Third Quarter 2020
Earnings Call

NOVEMBER 5, 2020

TWO HARBORS
Investment Corp.

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, 2019, 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; the ongoing impact of the COVID-19 pandemic, and the actions taken by federal and state governmental authorities and GSEs in response, on the U.S. economy, financial markets and our target assets; 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 decision to terminate our management agreement with PRCM Advisers LLC and the pending litigation related thereto; 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.

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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.

Executive Overview

Strong Performance From Agency Plus MSR Strategy

Quarterly Summary

- Reported book value of $7.37 per common share, representing a 12.1% quarterly return on book value; excluding the $0.51 reversal of the previously accrued management agreement termination fee, quarterly return on book value would have been 4.5%[(1)]
- Generated Comprehensive Income of $219.2 million, representing an annualized return on average common equity of 45.6%
- Reported Core Earnings of $75.6 million, or $0.28 per weighted average basic common share[(2)]
- Declared a third quarter common stock dividend of $0.14 per share
- Continued strength in MSR flow-sale program; settled on $14.5 billion unpaid principal balance (UPB) of MSR through these arrangements
- Strengthened liquidity position by closing a $200 million financing facility for servicing advance receivables and a $100 million financing facility for MSR
- Experienced reduced forbearance rates; 5.0% of our MSR portfolio by loan count was in forbearance and 3.6% by loan count in forbearance and not current at September 30, 2020
- Completed transition to self-management after the termination of the management agreement on August 14, 2020

Fourth Quarter Update

- Settled on $14.5 billion UPB of MSR in three separate bulk transactions

(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 book value as of the beginning of the period.

(2) Core Earnings is a non-GAAP measure. Please see Appendix slide 20 for a definition of Core Earnings and a reconciliation of GAAP to non-GAAP financial information.

Agency + MSR Advantage

DIFFERENTIATED STRATEGY

- Portfolio constructed by pairing Agency MSR with Agency RMBS
- Continue to believe that this Agency plus MSR strategy has a higher return potential with lower mortgage spread risk
- Expect to continue to grow MSR holdings through strategic partnerships with servicers and originators

FOUNDATIONS OF TWO HARBORS' SUCCESS

UNIQUE STRATEGY OF PAIRING AGENCY MSR WITH AGENCY RMBS	ROBUST AND SOPHISTICATED RISK MANAGEMENT PRACTICES
DEDICATED TO STOCKHOLDER ENGAGEMENT AND TRANSPARENCY	COMMITTED TO HIGHEST STANDARDS OF CORPORATE GOVERNANCE

Book Value Summary

(Dollars in millions, except per share data)	Q3-2020 Book Value	Q3-2020 Book Value per share	YTD-2020 Book Value	YTD-2020 Book Value per share
Beginning common stockholders' equity	**$ 1,834.6**	**$ 6.70**	**$ 3,969.2**	**$ 14.54**
GAAP Net Income (Loss):				
Core Earnings, net of tax[1]	94.5		185.6	
Dividend declaration - preferred	(18.9)		(56.9)	
Core Earnings attributable to common stockholders, net of tax[1]	75.6		128.7	
Realized and unrealized gains and losses, net of tax	(32.4)		(2,020.8)	
Restructuring Charges	139.8		(6.0)	
Other comprehensive income, net of tax	36.2		30.9	
Common stock dividends declared	(38.4)		(90.3)	
Other	2.9		7.5	
Repurchases of common stock	—		(1.1)	
Issuance of common stock, net of offering costs	0.1		0.3	
Ending common stockholders' equity	$ 2,018.4	$ 7.37	$ 2,018.4	$ 7.37
Total preferred stock liquidation preference	1,001.3		1,001.3	
Ending total equity	$ 3,019.7		$ 3,019.7	

- Book value of $7.37 per common share, represented a 12.1% quarterly return on book value. Excluding the $0.51 reversal of the previously accrued management agreement termination fee, quarterly return on book value would have been 4.5%[2]

(1) Core Earnings is a non-GAAP measure. Please see Appendix slide 20 for a definition of Core Earnings and a reconciliation of GAAP to non-GAAP financial information.
(2) 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 book value as of the beginning of the period.

Core Earnings Review[1]

($ in millions, except per share data)	Q2-2020	Q3-2020	Variance ($)
Interest income	$ 107.3	$ 89.7	$ (17.6)
Interest expense	62.1	29.2	32.9
Net interest income	45.2	60.5	15.3
Servicing income, net of amortization on MSR	51.0	42.2	(8.8)
Gain (loss) on swaps and swaptions	(56.3)	0.8	57.1
Gain on other derivatives	11.9	32.9	21.0
Other	0.1	0.1	—
Total other income	6.7	76.0	69.3
Expenses	46.8	43.5	3.3
Provision for income taxes	0.6	(1.5)	2.1
Core Earnings[1]	**4.5**	**94.5**	**90.0**
Dividends on preferred stock	19.0	18.9	0.1
Core Earnings attributable to common stockholders[1]	**$ (14.5)**	**$ 75.6**	**$ 90.1**
Basic weighted average Core EPS	**$ (0.05)**	**$ 0.28**	
Core Earnings annualized return on average common equity	**(3.1)%**	**15.7 %**	

- Third quarter Core Earnings results impacted by:
  - Net interest income increased from $45.2 million to $60.5 million due to favorable repo terms on lower LIBOR offset by higher Agency RMBS prepayments and rotation to lower coupon pools
  - Interest spread on swaps improved from -$56.3 million in Q2 to +$0.8 million in Q3 due to re-strike of swap position in the second quarter to market rates
  - Expenses declined from $46.8 million to $43.5 million primarily due to termination of the management agreement on August 14th and transition to self-management

(1) Core Earnings is a non-GAAP measure. Please see Appendix slide 20 for a definition of Core Earnings and a reconciliation of GAAP to non-GAAP financial information.

