Fourth Quarter 2019
Earnings Call

FEBRUARY 6, 2020

TWO HARBORS
Investment Corp.
A Pine River Capital Managed Company

Safe Harbor Statement

FORWARD-LOOKING STATEMENTS

This presentation includes “forward-looking statements” within the meaning of the safe harbor provisions of the United States Private Securities Litigation Reform Act of 1995. Actual results may differ from expectations, estimates and projections and, consequently, readers should not rely on these forward-looking statements as predictions of future events. Words such as “expect,” “target,” “assume,” “estimate,” “project,” “budget,” “forecast,” “anticipate,” “intend,” “plan,” “may,” “will,” “could,” “should,” “believe,” “predicts,” “potential,” “continue,” and similar expressions are intended to identify such forward-looking statements. These forward-looking statements involve significant risks and uncertainties that could cause actual results to differ materially from expected results, including, among other things, those described in our Annual Report on Form 10-K for the year ended December 31, 2018, and any subsequent Quarterly Reports on Form 10-Q, under the caption “Risk Factors.” Factors that could cause actual results to differ include, but are not limited to: the state of credit markets and general economic conditions; changes in interest rates and the market value of our assets; changes in prepayment rates of mortgages underlying our target assets; the rates of default or decreased recovery on the mortgages underlying our target assets; the occurrence, extent and timing of credit losses within our portfolio; the concentration of credit risks we are exposed to; declines in home prices; our ability to establish, adjust and maintain appropriate hedges for the risks in our portfolio; the availability and cost of our target assets; the availability and cost of financing; changes in the competitive landscape within our industry; our ability to effectively execute and to realize the benefits of strategic transactions and initiatives we have pursued or may in the future pursue; our ability to manage various operational risks and costs associated with our business; interruptions in or impairments to our communications and information technology systems; our ability to acquire mortgage servicing rights (MSR) and successfully operate our seller-servicer subsidiary and oversee our subservicers; the impact of any deficiencies in the servicing or foreclosure practices of third parties and related delays in the foreclosure process; our exposure to legal and regulatory claims; legislative and regulatory actions affecting our business; the impact of new or modified government mortgage refinance or principal reduction programs; our ability to maintain our REIT qualification; and limitations imposed on our business due to our REIT status and our exempt status under the Investment Company Act of 1940.

Readers are cautioned not to place undue reliance upon any forward-looking statements, which speak only as of the date made. Two Harbors does not undertake or accept any obligation to release publicly any updates or revisions to any forward-looking statement to reflect any change in its expectations or any change in events, conditions or circumstances on which any such statement is based. Additional information concerning these and other risk factors is contained in Two Harbors’ most recent filings with the Securities and Exchange Commission (SEC). All subsequent written and oral forward-looking statements concerning Two Harbors or matters attributable to Two Harbors or any person acting on its behalf are expressly qualified in their entirety by the cautionary statements above.

This presentation may include industry and market data obtained through research, surveys, and studies conducted by third parties and industry publications. We have not independently verified any such market and industry data from third-party sources. This presentation is provided for discussion purposes only and may not be relied upon as legal or investment advice, nor is it intended to be inclusive of all the risks and uncertainties that should be considered. This presentation does not constitute an offer to purchase or sell any securities, nor shall it be construed to be indicative of the terms of an offer that the parties or their respective affiliates would accept.

Readers are advised that the financial information in this presentation is based on company data available at the time of this presentation and, in certain circumstances, may not have been audited by the company’s independent auditors.

Quarterly and Annual Summary

Generated 23.6% Total Annual Return on Book Value(1)

Quarterly Summary

- Reported book value of $14.54 per common share, representing a 1.5% total quarterly return on book value.(1)
- Generated Comprehensive Income of $56.8 million, or $0.21 per weighted average basic common share, representing an annualized return on average common equity of 5.7%.
- Added $22.3 billion in unpaid principal balance (UPB) of MSR through both bulk acquisitions and monthly flow-sale arrangements, bringing total holdings to $175.9 billion UPB.
- Reported Core Earnings, including dollar roll income, of $67.7 million, or $0.25 per weighted average basic common share.(2)

Annual Summary

- Grew book value to $14.54 per common share from $13.11 per common share at December 31, 2018, representing a 23.6% total annual return on book value.(1)
- Generated Comprehensive Income of $826.7 million, or $3.09 per weighted average basic common share, representing an annualized return on average common equity of 21.7%.
- Generated total shareholder return of 28.7%.(3)
- Enhanced financing for MSR through $400 million securitization of 5-year term notes.

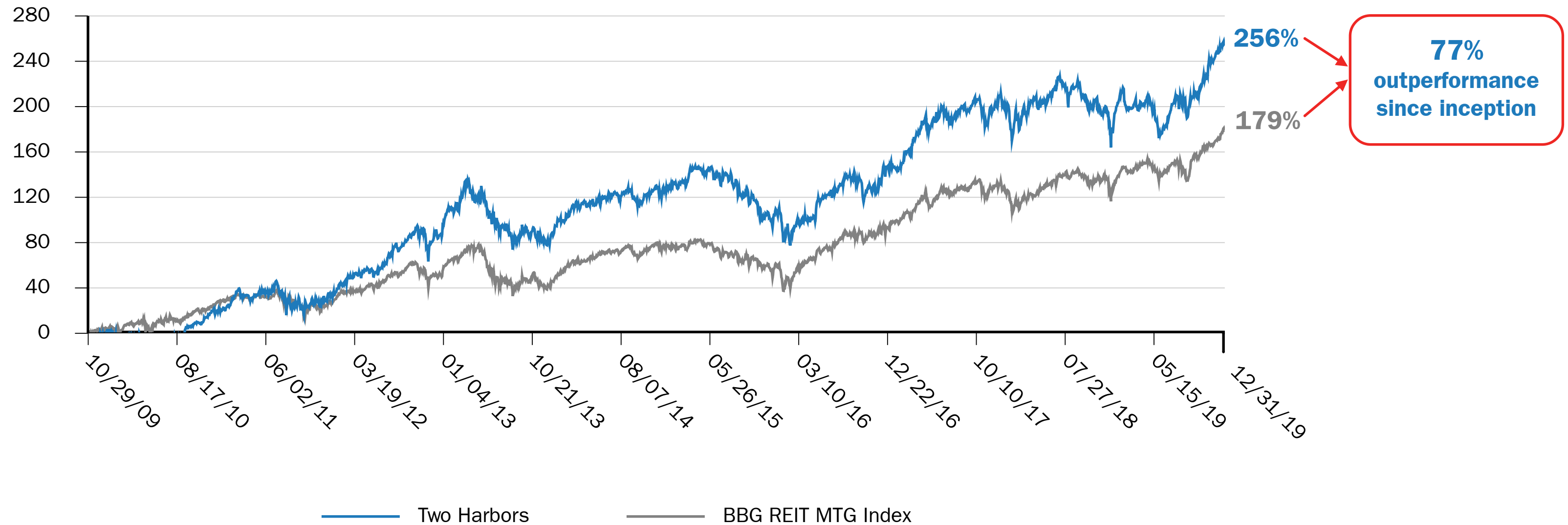
(1) Return on book value is defined as the increase (decrease) in book value per common share from the beginning to the end of the given period, plus dividends declared in the period, divided by the book value as of the beginning of the period.

(2) Core Earnings, including dollar roll income, is a non-GAAP measure. Please see Appendix slide 21 of this presentation for a definition of Core Earnings, including dollar roll income, and a reconciliation of GAAP to non-GAAP financial information. A description of the updated MSR amortization method utilized by the company to calculate Core Earnings, including dollar roll income, is also provided.

(3) Two Harbors' total stockholder return is calculated for the period December 31, 2018 through December 31, 2019. Total stockholder return is defined as stock price appreciation including dividends. Source: Bloomberg.

Focused on Generating Long-Term Stockholder Value

DELIVERED TOTAL STOCKHOLDER RETURN OF 256% SINCE INCEPTION(1)



KEY DIFFERENTIATING FACTORS

1. Strategy of pairing MSR with Agency RMBS
2. Utilize a variety of instruments to hedge interest rate and spread exposure
3. Unique portfolio of legacy non-Agency securities

✓ **Generated 10.4% book value growth since inception in 2009(2)**

(1) Two Harbors' total stockholder return is calculated for the period October 29, 2009 through December 31, 2019. Total stockholder return is defined as stock price appreciation including dividends. Source: Bloomberg. Bloomberg REIT Mortgage Index total stockholder return for the period October 29, 2009 through December 31, 2019. The Bloomberg REIT Mortgage Index tracks publicly traded REITs whose principal business consists of originating, servicing or investing in residential mortgage interests. The index uses a modified market capitalization weighted methodology, and components are reviewed quarterly for eligibility. Source: Bloomberg.
(2) Book value growth since inception is measured from December 31, 2009 through December 31, 2019. Quarterly book values have been adjusted for each quarter from Q1 2013 forward to include $1.88 of stock distributions associated with the special dividend of Silver Bay Realty Trust ("Silver Bay") and, beginning in Q4 2017, $3.67 of stock distributions associated with the special dividend of Granite Point Mortgage Trust Inc. ("Granite Point") common stock.

