



Mortgage Servicing Rights (MSR) Primer

December 6, 2016



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, 2015, 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 successfully implement new strategies and to diversify our business into new asset classes; 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 successfully securitize or sell mortgage loans; 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; the state of commercial real estate markets and our ability to acquire or originate commercial real estate loans or related assets; 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.

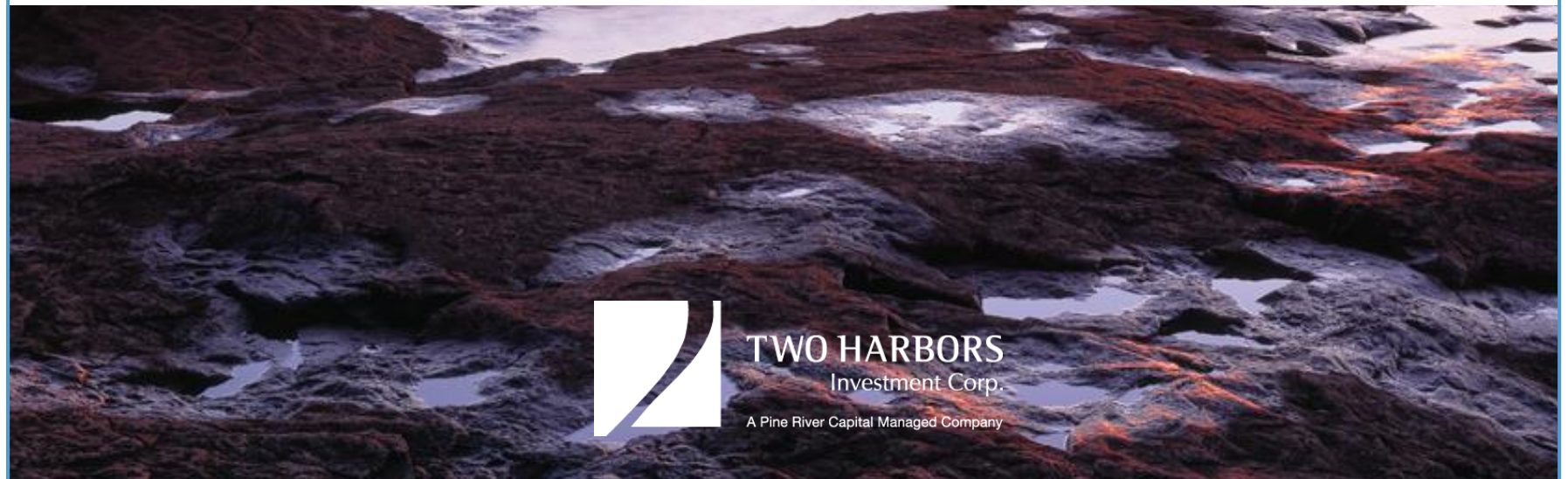
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Two Harbors Overview



TWO HARBORS
Investment Corp.

A Pine River Capital Managed Company



Two Harbors Investment Corp. Overview⁽¹⁾

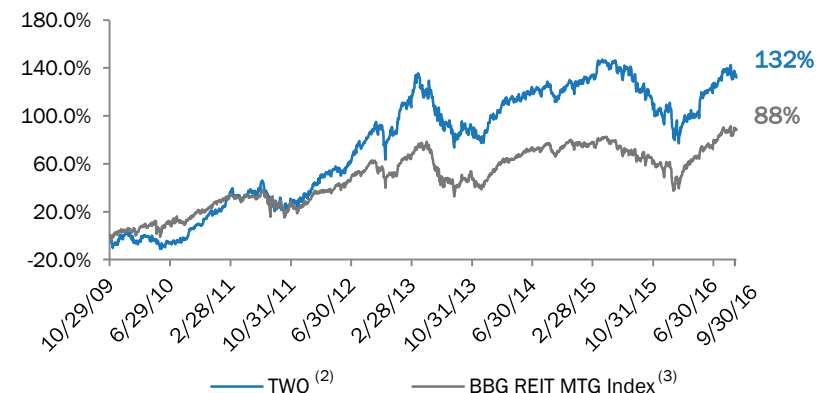
LEADING HYBRID MORTGAGE REIT FOCUSED ON DRIVING STRONG LONG-TERM RETURNS WHILE TAKING LESS RISK