Portfolio Yield

LOWER PORTFOLIO YIELD OFFSET BY LOWER COST OF FUNDS

- Lower portfolio yield due to higher Agency RMBS prepayments, rotation to lower coupon pools, and higher servicing expense and lower servicing income due to MSR portfolio runoff and forbearances
- Lower cost of funds due to favorable repo rolls and re-strike of swap position in June

	Realized Q2-2020	Realized Q3-2020	As of Sept. 30, 2020(1)
Annualized portfolio yield(2)	2.84 %	2.42 %	2.27 %
Annualized cost of funds(3)	2.61 %	0.64 %	0.49 %
Annualized net yield for aggregate portfolio	0.23 %	1.78 %	1.78 %

CORE EARNINGS AND PORTFOLIO YIELDS EXCEED EXPECTED RETURNS IN THE NEAR TERM

- Expect annualized net yield for the aggregate portfolio to decline to market yields over time

(1) Represents those on the portfolio held as of September 30, 2020 and projected over the remaining life of the investments. Assumes a static portfolio and, as a result, does not represent a projection of future yields.
(2) Includes interest income on RMBS and servicing income net of servicing expenses and amortization on MSR.
(3) Cost of funds includes interest spread income/expense associated with the portfolio's interest rate swaps and caps.

Financing Profile

ECONOMIC DEBT-TO-EQUITY[1]

- 7.7x at September 30, 2020, compared to 7.4x at June 30, 2020
- Average economic debt-to-equity of 7.6x in the third quarter, compared to 6.8x in the second quarter

DIVERSE FINANCING PROFILE

AGENCY RMBS

- Outstanding repurchase agreements of $16.4 billion with 20 counterparties
- Repo markets have been stable and term markets have redeveloped

MORTGAGE SERVICING RIGHTS

- Outstanding borrowings of $274.8 million under bilateral MSR financing facilities
- $400 million of outstanding 5-year MSR term notes[2]
- Committed total capacity of $850 million under MSR financing alternatives, of which $175.2 million was unused
- Closed a $200 million financing facility for servicing advance receivables and a $100 million financing facility for MSR

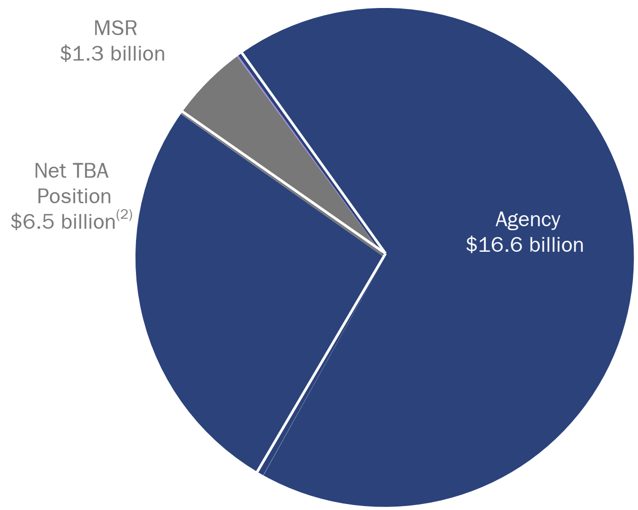
(1) Defined as total borrowings to fund RMBS, MSR and Agency Derivatives, plus the implied debt on net TBA positions, divided by total equity.
(2) Excludes deferred debt issuance costs.

Quarterly Activity and Portfolio Composition

PORTFOLIO COMPOSITION[1]

$24.4 billion portfolio

Includes $17.9 billion settled positions



PERFORMANCE COMMENTARY

- Return on book value of 4.5%[3] excluding the reversal of previously accrued management agreement termination fee
- MSR performed as expected by offsetting mortgage spread risk; estimate MSR offset Agency RMBS by (3%) to (4%)[4]

PORTFOLIO ACTIVITY

- Increased current coupon TBA notional amount by $6.0 billion to capitalize on roll specialness; sold $3.0 billion of other TBA coupons
- Settled $14.5 billion UPB MSR through flow-sale arrangements

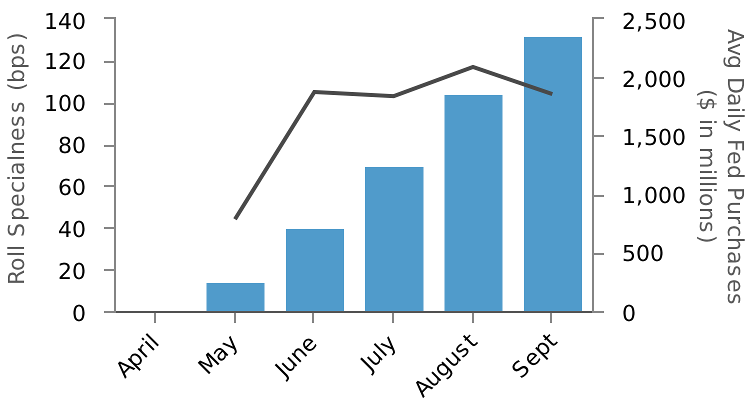
(1) For additional detail on the portfolio, see Appendix slides 24-26.
(2) Represents bond equivalent value of TBA position. Bond equivalent value is defined as notional amount multiplied by market price. Accounted for as derivative instruments in accordance with GAAP.
(3) Return on book value is defined 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 book value as of the beginning of the period.
(4) Represents estimated book value impact by MSR. Attribution is based on results with inputs from our internal investment professionals.

Special Topic: TBA Roll Specialness

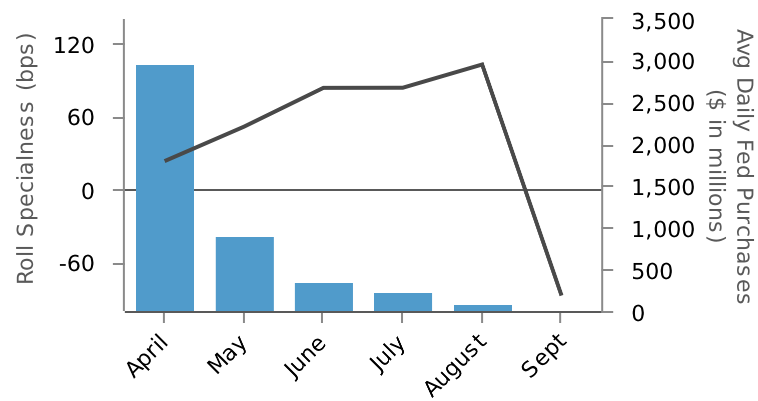
DYNAMICS OF ROLL SPECIALNESS

- Economics of holding TBA is roughly equal to that of a cash RMBS pool
- Large non-economic buyers such as the Fed can distort these supply/demand dynamics by taking delivery and driving up prices in the front month
- Simultaneously, low rates and large origination volumes put pressure on back month TBA as originators sell in order to hedge
- Larger-than-normal differences between front and back month TBA result in higher income
- When the roll income is greater than the income on cash RMBS pool, the roll is “special”

ROLL SPECIALNESS (2% COUPON)



