. The automatic transfer will be effective as of the close of business on the business day prior to the date of the purported transfer or other event that results in a transfer to the trust. Any dividend or other distribution paid to the purported record transferee, prior to our discovery that the shares had been automatically transferred to a trust as described above, must be repaid to the trustee upon demand for distribution to the charitable beneficiary by the trust. If the transfer to the trust as described above is not automatically effective, for any reason, to prevent violation of the applicable ownership limit or our being "closely held" under Section 856(h) of the Code or otherwise failing to qualify as a REIT, then our charter provides that the transfer of the shares will be null and void and the intended transferee will acquire no rights in such shares.

Shares of stock transferred to the trustee are deemed offered for sale to us, or our designee, at a price per share equal to the lesser of (1) the price paid by the purported record transferee for the shares (or, if the event that resulted in the transfer to the trust did not involve a purchase of such shares of stock at market price, the last reported sales price reported on the NYSE (or other applicable exchange) on the day of the event which resulted in the transfer of such shares of stock to the trust) and (2) the market price on the date we or our designee accepts such offer. We have the right to accept such offer until the trustee has sold the shares of stock held in the trust pursuant to the clauses discussed below. Upon a sale to us, the interest of the charitable beneficiary in the shares sold terminates, the trustee must distribute the net proceeds of the sale to the purported record transferee and any dividends or other distributions held by the trustee with respect to such shares of stock will be paid to the charitable beneficiary.

If we do not buy the shares, the trustee must, within 20 days of receiving notice from us of the transfer of shares to the trust, sell the shares to a person or entity designated by the trustee who could own the shares without violating the ownership limits or such other limit as established by our board of directors. After that, the trustee must distribute to the purported record transferee an amount equal to the lesser of (1) the price paid by the purported record transferee for the shares (or, if the event which resulted in the transfer to the trust did not involve a purchase of such shares at market price, the last reported sales price reported on the NYSE (or other applicable exchange) on the day of the event which resulted in the transfer of such shares of stock to the trust) and (2) the sales proceeds (net of commissions and other expenses of sale) received by the trust for the shares. Any net sales proceeds in excess of the amount payable to the purported record transferee will be immediately paid to the charitable beneficiary, together with any dividends or other distributions thereon. In addition, if prior to discovery by us that shares of stock have been transferred to a trust, such shares of stock are sold by a purported record transferee, then such shares will be deemed to have been sold on behalf of the trust and to the extent that the purported record transferee received an amount for or in respect of such shares that exceeds the amount that such purported record transferee was entitled to receive, such excess amount must be paid to the trustee upon demand. The purported beneficial transferee or purported record transferee has no rights in the shares held by the trustee.

The trustee will be designated by us and will be unaffiliated with us and with any purported record transferee or purported beneficial transferee. Prior to the sale of any shares by the trust, the trustee will receive, in trust for the beneficiary, all dividends and other distributions paid by us with respect to the shares held in trust and may also exercise all voting rights with respect to the shares held in trust. These rights will be exercised for the exclusive benefit of the charitable beneficiary. Any dividend or other distribution paid prior to our discovery that shares of stock have been transferred to the trust will be paid by the recipient to the trustee upon demand. Any dividend or other distribution authorized but unpaid will be paid when due to the trustee.

Subject to Maryland law, effective as of the date that the shares have been transferred to the trust, the trustee will have the authority, at the trustee's sole discretion:

- to rescind as void any vote cast by a purported record transferee prior to our discovery that the shares have been transferred to the trust; and
- to recast the vote in accordance with the desires of the trustee acting for the benefit of the charitable beneficiary of the trust.

However, if we have already taken irreversible action, then the trustee may not rescind and recast the vote.

If our board of directors determines in good faith that a proposed transfer would violate the restrictions on ownership and transfer of shares of our stock set forth in the charter, the board of directors will take such action as it deems advisable to refuse to give effect to or to prevent such transfer, including, but not limited to, causing us to redeem the shares of stock, refusing to give effect to the transfer on our books or instituting proceedings to enjoin the transfer.

Every owner of more than 5% (or such lower percentage as required by the Code or the regulations promulgated thereunder) of our stock, within 30 days after the end of each taxable year, is required to give us written notice, stating the name and address of such owner, the number of shares of our capital stock which he, she or it beneficially owns and a description of the manner in which the shares are held. Each such owner shall provide us with such additional information as we may request in order to determine the effect, if any, of such beneficial ownership on our status as a REIT and to ensure compliance with the aggregate share ownership limit. In addition, each stockholder shall upon demand be required to provide us with such information as we may request in good faith in order to determine our status as a REIT and to comply with the requirements of any taxing authority or governmental authority or to determine such compliance.

These ownership limits could delay, defer or prevent a transaction or a change in control that might involve a premium price for the common stock or otherwise be in the best interests of the stockholders.

Certain Provisions of the Maryland General Corporation Law and Two Harbors' Charter and Bylaws

The following summary description of certain provisions of the MGCL and our charter and bylaws does not purport to be complete and is subject to and qualified in its entirety by reference to the MGCL and the actual provisions of our charter and our bylaws.

Our Board of Directors

Our charter and bylaws provide that the number of directors we have may be established by our board of directors but may not be less than the minimum number required by the MGCL, nor more than 15. Our bylaws currently provide that any vacancy may be filled only by a majority of the remaining directors. Any individual elected to fill such vacancy will serve until the next annual meeting of stockholders and until a successor is duly elected and qualifies.

Pursuant to our bylaws, each of our directors is elected by our common stockholders entitled to vote to serve until the next annual meeting of stockholders and until his or her successor is duly elected and qualified. Holders of shares of common stock will have no right to cumulative voting in the election of directors. Consequently, at each annual meeting of stockholders, the holders of a majority of the shares of common stock entitled to vote will be able to elect all of our directors. However, our Bylaws provide that, in the event that the Company's Secretary determines that, as of the record date for the stockholders' meeting, the number of nominees exceeds the number of directors to be elected, then directors will be elected by a plurality of the votes cast at a meeting of stockholders duly called and at which a quorum is present. In such case, each share may be voted for as many individuals as there are directors to be elected and for whose election the share is entitled to be cast.

Removal of Directors

Our charter provides that a director may be removed, with or without cause, only by the affirmative vote of the holders of shares entitled to cast at least two-thirds of all the votes of common stockholders entitled to be cast generally in the election of directors. This provision, when coupled with the power of our board of directors to fill vacancies on the board of directors, precludes stockholders from (1) removing incumbent directors except upon a substantial affirmative vote and (2) filling the vacancies created by such removal with their own nominees.

Business Combinations

Under the MGCL, certain "business combinations" (including a merger, consolidation, share exchange or, in certain circumstances, an asset transfer or issuance or reclassification of equity securities) between a Maryland corporation and an interested stockholder (defined generally as any person who beneficially owns, directly or indirectly, 10% or more of the voting power of the corporation's outstanding voting stock or an affiliate or associate of the corporation who, at any time within the two-year period immediately prior to the date in question, was the beneficial owner of 10% or more of the voting power of the then-outstanding stock of the corporation) or an affiliate of such an interested stockholder are prohibited for five years after the most recent date on which the interested stockholder becomes an interested stockholder. Thereafter, any such business combination must be recommended by the board of directors of such corporation and approved by the affirmative vote of at least (a) 80% of the votes entitled to be cast by holders of outstanding voting shares of stock of the corporation and (b) two-thirds of the votes entitled to be cast by holders of voting stock of the corporation other than shares held by the interested stockholder with whom (or with whose affiliate) the business combination is to be effected or held by an affiliate or associate of the interested stockholder, unless, among other conditions, the corporation's common stockholders receive a minimum price (as described in the MGCL) for their shares and the consideration is received in cash or in the same form as previously paid by the interested stockholder for its shares.

These provisions of the MGCL do not apply, however, to business combinations that are approved or exempted by a board of directors prior to the most recent date on which the interested stockholder became an interested stockholder. Our board of directors may provide that the board's approval is subject to compliance with any terms and conditions determined by the board. Pursuant to the statute, our board of directors has by resolution exempted business combinations between us and Pine River or its affiliates. In addition, in the future our board of directors may by resolution exempt business combinations between us and any other person, provided that such resolution is adopted prior to the most recent date on which the applicable interested stockholder becomes an interested stockholder. Consequently, the five-year prohibition and the supermajority vote requirements will not apply to business combinations between us and such persons. As a result, any person described above may be able to enter into business combinations with us that may not be in the best interest of our stockholders without compliance by us with the supermajority vote requirements and other provisions of the statute.

The business combination statute may discourage others from trying to acquire control of us and increase the difficulty of consummating any offer.

Control Share Acquisitions

The MGCL provides that holders of "control shares" of a Maryland corporation acquired in a "control share acquisition" have no voting rights except to the extent approved at a special meeting of stockholders by the affirmative vote of two-thirds of the votes entitled to be cast on the matter, excluding shares of stock in a corporation in respect of which any of the following persons is entitled to exercise or direct the exercise of the voting power of such shares in the election of directors: (1) a person who makes or proposes to make a control share acquisition, (2) an officer of the corporation or (3) an employee of the corporation who is also a director of the corporation. "Control shares" are voting shares of stock which, if aggregated with all other such shares of stock previously acquired by the acquirer, or in respect of which the acquirer is able to exercise or direct the exercise of voting power (except solely by virtue of a revocable proxy), would entitle the acquirer to exercise or direct the exercise of voting power in electing directors within one of the following ranges of voting power: (A) one-tenth or more but less than one-third; (B) one-third or more but less than a majority; or (C) a majority or more of all voting power. Control shares do not include shares that the acquiring person is then entitled to vote as a result of having previously obtained stockholder approval. A "control share acquisition" means the acquisition of control shares or of the power to direct the exercise of voting power of control shares, subject to certain exceptions.

A person who has made or proposes to make a control share acquisition, upon satisfaction of certain conditions (including an undertaking to pay expenses and making an "acquiring person statement" as described in the MGCL), may compel our board of directors to call a special meeting of stockholders to be held within 50 days of demand to consider the voting rights of the shares. If no request for a meeting is made, the corporation may itself present the question at any stockholders meeting.