OVERVIEW

- Equity market capitalization of approximately \$3.0 billion
- Portfolio of \$17.0 billion
- Target assets include Agency and non-Agency residential mortgage-backed securities (RMBS), MSR and commercial real estate assets
- Experienced management team with deep expertise and experience in managing mortgage credit, interest rate and prepayment risk

PROVEN STRATEGY

- Diversified business model takes advantage of evolving mortgage finance landscape
- Opportunistically allocate capital to drive long-term stockholder value
- Disciplined risk management drives high quality returns with lower volatility



1) Data as of September 30, 2016.

2) Two Harbors' total stockholder return is calculated for the period October 29, 2009 through September 30, 2016. Total stockholder return is defined as stock price appreciation including dividends. Source: Bloomberg

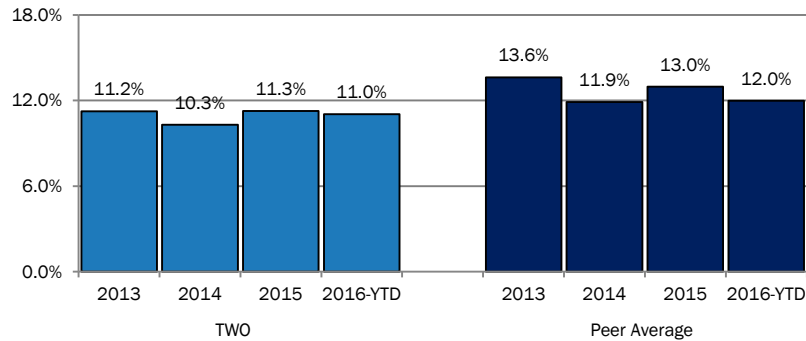
3) Bloomberg REIT Mortgage Index total stockholder return for the period October 29, 2009 through September 30, 2016. The Bloomberg REIT Mortgage Index tracks publicly traded REITs whose principal business consists of originating, servicing or investing in residential mortgage interests. The index uses a modified market capitalization weighted methodology, and components are reviewed quarterly for eligibility. Source: Bloomberg.



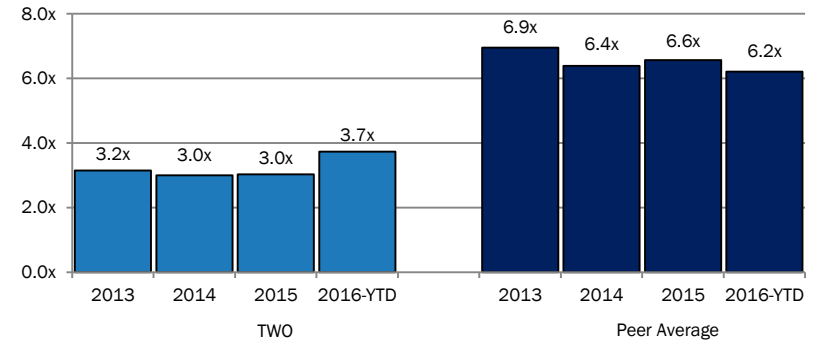
Attractive Returns With Lower Risk

SUPERIOR ASSET SELECTION AND RISK MANAGEMENT DRIVE RETURNS WITH LESS RISK

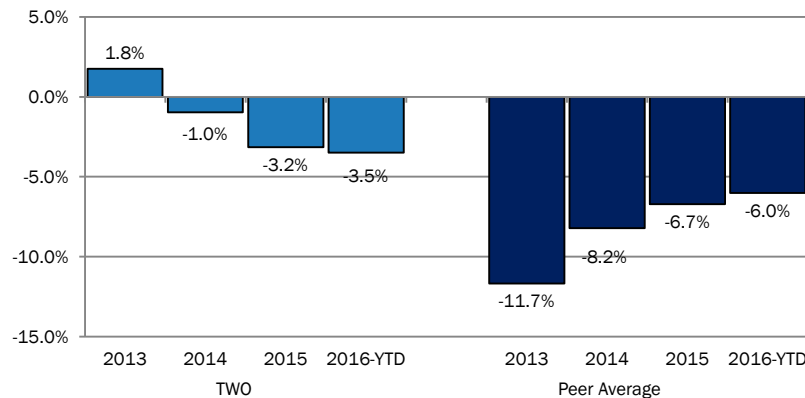
ATTRACTIVE & COMPARABLE DIVIDEND YIELD ⁽¹⁾