ROLL SPECIALNESS (3% COUPON)



Average Daily Fed Purchases[(1)] (RHS) — Average Specialness[(2)] (LHS)

(1) Bank of America Global Research

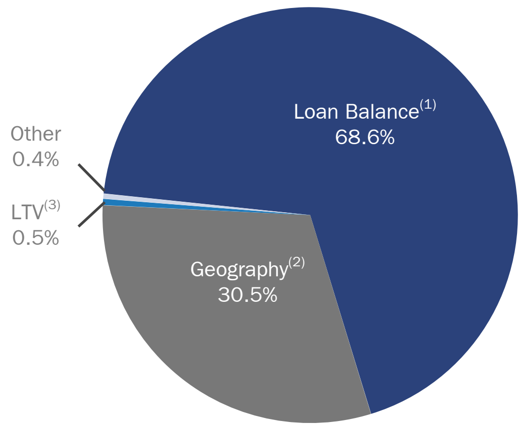
(2) J.P. Morgan Beta MBS Pricing and Analytics Package, as of September 30, 2020.

Specified Pools

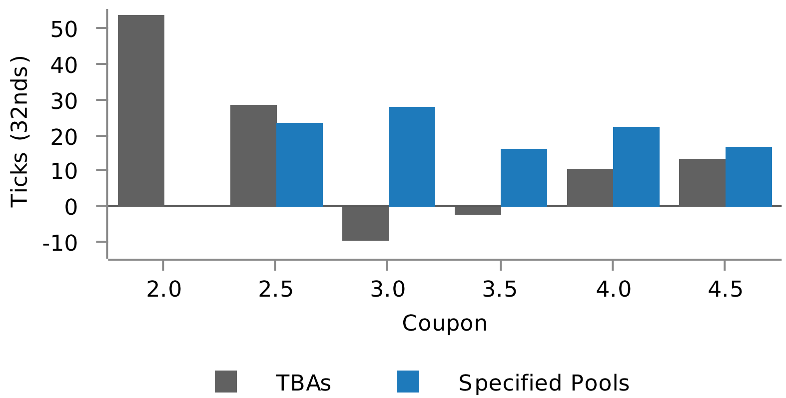
SPECIFIED POOL PERFORMANCE

- Specified pools outperformed TBA on a relative basis in nearly every coupon
- Specified pool prepayment speeds continue to be slower and more stable than TBA speeds
- Expect that while prepayments may remain elevated in specified pools, any increase may be modest compared to generic collateral

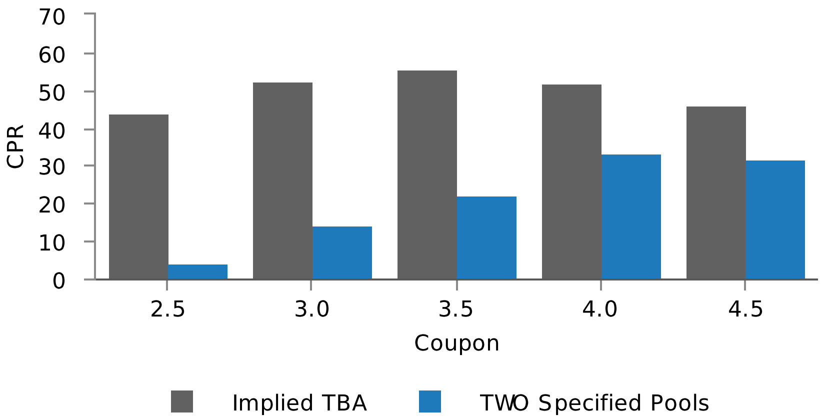
SPECIFIED POOL PORTFOLIO



QUARTERLY PERFORMANCE[4]



SPECIFIED POOL PREPAYMENT SPEEDS[5]



(1) Securities collateralized by loans less than or equal to $200 thousand of initial principal balance.
(2) Securities collateralized by loans from certain geographic concentrations.
(3) Securities collateralized by loans with greater than or equal to 80% LTV.
(4) J.P. Morgan Beta MBS Pricing and Analytics Package, as of September 30, 2020.
(5) Non-specified pool speeds from J.P. Morgan Beta MBS Pricing and Analytics Package, as of September 30, 2020.

Mortgage Servicing Rights

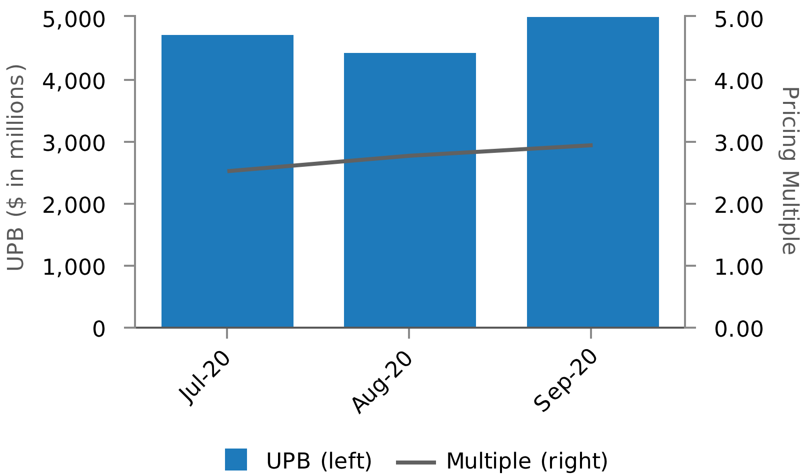
MSR PORTFOLIO ACTIVITY

- Expanded MSR flow-sale program
  - Experienced three of the four highest months of lock volume by UPB since program inception
  - October lock volume projected to be in excess of $6 billion UPB
- Experienced $21.6 billion UPB runoff in the third quarter
- MSR speeds slower than generic speeds due to a majority of portfolio having some form of seasoning or prepayment protection
- Settled on $14.5 billion UPB of MSR in three separate bulk transactions in the fourth quarter