If voting rights are not approved at the meeting or if the acquiring person does not deliver an "acquiring person statement" as required by the statute, then, subject to certain conditions and limitations, the corporation may redeem any or all of the control shares (except those for which voting rights have previously been approved) for fair value determined, without regard to the absence of voting rights for the control shares, as of the date of the last control share acquisition by the acquirer or of any meeting of stockholders at which the voting rights of such shares are considered and not approved. If voting rights for control shares are approved at a stockholders meeting and the acquirer becomes entitled to vote a majority of the shares entitled to vote, all other stockholders may exercise appraisal rights. The fair value of the shares as determined for purposes of such appraisal rights may not be less than the highest price per share paid by the acquirer in the control share acquisition.

The control share acquisition statute does not apply to (a) shares acquired in a merger, consolidation or share exchange if the corporation is a party to the transaction or (b) acquisitions approved or exempted by the charter or bylaws of the corporation.

Our bylaws contain a provision exempting from the control share acquisition statute any and all acquisitions by any person of shares of our stock. There is no assurance that such provision will not be amended or eliminated at any time in the future.

Subtitle 8

Subtitle 8 of Title 3 of the MGCL permits a Maryland corporation with a class of equity securities registered under the Exchange Act and at least three independent directors to elect to be subject, by provision in its charter or bylaws or a resolution of its board of directors and notwithstanding any contrary provision in the charter or bylaws, to any or all of five provisions:

- a classified board;
- a two-thirds vote requirement for removing a director;
- a requirement that the number of directors be fixed only by vote of the directors;
- a requirement that a vacancy on the board be filled only by the remaining directors in office and for the remainder of the full term of the class of directors in which the vacancy occurred; and
- a majority requirement for the calling of a special meeting of stockholders.

Our charter provides that, pursuant to Subtitle 8, vacancies on the board may be filled only by the affirmative vote of a majority of the remaining directors in office, even if the remaining directors do not constitute a quorum, and any director elected to fill a vacancy shall serve for the remainder of the full term of the directorship in which the vacancy occurred. Through provisions in our charter and bylaws unrelated to Subtitle 8, we already (1) require the affirmative vote of the holders of not less than two-thirds of all of the votes entitled to be cast on the matter for the removal of any director from the board, which removal will be allowed with or without cause, (2) vest in the board the exclusive power to fix the number of directorships and (3) require, unless called by the chairman of the board, chief executive officer, president or the board of directors, the written request of stockholders of not less than a majority of all the votes entitled to be cast at such a meeting to call a special meeting.

Meetings of Stockholders

Pursuant to our bylaws, a meeting of our stockholders for the election of directors and the transaction of any business will be held annually on a date and at the time set by our board of directors. In addition, the chairman of the board, chief executive officer, president or board of directors may call a special meeting of our stockholders. Subject to the provisions of our bylaws, a special meeting of our stockholders will also be called by the secretary upon the written request of the stockholders entitled to cast not less than a majority of all the votes entitled to be cast at the meeting.

Amendment to Our Charter and Bylaws

Except for amendments related to removal of directors, the restrictions on ownership and transfer of shares of our stock and the requirement of a two-thirds vote for amendments to these provisions (each of which require the affirmative vote of the holders of not less than two-thirds of all the votes entitled to be cast on the matter and the approval of our board of directors), our charter may be amended only with the approval of the board of directors and the affirmative vote of the holders of a majority of all of the votes entitled to be cast on the matter.

Our board of directors has the exclusive power to adopt, alter or repeal any provision of our bylaws and to make new bylaws. In addition, our stockholders may alter or repeal any provision of our bylaws and adopt new bylaws if any such alteration, repeal or adoption is approved by the affirmative vote of a majority of the votes entitled to be cast on the matter.

Dissolution of Two Harbors

Our dissolution must be approved by a majority of the entire board of directors and the affirmative vote of holders of not less than a majority of all of the votes entitled to be cast on the matter.

Advance Notice of Director Nominations and New Business

Our bylaws provide that, with respect to an annual meeting of stockholders, nominations of individuals for election to the board of directors and the proposal of other business to be considered by stockholders may be made only (1) pursuant to our notice of the meeting, (2) by or at the direction of our board of directors or (3) by a stockholder who was a stockholder of record both at the time of giving his notice and at the time of the meeting and who is entitled to vote at the meeting on the election of directors or on the proposal of other business, as the case may be, and has complied with the advance notice provisions set forth in our bylaws.

With respect to special meetings of stockholders, only the business specified in our notice of meeting may be brought before the meeting. Nominations of individuals for election to our board of directors may be made only (1) by or at the direction of our board of directors or (2) provided that the board of directors has determined that directors will be elected at such meeting, by a stockholder who was a stockholder of record both at the time of giving his notice and at the time of the meeting and who is entitled to vote at the meeting and has complied with the advance notice provisions set forth in our bylaws.

Anti-takeover Effect of Certain Provisions of Maryland Law and of Our Charter and Bylaws

Our charter and bylaws and Maryland law contain provisions that may delay, defer or prevent a change in control or other transaction that might involve a premium price for shares of our common stock or otherwise be in the best interests of our stockholders, including business combination provisions, supermajority vote requirements and advance notice requirements for director nominations and stockholder proposals. Likewise, if the provision in the bylaws opting out of the control share acquisition provisions of the MGCL were rescinded or if we were to opt into the classified board or other provisions of Subtitle 8, these provisions of the MGCL could have similar anti-takeover effects.

Exclusive Forum

Our bylaws provide that, unless we consent in writing to the selection of an alternative forum, the Circuit Court for Baltimore City, Maryland, or, if that court does not have jurisdiction, the United States District Court for the District of Maryland, Baltimore Division, shall be the sole and exclusive forum for the following: any derivative action or proceeding brought on behalf of Two Harbors; any action asserting a claim of breach of any duty owed by any of our directors or officers or our other employees to us or to our stockholders; any action asserting a claim against us or any of our directors or officers or our other employees arising pursuant to any provision of the MGCL or our charter or bylaws; or any action asserting a claim against us or any of our directors or officers or our employees that is governed by the internal affairs doctrine. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that the stockholder believes is favorable for disputes with us or our directors, officers or other employees, which may discourage lawsuits against us and our directors, officers and employees. Alternatively, if a court were to find these provisions of our bylaws inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition or results of operations.

Indemnification and Limitation of Directors' and Officers' Liability

Maryland law permits a Maryland corporation to include in its charter a provision eliminating the liability of its directors and officers to the corporation and its stockholders for money damages except for liability resulting from actual receipt of an improper benefit or profit in money, property or services or active and deliberate dishonesty that is established by a final judgment and is material to the cause of action. Our charter contains such a provision that eliminates such liability to the maximum extent permitted by Maryland law.

The MGCL requires us (unless our charter provides otherwise, which our charter does not) to indemnify a director or officer who has been successful, on the merits or otherwise, in the defense of any proceeding to which he or she is made or threatened to be made a party by reason of his or her service in that capacity. The MGCL permits a corporation to indemnify its present and former directors and officers, among others, against judgments, penalties, fines, settlements and reasonable expenses actually incurred by them in connection with any proceeding to which they may be made or threatened to be made a party by reason of their service in those or other capacities unless it is established that:

- the act or omission of the director or officer was material to the matter giving rise to the proceeding and (1) was committed in bad faith or (2) was the result of active and deliberate dishonesty;
- the director or officer actually received an improper personal benefit in money, property or services; or
- in the case of any criminal proceeding, the director or officer had reasonable cause to believe that the act or omission was unlawful.

However, under the MGCL, a Maryland corporation may not indemnify a director or officer in a suit by or in the right of the corporation in which the director or officer was adjudged liable to the corporation or in a proceeding in which the director or officer was adjudged liable on the basis that personal benefit was improperly received. A court may order indemnification if it determines that the director or officer is fairly and reasonably entitled to indemnification, even though the director or officer did not meet the prescribed standard of conduct or was adjudged liable on the basis that personal benefit was improperly received. However, indemnification for an adverse judgment in a suit by us or in our right, or for a judgment of liability on the basis that personal benefit was improperly received, is limited to expenses.

In addition, the MGCL permits a corporation to advance reasonable expenses to a director or officer upon the corporation's receipt of:

- a written affirmation by the director or officer of his or her good faith belief that he or she has met the standard of conduct necessary for indemnification by the corporation; and

- a written undertaking by the director or officer or on the director's or officer's behalf to repay the amount paid or reimbursed by the corporation if it is ultimately determined that the director or officer did not meet the standard of conduct.

Our charter authorizes us to obligate ourselves and our bylaws obligate us, to the maximum extent permitted by Maryland law in effect from time to time, to indemnify and, without requiring a preliminary determination of the ultimate entitlement to indemnification, pay or reimburse reasonable expenses in advance of final disposition of a proceeding to:

- any present or former director or officer of ours who is made or threatened to be made a party to the proceeding by reason of his or her service in that capacity; or

- any individual who, while a director or officer of ours and at our request, serves or has served another corporation, REIT, partnership, joint venture, trust, employee benefit plan or other enterprise as a director, officer, partner or trustee of such corporation, REIT, partnership, joint venture, trust, employee benefit plan or other enterprise and who is made or threatened to be made a party to the proceeding by reason of his or her service in that capacity.

Our charter and bylaws also permit us to indemnify and advance expenses to any person who served a predecessor of ours in any of the capacities described above and to any employee or agent of ours or a predecessor of ours.

We have entered into indemnification agreements with each of our directors and executive officers that provide for indemnification to the maximum extent permitted by Maryland law. In addition, the operating agreements of our subsidiaries provide that we, as managing member, and our officers and directors are indemnified to the fullest extent permitted by law.

Insofar as the foregoing provisions permit indemnification of directors, officers or persons controlling us for liability arising under the Securities Act, we have been informed that, in the opinion of the SEC, this indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

REIT Qualification

Our charter provides that our board of directors may revoke or otherwise terminate our REIT election, without approval of our stockholders, if it determines that it is no longer in our best interests to continue to qualify as a REIT.

Common Stock

Subject to the preferential rights of any other class or series of shares of stock and to the provisions of our charter regarding the restrictions on ownership and transfer of shares of our stock, holders of shares of our common stock are entitled to receive dividends on such shares of common stock out of investments legally available therefor if, as and when authorized by our board of directors and declared by us, and the holders of our shares of common stock are entitled to share ratably in our investments legally available for distribution to our stockholders in the event of our liquidation, dissolution or winding up after payment of or adequate provision for all our known debts and liabilities.

Subject to the provisions of our charter regarding the restrictions on transfer and ownership of shares of our stock and except as may otherwise be specified in the terms of any class or series of shares of stock, each outstanding share of common stock entitles the holder to one vote on all matters submitted to a vote of stockholders, including the election of directors, and, except as provided with respect to any other class or series of shares of stock, the holders of such shares of common stock will possess the exclusive voting power. There is no cumulative voting in the election of our board of directors, which means that the holders of a majority of the outstanding shares of common stock can elect all of the directors then standing for election, and the holders of the remaining shares of common stock will not be able to elect any directors.