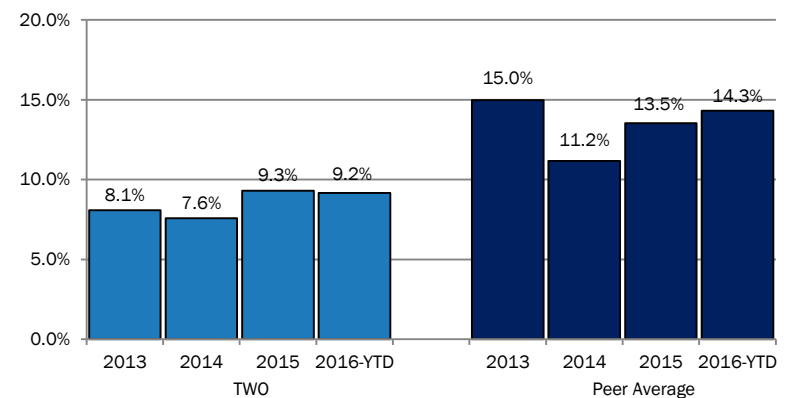
...WITH LOWER LEVERAGE ⁽²⁾...



...LESS INTEREST RATE RISK ⁽³⁾...



...AND LESS PREPAYMENT EXPOSURE ⁽⁴⁾



Note: Two Harbors and peer financial data for Dividend Yield, Leverage, Prepayment Risk and Interest Rate Exposure on this slide is based on available financial information as of September 30, 2016 as filed with the SEC. Peers include AGNC, ANH, ARR, CMO, CYS, IVR, MFA, NLY and HTS (financial information for HTS is included in peer financial data only for the periods ending prior to the second quarter of 2016).

1) Represents average of annualized yields on all quarterly cash dividends per respective fiscal year. Two Harbors' first quarter 2013 dividend yield used in annual average calculation was based on cash dividend of \$0.32 per share and does not include Silver Bay Realty Trust common stock distribution of \$1.01 per share. Annualized yields for each quarter are calculated by dividing annualized quarterly dividends by closing share price as of respective quarter-ends. Peer dividend data based on peer company press releases. Historical dividends may not be indicative of future dividend distributions. Our company ultimately distributes dividends based on its taxable income per share of common stock.

2) Represents average of debt-to-equity ratios for all reportable quarters per respective fiscal year. Debt-to-equity is defined as total borrowings to fund residential mortgage-backed securities (RMBS), residential mortgage loans held-for-sale, commercial real estate assets, MSR and Agency Derivatives divided by total equity.

3) Represents average of estimated change in equity value for theoretical +100bps parallel shift in interest rates for all reportable quarters per respective fiscal year. Change in equity market capitalization is adjusted for leverage.

4) Represents average of the constant prepayment rate (CPR) on Agency RMBS, including Agency Derivatives, for all reportable quarters per respective fiscal year.