Book Value

(Dollars in millions, except per share data)	Q4-2019 Book Value	Q4-2019 Book Value per share	FY-2019 Book Value	FY-2019 Book Value per share
Beginning common stockholders' equity	**$ 4,018.3**	**$ 14.72**	**$ 3,253.2**	**$ 13.11**
GAAP Net Income:				
Core Earnings, including dollar roll income, net of tax[(1)]	86.6		437.2	
Dividend declaration - preferred	(18.9)		(75.8)	
Core Earnings attributable to common stockholders, including dollar roll income, net of tax[(1)]	67.7		361.4	
Realized and unrealized gains and losses, net of tax	48.1		(113.3)	
Other comprehensive (loss) income, net of tax	(59.0)		578.6	
Dividend declaration - common	(109.1)		(455.7)	
Other	2.6		8.7	
Issuance of common stock, net of offering costs	0.6		336.3	
Ending common stockholders' equity	**$ 3,969.2**	**$ 14.54**	**$ 3,969.2**	**$ 14.54**
Total preferred stock liquidation preference	1,001.3		1,001.3	
Ending total equity	**$ 4,970.5**		**$ 4,970.5**	

Comprehensive Income (GAAP)

Generated Q4-2019 Comprehensive Income of $56.8 million, or $0.21 per basic common share.

Generated 2019 Comprehensive Income of $826.7 million, or $3.09 per basic common share.

(1) Core Earnings, including dollar roll income, is a non-GAAP measure. Please see Appendix slide 21 for a definition of Core Earnings, including dollar roll income, and a reconciliation of GAAP to non-GAAP financial information.

Core Earnings Summary[1]

(Dollars in millions, except per share data)	Q3-2019	Q4-2019	Variance ($)
Interest income	$ 251.1	$ 237.3	$ (13.8)
Interest expense	191.1	167.3	23.8
Net interest income	60.0	70.0	10.0
Servicing income, net of amortization on MSR	52.7	54.6	1.9
Gain on swaps, caps and swaptions	19.1	4.8	(14.3)
Gain on other derivatives	—	9.0	9.0
Other	0.4	0.1	(0.3)
Total other income	72.2	68.5	(3.7)
Expenses	46.2	49.4	(3.2)
Provision for income taxes	2.0	2.5	0.5
Core Earnings, including dollar roll income[1]	**84.0**	**86.6**	**2.6**
Dividends on preferred stock	19.0	18.9	0.1
Core Earnings, including dollar roll income attributable to common stockholders[1]	**$ 65.0**	**$ 67.7**	**$ 2.7**
Basic weighted average Core EPS, including dollar roll income	**$ 0.24**	**$ 0.25**	
Core Earnings, including dollar roll income, annualized return on average common equity	**6.5%**	**6.8%**	

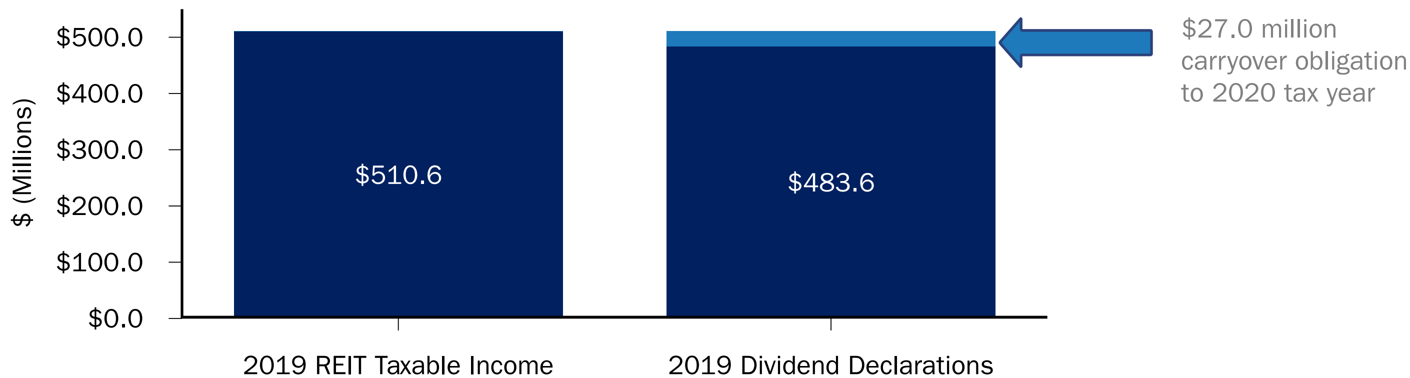
- Fourth quarter Core Earnings, including dollar roll income, favorably driven by:
  - Lower LIBOR
  - Increased servicing income from MSR portfolio growth, and
  - Higher TBA dollar roll income
- This was offset by:
  - Agency RMBS portfolio rotation, and
  - Higher RMBS amortization from faster prepayments

(1) Core Earnings, including dollar roll income, is a non-GAAP measure. Please see Appendix slide 21 for a definition of Core Earnings, including dollar roll income, and a reconciliation of GAAP to non-GAAP financial information.

Tax Characterization of Dividends in 2019

FULL YEAR 2019 DIVIDEND SUMMARY

- Generated REIT taxable income of $510.6 million in 2019 after utilizing $11.7 million of carryover net operating losses(1)
- 2019 dividend declarations for tax purposes totaled $483.6 million(2)
  - $483.6 million consists of dividends to common shares of $453.8 million ($1.67 per common share), dividends to preferred shares of $75.8 million and deemed dividends from the convertible note conversion rate adjustments of $0.4 million, less carryover dividend obligation from 2018 REIT taxable income of $46.4 million
  - Distributed 94.7% of REIT taxable income after net operating loss
  - Carrying $27.0 million, or approximately $0.10 per share, of excess ordinary income and dividend obligation to 2020
- Dividends are characterized as 100% ordinary taxable income, with 9.4% of the ordinary dividends also characterized as ordinary qualified dividend income on Form 1099-DIV(3)



(1) Excludes net capital gain of $490.6 million generated in 2019 tax year. This net capital gain was offset by utilizing capital loss carryover available from previous tax years.
(2) Net of 2018 carryover dividend obligation of $46.4 million.
(3) The U.S. federal income tax treatment of holding Two Harbors common stock to any particular stockholder will depend on the stockholder's particular tax circumstances. You are urged to consult your tax advisor regarding the U.S. federal, state, local and foreign income and other tax consequences to you, in light of your particular investment or tax circumstances, of acquiring, holding and disposing of Two Harbors common stock. Two Harbors does not provide tax, accounting or legal advice. Any tax statements contained herein were not intended or written to be used, and cannot be used for the purpose of avoiding U.S., federal, state or local tax penalties. Please consult your advisor as to any tax, accounting or legal statements made herein.

Performance Summary

- Lower portfolio yield driven by Agency portfolio rotation and increased premium amortization

	Realized Q3-2019	Realized Q4-2019	As of December 31, 2019
Annualized portfolio yield[(1)]	**3.67%**	**3.54%**	**3.74%**
Rates			
Agency RMBS, Agency Derivatives and MSR	3.47%	3.20%	3.39%
Credit			
Non-Agency securities	5.26%	6.29%	6.87%
Annualized cost of funds[(2)]	**2.51%**	**2.35%**	**2.32%**
Annualized net yield for aggregate portfolio	**1.16%**	**1.19%**	**1.42%**

(1) Includes interest income on RMBS and servicing income net of servicing expenses and amortization on MSR.
(2) Cost of funds includes interest spread income/expense associated with the portfolio's interest rate swaps and caps.