Holders of shares of common stock have no preference, conversion, exchange, sinking fund or redemption rights, have no preemptive rights to subscribe for any securities of our Company and generally have no appraisal rights. Subject to the provisions of our charter regarding the restrictions on transfer and ownership of shares of our stock, shares of common stock will have equal dividend, liquidation and other rights.

Under the MGCL, a Maryland corporation generally cannot dissolve, amend its charter, merge with another entity, transfer all or substantially all of its investments, engage in a share exchange or engage in similar transactions outside the ordinary course of business unless declared advisable by its board of directors and approved by the affirmative vote of stockholders holding at least two-thirds of the votes entitled to be cast on the matter unless a lesser percentage (but not less than a majority of all of the votes entitled to be cast on the matter) is set forth in the corporation's charter. Our charter provides that these matters (other than certain amendments to the provisions of our charter related to the removal of directors, the restrictions on ownership and transfer of shares of our stock and the requirement of a two-thirds vote for amendment to these provisions) may be approved by our stockholders by a majority of all of the votes entitled to be cast on the matter.

As of December 31, 2019, we had 272,935,731 shares of common stock issued and outstanding.

Preferred Stock

As of December 31, 2019, we had 5,750,000 shares of Series A Preferred Stock, 11,500,000 shares of 7.625% Series B Preferred Stock, 11,800,000 shares of Series C Preferred Stock, 3,000,000 shares of Series D Preferred Stock and 8,000,000 shares of Series E Preferred Stock (collectively, the "Outstanding Preferred Stock") issued and outstanding (collectively, the "Outstanding Preferred Stock"). As of December 31, 2019, we had available for issuance 9,950,000 authorized but undesignated and unissued shares of preferred stock. Our board of directors may, without the approval of holders of the Outstanding Preferred Stock or our common stock, designate additional series of authorized preferred stock ranking junior to or on parity with the Outstanding Preferred Stock or designate additional shares of the Outstanding Preferred Stock and authorize the issuance of such shares.

Description of Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock

This description of certain terms of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock does not purport to be complete and is in all respects subject to, and qualified in its entirety by references to the relevant provisions of our charter, including the articles supplementary designating the terms of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, our bylaws and Maryland law. Unless otherwise noted, the description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Maturity

The Series A Preferred Stock have no stated maturity and are not subject to any sinking fund or mandatory redemption. Shares of the Series A Preferred Stock will remain outstanding indefinitely unless we decide to redeem or otherwise repurchase them or they become convertible and are converted as described below under "—Conversion Rights." We are not required to set apart for payment the funds to redeem the Series A Preferred Stock.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Ranking

The Series A Preferred Stock, with respect to rights to the payment of dividends and the distribution of assets upon our liquidation, dissolution or winding up, rank:

- senior to all classes or series of our common stock and any class or series of stock we may issue in the future that by its terms ranks junior to our Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock and Series E Preferred Stock with respect to the payment of dividends and the distribution of assets in the event of our liquidation, dissolution or winding up ("Junior Stock");

- on a parity with our Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock, Series E Preferred Stock and any other any class or series of stock issued by us in the future that by its terms ranks on parity with the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock and Series E Preferred Stock with respect to the payment of dividends and the distribution of assets in the event of our liquidation, dissolution or winding up ("Parity Stock");

- junior to any class or series of stock we may issue in the future that by its terms ranks senior to the Parity Stock with respect to the payment of dividends and the distribution of assets in the event of our liquidation, dissolution or winding up ("Senior Stock"); and

- effectively junior to all of our existing and future indebtedness (including indebtedness convertible into or exchangeable for our common stock or preferred stock) and the indebtedness of our existing and future subsidiaries.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Dividends

Holders of shares of the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock are entitled to receive, when, as and if authorized by our board of directors and declared by us, out of funds legally available for the payment of dividends, cumulative cash dividends. The initial dividend rates for the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock are as follows:

- For the Series A Preferred Stock, 8.125% of the $25.00 per share liquidation preference per annum (equivalent to $2.03125 per annum per share) until April 27, 2027, after which, dividends on the Series A Preferred Stock accumulate at a percentage of the $25.00 liquidation preference equal to an annual floating rate of the Three-Month LIBOR Rate plus a spread of 5.660%;

- For the Series B Preferred Stock, 7.625% of the $25.00 per share liquidation preference per annum (equivalent to $1.90625 per annum per share) until July 27, 2027, after which, dividends on the Series B Preferred Stock accumulate at a percentage of the $25.00 liquidation preference equal to an annual floating rate of the Three-Month LIBOR Rate plus a spread of 5.352%.

- For the Series C Preferred Stock, 7.25% of the $25.00 per share liquidation preference per annum (equivalent to $1.8125 per annum per share) until January 27, 2025, after which, dividends on the Series C Preferred Stock accumulate at a percentage of the $25.00 liquidation preference equal to an annual floating rate of the Three-Month LIBOR Rate plus a spread of 5.011%.

Dividends on the Series A Preferred Stock accumulate daily and be cumulative from, and including, the date of original issue and is payable quarterly in arrears on the 27th day of each April, July, October and January of each year (each, a "dividend payment date"). If any dividend payment date is not a business day, then the payment will be made on the next business day without any adjustment to the amount of dividends paid. If any dividend payment date thereafter is not a business day, then the dividend payment date will be postponed to the next succeeding business day, unless that day falls in the next calendar month, in which case the dividend payment date will be brought forward to the immediately preceding day that is a business day, and, in either case, dividends will accrue to, but excluding, the actual payment day.

During the floating rate period, any dividend payable on the Series A Preferred Stock, including dividends payable for any partial Dividend Period, is computed on the basis of a 360-day year and the number of days actually elapsed. Dividends is payable to holders of record as they appear on our stock records at the close of business on the applicable record date, which is no fewer than ten days and no more than 35 days prior to the applicable dividend payment date, as shall be fixed by the board of directors (each, a "dividend record date"). The dividends payable on any dividend payment date include dividends accumulated to, but excluding, such dividend payment date.

For each Dividend Period during the floating rate period, LIBOR (the London interbank offered rate) ("Three-Month LIBOR Rate") is determined by us, as of the applicable Dividend Determination Date (as defined below), in accordance with the following provisions:

- LIBOR will be the rate (expressed as a percentage per year) for deposits in U.S. dollars having an index maturity of three months, in amounts of at least $1,000,000, as such rate appears on "Reuters Page LIBOR01" at approximately 11:00 a.m. (London time) on the relevant Dividend Determination Date; or

- if no such rate appears on "Reuters Page LIBOR01" or if the "Reuters Page LIBOR01" is not available at approximately 11:00 a.m. (London time) on the relevant Dividend Determination Date, then we will select four nationally-recognized banks in the London interbank market and request that the principal London offices of those four selected banks provide us with their offered quotation for deposits in U.S. dollars for a period of three months, commencing on the first day of the applicable Dividend Period, to prime banks in the London interbank market at approximately 11:00 a.m. (London time) on that Dividend Determination Date for the applicable Dividend Period. Offered quotations must be based on a principal amount equal to an amount that, in our discretion, is representative of a single transaction in U.S. dollars in the London interbank market at that time. If at least two quotations are provided, the Three-Month LIBOR Rate for such Dividend Period will be the arithmetic mean (rounded upward if necessary, to the nearest 0.00001 of 1%) of those quotations. If fewer than two quotations are provided, the Three-Month LIBOR Rate for such Dividend Period will be the arithmetic mean (rounded upward if necessary, to the nearest 0.00001 of 1%) of the rates quoted at approximately 11:00 a.m. (New York City time) on that Dividend Determination Date for such Dividend Period by three nationally-recognized banks in New York, New York selected by us, for loans in U.S. dollars to nationally-recognized European banks (as selected by us), for a period of three months commencing on the first day of such Dividend Period. The rates quoted must be based on an amount that, in our discretion, is representative of a single transaction in U.S. dollars in that market at that time. If fewer than three New York City banks selected by us do not quote rates in the manner described above, the Three-Month LIBOR Rate for the applicable Dividend Period is the same as for the immediately preceding Dividend Period, or, if there was no such Dividend Period, the dividend shall be calculated at the dividend rate in effect for the immediately preceding Dividend Period.

"Dividend Determination Date" means the London Business Day (as defined below) immediately preceding the first date of the applicable Dividend Period.

"Dividend Period" means the period from, and including, a dividend payment date to, but excluding, the next succeeding dividend payment date.

"London Business Day" means any day on which dealings in deposits in U.S. dollars are transacted in the London interbank market.

"Reuters Page LIBOR01" means the display so designated on the Reuters 3000 Xtra (or such other page as may replace the LIBOR01 page on that service, or such other service as may be nominated by the ICE Benchmark Administration Limited, or ICE, or its successor, or such other entity assuming the responsibility of ICE or its successor in the event ICE or its successor no longer does so, as the successor service, for the purpose of displaying London interbank offered rates for U.S. dollar deposits).

Notwithstanding the foregoing and solely with respect to the Series C Preferred Stock:

(a) If we determine on the relevant Dividend Determination Date that the LIBOR base rate has been discontinued, then we will appoint a Calculation Agent (as defined below) and the Calculation Agent will use a substitute or successor base rate that it has determined in its sole discretion is most comparable to the LIBOR base rate, provided that if the Calculation Agent determines there is an industry-accepted successor base rate, then the Calculation Agent shall use such successor base rate; and

(b) If the Calculation Agent has determined a substitute or successor base rate in accordance with the foregoing, the Calculation Agent in its sole discretion may determine what business day convention to use, the definition of business day, the dividend determination date and any other relevant methodology for calculating such substitute or successor base rate in a manner that is consistent with industry-accepted practices for such substitute or successor base rate.

"Calculation Agent" with respect to the Series C Preferred Stock shall mean a third-party independent financial institution of national standing with experience providing such services, which has been selected by us.

No dividends on shares of Series A Preferred Stock may be authorized by our board of directors or paid or set apart for payment by us at any time when the terms and provisions of any agreement of ours, including any agreement relating to our indebtedness, prohibit the authorization, payment or setting apart for payment thereof or provide that the authorization, payment or setting apart for payment thereof would constitute a breach of the agreement or a default under the agreement, or if the authorization, payment or setting apart for payment is restricted or prohibited by law.