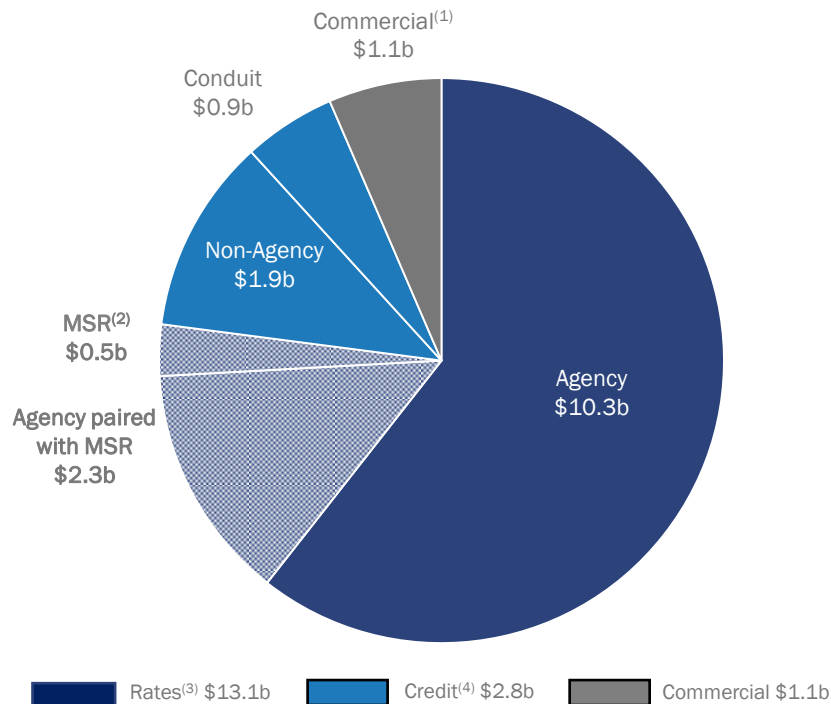


Two Harbors' Portfolio Composition

MSR PORTFOLIO COMPRISED OF HIGH QUALITY, NEW ISSUE, CONVENTIONAL MSR

TOTAL PORTFOLIO COMPOSITION

\$17.0 BILLION PORTFOLIO AS OF SEPTEMBER 30, 2016



MSR PORTFOLIO AT A GLANCE ⁽⁵⁾

	As of September 30, 2016
Fair value (\$M)	\$455.6
Unpaid principal balance (\$M)	\$55,080.9
Weighted average coupon	3.9%
Original FICO score⁽⁶⁾	757
Original LTV	72%
60+ day delinquencies	0.3%
Net servicing spread	25.4 basis points
Vintage:	
Pre-2009	0.7%
2009-2012	28.4%
Post 2012	70.9%
Percent of MSR portfolio:	
Conventional	99.7%
Government FHA	0.3%
Government VA/USDA	—%

1) Commercial consists of senior and mezzanine commercial real estate debt and related instruments.

2) MSR includes Ginnie Mae buyout residential mortgage loans.

3) Assets in "Rates" include Agency RMBS, Agency Derivatives, MSR and Ginnie Mae buyout residential mortgage loans.

4) Assets in "Credit" include non-Agency RMBS, prime jumbo residential mortgage loans, net economic interest in securitization trusts and credit sensitive residential mortgage loans.

5) Excludes residential mortgage loans held-for-investment in securitization trusts for which the company is the named servicing administrator.

6) FICO represents a mortgage industry accepted credit score of a borrower.

Webinar Executive Summary



A PORTFOLIO OF RMBS AND MSR HAS HIGHER RETURN POTENTIAL, WITH LOWER MORTGAGE SPREAD RISK, AND LOWER LEVERAGE

	Expected Gross Return on Equity (ROE) ⁽¹⁾	Debt-to-Equity	Impact of 20 Basis Point Rate Increase	Impact of 20 Basis Point RMBS Spread Widening
RMBS + Swap	8-10%	8.0	0%	(9%)
RMBS + MSR	12-14%	4.2	0%	0 %

1) Illustrative returns reflective of a duration neutral position. See slide 20 for further detail on these two illustrative portfolios.

Note: The above scenarios are intended to illustrate the potential benefits of hedging Agency RMBS with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



MSR Overview



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What are Mortgage Servicing Rights?