Financing Profile and Capital Structure

DIVERSE FINANCING PROFILE

RATES – AGENCY RMBS

- Outstanding repurchase agreements of $27.4 billion with 23 counterparties
- Outstanding secured FHLB advances of $210.0 million
- Repo rates have started to normalize; expect to begin to realize benefit in the first half of 2020 as existing repurchase agreements mature and restrike

RATES – MSR

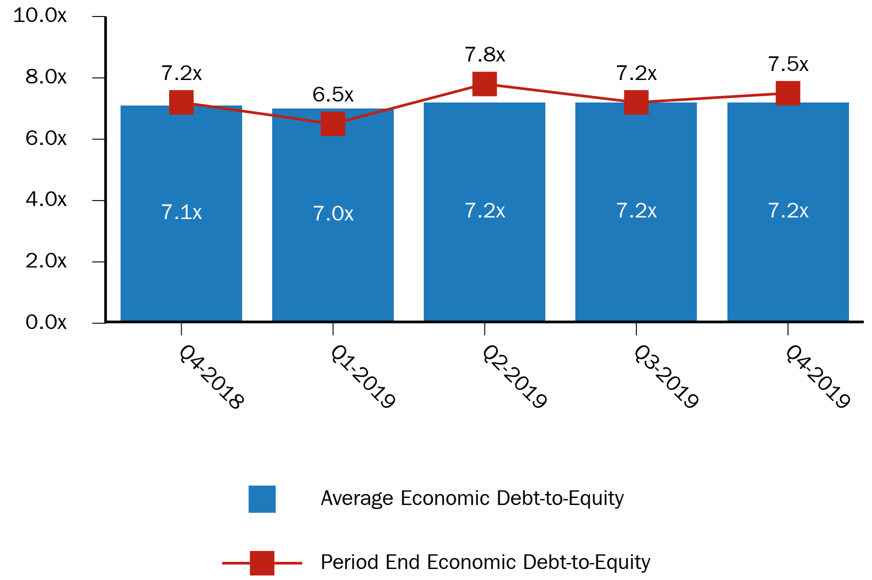
- Outstanding borrowings of $562.6 million under bilateral MSR financing facilities
- Total bilateral facilities financing capacity of $750.0 million
- $400 million of outstanding 5-year MSR term notes(2)
- Additional $1.0 billion capacity available under variable funding note related to securitization

CREDIT – NON-AGENCY SECURITIES

- Outstanding repurchase agreements of $1.5 billion with 9 counterparties
- Haircuts and spreads stable; haircuts generally between 20% - 30% and spreads 85 - 100 basis points over LIBOR

ECONOMIC DEBT-TO-EQUITY(1)

- 7.5x at December 31, 2019, compared to 7.2x at September 30, 2019
- Average of 7.2x consistent quarter-over-quarter



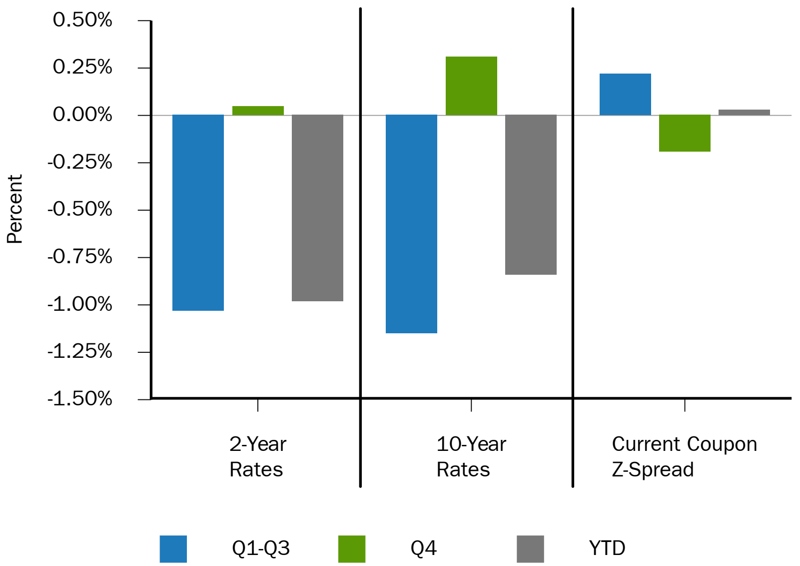
(1) Defined as total borrowings to fund RMBS, MSR and Agency Derivatives, plus the implied debt on net TBA positions, divided by total equity.
(2) Excludes deferred debt issuance costs.

Markets and Performance Overview - Rates

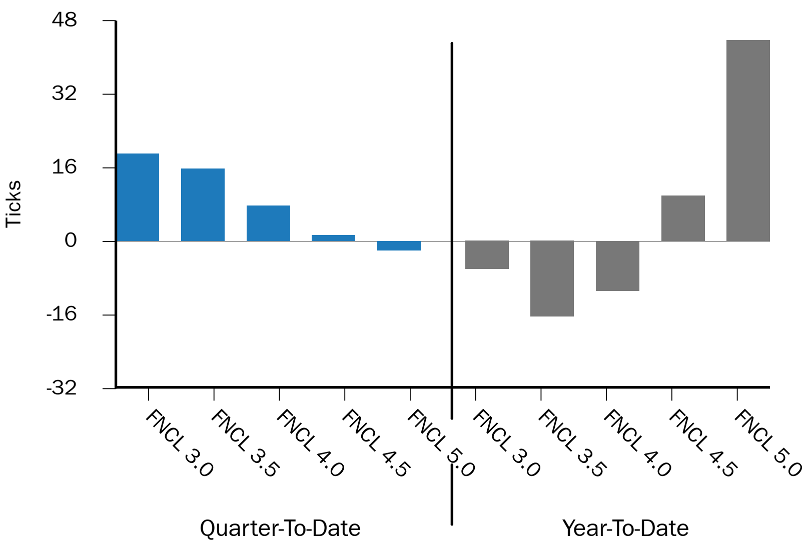
MARKET OVERVIEW

- Fourth quarter was reversal of 2019 performance trends; long interest rates rose, higher coupon MBS widened and lower coupon MBS tightened
- Steepening yield curve reduced prepayment fears
- Repo markets continue to show signs of improvement

CHANGE IN INTEREST RATES & CURRENT COUPON Z-SPREAD(1)



HEDGED MORTGAGE PERFORMANCE(2)



(1) Z-spread is the implied spread of an underlying bond off a yield curve, in this case the LIBOR curve. Interest rate and spread data from J.P. Morgan Data Query, as of December 31, 2019.

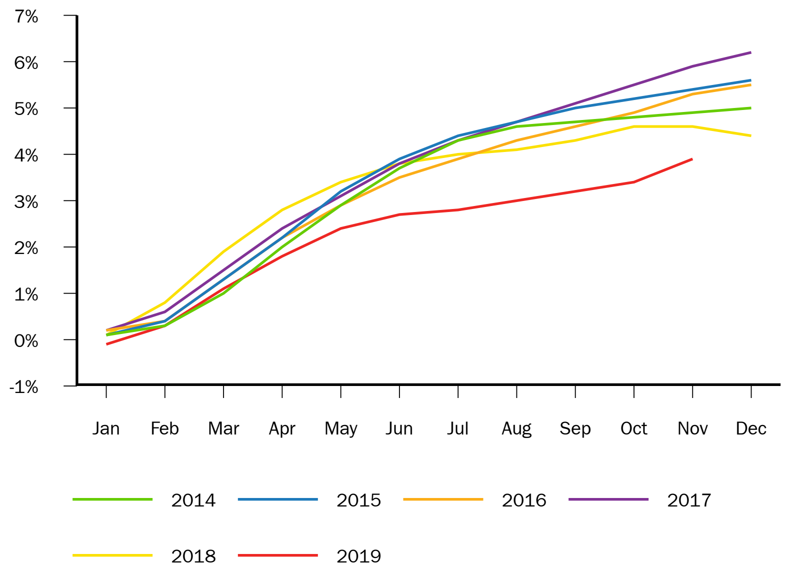
(2) Hedged mortgage total return. Calculated as performance in ticks of the total return (including carry) of TBA mortgage coupons versus LIBOR hedges. Source: J.P. Morgan Data Query, as of December 31, 2019.