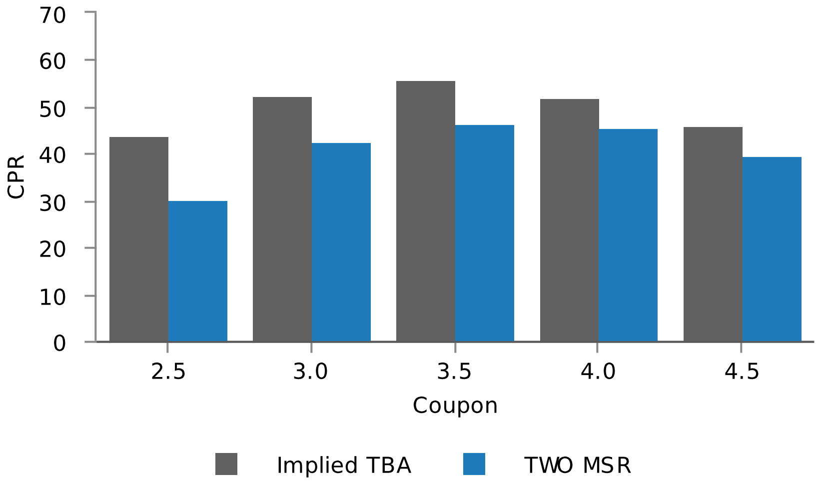
MSR PORTFOLIO[1]

Fair value ($ millions)	$ 1,257.5
UPB ($ millions)	$ 163,993.9
Gross weighted average coupon rate	3.9%
Weighted average original FICO[2]	755
Weighted average original loan-to-value	74%
60+ day delinquencies	4.0%
Net servicing fee (basis points)	27.2
Weighted average loan age (months)	38
% Fannie Mae	65%

FLOW PROGRAM LOCK ACTIVITY



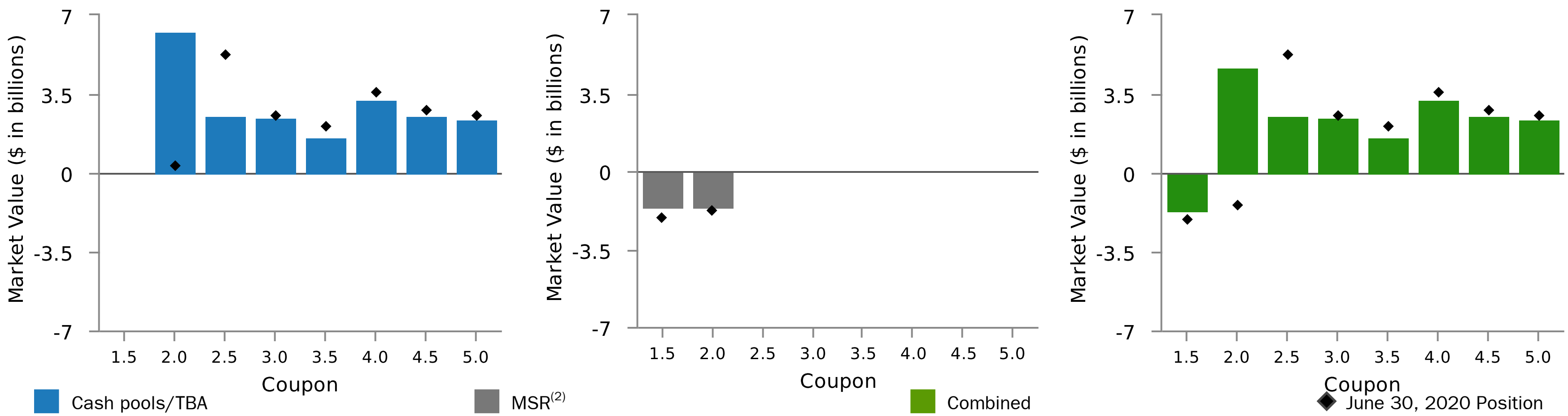
MSR PREPAYMENT SPEEDS[3]



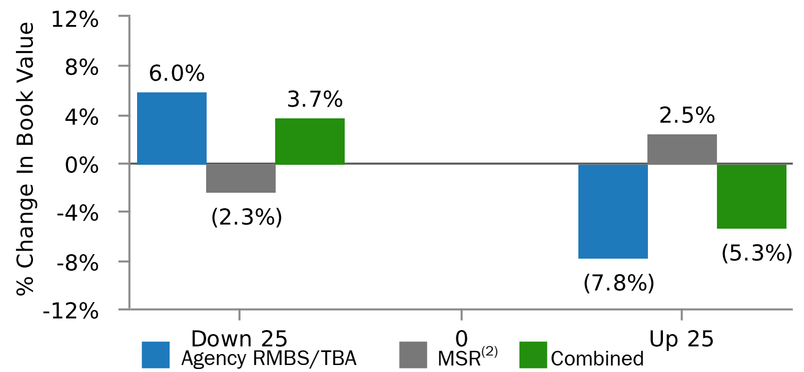
(1) Based on the loans underlying the MSR reported by subservicers on a month lag, adjusted for current month purchases.
(2) FICO represents a mortgage industry accepted credit score of a borrower.
(3) J.P. Morgan Beta MBS Pricing and Analytics Package and Two Harbors portfolio, as of September 30, 2020.

Effective Coupon Positioning

EFFECTIVE COUPON POSITIONING[1]



BOOK VALUE EXPOSURE TO CHANGES IN SPREAD[3]



COMMENTARY

- MSR has similar risks to a short pools/TBA position in 1.5% and 2.0% coupons
- Portfolio long 2.0% through 5.0% coupons
- In a 25 basis point spread widening scenario, potential book value decrease of (5.3%)

Note: Sensitivity data as of September 30, 2020. 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.

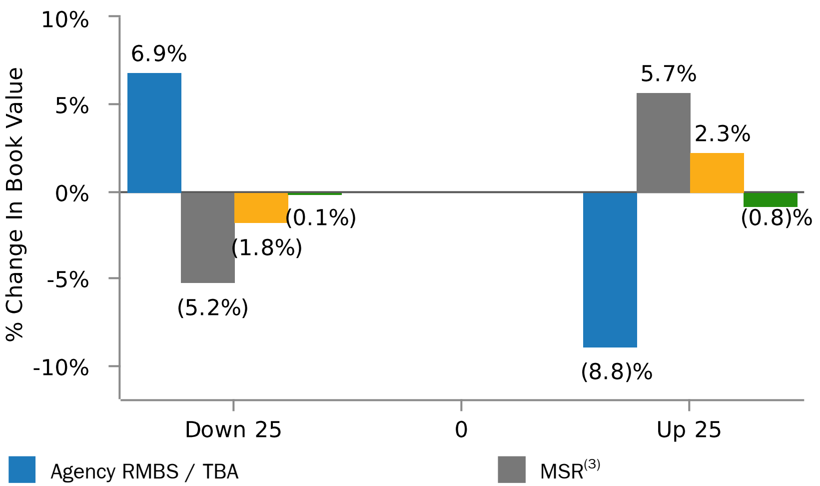
(1) The effective coupon positioning for MSR is an internally calculated exposure that represents the current coupon equivalents of our MSR assets. Data as of September 30, 2020.