MSR ARE THE CONTRACTUAL RIGHTS TO PERFORM AND CONTROL SERVICING OF A MORTGAGE LOAN IN EXCHANGE FOR A SERVICING FEE

- Servicing responsibilities include: collecting principal and interest (P&I) payments, holding escrow funds, paying taxes and insurance (T&I) payments
- All types of loans need servicing including: residential, commercial, student, credit card and car loans
 - Focus on residential conforming MSR at Two Harbors
- High barriers to entry for becoming an MSR owner⁽¹⁾

TYPES OF MSR

Legacy

- Originated pre-crisis
- Sensitive primarily to credit performance
- Higher touch and cost to service

New Issue

- Originated post-crisis
- Sensitive primarily to prepays
- Low cost to service



TWO HARBORS' FOCUS

ORIGINATION CHANNEL

Bulk

- Seller aggregates a substantial amount of MSR
- Sells in a single transaction
- Price is determined by the market on bid date

Flow

- Sells MSR on a regular basis as it is created
- Sales are monthly for a period of time
- Prices are determined daily according to market rates and spreads are reset quarterly




TWO HARBORS' FOCUS

1) Continued status as an approved servicer by the GSEs or Ginnie Mae 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.



MSR Provide Different Benefits to Different Participants

TYPICAL MSR HOLDERS AND INVESTORS

Who?	What?	Why?
Banks	New, high quality, rate-sensitive MSR, including both GSE and Ginnie	<ul style="list-style-type: none"> MSR provide a hedge to the origination business When rates fall (rise), MSR values fall (rise) but origination fees increase (decrease) Financial instruments are rarely utilized to hedge
Mortgage Companies	Legacy, credit-sensitive, non-rate-sensitive MSR	<ul style="list-style-type: none"> Portfolio can be mined to extract refinance and modification opportunities No financial instruments generally utilized to hedge
 Financial Investors <small>TWO HARBORS' FOCUS</small>	New, high quality, rate-sensitive, primarily GSE MSR	<ul style="list-style-type: none"> MSR provide a financial hedge to other securities held in portfolio Financial instruments also used extensively to hedge