Markets and Performance Overview - Credit

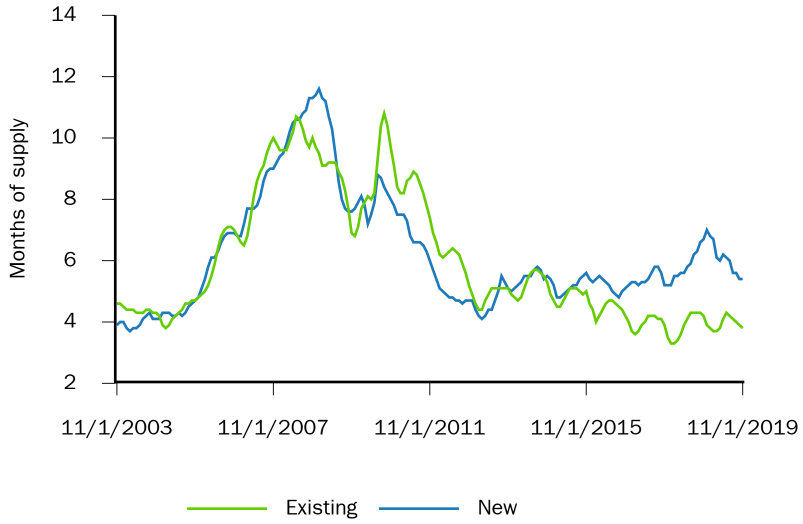
MARKET OVERVIEW

- HPA remains solid and expectations are for slowly increasing home prices
- Supply of single family homes lowest it has been in 15 years

HOME PRICE APPRECIATION BY YEAR[1]



MONTH'S SUPPLY OF SINGLE-FAMILY HOMES[2]



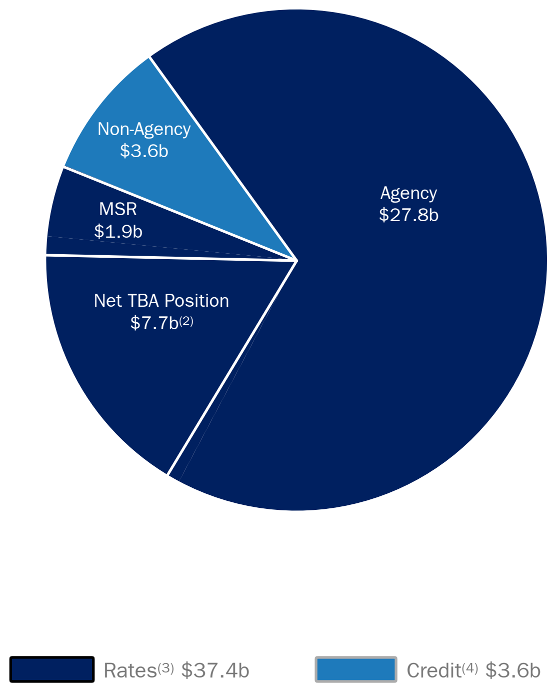
(1) Source: CoreLogic, Nomura Securities International.
(2) Values shown are three month moving averages. Source: National Association of Realtors, US Census Bureau, Nomura Securities International.

Portfolio Composition and Quarterly Activity

PORTFOLIO COMPOSITION[1]

$41.0b PORTFOLIO AS OF DECEMBER 31, 2019

Includes $33.4b settled positions in portfolio



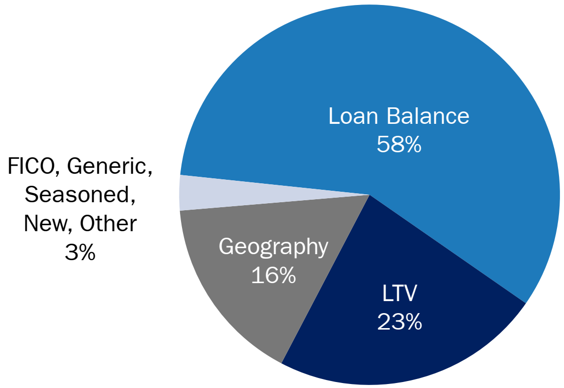
PORTFOLIO ACTIVITY

- Capital allocation[5] was 78% Rates[3], 22% Credit[4] at December 31, 2019
- Continued to rotate exposure out of higher coupons and into lower coupons; throughout 2019, acquired about $11 billion of 3.0 coupons in both pool and TBA form, up from a flat exposure at the beginning of the year
  - Maintained prospective returns with much lower mortgage spread risk, as the current coupon better aligns with MSR holdings
- MSR market showed signs of picking up in Q4; acquired $11.1 billion UPB through bulk purchases and $11.2 billion UPB through flow origination
- Opportunistically added about $200 million of discounted legacy subprime non-Agencies at an average price of $66; believe these have attractive upside potential

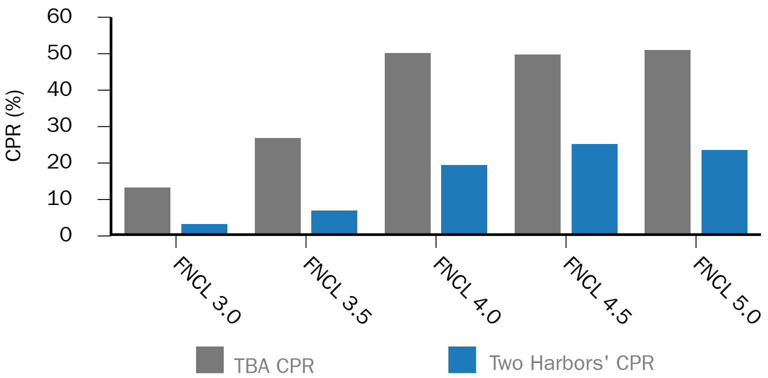
(1) For additional detail on the portfolio, see Appendix slides 22-26.
(2) Represents bond equivalent value of TBA position. Bond equivalent value is defined as notional amount multiplied by market price. Accounted for as derivative instruments in accordance with GAAP.
(3) Assets in “Rates” include Agency RMBS, MSR, net TBA position, and other interest rate sensitive assets.
(4) Assets in “Credit” include non-Agency securities and other credit sensitive assets.
(5) 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. Please refer to Appendix slide 26 for more information on financing.

Specified Pool and Coupon Positioning

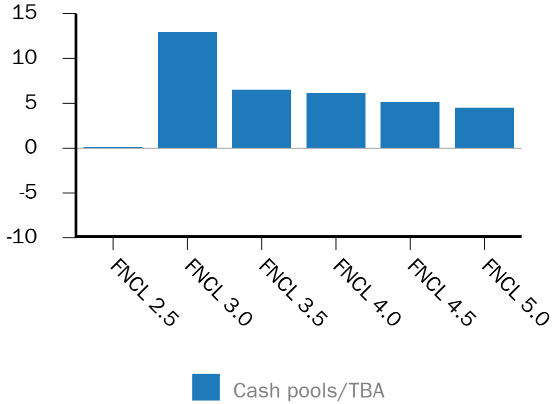
SPECIFIED POOL CHARACTERISTICS(1)

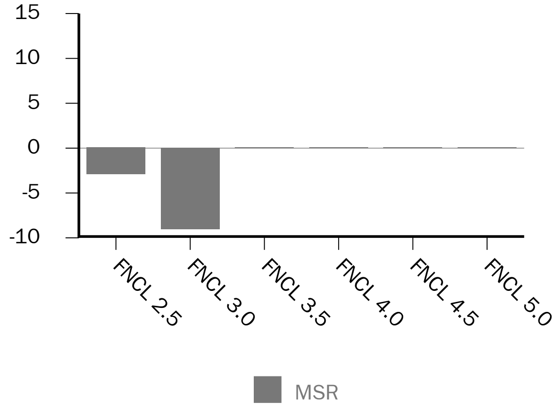


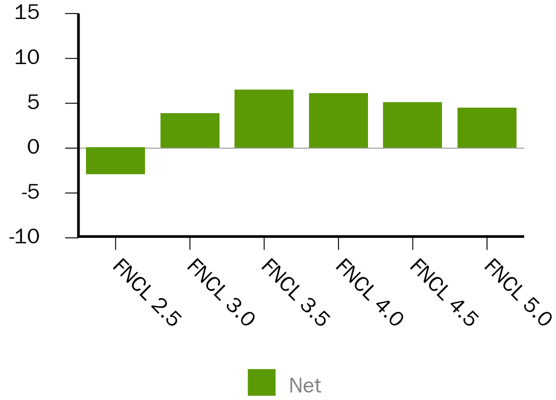
3-MONTH TBA SPEEDS VS. TWO CPR(2)



EFFECTIVE COUPON POSITIONING(3)







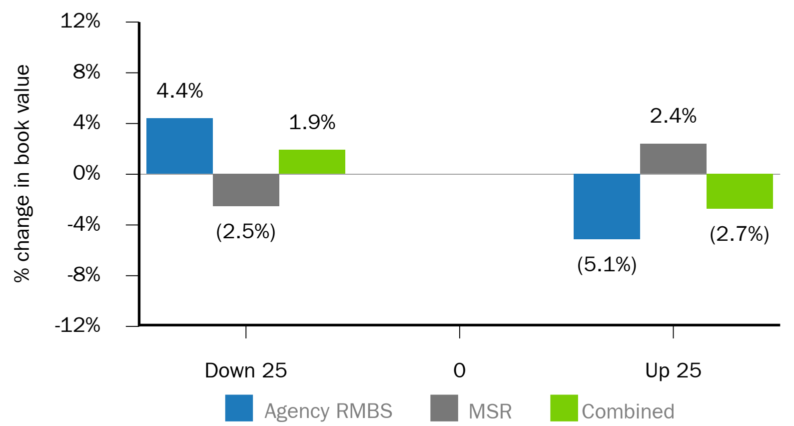
(1) Specified pool categories include lower loan balances (securities collateralized by loans less than or equal to $200K of initial principal balance), higher LTVs (securities collateralized by loans with greater than or equal to 80% LTV), certain geographic concentrations and lower FICO scores. Data as of December 31, 2019.
(2) Implied TBA speeds from J.P. Morgan Data Query, as of December 31, 2019.
(3) The effective coupon positioning for MSR is an internally calculated exposure that represents the current coupon equivalents of our MSR assets. Data as of December 31, 2019.