(2) Includes the effect of unsettled MSR.

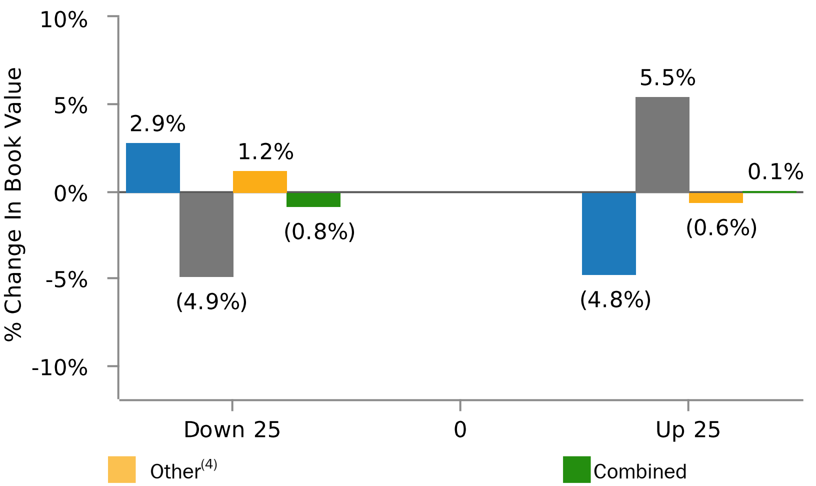
(3) Represents estimated change in common book value for theoretical parallel shifts in spreads.

Risk Positioning

BOOK VALUE EXPOSURE TO CHANGES IN RATES[1]



BOOK VALUE EXPOSURE TO CHANGES IN YIELD CURVE[2]



COMMENTARY

- Exposure to rates remains low, in line with historical positioning
- MSR position has more negative duration than RMBS position
- In a 25 basis point parallel shift up in rates, potential book value decrease of (0.8%)
- In a 25 basis point non-parallel shift up in the yield curve, potential book value increase of 0.1%

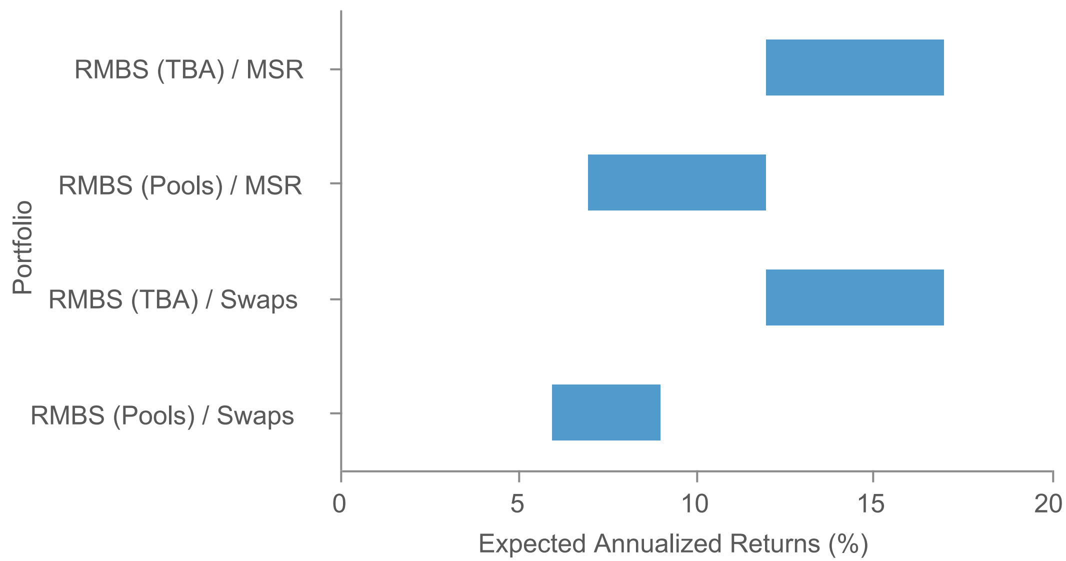
Note: Sensitivity data as of September 30, 2020. The above scenarios are provided for illustration purposes only and is not necessarily indicative of Two Harbors' financial condition and operating results, nor is it necessarily indicative of the financial condition or results of operations that may be expected for any future period or date.
(1) Represents estimated change in common book value for theoretical parallel shift in interest rates.
(2) Represents estimated change in common book value for theoretical non-parallel shifts in the yield curve. Analysis uses a +/- 25 basis point shift in 10 year rates while holding near term rates constant.
(3) Includes the effect of unsettled MSR.
(4) Other includes all other derivative assets and liabilities and borrowings. Other excludes TBAs and Agency derivatives, which are included in the RMBS/TBA category.

Two Harbors Outlook

OPPORTUNITY SET IN OUR TARGET ASSETS REMAINS ATTRACTIVE TODAY

- Estimate returns for Agency RMBS / swaps in mid-to-high single digits
- Higher returns available in the near term in current coupon TBA in the mid teens
- Estimate returns for Agency RMBS / flow MSR in low-to-mid teens