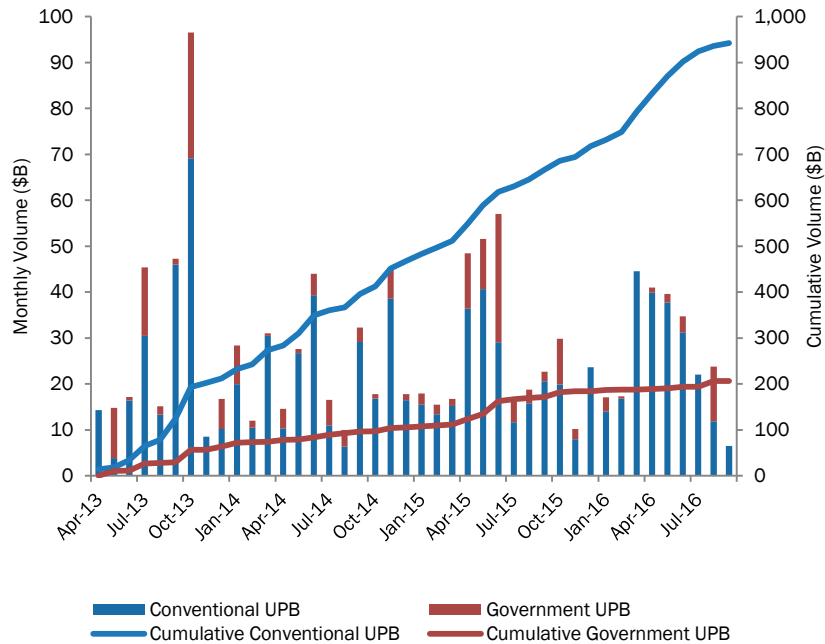


Current Market Overview

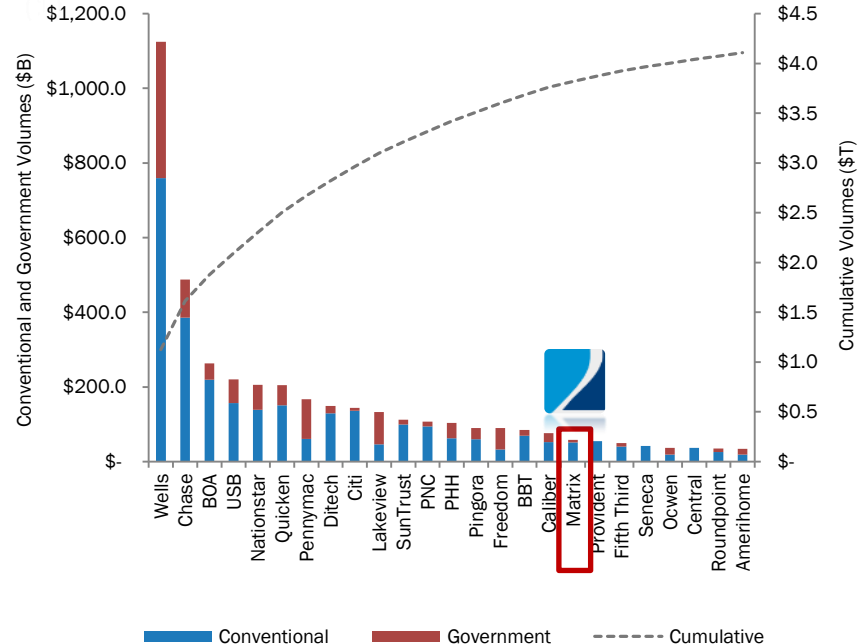
MSR MARKET IS LARGE AND RAPIDLY EVOLVING

- Volume opportunities abundant; cumulative volume of new issue MSR expected to exceed \$1.0 trillion unpaid principal balance (UPB) in 2016⁽¹⁾
- The top 25 servicers of GSE-backed loans comprise roughly 80% of the entire universe⁽²⁾
- Non-bank servicers have grown significantly in recent years
- Matrix Financial Services Corporation, a wholly-owned subsidiary of Two Harbors, is ranked #18 by conventional servicing volume

TRANSACTION VOLUME⁽¹⁾



GSE SERVICING VOLUME⁽²⁾



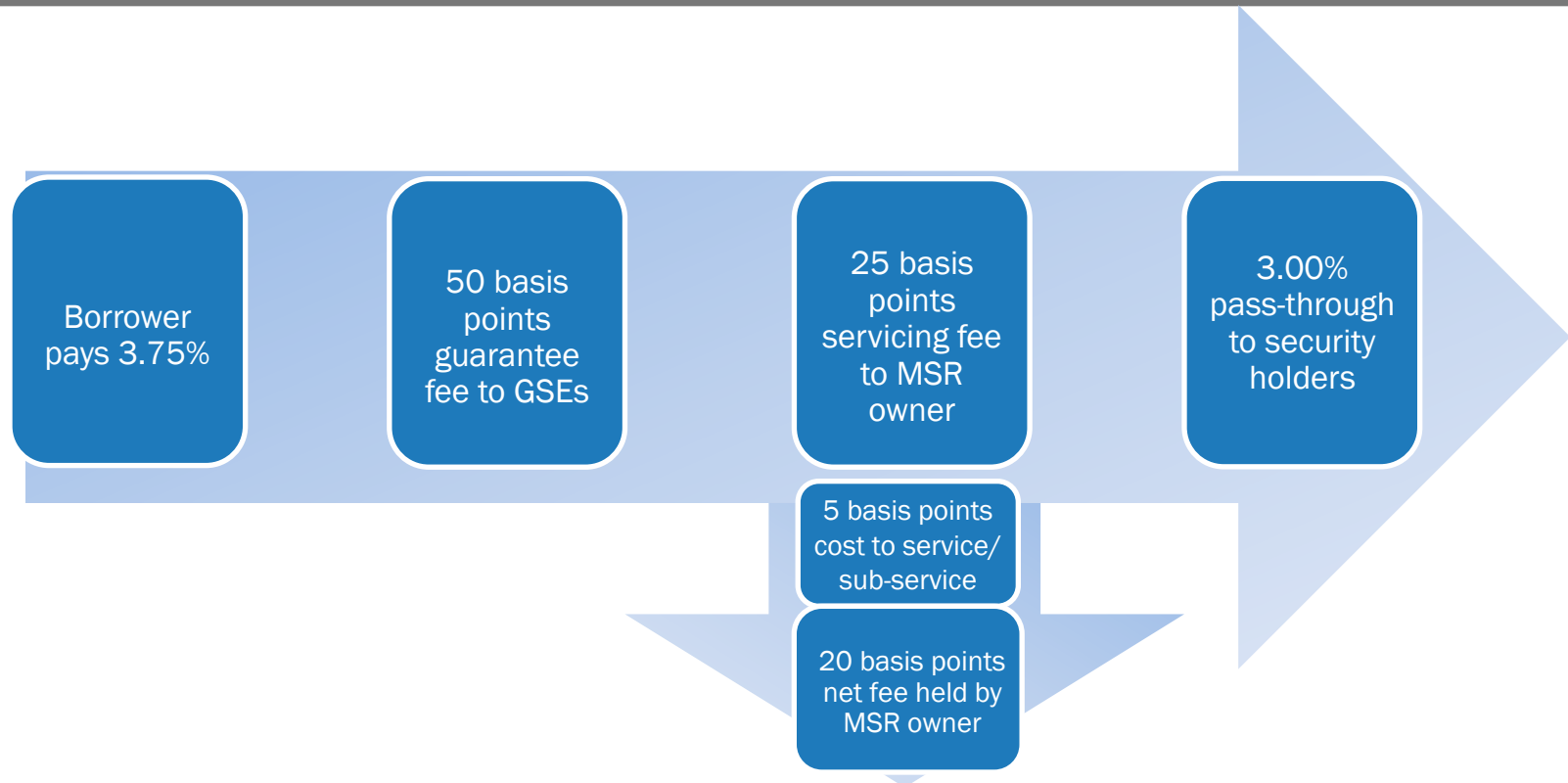
1) Source: Based on Two Harbors' internal research as of September 30, 2016.
2) Source: CPR & CDR Technologies, Inc. as of October 17, 2016.