Risk Profile

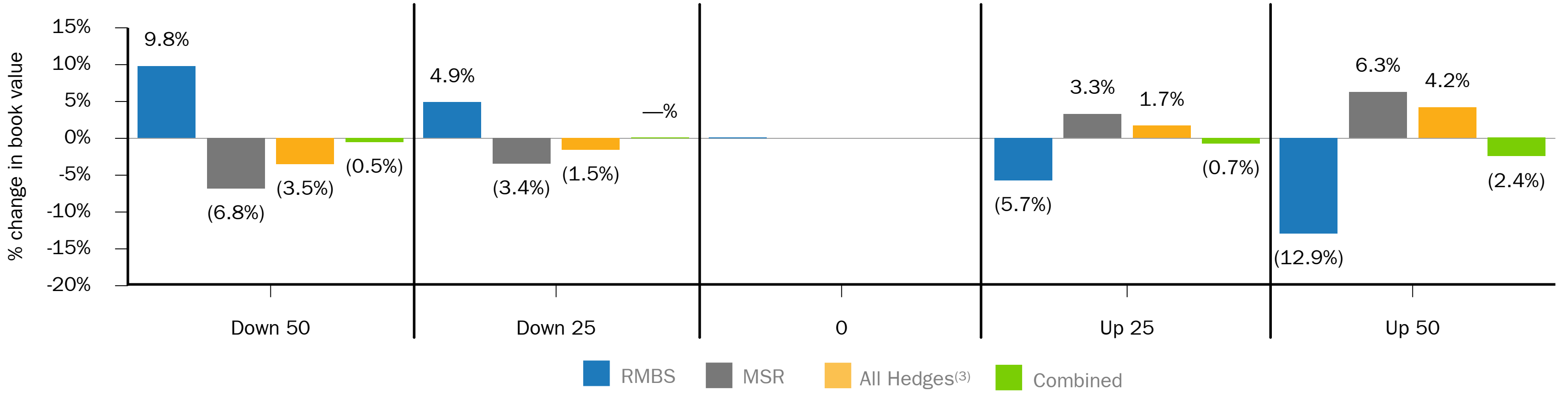
LOW RISK EXPOSURES

- Exposure to mortgage spreads and interest rates remains small
- Potential impact of (2.7%) of book value in 25 basis point spread widening
- Potential impact of (2.4%) of book value in instantaneous parallel shift in interest rates upward of 50 basis points

COMMON BOOK VALUE EXPOSURE TO CHANGES IN SPREADS[1]



COMMON BOOK VALUE EXPOSURE TO CHANGES IN RATES[2]



Note: Sensitivity data as of December 31, 2019. The above spread scenario is provided for illustration purposes only and is not necessarily indicative of Two Harbors' financial condition and operating results, nor is it necessarily indicative of the financial condition or results of operations that may be expected for any future period or date.

(1) The information presented in this chart projects the potential impact on common book value of instantaneous changes in current coupon mortgage spreads. Spread sensitivity is based on results from third party models in conjunction with inputs from our internal investment professionals. Actual results could differ materially from these estimates.

(2) Represents estimated change in common book value for theoretical parallel shift in interest rates.

(3) All hedges includes derivative assets and liabilities and all borrowings. All Hedges excludes Agency derivatives, which are included in the RMBS category.

Outlook

GENERATING STRONG ECONOMIC RETURNS WITH LOWER VOLATILITY OVER TIME

RATES STRATEGY - Combination of Agency RMBS and MSR

- Expect capital allocation to this strategy to continue to increase
- Current expected returns in low to mid double digits for Agency RMBS paired with MSR
- Believe the combination of these two assets results in an attractive return with lower spread risk

CREDIT STRATEGY - Legacy non-Agency securities

- Baseline returns for discounted legacy non-Agencies are in the high single digits but upside price appreciation can drive much higher total returns
- Low rate environment beneficial to residential credit assets, driving better affordability, faster prepayments and lower severities
- Expect more legacy assets to reach upside potential as time goes on

Appendix


TWO HARBORS
Investment Corp.
A Pine River Capital Managed Company

Return on Book Value[1]

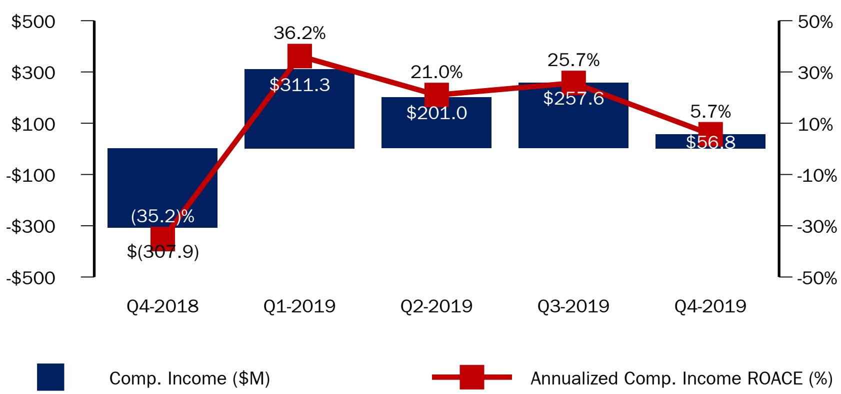
Return on common book value Q4-2019 (Per common share amounts, except for percentage)	
Book value at September 30, 2019	$ 14.72
Book value at December 31, 2019	14.54
Decrease in book value	(0.18)
Dividend declared in Q4-2019	0.40
Return on book value Q4-2019	$ 0.22
Percent return on book value Q4-2019	1.5%

Return on common book value FY-2019 (Per common share amounts, except for percentage)	
Book value at December 31, 2018	$ 13.11
Book value at December 31, 2019	14.54
Increase in book value	1.43
Dividends declared FY-2019	1.67
Return on book value FY-2019	$ 3.10
Percent return on book value FY-2019	23.6%

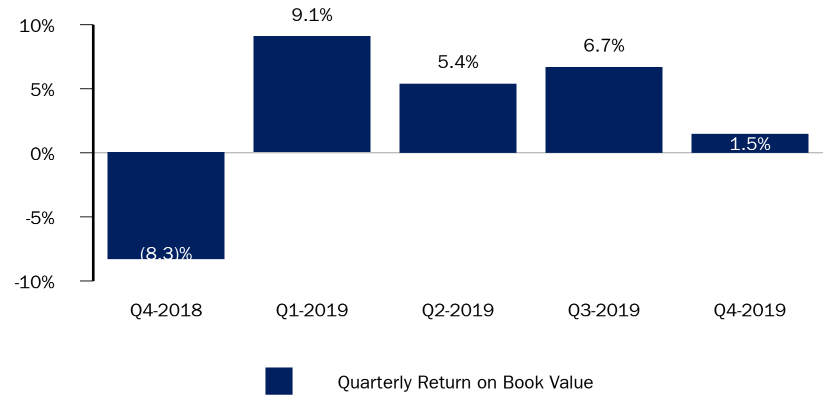
(1) Return on book value is defined as the increase (decrease) in book value per common share from the beginning to the end of the given period, plus dividends declared in the period, divided by the book value as of the beginning of the period.