Notwithstanding the foregoing, dividends on the Series A Preferred Stock will accumulate whether or not (i) the terms and provisions of any laws or agreements referred to in the preceding paragraph at any time prohibit the current payment of dividends, (ii) we have earnings, (iii) there are funds legally available for the payment of those dividends and (iv) those dividends are declared. No interest, or sum in lieu of interest, is payable in respect of any dividend payment or payments on the Series A Preferred Stock which may be in arrears, and holders of Series A Preferred Stock will not be entitled to any dividends in excess of full cumulative dividends described above. Any dividend payment made on the Series A Preferred Stock will first be credited against the earliest accumulated but unpaid dividend due with respect to those shares.

Future dividends on our common stock and preferred stock, including the Series A Preferred Stock is at the discretion of our board of directors and will depend on, among other things, our results of operations, cash flow from operations, financial condition and capital requirements, the annual distribution requirements under the REIT provisions of the Code, applicable law, any debt service requirements and any other factors our board of directors deems relevant. Accordingly, we cannot guarantee that we will be able to make cash distributions on the Series A Preferred Stock or what the actual dividends will be for any future period.

Except as noted below, unless full cumulative dividends on the Series A Preferred Stock, have been or contemporaneously are declared and paid or declared and a sum sufficient for the payment thereof is set apart for payment for all past Dividend Periods, no dividends (other than in shares of our common stock or other Junior Stock we may issue in the future) may be declared or paid or set apart for payment upon our common stock or other Junior Stock or Parity Stock we may issue in the future and no other distribution may be declared or made upon our common stock or other Junior Stock or Parity Stock we may issue in the future. In addition, our common stock and other Junior Stock or Parity Stock we may issue in the future may not be redeemed, purchased or otherwise acquired for any consideration (or any moneys be paid to or made available for a sinking fund for the redemption of any such securities) by us (except by conversion into or exchange for shares of, or options, warrants or rights to purchase or subscribe for, our common stock or other Junior Stock we may issue in the future or pursuant to an exchange offer made on the same terms to all holders of Series A Preferred Stock and all Parity Stock we may issue in the future). The foregoing will not, however, prevent the redemption, purchase or acquisition by us of shares of any class or series of stock for the purpose of enforcing restrictions on transfer and ownership of our stock contained in our charter, or the redemption, purchase or acquisition by us of shares of our common stock for purposes of and in compliance with any incentive or benefit plan of ours.

When dividends are not paid in full (or a sum sufficient for such full payment is not so set apart) upon the Series A Preferred Stock and any Parity Stock we may issue in the future, all dividends declared upon the Series A Preferred Stock and such Parity Stock must be declared pro rata so that the amount of dividends declared per share of Series A Preferred Stock and such Parity Stock will in all cases bear to each other the same ratio that accumulated dividends per share on the Series A Preferred Stock and such Parity Stock (which will not include any accrual in respect of unpaid dividends for prior Dividend Periods if such Parity Stock do not have a cumulative dividend) bear to each other. No interest, or sum of money in lieu of interest, is payable in respect of any dividend payment or payments on the Series A Preferred Stock which may be in arrears.

The description of Series A Preferred Stock included in this section (other than the first paragraph and the discussion of the use of a Calculation Agent which applies solely to the Series C Preferred Stock) applies equally to Series B Preferred Stock and Series C Preferred Stock.

Liquidation Preference

In the event of our voluntary or involuntary liquidation, dissolution or winding up, the holders of Series A Preferred Stock are entitled to be paid out of the assets we have legally available for distribution to our stockholders, subject to the preferential rights of the holders of any Senior Stock, a liquidation preference of $25.00 per share, plus any accumulated and unpaid dividends thereon (whether or not authorized or declared) to, but excluding, the payment date, before any distribution of assets is made to holders of common stock or other Junior Stock we may issue in the future; and the holders of Series A Preferred Stock are not entitled to any further payment.

In the event that, upon any such voluntary or involuntary liquidation, dissolution or winding up, our available assets are insufficient to pay the amount of the liquidating distributions on all outstanding shares of Series A Preferred Stock and any Parity Stock we may issue in the future, then the holders of Series A Preferred Stock and such Parity Stock will share ratably in any such distribution of assets in proportion to the full liquidating distributions to which they would otherwise be respectively entitled.

Notice of any such liquidation stating the payment date or dates when, and the place or places where, the amounts distributable in each circumstance shall be payable, is given no fewer than 30 days and no more than 60 days prior to the payment date, to each holder of record of Series A Preferred Stock at the address of such holder as it appears on our stock records. After payment of the full amount of the liquidating distributions to which they are entitled, the holders of Series A Preferred Stock have no right or claim to any of our remaining assets. The consolidation, conversion or merger of us with or into any other corporation, trust or entity or of any other entity with or into us, the sale, lease, transfer or conveyance of all or substantially all of our property or business or a statutory share exchange, will not be deemed to constitute a liquidation, dissolution or winding up of us (although such events may give rise to the special optional redemption and contingent conversion rights described below).

In determining whether a distribution (other than upon voluntary or involuntary liquidation), by dividend, redemption or other acquisition of shares of stock or otherwise, is permitted under Maryland law with respect to any share of any class or series of our stock, amounts that would be needed, if we were to be dissolved at the time of the distribution, to satisfy the preferential rights upon dissolution of holders of shares of Series A Preferred Stock will not be added to our total liabilities.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Redemption

The Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock are not redeemable by us prior to April 27, 2027, July 27, 2027 and January 27, 2025, respectively, except under circumstances where it is necessary to preserve our qualification as a REIT for U.S. federal income tax purposes and except as described below under "—Special Optional Redemption" upon the occurrence of a Change of Control (as defined herein).

Optional Redemption. We may, at our option, upon not less than 30 nor more than 60 days' notice, redeem the Series A Preferred Stock on and after April 27, 2027, the Series B Preferred Stock on and after July 27, 2027 and the Series C Preferred Stock on and after January 27, 2025, in whole or in part, at any time or from time to time, for cash at a redemption price of $25.00 per share, plus any accumulated and unpaid dividends thereon (whether or not authorized or declared) to, but excluding, the redemption date, without interest.

Special Optional Redemption. Upon the occurrence of a Change of Control, we may, at our option, upon not less than 30 nor more than 60 days' notice, redeem the Series A Preferred Stock, in whole or in part, within 120 days after the first date on which such Change of Control occurred, for cash at a redemption price of $25.00 per share, plus any accumulated and unpaid dividends thereon (whether or not authorized or declared) to, but excluding, the redemption date. If, prior to the Change of Control Conversion Date, we have provided notice of our election to redeem some or all of the shares of Series A Preferred Stock (whether pursuant to our optional redemption right described above under "—Optional Redemption" or this special optional redemption right), the holders of Series A Preferred Stock will not have the Change of Control Conversion Right (as defined below) described below under "—Conversion Rights" with respect to the shares called for redemption.

A "Change of Control" is deemed to occur when, after the original issuance of the Series A Preferred Stock, the following have occurred and are continuing:

- the acquisition by any person, including any syndicate or group deemed to be a "person" under Section 13(d)(3) of the Exchange Act, of beneficial ownership, directly or indirectly, through a purchase, merger or other acquisition transaction or series of purchases, mergers or other acquisition transactions of our stock entitling that person to exercise more than 50% of the total voting power of all our stock entitled to vote generally in the election of our directors (except that such person is deemed to have beneficial ownership of all securities that such person has the right to acquire, whether such right is currently exercisable or is exercisable only upon the occurrence of a subsequent condition); and

- following the closing of any transaction referred to in the bullet point above, neither we nor the acquiring or surviving entity has a class of common securities (or American Depositary Receipts representing such securities) listed on the NYSE, the NYSE American LLC or the Nasdaq Stock Market, or listed or quoted on an exchange or quotation system that is a successor to the NYSE, the NYSE American LLC or the Nasdaq Stock Market.

Redemption Procedures. In the event we elect to redeem Series A Preferred Stock pursuant to our optional redemption right or our special optional redemption right, the notice of redemption will be given to each holder of record of Series A Preferred Stock called for redemption at such holder's address as it appears on our stock records and will state the following:

- the redemption date;

- the number of shares of Series A Preferred Stock to be redeemed;

- the redemption price;

- the place or places where certificates (if any) for the Series A Preferred Stock are to be surrendered for payment of the redemption price;

- that dividends on the shares to be redeemed will cease to accumulate on the redemption date;

- whether such redemption is being made pursuant to the provisions described above under "—Optional Redemption" or "—Special Optional Redemption;"

- if applicable, that such redemption is being made in connection with a Change of Control and, in that case, a brief description of the transaction or transactions constituting such Change of Control; and

- if such redemption is being made in connection with a Change of Control, that the holders of the shares of Series A Preferred Stock being so called for redemption will not be able to tender such shares of Series A Preferred Stock for conversion in connection with the Change of Control and that each share of Series A Preferred Stock tendered for conversion that is called, prior to the Change of Control Conversion Date, for redemption will be redeemed on the related date of redemption instead of converted on the Change of Control Conversion Date.

If less than all of the Series A Preferred Stock held by any holder is to be redeemed, the notice given to such holder shall also specify the number of shares of Series A Preferred Stock held by such holder to be redeemed (or the method of determining such number). No failure to give such notice or any defect thereto or in the giving thereof will affect the validity of the proceedings for the redemption of any shares of Series A Preferred Stock, except as to the holder to whom notice was defective or not given.

Holders of shares of Series A Preferred Stock to be redeemed must surrender such shares at the place designated in the notice of redemption and is entitled to the redemption price and any accumulated and unpaid dividends payable upon the redemption following the surrender. If notice of redemption of any shares of Series A Preferred Stock has been given and if we have irrevocably set apart for payment the funds necessary for redemption (including any accumulated and unpaid dividends) in trust for the benefit of the holders of the shares of Series A Preferred Stock so called for redemption, then from and after the redemption date (unless we default in providing for the payment of the redemption price plus accumulated and unpaid dividends, if any), dividends will cease to accumulate on those shares of Series A Preferred Stock, those shares of Series A Preferred Stock will no longer be deemed outstanding and all rights of the holders of those shares will terminate, except the right to receive the redemption price plus accumulated and unpaid dividends, if any, payable upon redemption. If any redemption date is not a business day, then the redemption price and accumulated and unpaid dividends, if any, payable upon redemption may be paid on the next business day and no interest, additional dividends or other sums will accumulate on the amount payable for the period from and after that redemption date to that next business day. If less than all of the outstanding shares of Series A Preferred Stock are to be redeemed, the shares of Series A Preferred Stock to be redeemed will be selected pro rata (as nearly as may be practicable without creating fractional shares) or by lot. If such redemption is to be by lot and if, as a result of such redemption, any holder of Series A Preferred Stock would own, or be deemed by virtue of certain attribution provisions of the Code to own, in excess of 9.8% in value or in number of shares (whichever is more restrictive) of any class or series of our stock (including the Series A Preferred Stock), or violate any other restriction or limitation of our stock set forth in our charter, then, except as otherwise permitted in our charter, we will redeem the requisite number of shares of Series A Preferred Stock of that holder such that the holder will not own or be deemed by virtue of certain attribution provisions of the Code to own, subsequent to the redemption, in excess of 9.8% in value or in number of shares (whichever is more restrictive) of any class or series of our stock or violate any other restriction or limitation of our stock set forth in our charter.