How are MSR Made?

- The Net Servicing Fee for MSR is the difference between the Gross Servicing Fee less the fee paid to the GSEs or Ginnie to guarantee the mortgage.
 - Additionally, in many cases the holder of MSR has the right to receive float income on principal and interest, taxes, insurance, late fees and ancillary income before payments are remitted to the GSEs.

MSR EXAMPLE





MSR Are More Than Just Interest-Only

- MSR are “interest-only” (IO) in the sense that when the loan goes away, the MSR goes away; the longer the mortgage is outstanding, the longer the investor receives MSR cash flows.
- Unlike IO securities, there are “other components” that an MSR holder enjoys.
- 80-90% of MSR value is derived from the Net Servicing Fee (the IO component of the MSR cash flow).
- 10%-20% of MSR value comes from “other components”:

	MSR Component ⁽¹⁾	Price	Interest Rate Sensitivity
Pure IO components	Net Servicing Fee	117%	53%
	Cost to Service	(26%)	(13%)
Other Components	Taxes & Insurance (T&I) Float	10%	42%
	Unscheduled Principal & Interest (P&I) Float	2%	7%
	Scheduled P&I Float	2%	3%
	Compensating Interest	(5%)	7%
	Total	100%	100%

1) Table shows the relative amounts of value contained in a typical pool of MSR with 3.75% gross weighted average coupon, 25 basis points servicing fee, \$7.25 per loan per month cost to service, scheduled/scheduled remit type, and 1.5% average T&I balance. For more details, see Aldrich, Greenberg, and Payner, “A Capital Markets View of Mortgage Servicing Rights”, *Journal of Fixed Income*, June 2001 (37).



Cash Flows Overview



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Illustrative Treasury Cash Flow Scenarios

CASH FLOWS ON TREASURIES ARE NOT IMPACTED BY RATE ENVIRONMENT

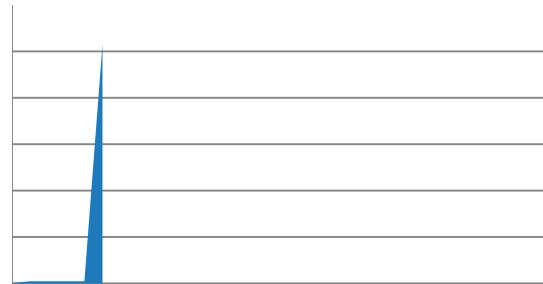
HIGH RATE SCENARIO



■ Treasury Total

- Total cash flow is 105% of face amount
- Weighted average life of 5 years
- Yield of 1.25% ↔ PV of 98.79%
- Yield of 2.25% ↔ PV of 94.12%