Financial Performance

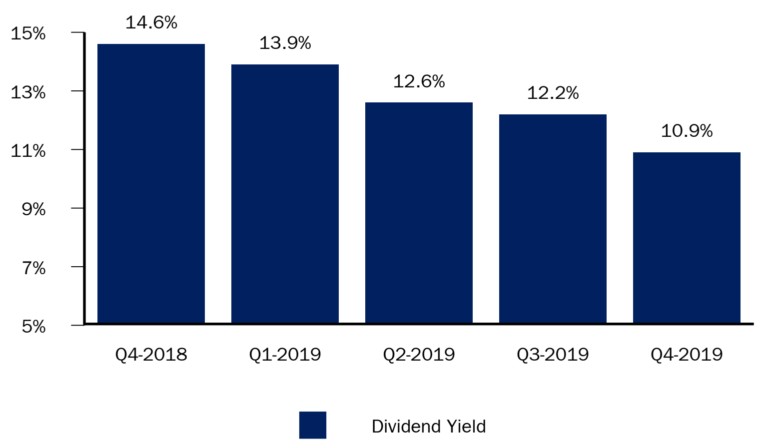
COMPREHENSIVE (LOSS) INCOME



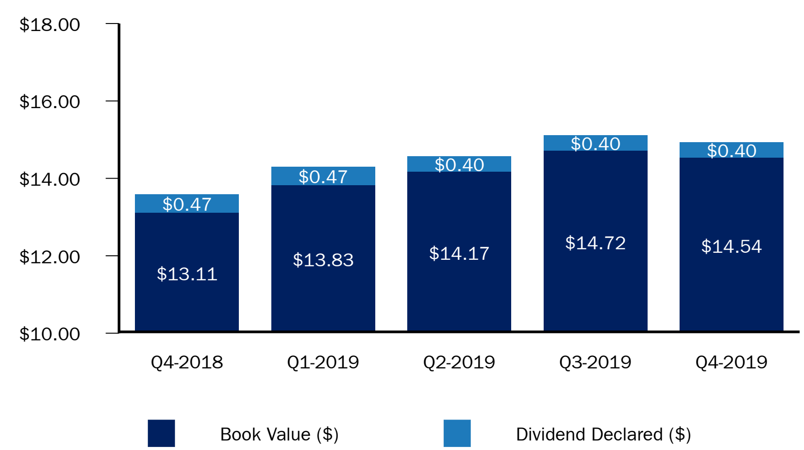
QUARTERLY RETURN ON BOOK VALUE[1]



DIVIDEND YIELD[2]



BOOK VALUE AND DIVIDEND PER COMMON SHARE[2]



(1) Return on book value is defined as the increase (decrease) in book value per common share from the beginning to the end of the given period, plus dividends declared in the period, divided by the book value as of the beginning of the period.

(2) Historical dividends may not be indicative of future dividend distributions. The company ultimately distributes dividends based on its taxable income per common share, not GAAP earnings. The annualized dividend yield on the company's common stock is calculated based on the closing price of the last trading day of the relevant quarter.

Q4-2019 Operating Performance

	Q4-2019			
(In millions, except for per common share data)	Core Earnings, including dollar roll income[(1)]	Realized Gains (Losses)	Unrealized MTM	Total
Interest income	$ 237.3	$ —	$ 1.1	$ 238.4
Interest expense	167.3	—	—	167.3
Net interest income	70.0	—	1.1	71.1
Total other-than-temporary impairments and loss recovery adjustments	—	—	(3.3)	(3.3)
Gain on investment securities	—	27.6	0.5	28.1
Servicing income	127.7	—	—	127.7
(Loss) gain on servicing asset	(73.1)	(3.4)	54.7	(21.8)
Gain (loss) on interest rate swaps, caps and swaptions	4.8	(1.5)	(10.1)	(6.8)
Gain (loss) on other derivative instruments	9.0	(10.8)	(9.0)	(10.8)
Other income (loss)	0.1	—	(0.1)	—
Total other income	68.5	11.9	36.0	116.4
Management fees & other expenses	49.4	2.5	—	51.9
Net income before income taxes	89.1	9.4	33.8	132.3
Income tax expense (benefit)	2.5	(1.5)	(3.4)	(2.4)
Net income	**86.6**	**10.9**	**37.2**	**134.7**
Dividends on preferred stock	18.9	—	—	18.9
Net income attributable to common stockholders	**$ 67.7**	**$ 10.9**	**$ 37.2**	**$ 115.8**
Weighted average earnings per basic common share	$ 0.25	$ 0.04	$ 0.13	$ 0.42

(1) Core Earnings, including dollar roll income, is a non-GAAP measure. Please see Appendix slide 21 of this presentation for a definition of Core Earnings, including dollar roll income, and a reconciliation of GAAP to non-GAAP financial information.

Q3-2019 Operating Performance

	Q3-2019			
(In millions, except for per common share data)	Core Earnings, including dollar roll income[(1)]	Realized Gains (Losses)	Unrealized MTM	Total
Interest income	$ 251.1	$ —	$ (1.3)	$ 249.8
Interest expense	191.1	—	—	191.1
Net interest income	60.0	—	(1.3)	58.7
Total other-than-temporary impairments and loss recovery adjustments	—	—	(6.0)	(6.0)
Gain (loss) on investment securities	—	250.2	(1.4)	248.8
Servicing income	126.0	—	—	126.0
Loss on servicing asset	(73.3)	(2.0)	(159.2)	(234.5)
Gain (loss) on interest rate swaps, caps and swaptions	19.1	75.4	(23.9)	70.6
Gain (loss) on other derivative instruments	—	120.5	(34.6)	85.9
Other income	0.4	0.1	—	0.5
Total other income (loss)	72.2	444.2	(219.1)	297.3
Management fees & other expenses	46.2	1.7	—	47.9
Net income (loss) before income taxes	86.0	442.5	(226.4)	302.1
Income tax expense (benefit)	2.0	(0.1)	(5.5)	(3.6)
Net income (loss)	**84.0**	**442.6**	**(220.9)**	**305.7**
Dividends on preferred stock	19.0	—	—	19.0
Net income (loss) attributable to common stockholders	**$ 65.0**	**$ 442.6**	**$ (220.9)**	**$ 286.7**
Weighted average earnings (loss) per basic common share	$ 0.24	$ 1.62	$ (0.81)	$ 1.05

(1) Core Earnings, including dollar roll income, is a non-GAAP measure. Please see Appendix slide 21 of this presentation for a definition of Core Earnings, including dollar roll income, and a reconciliation of GAAP to non-GAAP financial information.

GAAP to Core Earnings Reconciliation[(1)(2)]

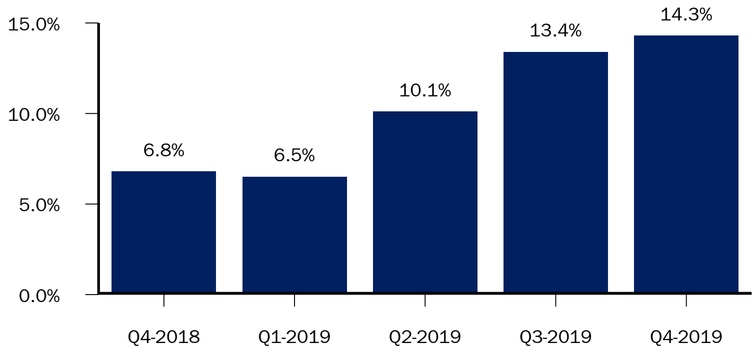
Reconciliation of GAAP to non-GAAP Information (In thousands, except for per common share data)	Three Months Ended September 30, 2019	Three Months Ended December 31, 2019
Reconciliation of Comprehensive income to Core Earnings:		
Comprehensive income attributable to common stockholders	**$ 257,585**	**$ 56,850**
Adjustment for other comprehensive loss attributable to common stockholders:		
Unrealized loss on available-for-sale securities attributable to common stockholders	29,164	58,954
Net income attributable to common stockholders	**$ 286,749**	**$ 115,804**
Adjustments for non-core earnings:		
Other-than-temporary impairments and loss recovery adjustments	7,275	2,198
Realized gains on securities	(250,267)	(27,615)
Unrealized loss (gain) on securities	1,439	(526)
Realized and unrealized loss (gain) on mortgage servicing rights	161,214	(51,387)
Realized (gain) loss on termination or expiration of swaps, caps and swaptions	(75,409)	1,495
Unrealized losses on interest rate swaps, caps and swaptions	23,940	10,148
(Gain) loss on other derivative instruments	(85,916)	19,833
Other (income) loss	(114)	73
Change in servicing reserves	(300)	72
Non-cash equity compensation expense	1,980	2,423
Net benefit from income taxes on non-Core Earnings	(5,612)	(4,847)
Core Earnings attributable to common stockholders, including dollar roll income[(1)(2)]	**$ 64,979**	**$ 67,671**
Weighted average basic common shares	272,897,575	272,906,815
Core Earnings, including dollar roll income, per weighted average basic common share	$ 0.24	$ 0.25

(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, non-cash compensation expense related to restricted common stock and restructuring charges) and transaction costs and purchase premium associated with the acquisition of CYS. As defined, Core Earnings 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.