Immediately prior to any redemption of Series A Preferred Stock, we will pay, in cash, any accumulated and unpaid dividends to, but excluding, the redemption date, unless a redemption date falls after a dividend record date and prior to the corresponding dividend payment date, in which case each holder of Series A Preferred Stock at the close of business on such dividend record date will be entitled to the dividend payable on such shares on the corresponding dividend payment date notwithstanding the redemption of such shares before such dividend payment date. Except as provided above, we will make no payment or allowance for unpaid dividends, whether or not in arrears, on shares of the Series A Preferred Stock to be redeemed.

Unless full cumulative dividends on all shares of Series A Preferred Stock have been or contemporaneously are declared and paid or declared and a sum sufficient for the payment thereof has been or contemporaneously is set apart for payment for all past Dividend Periods, no shares of Series A Preferred Stock may be redeemed unless all outstanding shares of Series A Preferred Stock are simultaneously redeemed, and we may not purchase or otherwise acquire directly or indirectly any shares of Series A Preferred Stock (except by conversion into or exchange for shares of, or options, warrants or rights to purchase or subscribe for, our common stock or other Junior Stock we may issue in the future or pursuant to a purchase or exchange offer made on the same terms to all holders of Series A Preferred Stock, if any); provided, however, that the foregoing will not prevent the redemption, purchase or acquisition by us of shares of Series A Preferred Stock for the purpose of enforcing restrictions on ownership and transfer of our stock contained in our charter.

Subject to applicable law, we may purchase shares of Series A Preferred Stock in the open market, by tender or by privately negotiated transactions. Any shares of Series A Preferred Stock that we acquire, by redemption or otherwise, shall be reclassified as authorized but unissued shares of preferred stock, without designation as to class or series, and may thereafter be issued as any class or series of preferred stock.

The description of Series A Preferred Stock included in this section (other than the first two paragraphs) applies equally to Series B Preferred Stock and Series C Preferred Stock.

Conversion Rights

Upon the occurrence of a Change of Control, each holder of Series A Preferred Stock has the right (unless, prior to the Change of Control Conversion Date, we have provided notice of our election to redeem some or all of the shares of Series A Preferred Stock held by such holder as described above under "—Redemption," in which case such holder will have the right only with respect to shares of Series A Preferred Stock that are not called for redemption) to convert some or all of the shares of the Series A Preferred Stock held by such holder (the "Change of Control Conversion Right") on the Change of Control Conversion Date into a number of shares of our common stock per share of Series A Preferred Stock (the "Common Stock Conversion Consideration") equal to the lesser of:

- the quotient obtained by dividing (i) the sum of the $25.00 liquidation preference per share of Series A Preferred Stock, plus any accumulated and unpaid dividends thereon (whether or not authorized or declared) to, but excluding, the Change of Control Conversion Date (unless the Change of Control Conversion Date is after a dividend record date and prior to the corresponding dividend payment date for the Series A Preferred Stock, in which case no additional amount for such accumulated and unpaid dividends to be paid on such dividend payment date will be included in this sum) by (ii) the common stock Price, as defined below (such quotient, the "Conversion Rate"); and

- 2.69106 (as adjusted)(the "Share Cap") subject to certain adjustments as described below.

Notwithstanding anything in the articles supplementary designating the Series A Preferred Stock to the contrary and except as otherwise required by law, the persons who are the holders of record of shares of Series A Preferred Stock at the close of business on a dividend record date will be entitled to receive the dividend payable on the corresponding dividend payment date notwithstanding the conversion of those shares after such dividend record date and on or prior to such dividend payment date and, in such case, the full amount of such dividend will be paid on such dividend payment date to the persons who were the holders of record at the close of business on such dividend record date. Except as provided above, we will make no allowance for unpaid dividends that are not in arrears on the shares of Series A Preferred Stock to be converted.

The Share Cap is subject to pro rata adjustments for any share splits (including those effected pursuant to a distribution of our common stock to existing holders of our common stock), subdivisions or combinations (in each case, a "Share Split") with respect to our common stock as follows: the adjusted Share Cap as the result of a Share Split will be the number of shares of our common stock that is equivalent to the product obtained by multiplying (i) the Share Cap in effect immediately prior to such Share Split by (ii) a fraction, the numerator of which is the number of shares of our common stock outstanding immediately after giving effect to such Share Split and the denominator of which is the number of shares of our common stock outstanding immediately prior to such Share Split.

For the avoidance of doubt, subject to the immediately succeeding sentence, the aggregate number of shares of our common stock (or equivalent Alternative Conversion Consideration (as defined below), as applicable) issuable or deliverable, as applicable, in connection with the exercise of the Change of Control Conversion Right may not exceed the product of the Share Cap times the aggregate number of shares of the Series A Preferred issued and outstanding at the Change of Control Conversion Date (or equivalent Alternative Conversion Consideration, as applicable) (the “Exchange Cap”). The Exchange Cap is subject to pro rata adjustments for any Share Splits on the same basis as the corresponding adjustment to the Share Cap.

In the case of a Change of Control pursuant to which our common stock is or will be converted into cash, securities or other property or assets (including any combination thereof) (the “Alternative Form Consideration”), a holder of Series A Preferred Stock will receive upon conversion of such shares of the Series A Preferred Stock the kind and amount of Alternative Form Consideration which such holder would have owned or been entitled to receive upon the Change of Control had such holder held a number of shares of our common stock equal to the common stock Conversion Consideration immediately prior to the effective time of the Change of Control (the “Alternative Conversion Consideration”). The common stock Conversion Consideration or the Alternative Conversion Consideration, whichever shall be applicable to a Change of Control, is referred to as the “Conversion Consideration.”

If the holders of our common stock have the opportunity to elect the form of consideration to be received in the Change of Control, the Conversion Consideration in respect of such Change of Control will be deemed to be the kind and amount of consideration actually received by holders of a majority of the outstanding shares of our common stock that made or voted for such an election (if electing between two types of consideration) or holders of a plurality of the outstanding shares of our common stock that made or voted for such an election (if electing between more than two types of consideration), as the case may be, and will be subject to any limitations to which all holders of our common stock are subject, including, without limitation, pro rata reductions applicable to any portion of the consideration payable in such Change of Control.

We will not issue fractional shares of our common stock upon the conversion of the Series A Preferred Stock in connection with a Change of Control. Instead, we will make a cash payment equal to the value of such fractional shares based upon the common stock Price used in determining the common stock Conversion Consideration for such Change of Control.

Within 15 days following the occurrence of a Change of Control, provided that we have not then exercised our right to redeem all shares of Series A Preferred Stock pursuant to the redemption provisions described above, we will provide to holders of Series A Preferred Stock a notice of occurrence of the Change of Control that describes the resulting Change of Control Conversion Right, which notice shall be delivered to the holders of record of the shares of Series A Preferred Stock to their addresses as they appear on our stock records. No failure to give such notice or any defect thereto or in the giving thereof will affect the validity of the proceedings for the conversion of any shares of Series A Preferred Stock except as to the holder to whom notice was defective or not given. This notice will state the following:

- the events constituting the Change of Control;
- the date of the Change of Control;
- the last date on which the holders of Series A Preferred Stock may exercise their Change of Control Conversion Right;
- the method and period for calculating the common stock Price;
- the Change of Control Conversion Date;
- that if, prior to the Change of Control Conversion Date, we have provided notice of our election to redeem all or any shares of Series A Preferred Stock, holders of Series A Preferred Stock that are subject to such notice of redemption will not be able to convert the shares of Series A Preferred called

for redemption and such shares will be redeemed on the related redemption date, even if such shares have already been tendered for conversion pursuant to the Change of Control Conversion Right;

- if applicable, the type and amount of Alternative Conversion Consideration entitled to be received per share of Series A Preferred Stock;

- the name and address of the paying agent, transfer agent and conversion agent for the Series A Preferred Stock;

- the procedures that the holders of Series A Preferred Stock must follow to exercise the Change of Control Conversion Right (including procedures for surrendering shares of Series A Preferred Stock for conversion through the facilities of a Depositary (as defined below)), including the form of conversion notice to be delivered by such holders as described below; and

- the last date on which holders of Series A Preferred Stock may withdraw shares of Series A Preferred Stock surrendered for conversion and the procedures that such holders must follow to effect such a withdrawal.

Under such circumstances, we also will issue a press release containing such notice for publication on Dow Jones & Company, Inc., Business Wire, PR Newswire or Bloomberg Business News (or, if these organizations are not in existence at the time of issuance of the press release, such other news or press organization as is reasonably calculated to broadly disseminate the relevant information to the public), and post a notice on our website, in any event prior to the opening of business on the first business day following any date on which we provide the notice described above to the holders of Series A Preferred Stock.

To exercise the Change of Control Conversion Right, the holders of Series A Preferred Stock will be required to deliver, on or before the close of business on the Change of Control Conversion Date, the certificates (if any) representing the shares of Series A Preferred Stock to be converted, duly endorsed for transfer (or, in the case of any shares of Series A Preferred Stock held in book-entry form through a Depositary or shares directly registered with the transfer agent, therefor, to deliver, on or before the close of business on the Change of Control Conversion Date, the shares of Series A Preferred Stock to be converted through the facilities of such Depositary or through such transfer agent, respectively), together with a written conversion notice in the form provided by us, duly completed, to our transfer agent. The conversion notice must state:

- the relevant Change of Control Conversion Date;

- the number of shares of Series A Preferred Stock to be converted; and

- that the shares of the Series A Preferred Stock are to be converted pursuant to the applicable provisions of the articles supplementary designating the Series A Preferred Stock.