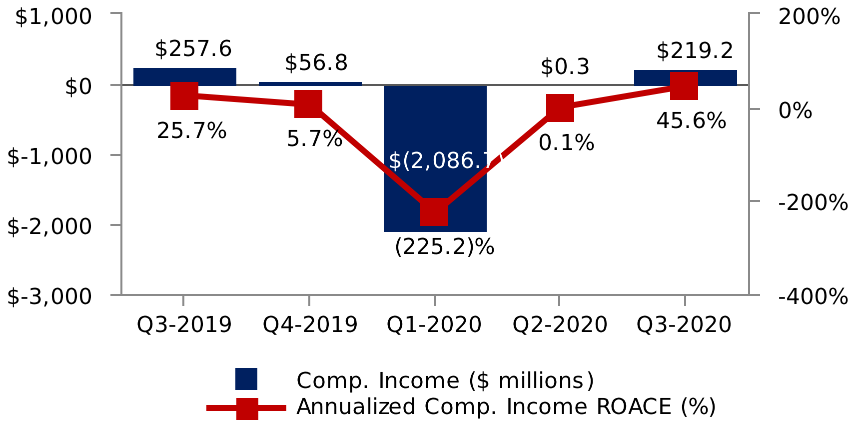
MARKET OUTLOOK



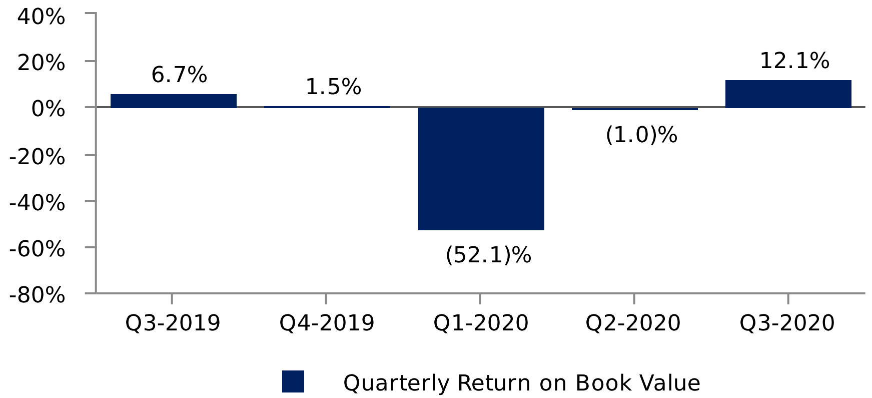
Appendix

Financial Performance

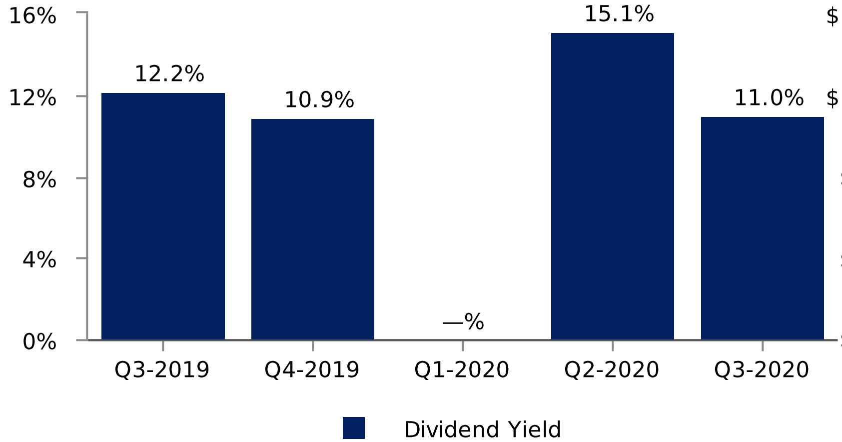
COMPREHENSIVE INCOME (LOSS)



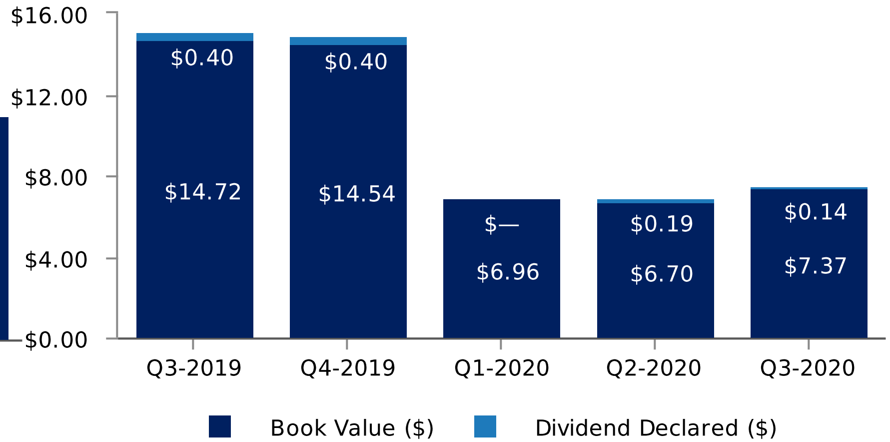
QUARTERLY RETURN ON BOOK VALUE[1]



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.

Q3-2020 Operating Performance

	Q3-2020			
(In millions, except for per common share data)	Core Earnings[1]	Realized Gains (Losses)	Unrealized MTM	Total
Interest income	$ 89.7	$ —	$ —	$ 89.7
Interest expense	29.2	—	—	29.2
Net interest income	60.5	—	—	60.5
Loss on investment securities	—	(8.9)	(0.2)	(9.1)
Servicing income	99.1	—	—	99.1
Loss on servicing asset	(56.9)	—	(55.9)	(112.8)
Gain on interest rate swaps and swaptions	0.8	—	0.6	1.4
Gain (loss) on other derivative instruments	32.9	85.8	(53.1)	65.6
Other income	0.1	—	—	0.1
Total other income (loss)	76.0	76.9	(108.6)	44.3
Management fees & other expenses	43.5	(132.4)	—	(88.9)
Net income (loss) before income taxes	93.0	209.3	(108.6)	193.7
Benefit from Income taxes	(1.5)	(0.2)	(6.5)	(8.2)
Net income (loss)	**94.5**	**209.5**	**(102.1)**	**201.9**
Dividends on preferred stock	18.9	—	—	18.9
Net income (loss) attributable to common stockholders	**$ 75.6**	**$ 209.5**	**$ (102.1)**	**$ 183.0**
Weighted average earnings (loss) per basic common share	$ 0.28	$ 0.77	$ (0.38)	$ 0.67

(1) Core Earnings is a non-GAAP measure. Please see Appendix slide 20 of this presentation for a definition of Core Earnings and a reconciliation of GAAP to non-GAAP financial information.

Q2-2020 Operating Performance

(In millions, except for per common share data)	Q2-2020 Core Earnings[1]	Q2-2020 Realized Gains (Losses)	Q2-2020 Unrealized MTM	Q2-2020 Total
Interest income	$ 107.3	$ —	$ —	$ 107.3
Interest expense	62.1	—	—	62.1
Net interest income	45.2	—	—	45.2
Gain (loss) on investment securities	—	53.6	(0.1)	53.5
Servicing income	112.9	—	—	112.9
Loss on servicing asset	(61.9)	(0.9)	(176.0)	(238.8)
(Loss) gain on interest rate swaps and swaptions	(56.3)	(747.1)	756.5	(46.9)
Gain (loss) on other derivative instruments	11.9	(34.2)	98.9	76.6
Other income	0.1	—	—	0.1
Total other income (loss)	6.7	(728.6)	679.3	(42.6)
Management fees & other expenses	46.8	147.5	—	194.3
Net income (loss) before income taxes	5.1	(876.1)	679.3	(191.7)
Income tax expense (benefit)	0.6	(0.1)	(18.7)	(18.2)
Net income (loss)	**4.5**	**(876.0)**	**698.0**	**(173.5)**
Dividends on preferred stock	19.0	—	—	19.0
Net (loss) income attributable to common stockholders	**$ (14.5)**	**$ (876.0)**	**$ 698.0**	**$ (192.5)**
Weighted average (loss) earnings per basic common share	$ (0.05)	$ (3.20)	$ 2.55	$ (0.70)

(1) Core Earnings is a non-GAAP measure. Please see Appendix slide 20 of this presentation for a definition of Core Earnings and a reconciliation of GAAP to non-GAAP financial information.