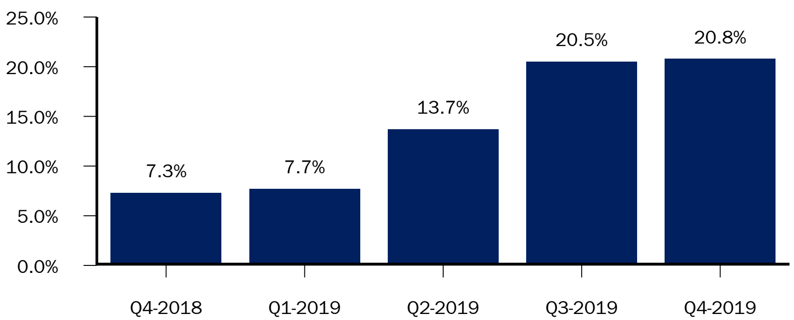
(2) Beginning with the June 30, 2019 reporting period, the company refined the MSR amortization method utilized in the calculation of Core Earnings, including dollar roll income. The new method includes an adjustment for any gain or loss on the capital used to purchase the MSR and allows Core Earnings to better reflect how the carry earned on MSR varies as a function of prepayment rates.

Rates Metrics

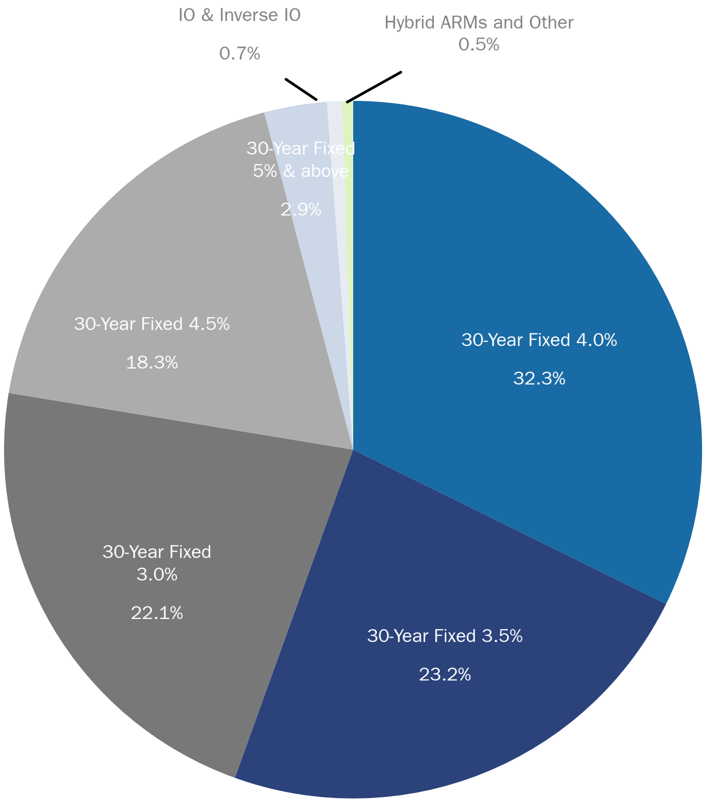
AGENCY RMBS CPR[1]



MSR CPR



AGENCY PORTFOLIO COMPOSITION



(1) Agency weighted average 3-month Constant Prepayment Rate (CPR) includes IIOs (or Agency Derivatives).

Rates: Agency RMBS

As of December 31, 2019	Par Value ($M)	Market Value ($M)	Weighted Average CPR	% Prepay Protected[1]	Amortized Cost Basis ($M)	Gross Weighted Average Coupon	Weighted Average Age (Months)
30-Year fixed							
3.0%	$ 6,034	$ 6,168	3.3%	98.3%	$ 6,169	3.8%	3
3.5%	6,175	6,452	7.0%	100.0%	6,386	4.3%	7
4.0%	8,455	8,993	19.4%	100.0%	8,809	4.6%	25
4.5%	4,715	5,082	25.2%	100.0%	4,942	5.0%	20
≥ 5.0%	741	814	23.5%	100.0%	787	5.8%	48
	26,120	27,509	14.4%	99.6%	27,093	4.5%	16
Other P&I[2]	119	133	7.3%	0.3%	133	6.7%	210
IOs and IIOs[3]	2,999	205	11.3%	—%	227	5.2%	131
Total Agency RMBS	**$ 29,238**	**$ 27,847**		**98.4%**	**$ 27,453**		

As of December 31, 2019	Notional Amount ($M)	Bond Equivalent Value ($M)[4]	Implied CPR[5]
TBA Positions			
3.0%	$ 6,639	$ 6,734	13.2%
3.5%	—	—	26.8%
4.0%	(2,796)	(2,909)	50.2%
4.5%	—	—	49.8%
5.0%	3,584	3,831	51.0%
Net TBA position	**$ 7,427**	**$ 7,656**	

(1) Includes securities with implicit or explicit protection including lower loan balances (securities collateralized by loans less than or equal to $200K of initial principal balance), higher LTVs (securities collateralized by loans with greater than or equal to 80% LTV), certain geographic concentrations and lower FICO scores.
(2) Includes 15-year fixed, Hybrid ARMs, CMO and DUS pools.
(3) Represents market value of $136.2 million of IOs and $68.9 million of Agency Derivatives.
(4) Bond equivalent value is defined as the notional amount multiplied by market price. Accounted for as derivative instruments in accordance with GAAP.
(5) Implied TBA speeds from J.P. Morgan Data Query.

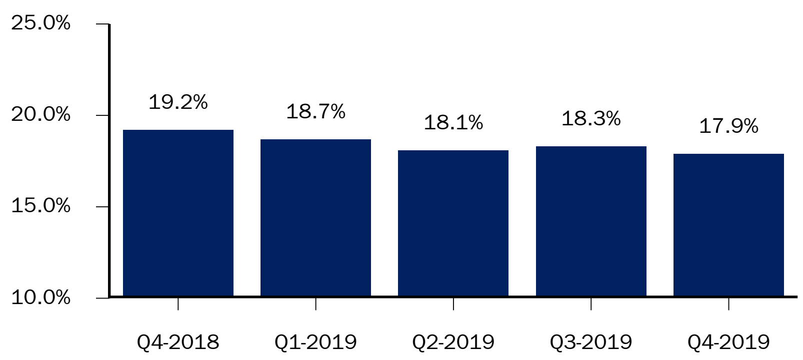
Rates: Mortgage Servicing Rights(1)

(dollars in millions)	Number of Loans	Unpaid Principal Balance	Fair Value	% Fannie Mae	Gross Weighted Average Coupon Rate	Weighted Average Loan Age (months)	Weighted Average Original FICO(2)	Weighted Average Original LTV	60+ Day Delinquencies	3-Month CPR	Net Servicing Fee (bps)
30-Year Fixed											
≤ 3.75%	106,097	$ 27,628	$ 330	71%	3.5%	47	771	71%	0.1%	10.5%	26.4
3.75% - 4.25%	241,274	59,173	672	65%	3.9%	39	761	76%	0.2%	16.1%	26.9
4.25% - 4.75%	194,543	43,612	455	65%	4.4%	33	745	79%	0.4%	26.4%	26.3
4.75% - 5.25%	95,468	19,780	207	66%	4.9%	26	732	80%	0.5%	32.9%	28.0
> 5.25%	34,524	5,987	61	71%	5.5%	24	709	80%	1.0%	30.8%	30.8
	671,906	156,180	1,725	66%	4.2%	37	753	77%	0.3%	21.4%	26.9
15-Year Fixed											
≤ 2.75%	2,325	465	4	81%	2.6%	46	778	60%	—%	8.6%	26.1
2.75% - 3.25%	39,977	6,894	63	80%	2.9%	48	772	62%	0.1%	11.2%	25.8
3.25% - 3.75%	40,052	6,311	61	74%	3.4%	40	760	65%	0.1%	15.0%	27.6
3.75% - 4.25%	21,243	2,990	30	64%	3.9%	32	747	66%	0.2%	19.2%	29.4
> 4.25%	11,644	1,423	14	62%	4.5%	23	734	67%	0.2%	24.8%	31.4
	115,241	18,083	172	74%	3.4%	40	761	64%	0.1%	15.0%	27.5
Total ARMs	6,323	1,619	12	70%	3.6%	44	762	66%	0.3%	27.3%	25.2
Total Portfolio	793,470	$ 175,882	$ 1,909	67%	4.1%	37	754	75%	0.3%	20.8%	27.0