The “Change of Control Conversion Date” is the date the Series A Preferred Stock is to be converted, which will be a business day selected by us that is no fewer than 20 days nor more than 35 days after the date on which we provide the notice described above to the holders of Series A Preferred Stock.

The “common stock Price” is (i) if the consideration to be received in the Change of Control by the holders of our common stock is solely cash, the amount of cash consideration per share of our common stock or (ii) if the consideration to be received in the Change of Control by holders of our common stock is other than solely cash (x) the average of the closing sale prices per share of our common stock (or, if no closing sale price is reported, the average of the closing bid and ask prices per share or, if more than one in either case, the average of the average closing bid and the average closing ask prices per share) for the ten consecutive trading days immediately preceding, but excluding, the date on which such Change of Control occurred as reported on the principal U.S. securities exchange on which our common stock is then traded, or (y) if our common stock is not then listed for trading on a U.S. securities exchange, the average of the last quoted bid prices for our common stock in the over-the-counter market as reported by Pink OTC Markets Inc. or a similar organization for the ten consecutive trading days immediately preceding, but excluding, the date on which such Change of Control occurred.

Holders of Series A Preferred Stock may withdraw any notice of exercise of a Change of Control Conversion Right (in whole or in part) by a written notice of withdrawal delivered to our transfer agent prior to the close of business on the business day prior to the Change of Control Conversion Date. The notice of withdrawal delivered by any holder must state:

- the number of withdrawn shares of Series A Preferred Stock;

- if certificated shares of Series A Preferred Stock have been surrendered for conversion, the certificate numbers of the withdrawn shares of Series A Preferred Stock; and

- the number of shares of Series A Preferred Stock, if any, which remain subject to the holder's conversion notice.

Notwithstanding the foregoing, if any shares of Series A Preferred (each, a "Depositary"), the conversion notice and/or the notice of withdrawal, as applicable, must comply with applicable procedures, if any, of the applicable Depositary.

Shares of Series A Preferred Stock as to which the Change of Control Conversion Right has been properly exercised and for which the conversion notice has not been properly withdrawn will be converted into the applicable Conversion Consideration in accordance with the Change of Control Conversion Right on the Change of Control Conversion Date, unless prior to the Change of Control Conversion Date we have provided notice of our election to redeem some or all of the shares of Series A Preferred Stock, as described above under "—Redemption," in which case only the shares of Series A Preferred Stock properly surrendered for conversion and not properly withdrawn that are not called for redemption will be converted as aforesaid. If we elect to redeem shares of Series A Preferred Stock that would otherwise be converted into the applicable Conversion Consideration on a Change of Control Conversion Date, such shares of Series A Preferred Stock will not be so converted and the holders of such shares will be entitled to receive on the applicable redemption date the redemption price described above under "—Redemption—Optional Redemption" or "—Redemption—Special Optional Redemption," as applicable.

We will deliver all securities, cash and any other property owing upon conversion no later than the third business day following the Change of Control Conversion Date. Notwithstanding the foregoing, the persons entitled to receive any shares of our common stock or other securities delivered on conversion will be deemed to have become the holders of record thereof as of the Change of Control Conversion Date.

In connection with the exercise of any Change of Control Conversion Right, we will comply with all applicable federal and state securities laws and stock exchange rules in connection with any conversion of shares of the Series A Preferred Stock into shares of our common stock or other property. Notwithstanding any other provision of the Series A Preferred Stock, no holder of Series A Preferred Stock will be entitled to convert such shares of the Series A Preferred Stock into shares of our common stock to the extent that receipt of such shares of common stock would cause such holder (or any other person) to violate the applicable restrictions on transfer and ownership of our stock contained in our charter, unless we provide an exemption from this limitation to such holder.

The Change of Control conversion feature may make it more difficult for a third party to acquire us or discourage a party from acquiring us. These change of control conversion rights may also make it more difficult for a party to acquire us or discourage a party from acquiring us."

Except as provided above in connection with a Change of Control, the Series A Preferred Stock is not convertible into or exchangeable for any other securities or property.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock, except with respect to calculation of the Common Stock Conversion Consideration as described in the first paragraph, where the share cap for the Series B Preferred Stock is equal to 2.540646 (as adjusted) and the share cap for the Series C Preferred Stock is equal to 3.24465.

Voting Rights

Holders of Series A Preferred Stock do not have any voting rights, except as set forth below.

Whenever dividends on any shares of Series A Preferred Stock are in arrears for six or more full quarterly Dividend Periods, whether or not consecutive, the number of directors constituting our board of directors will be automatically increased by two (if not already increased by two by reason of the election of directors by the holders of any other class or series of preferred stock we may issue in the future and upon which like voting rights have been conferred and are exercisable) and the holders of Series A Preferred Stock, voting as a single class with holders of all other classes or series of Parity Stock we may issue in the future and upon which like voting rights have been conferred and are exercisable, will be entitled to vote for the election of those two additional directors at a special meeting called by us at the request of the holders of record of at least 20% of the outstanding shares of Series A Preferred Stock and all other classes or series of preferred stock we may issue in the future and upon which like voting rights have been conferred and are exercisable to be held no later than 90 days after our receipt of such request (unless the request is received less than 90 days before the date fixed for the next annual or special meeting of our stockholders, in which case, such vote will be held at the earlier of the next annual or special meeting of the stockholders to the extent permitted by applicable law), and at each subsequent annual meeting until all dividends accumulated on the Series A Preferred Stock for all past Dividend Periods and the then current Dividend Period will have been fully paid. In that case, the right of holders the Series A Preferred Stock to elect any directors will cease and, unless there are other classes or series of our preferred stock upon which like voting rights have been conferred and are exercisable, the term of office of any directors elected by holders of Series A Preferred Stock will immediately terminate and the number of directors constituting the board of directors will be reduced accordingly. If we fail to call the above special meeting within 20 days of receiving proper notice, any holder of our Series A Preferred Stock (or any other series of our preferred stock upon which like voting rights have been conferred and are exercisable) may call such a meeting at our expense solely for the election of such additional directors. For the avoidance of doubt, in no event will the total number of directors elected by holders of Series A Preferred Stock (voting together as a single class with the holders of all other classes or series of preferred stock we may issue in the future and upon which like voting rights have been conferred and are exercisable) pursuant to these voting rights exceed two. The directors elected by the holders of the Series A Preferred Stock and the holders of all other classes or series of preferred stock upon which like voting rights have been conferred and are exercisable will be elected by a plurality of the votes cast by the holders of the outstanding shares of Series A Preferred Stock when they have the voting rights described in this paragraph and any other classes or series of preferred stock we may issue in the future and upon which like voting rights have been conferred and are exercisable (voting together as a single class) to serve until our next annual meeting of stockholders and until their successors are duly elected and qualified or until such directors' right to hold the office terminates as described above, whichever occurs earlier.

On each matter on which holders of Series A Preferred Stock are entitled to vote, each share of Series A Preferred Stock is entitled to one vote, except that when the Series A Preferred Stock and shares of any other class or series of preferred stock we may issue in the future have the right to vote with the Series A Preferred Stock as a single class on any matter, the Series A Preferred Stock and each such other class or series of stock will have one vote for each $25.00 of liquidation preference (excluding accumulated dividends). If, at any time when the voting rights conferred upon the Series A Preferred Stock are exercisable, any vacancy in the office of a director elected by the holders of Series A Preferred Stock and any other classes or series of preferred stock upon which like voting rights have been conferred and are exercisable will occur, then such vacancy may be filled only by the remaining such director or by vote of the holders of the outstanding Series A Preferred Stock and any other classes or series of preferred stock upon which like voting rights have been conferred and are exercisable.

Any director elected by holders of shares of Series A Preferred Stock and any class or series of preferred stock we may issue in the future upon which like voting rights have been conferred and are exercisable may be removed at any time, with or without cause, by the vote of, and may not be removed otherwise than by the vote of, the holders of record of a majority of the outstanding shares of Series A Preferred Stock and any class or series of preferred stock we may issue in the future when they have the voting rights described above (voting as a single class with all other classes or series of preferred stock we may issue in the future upon which like voting rights have been conferred and are exercisable).

So long as any shares of Series A Preferred Stock remain outstanding, we will not, without the affirmative vote or consent of the holders of at least two-thirds of the shares of Series A Preferred Stock outstanding at the time, voting together as a single class with the shares of Series A Preferred Stock and all classes or series of Parity Stock we may issue in the future and upon which like voting rights have been conferred and are exercisable (and which have been adversely impacted in the case of clause (ii) below), (i) authorize, create, or increase the authorized or issued amount of, any class or series of Senior Stock or reclassify any of our authorized stock into such shares, or create or authorize or issue any obligation or security convertible into or evidencing the right to purchase any such shares or (ii) amend, alter or repeal the provisions of our charter, whether by merger, conversion, consolidation or otherwise, so as to materially and adversely affect any right, preference, privilege or voting power of the Series A Preferred Stock (each, an “Event”); provided, however, with respect to the occurrence of any Event set forth in clause (ii) above, so long as the Series A Preferred Stock remains outstanding with the terms thereof materially unchanged or the holders of Series A Preferred Stock receive shares of stock or other equity interests with rights, preferences, privileges and voting powers substantially the same as those of the Series A Preferred Stock taking into account that upon the occurrence of an Event we may not be the successor entity, the occurrence of any such Event will not be deemed to materially and adversely affect the rights, preferences, privileges or voting power of holders of Series A Preferred Stock; and, provided further, that any increase in the amount of the authorized or issued Series A Preferred Stock or the creation or issuance, or any increase in the amounts authorized of any Parity Stock or Junior Stock will not be deemed to materially and adversely affect the rights, preferences, privileges or voting powers of holders of Series A Preferred Stock. Notwithstanding the foregoing, if any amendment, alteration or repeal of any provision of our charter would materially and adversely affect the rights, preferences, privileges or voting rights of the Series A Preferred Stock disproportionately relative to other classes or series of Parity Stock, then the affirmative vote or consent of the holders of at least two-thirds of the outstanding shares of Series A Preferred Stock, (each voting as a separate class) shall also be required.

The foregoing voting provisions will not apply if, at or prior to the time when the act with respect to which such vote would otherwise be required shall be effected, all outstanding shares of Series A Preferred Stock have been redeemed or called for redemption upon proper notice and sufficient funds have been irrevocably set apart to effect such redemption.