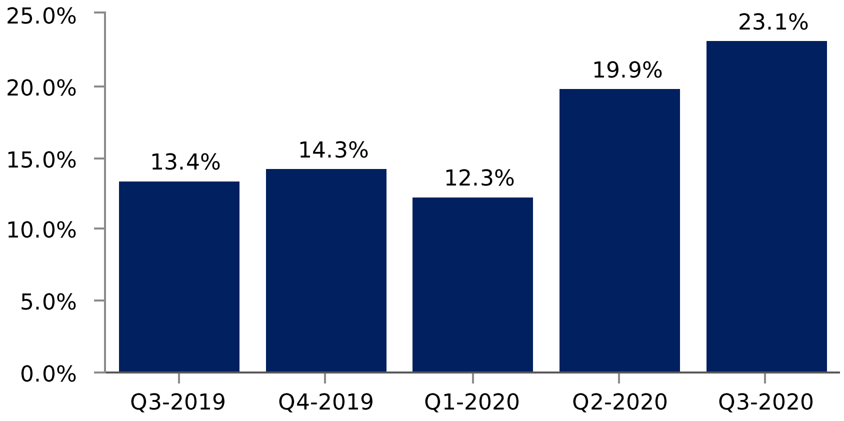
GAAP to Core Earnings Reconciliation[1]

Reconciliation of GAAP to non-GAAP Information (In thousands, except for per common share data)	Three Months Ended June 30, 2020	Three Months Ended September 30, 2020
Reconciliation of Comprehensive income to Core Earnings:		
Comprehensive income attributable to common stockholders	**$ 279**	**$ 219,180**
Adjustment for other comprehensive income attributable to common stockholders:		
Unrealized gain on available-for-sale securities	(192,794)	(36,216)
Net (loss) income attributable to common stockholders	**$ (192,515)**	**$ 182,964**
Adjustments for non-core earnings:		
Realized (gain) loss on securities	(54,795)	1,725
Unrealized loss on securities	110	281
Provision for credit losses	1,193	7,101
Realized and unrealized losses on mortgage servicing rights	176,916	55,858
Realized loss on termination or expiration of swaps and swaptions	747,055	—
Unrealized gain on interest rate swaps, caps and swaptions	(756,464)	(583)
Gain on other derivative instruments	(64,744)	(32,696)
Other loss	61	5
Change in servicing reserves	39	898
Non-cash equity compensation expense	2,398	2,857
Other nonrecurring expenses	—	3,664
Change in restructuring charges	145,069	(139,788)
Net benefit from income taxes on non-Core Earnings	(18,814)	(6,715)
Core Earnings attributable to common stockholders[1]	$ (14,491)	$ 75,571
Weighted average basic common shares	273,604	273,706
Core Earnings per weighted average basic common share	$ (0.05)	$ 0.28

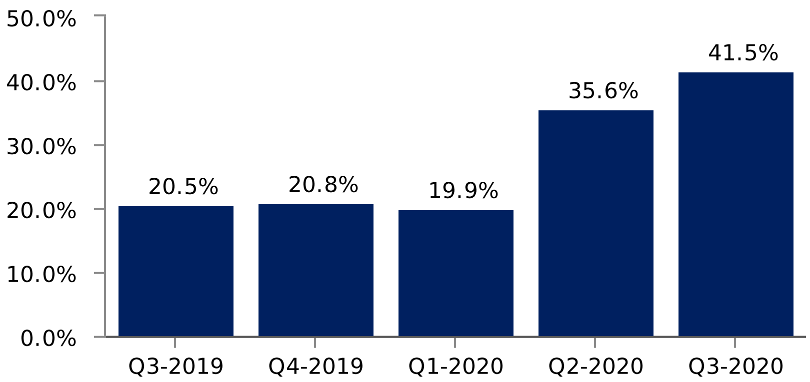
(1) Core Earnings is a non-U.S. GAAP measure that we define as comprehensive income (loss) attributable to common stockholders, excluding "realized and unrealized gains and losses" (impairment losses, provision for credit losses, realized and unrealized gains and losses on the aggregate portfolio, reserve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

Portfolio Metrics

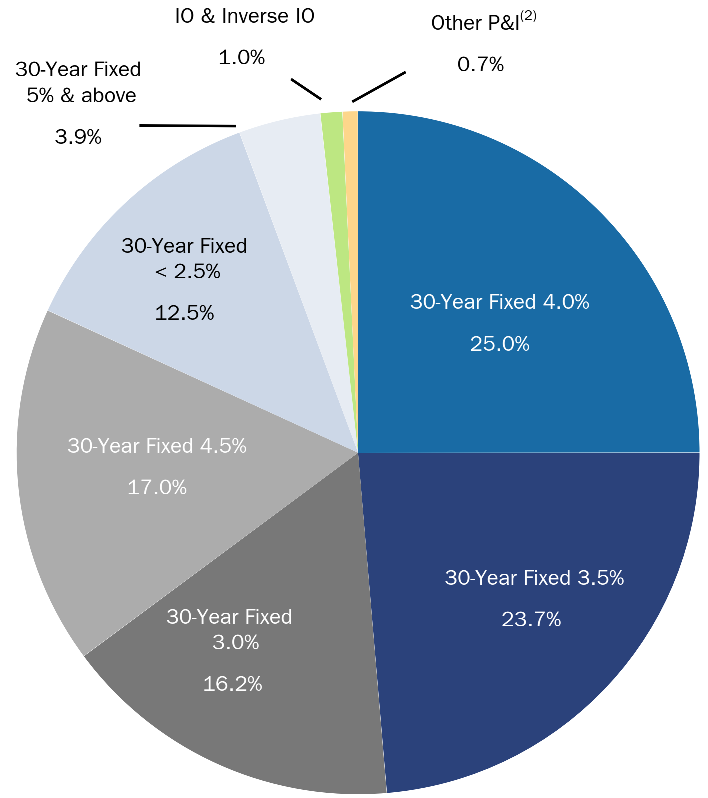
AGENCY RMBS CPR[1]



MSR CPR



AGENCY PORTFOLIO COMPOSITION



(1) Agency weighted average 3-month Constant Prepayment Rate (CPR) includes IIOs (or Agency Derivatives).
(2) Includes 15-year fixed, Hybrid ARMs, CMO and DUS pools.