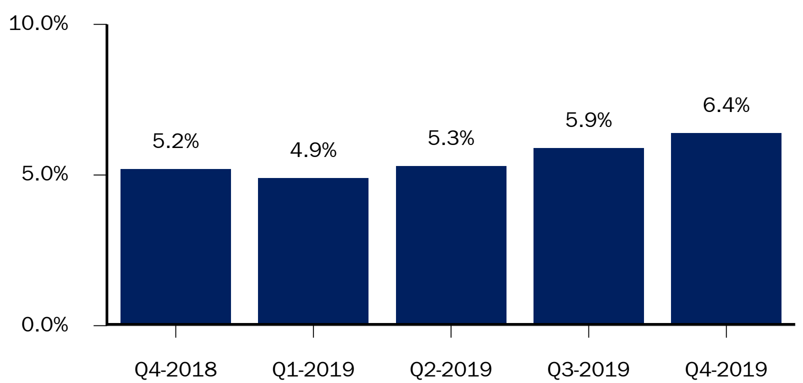
(1) Excludes residential mortgage loans for which the company is the named servicing administrator.
(2) FICO represents a mortgage industry accepted credit score of a borrower.

Credit Metrics

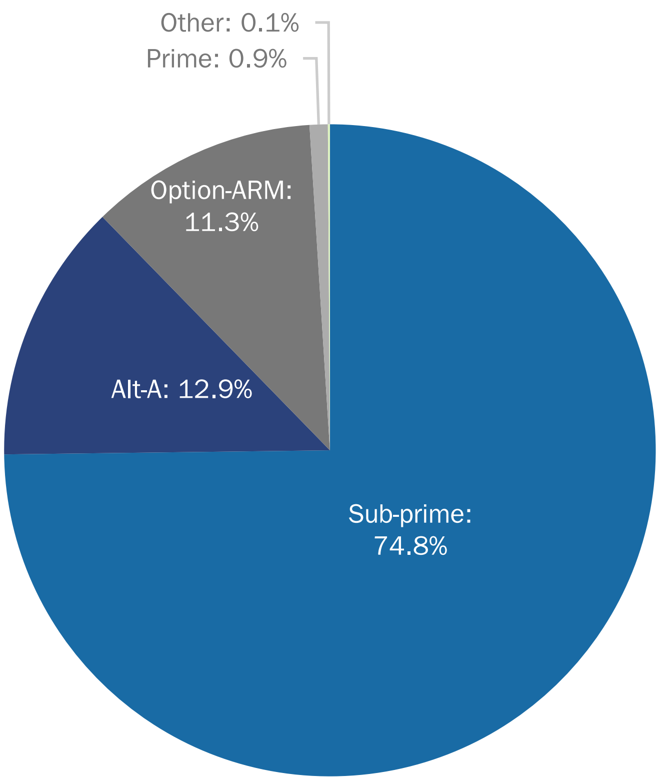
NON-AGENCY 60+ DAY DELINQUENCIES



NON-AGENCY CPR



NON-AGENCY PORTFOLIO COMPOSITION



Credit: Non-Agency Securities

As of December 31, 2019	Senior Bonds	Mezzanine Bonds	Total P&I
Portfolio characteristics:			
Carrying value ($M)	$ 3,073.1	$ 480.8	$ 3,553.9
% of non-Agency portfolio	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 market price[(2)]	$ 63.21	$ 75.50	$ 64.63
Collateral attributes:			
Weighted average loan age (months)	160	167	161
Weighted average current loan size ($K)	$ 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[(3)]	1.9%	8.1%	2.8%
3-Month CPR[(4)]	6.1%	8.5%	6.4%
3-Month CDR	5.0%	4.5%	4.9%
3-Month severity	48.6%	33.2%	46.6%
Cumulative loss	36.3%	21.9%	34.3%

(1) Weighted average purchase price utilized carrying value for weighting purposes. If current face were utilized for weighting purposes, the weighted average purchase price for senior, mezzanine and total non-Agency securities, excluding our non-Agency interest-only portfolio, would have been $59.53, $60.13 and $59.60, respectively.
(2) Weighted average market price utilized current face for weighting purposes.
(3) Average credit enhancement remaining on our non-Agency portfolio, which is the average amount of protection available to absorb future credit losses due to defaults on the underlying collateral.
(4) 3-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.

Financing

$ in millions							
Outstanding Borrowings and Maturities[1]	Repurchase Agreements	FHLB Advances	Revolving Credit Facilities	Term Notes Payable	Convertible Notes	Total Outstanding Borrowings	Percent (%)
Within 30 days	$ 5,305.9	$ 160.0	$ —	$ —	$ —	$ 5,465.9	18.0%
30 to 59 days	6,300.4	—	—	—	—	6,300.4	20.8%
60 to 89 days	6,687.3	—	—	—	—	6,687.3	22.0%
90 to 119 days	4,740.2	—	—	—	—	4,740.2	15.6%
120 to 364 days	6,113.7	—	—	—	—	6,113.7	20.2%
One to three years	—	—	300.0	—	284.9	584.9	1.9%
Three to five years	—	—	—	394.5	—	394.5	1.3%
Five to ten years	—	—	—	—	—	—	—%
Ten years and over[2]	—	50.0	—	—	—	50.0	0.2%
	$ 29,147.5	$ 210.0	$ 300.0	$ 394.5	$ 284.9	$ 30,336.9	100.0%

Collateral Pledged for Borrowings[3]	Repurchase Agreements[4]	FHLB Advances	Revolving Credit Facilities[4]	Term Notes Payable	Convertible Notes	Total Collateral Pledged	Percent (%)
Available-for-sale securities, at fair value	$ 29,575.9	$ 226.5	$ —	$ —	n/a	$ 29,802.4	94.8%
Derivative assets, at fair value	68.9	—	—	—	n/a	68.9	0.2%
Mortgage servicing rights, at fair value	530.2	—	449.5	575.1	n/a	1,554.8	5.0%
	$ 30,175.0	$ 226.5	$ 449.5	$ 575.1	n/a	$ 31,426.1	100.0%

(1) Weighted average of 3.9 months to maturity.
(2) Includes FHLB advances of $50 million with original maturities of 20 years.
(3) Excludes FHLB membership and activity stock totaling $12.5 million.
(4) Repurchase agreements and/or revolving credit facilities secured by MSR may be over-collateralized due to operational considerations.

Interest Rate Swaps

INTEREST RATE SWAPS

Maturities		Notional Amounts ($B)	Average Fixed Pay Rate	Average Receive Rate	Average Maturity Years
Payers					
2020	$	3.6	1.806%	1.937%	0.8
2021		15.8	1.681%	1.910%	1.5
2022		2.6	1.911%	1.901%	2.7
2023		0.2	3.057%	1.910%	3.9
2024 and after		8.7	2.224%	1.935%	7.2
	$	30.9	1.878%	1.921%	3.1

Maturities		Notional Amounts ($B)	Average Pay Rate	Average Fixed Receive Rate	Average Maturity (Years)
Receivers					
2020	$	0.3	1.953%	2.258%	0.1
2021		0.9	1.894%	2.516%	1.1
2022		—	—%	—%	—
2023		—	—%	—%	—
2024 and after		7.6	1.937%	2.232%	8.6
	$	8.8	1.933%	2.262%	7.6

Interest Rate Swaptions

	Option				Underlying Swap			
Swaption	**Expiration**	**Cost ($M)**	**Fair Value ($M)**	**Average Months to Expiration**	**Notional Amount ($M)**	**Average Pay Rate**	**Average Receive Rate**	**Average Term (Years)**
Purchase Contracts:								
Payer	<6 Months	$ 24.7	$ 16.1	3.2	$ 7,525	2.27%	3M LIBOR	10.0
Total Payer		$ 24.7	$ 16.1	3.2	$ 7,525	2.27%	3M LIBOR	10.0
Receiver	<6 Months	$ 4.1	$ 0.3	1.1	$ 500	3M LIBOR	1.55%	10.0
Total Receiver		$ 4.1	$ 0.3	1.1	$ 500	3M LIBOR	1.55%	10.0
Sale Contracts:								
Receiver	<6 Months	$ (20.8)	$ (8.6)	3.2	$ (6,768)	3M LIBOR	1.28%	10.0
Total Receiver		$ (20.8)	$ (8.6)	3.2	$ (6,768)	3M LIBOR	1.28%	10.0


TWO HARBORS
Investment Corp.
A Pine River Capital Managed Company