Except as expressly stated in the articles supplementary designating the Series A Preferred Stock, the Series A Preferred Stock will not have any relative, participating, optional or other special voting rights or powers and the consent of the holders thereof will not be required for the taking of any corporate action. The holders of each of the Series A Preferred Stock have exclusive voting rights on any amendment to our charter that would alter the contract rights, as expressly set forth in the charter, of only each of the Series A Preferred Stock.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock

Information Rights

During any period in which we are not subject to Section 13 or 15(d) of the Exchange Act and any shares of Series A Preferred Stock are outstanding, we will use our best efforts to transmit through our website at www.twoharborsinvestment.com (or other permissible means under the Exchange Act) copies of the Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q that we would have been required to file with the SEC pursuant to Section 13 or 15(d) of the Exchange Act if we were subject thereto (other than any exhibits that would have been required). We will use our best efforts to provide such reports on our website within 15 days after the respective dates by which we would have been required to file such reports with the SEC if we were subject to Section 13 or 15(d) of the Exchange Act and we were a “large accelerated filer” within the meaning of the Exchange Act.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Restrictions on Transfer and Ownership

In order to ensure that we remain qualified as a REIT for U.S. federal income tax purposes, among other purposes, our charter, including the articles supplementary setting forth the terms of the Series A Preferred Stock, provides that generally no person, other than certain excepted holders, may own, or be deemed to own by virtue of the attribution provisions of the Code, more than 9.8% in value or in number of shares, whichever is more restrictive, of the outstanding shares of any class or series of our stock. These provisions may restrict the ability of a holder of Series A Preferred Stock to convert such stock into our common stock as described above under "—Conversion Rights." Our board of directors may, in its sole discretion, exempt a person from the 9.8% ownership limit under certain circumstances.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Preemptive Rights

No holders of Series A Preferred Stock, as holders of Series A Preferred Stock, have any preemptive rights to purchase or subscribe for our common stock or any of our other securities.

The description of Series A Preferred Stock included in this section applies equally to Series B Preferred Stock and Series C Preferred Stock.

Description of Series D Preferred Stock and Series E Preferred Stock

This description of certain terms of the Series D Preferred Stock and Series E Preferred Stock does not purport to be complete and is in all respects subject to, and qualified in its entirety by references to the relevant provisions of our charter, including the articles supplementary designating the terms of the Series D Preferred Stock and Series E Preferred Stock, our bylaws and Maryland law. Unless otherwise noted, the description of the Series D Preferred Stock included in this section applies equally to the Series E Preferred Stock.

Preemptive Rights

The holders of Series D Preferred Stock and Series E Preferred Stock have no preemptive rights and are not be subject to any sinking fund. Unless converted or redeemed by the Company into common stock, Series D Preferred Stock and Series E Preferred Stock have a perpetual term, with no maturity.

Ranking

The Series D Preferred Stock ranks senior to the common stock, and on parity with the Series A Preferred Stock, Series B Preferred Stock and Series C Preferred Stock, with respect to the payment of dividends and any distributions upon liquidation, dissolution or winding up. So long as any Series D Stock is outstanding, the Company may authorize, reclassify, create or increase the authorized amount of any class of shares having rights senior to Series D Preferred Stock, or authorize or issue securities exercisable or convertible for such shares, only if such action is approved by the affirmative vote of at least 662/3% of the votes entitled to be cast by the holders of Series D Preferred Stock and every other series of parity shares outstanding, voting together as a single class regardless of series, in addition to any other vote of our stockholders required by law. However, no such vote of the holders of Series D Preferred Stock will be required in connection with such authorization, creation, or increase in the authorized amount of a senior class if all of the outstanding shares of Series D Preferred Stock are redeemed or called for redemption upon proper notice with sufficient funds deposited in trust to effect such redemption. The Company may create additional classes of securities, increase the authorized number of preferred shares or issue series of preferred shares ranking junior to, or on parity with, Series D Preferred Stock, without the vote or consent of any holder of Series D Preferred Stock.

The description of Series D Preferred Stock included in this section applies equally to Series E Preferred Stock. Series E Preferred Stock will rank on a parity with Series D Preferred Stock with respect to the payment of dividends and any distributions upon liquidation, dissolution or winding up.

Dividends

Holders of Series D Preferred Stock are entitled to receive, when, as and if authorized by the board of directors and declared by the Company, out of funds legally available for payment of dividends, cumulative cash dividends at the rate of 7.75% of the $25.00 per share liquidation preference per annum (equivalent to $1.9375 per annum per share). Dividends on Series D Preferred Stock, for the quarterly periods commencing on January 15, April 15, July 15 and October 15 of each year, are payable quarterly in arrears on the 15th of January, April, July and October of each year. Dividends are cumulative and accumulations of dividends on the Series D Preferred Stock do not bear interest. Dividends payable on Series D Preferred Stock are computed on the basis of a 360-day year consisting of twelve 30-day months.

Holders of Series E Preferred Stock are entitled to receive, when, as and if authorized by the board of directors and declared by the Company, out of funds legally available for payment of dividends, cash cumulative cash dividends at the rate of 7.50% of the $25.00 per share liquidation preference per annum (equivalent to $1.875 per annum per share). Dividends on Series E Preferred Stock, for the quarterly periods commencing January 15, April 15, July 15 and October 15 of each year, are payable quarterly in arrears on the 15th of January, April, July and October of each year. Dividends are cumulative and accumulations of dividends on the Series E Preferred Stock do not bear interest. Dividends payable on Series E Preferred Stock are computed on the basis of a 360-day year consisting of twelve 30-day months.

Except as provided in the next sentence, no dividend will be declared or paid, or a sum sufficient set apart for payment, on any parity shares unless full cumulative dividends have been, or contemporaneously are, declared and paid, or set apart for payment, on Series D Preferred Stock for all prior dividend periods. If accrued dividends on Series D Preferred Stock and any parity shares for all prior dividend periods have not been paid in full (or a sum sufficient set apart for payment), then any dividend declared on Series D Preferred Stock and any parity shares for any dividend period will be declared ratably in proportion to accrued and unpaid dividends on Series D Preferred Stock and any parity shares.

Unless full cumulative dividends then required to be paid on Series D Preferred Stock and any parity shares have been, or contemporaneously are, declared and paid, or a sum sufficient set apart for payment, the Company will not declare, pay or set apart funds for the payment of any dividend or other distribution with respect to any junior shares or redeem, purchase or otherwise acquire for consideration any junior shares, subject to certain exceptions as described in our charter. Notwithstanding the foregoing limitations, the Company may, at any time, acquire shares of our common stock, without regard to rank, for the purpose of preserving its status as a REIT.

As used for these purposes,

- the term “dividend” does not include dividends or distributions payable solely in shares of junior shares, or in options, warrants or rights to holders of junior shares to subscribe for or purchase any junior shares;
- the term “junior shares” will mean common stock and any other class or series of shares of the Company over which Series D Preferred Stock has preference or priority in the payment of dividends or in the distribution of assets on any liquidation, dissolution or winding up of the Company; and
- the term “parity shares” means the Series A Preferred Stock, Series B Preferred Stock, Series C Preferred Stock, Series D Preferred Stock and Series E Preferred Stock, and any other class or series of the Company stock now or hereafter issued and outstanding that ranks equally with the Company.

Series D Preferred Stock as to the payment of dividends and amounts upon the liquidation, dissolution or winding up of the Company.

The description of Series D Preferred Stock included in this section (other than the first paragraph) applies equally to Series E Preferred Stock.

Optional Redemption

The Company may, at its option, upon not less than 30 nor more than 60 days' written notice, redeem the Series D Preferred Stock, in whole or in part, at any time or from time to time, for cash at a redemption price of twenty-five dollars ($25.00) per share, plus any accumulated and unpaid dividends thereon to, but not including, the date fixed for redemption. The Company may also, at its option, upon the occurrence of a change of control, upon not less than 30 nor more than 60 days' written notice, redeem the Series D Preferred Stock, in whole or in part, within 120 days after the first date on which such change of control occurred, for cash at a redemption price of twenty-five dollars ($25.00) per share, plus any accumulated and unpaid dividends thereon to, but not including, the date fixed for redemption. In the event that the Two Harbors elects to redeem Series D Preferred Stock, the notice of redemption will be mailed by the Company, postage prepaid, not less than 30 nor more than 60 days prior to the redemption date.

On the redemption date, the Company must pay on each share of Series D Preferred Stock to be redeemed any accumulated and unpaid dividends, in arrears, to, but not including, the redemption date. In the case of a redemption date falling after a dividend payment record date and prior to the related payment date, the holders of Series D Preferred Stock at the close of business on that record date will be entitled to receive the dividend payable on those shares on the corresponding dividend payment date, notwithstanding the redemption of their shares prior to the dividend payment date. Except as provided for in the preceding sentence, no payment or allowance will be made for unpaid dividends, whether or not in arrears, on any Series D Preferred Stock called for redemption or on the common stock issuable upon that redemption.

Unless full cumulative dividends then required to be paid on Series D Preferred Stock and any parity shares have been, or contemporaneously are, declared and paid, or declared and a sum sufficient for the payment thereof set apart for payment for all past dividend periods, Series D Preferred Stock may not be redeemed in part, and the Company may not, except as set forth in the following sentence, redeem, purchase or otherwise acquire for consideration any Series D Preferred Stock, other than pursuant to a purchase or exchange offer made on the same terms to all holders of Series D Preferred Stock. Notwithstanding the foregoing limitations, the Company may, at any time, acquire Series D Preferred Stock, without regard to rank, for the purpose of preserving its status as a REIT.

On and after the date fixed for redemption, provided that the Company has made available at the office of the registrar and transfer agent a sufficient amount of cash to effect the redemption, dividends will cease to accumulate on Series D Preferred Stock called for redemption, those shares will no longer be deemed to be outstanding and all rights of the holders of those Series D Preferred Stock will cease, except for the right to receive cash payable upon redemption, without interest from the date of redemption, and except that, in the case of a redemption date after a dividend payment record date and prior to the related dividend payment date, holders of Series D Preferred Stock on the dividend payment record date will be entitled on the dividend payment date to receive the dividend payable on those shares.

The description of Series D Preferred Stock included in this section applies equally to Series E Preferred Stock.

Liquidation Preference

Subject to the preferential rights of the holders of any senior securities, the holders of Series D Preferred Stock are entitled to receive, in the event of any liquidation, dissolution or winding up of the Company, whether voluntary or involuntary, a liquidation preference (the "Series D Liquidation Preference") of $25.00 per share of Series D Preferred Stock, plus an amount per share of Series D Preferred Stock equal to any accumulated and unpaid dividends, whether or not earned or declared to, but not including, the date of final distribution to such holders and will not be entitled to any other payment.