Agency RMBS Portfolio

	Par Value ($ millions)	Market Value ($ millions)	Weighted Average CPR	% Prepay Protected[1]	Amortized Cost Basis ($ millions)	Gross Weighted Average Coupon	Weighted Average Age (Months)
30-Year fixed							
2.5% & below	$ 1,956	$ 2,080	3.0 %	100.0 %	$ 2,052	3.4 %	5
3.0%	2,496	2,690	14.7 %	100.0 %	2,575	3.7 %	11
3.5%	3,611	3,936	22.4 %	100.0 %	3,783	4.2 %	14
4.0%	3,773	4,161	31.8 %	100.0 %	3,929	4.6 %	34
4.5%	2,526	2,817	31.3 %	100.0 %	2,664	5.0 %	32
≥ 5.0%	574	647	29.9 %	98.5 %	609	5.8 %	61
	14,936	16,331	23.3 %	99.9 %	15,612	4.3 %	23
Other P&I[2]	104	119	11.0 %	— %	116	6.7 %	222
IOs and IIOs[3]	2,528	173	15.8 %	— %	175	4.6 %	145
Total Agency RMBS	$ 17,568	$ 16,623		98.2 %	$ 15,903		

	Notional Amount ($ millions)	Bond Equivalent Value ($ millions)[4]	Implied CPR[5]
TBA Positions			
2.5% & below	$ 6,839	$ 7,074	43.8 %
3.0%	—	—	52.5 %
3.5%	(2,003)	(2,112)	55.8 %
4.0%	(550)	(587)	52.2 %
4.5%	—	—	46.2 %
5.0%	1,950	2,136	43.4 %
Net TBA position	$ 6,236	$ 6,511	

(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 $105.9 million of IOs and $66.8 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 Beta MBS Pricing and Analytics Package, as of September 30, 2020.

Mortgage Servicing Rights Portfolio[1]

	Number of Loans	Unpaid Principal Balance	% 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%	144,020	$ 39,808	62%	3.4%	31	768	71%	1.8%	36.8%	26.5
3.75% - 4.25%	208,657	48,983	64%	3.9%	43	758	76%	3.8%	43.5%	27.6
4.25% - 4.75%	147,230	30,390	66%	4.4%	42	742	78%	6.1%	47.1%	26.6
4.75% - 5.25%	71,543	13,445	67%	4.9%	36	728	80%	8.2%	44.5%	27.8
> 5.25%	28,080	4,466	70%	5.5%	33	708	80%	10.4%	38.7%	30.9
	599,530	137,092	64%	4.0%	38	753	76%	4.4%	42.8%	27.2
15-Year Fixed										
≤ 2.75%	6,663	1,723	64%	2.5%	14	779	58%	0.3%	15.1%	25.5
2.75% - 3.25%	42,552	7,457	73%	2.9%	43	772	62%	1.5%	26.7%	26.2
3.25% - 3.75%	37,346	5,551	72%	3.4%	44	759	65%	2.6%	30.7%	27.7
3.75% - 4.25%	18,616	2,372	64%	3.9%	40	745	66%	3.6%	35.5%	29.4
> 4.25%	9,849	1,080	62%	4.5%	31	732	66%	3.6%	36.1%	31.3
	115,026	18,183	70%	3.3%	39	763	63%	2.1%	29.6%	27.3
Total ARMs	4,788	1,169	67%	3.5%	52	761	66%	4.6%	48.8%	25.3
Total Portfolio	719,344	$ 156,444	65%	3.9%	38	754	74%	4.1%	41.5%	27.2

(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.

Financing

$ in millions						
Outstanding Borrowings and Maturities[1]	Repurchase Agreements	Revolving Credit Facilities	Term Notes Payable	Convertible Notes	Total Outstanding Borrowings	Percent (%)
Within 30 days	$ 3,791.0	$ —	$ —	$ —	$ 3,791.0	21.9 %
30 to 59 days	3,920.4	—	—	—	3,920.4	22.6 %
60 to 89 days	—	—	—	—	—	— %
90 to 119 days	3,644.5	—	—	—	3,644.5	21.0 %
120 to 364 days	5,020.8	60.0	—	—	5,080.8	29.3 %
One to three years	—	214.8	—	285.9	500.7	2.9 %
Three to five years	—	—	395.3	—	395.3	2.3 %
	$ 16,376.7	$ 274.8	$ 395.3	$ 285.9	$ 17,332.7	100.0 %
Collateral Pledged for Borrowings	Repurchase Agreements	Revolving Credit Facilities[2]	Term Notes Payable	Convertible Notes	Total Collateral Pledged	Percent (%)
Available-for-sale securities, at fair value	$ 16,550.9	$ —	$ —	n/a	$ 16,550.9	93.8 %
Derivative assets, at fair value	66.8	—	—	n/a	66.8	0.4 %
Mortgage servicing rights, at fair value	—	485.9	539.2	n/a	1,025.1	5.8 %
	$ 16,617.7	$ 485.9	$ 539.2	n/a	$ 17,642.8	100.0 %

(1) Weighted average of 4.0 months to maturity.
(2) 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				
2022	$ 7.4	0.042 %	0.090 %	1.9
2023	2.3	0.023 %	0.090 %	2.7
2024 and after	1.5	0.257 %	0.090 %	6.7
	$ 11.2	0.067 %	0.090 %	2.7

Maturities	Notional Amounts ($B)	Average Pay Rate	Average Fixed Receive Rate	Average Maturity (Years)
Receivers				
2024 and after	$ 1.2	0.090 %	0.442 %	9.7
	$ 1.2	0.090 %	0.442 %	9.7

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	$ 5.8	$ 6.9	3.4	$ 3,000	1.23 %	SOFR	10.0
Receiver	<6 Months	$ 4.0	$ 3.8	3.4	$ 3,000	SOFR	0.23	10.0


TWO HARBORS
Investment Corp.