Until the holders of Series D Preferred Stock have been paid the Series D Liquidation Preference, plus an amount equal to such accumulated and unpaid dividends, in full, no payment will be made to any holder of junior shares upon the liquidation, dissolution or winding up of the Company. If, upon any liquidation, dissolution or winding up of the Company, the assets of the Company or proceeds thereof distributable among the holders of Series D Preferred Stock and any parity shares are insufficient to pay in full the liquidating distributions on all outstanding Series D Preferred Stock and the liquidating distributions applicable to any parity shares, then those assets will be distributed among the holders of Series D Preferred Stock and any parity shares, ratably, in accordance with the respective amounts that would be payable on those shares if all amounts payable on those shares were to be paid in full. After payment in full of the liquidating distributions to which they are entitled, the holders of Series D Preferred Stock will have no right or claim to any of the remaining assets of Two Harbors. Neither a consolidation nor merger of the Company with another corporation, a statutory share exchange by the Company, nor a sale, lease or transfer or conveyance of all or substantially all of the Company's assets will be considered a liquidation, dissolution or winding up, voluntary or involuntary, of the Company. In determining whether a distribution (other than upon voluntary or involuntary liquidation), by dividend, redemption or other acquisition of shares of stock of the Company or otherwise, is permitted under the MGCL, amounts that would be needed if Two Harbors were to be dissolved at the time of the distribution to satisfy the preferential rights upon dissolution of holders of Series D Preferred Stock shall not be added to the Company's total liabilities.

The description of Series D Preferred Stock included in this section applies equally to Series E Preferred Stock, the liquidation preference of which is the same as the Series D Liquidation Preference.

Voting Rights

If six quarterly dividends, whether or not consecutive, payable on Series D Preferred Stock, or any parity shares, are in arrears, whether or not earned or declared, the number of directors then constituting the board of directors will automatically be increased by two, and the holders of shares of Series D Preferred Stock and any other parity shares upon which like voting rights have been conferred and are exercisable, voting together as a single class, which are referred to as the voting preferred shares, will have the right to elect two additional directors to serve on the board of directors. This voting right will be applicable to any annual meeting or special meeting of stockholders, or a properly called special meeting called by the holders of record of at least 25% of the outstanding shares of Series D Preferred Stock or by the holders of any other class or series of voting preferred shares, until all the delinquent dividends on the voting preferred shares have been paid and dividends for the then current dividend period have been paid or declared and a sum sufficient and set aside for payment. At such time as all delinquent dividends have been fully paid or a sum sufficient set apart for payment, the terms of the two additional directors elected by the holders of Series D Preferred Stock and any voting preferred stock shall immediately terminate and the number of directors constituting the board of directors shall be reduced accordingly.

The approval by the affirmative vote of at least 662/3% of the votes entitled to be cast by the holders of the outstanding shares of Series D Preferred Stock and any voting preferred shares similarly affected, voting together as a single class, is required in order to:

- amend our charter, whether by merger or otherwise, to affect materially and adversely the rights, preferences or voting power of the holders of Series D Preferred Stock and any applicable voting preferred shares; or

- authorize, reclassify, create or increase the authorized amount of any class of stock having rights senior to Series D Preferred Stock and any applicable voting preferred shares with respect to the payment of dividends or amounts upon the liquidation, dissolution or winding up of the Company, or create or authorize or issue any obligation or security convertible into or evidencing the right to purchase such shares.

We may, however, increase the authorized number of shares of common stock and may create additional classes of parity shares and junior shares, increase the authorized number of shares of parity shares and junior shares and issue additional series of parity shares and junior shares, all without the consent of any holder of Series D Preferred Stock.

Except as set forth above, the holders of Series D Preferred Stock will not be entitled to vote on any merger or consolidation involving the Company or a sale, lease or transfer of all or substantially all of the Company's assets. See the conversion price adjustments described below.

The description of Series D Preferred Stock included in this section applies equally to Series E Preferred Stock.

Conversion Rights

Upon the occurrence of a change of control, each holder of Series D Preferred Stock will have the right, unless, prior to the Change of Control Conversion Date (as defined below), the Company has provided or provides notice of its election to redeem some or all of the shares of Series D Preferred Stock, to convert some or all of the shares of Series D Preferred Stock held by such holder on a business day selected by the Company that is neither fewer than 20 days nor more than 35 days after the date on which it provides the notice (the "Change of Control Conversion Date") into a number of shares of common stock per share of Series D Preferred Stock to be converted, equal to the lesser of:

- the quotient obtained by dividing (i) the sum of the $25.00 liquidation preference per share plus the amount of any accrued and unpaid dividends (whether or not declared) to, but not including, the Change of Control Conversion Date (unless the Change of Control Conversion Date is after a record date for Series D Preferred Stock dividend payment and prior to the corresponding Series D Preferred Stock dividend payment date, in which case no additional amount for such accrued and unpaid dividend will be included in this sum) by (ii) the common stock Price (as defined below); and

- the share cap, which, subject to certain adjustments, is equal to (A) 3.5211, multiplied by (B) a fraction in which (i) the numerator is equal to the sum of (x) the Per Share Cash Consideration and (y) the product of (1) the Exchange Ratio and (2) the common stock price as of the date of Closing (using the average of the closing sale prices per share for the ten consecutive trading days immediately preceding, but not including, the date of Closing) and (ii) the denominator is the common stock price as of the date of Closing (using the average of the closing sale prices per share for the ten consecutive trading days immediately preceding, but not including, the date of Closing) (the "Share Cap Fraction");

subject, in each case, to provisions for the receipt of alternative consideration as described in the articles supplementary relating to the Series D Preferred Stock.

The "common stock Price" is (i) if the consideration to be received in the change of control by the holders of common stock is solely cash, the amount of cash consideration per share of common stock or (ii) if the consideration to be received in the change of control by holders of common stock is other than solely cash (x) the average of the closing sale prices per share of common stock (or, if no closing sale price is reported, the average of the closing bid and ask prices per share or, if more than one in either case, the average of the average closing bid and the average closing ask prices per share) for the ten consecutive trading days immediately preceding, but not including, the date on which such change of control occurred as reported on the principal U.S. securities exchange on which common stock is then traded, or (y) the average of the last quoted bid prices for common stock in the over-the-counter market as reported by Pink OTC Markets Inc. or similar organization for the ten consecutive trading days immediately preceding, but not including, the date on which such change of control occurred, if common stock is not then listed for trading on a U.S. securities exchange.

If, prior to the Change of Control Conversion Date, the Company has provided or provides a redemption notice, whether pursuant to its special optional redemption right in connection with a change of control or its optional redemption right, holders of Series D Preferred Stock will not have any right to convert such shares of Series D Preferred Stock in connection with the change of control and any shares of Series D Preferred Stock selected for redemption, even if such shares have been tendered for conversion will be redeemed on the related date of redemption instead of converted on the Change of Control Conversion Date.

Except as provided above in connection with a change of control, the Series D Preferred Stock is not convertible into or exchangeable for any other securities or property.

The description of Series D Preferred Stock included in this section applies equally to Series E Preferred Stock, except that the share cap for Series E Preferred Stock is subject to certain adjustments, equal to (A) 4.10846, multiplied by (B) the Share Cap Fraction.

EXHIBIT 21.1

TWO HARBORS INVESTMENT CORP.

Subsidiaries of Registrant

The following entities comprise the direct or indirect wholly owned subsidiaries of Two Harbors Investment Corp. as of the date of this filing:

Name	State of Organization	Percent Ownership
Agate Bay Residential Mortgage Securities LLC	Delaware	100%
Area RE Partners Columbus LLC	Delaware	20%
Capitol Acquisition Corp.	Delaware	100%
CYS/Area LP	Delaware	99%
CYS Condo GP LLC	Delaware	100%
CYS Investments LLC	Delaware	100%
Eiger Holdings Company LLC	Delaware	100%
Eiger Partnership LLC	Delaware	100%
Matrix Financial Services Corporation	Arizona	100%
North Shore Assets LLC	Delaware	100%
North Shore Mortgage Opportunity LLC	Delaware	100%
TH Asset Holdings LLC	Delaware	100%
TH Asset Investment Corp.	Delaware	100%
TH Insurance Holdings Company LLC	Missouri	100%
TH MSR issuer Trust	Delaware	100%
TH TRS Corp.	Delaware	100%
Two Harbors Asset I, LLC	Delaware	100%
Two Harbors Asset II, LLC	Delaware	100%
Two Harbors Operating Company LLC	Delaware	100%

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

- Registration Statements (Form S-8 No. 333-204220 and 333-188875) pertaining to the Second Restated 2009 Equity Incentive Plan of Two Harbors Investment Corp.,
- Registration Statement (Form S-3 No. 333-234636) pertaining to the Dividend Reinvestment and Direct Stock Purchase Plan of Two Harbors Investment Corp., and
- Registration Statement (Form S-3 No. 333-223311) pertaining to the registration of common stock, preferred stock, debt securities, and depositary shares of Two Harbors Investment Corp.;

of our reports dated February 26, 2020, with respect to the consolidated financial statements of Two Harbors Investment Corp. and the effectiveness of internal control over financial reporting of Two Harbors Investment Corp. included in this Annual Report (Form 10-K) of Two Harbors Investment Corp. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Minneapolis, Minnesota
February 26, 2020

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 Annual Report on Form 10-K 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:	February 26, 2020	/s/ Thomas E. Siering
		Thomas E. Siering
		Chief Executive Officer and President

EXHIBIT 31.2

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

I, Mary Riskey, certify that:

1. I have reviewed this Annual Report on Form 10-K 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: February 26, 2020

/s/ Mary Riskey

Mary Riskey
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned officer of Two Harbors Investment Corp. (the “Registrant”) hereby certifies that the Registrant’s Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (the “Annual 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 Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date:	February 26, 2020	/s/ Thomas E. Siering
		Thomas E. Siering
		Chief Executive Officer and President

The foregoing certification is being furnished solely pursuant to 18 U.S.C. §1350 and is not being filed as part of the Annual 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 Annual Report on Form 10-K for the fiscal year ended December 31, 2019 (the “Annual 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 Annual Report fairly presents, in all material respects, the financial condition and results of operations of the Registrant.

Date:	February 26, 2020	/s/ Mary Riskey
		Mary Riskey
		Chief Financial Officer

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