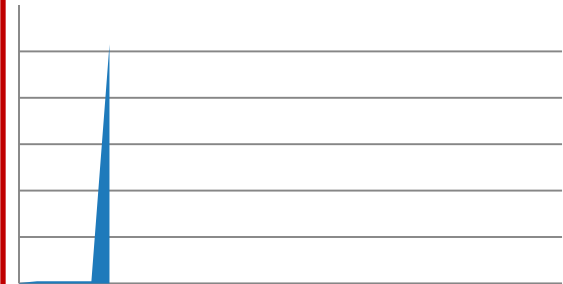
BASE CASE SCENARIO



■ Treasury Total

- Total cash flow is 105% of face amount
- Weighted average life of 5 years
- Yield of 1.25% ↔ Present Value (PV) of 98.79%

LOW RATE SCENARIO



■ Treasury Total

- Total cash flow is 105% of face amount
- Weighted average life of 5 years
- Yield of 1.25% ↔ PV of 98.79%
- Yield of 0.25% ↔ PV of 103.72%

Treasury Rate	Treasury Price
0.25%	103.72%
1.25%	98.79%
2.25%	94.12%

Note: The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.

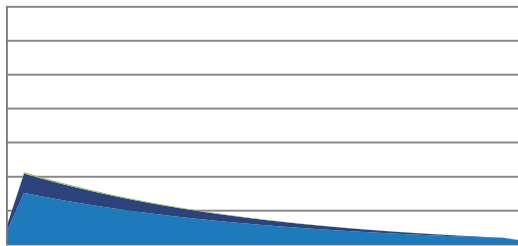


Illustrative RMBS Cash Flow Scenarios

CHANGING RATE ENVIRONMENTS INFLUENCE AVERAGE LIFE AND YIELD OF RMBS

- Effect of changing discount rate dominates the effect of changing prepayments

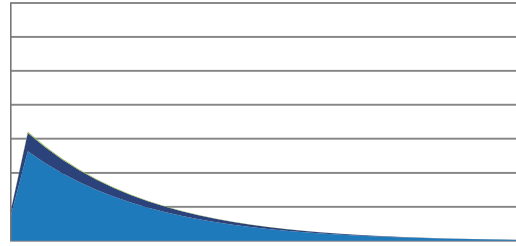
HIGH RATE SCENARIO



■ Underlying Principal ■ Underlying Interest ■ MSR Total

- Total P&I is 130.0% of face amount
- Weighted average life of 10.0 years
- Yield of 2.25% ↔ PV of 106.32%
- Yield of 3.25% ↔ PV of 98.04%

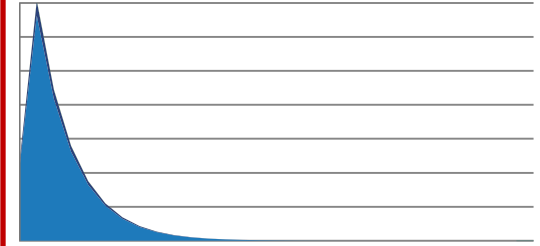
BASE CASE SCENARIO



■ Underlying Principal ■ Underlying Interest ■ MSR Total

- Total P&I is 119.2% of face amount
- Weighted average life of 6.4 years
- Yield of 2.25% ↔ PV of 104.24%

LOW RATE SCENARIO



■ Underlying Principal ■ Underlying Interest ■ MSR Total

- Total P&I is 110.2% of face amount
- Weighted average life of 3.4 years
- Yield of 2.25% ↔ PV of 102.38%
- Yield of 1.25% ↔ PV of 105.72%

MBS Yield	CPR	RMBS Price
1.25%	24	105.72%
2.25%	12	104.24%
3.25%	6	98.04%

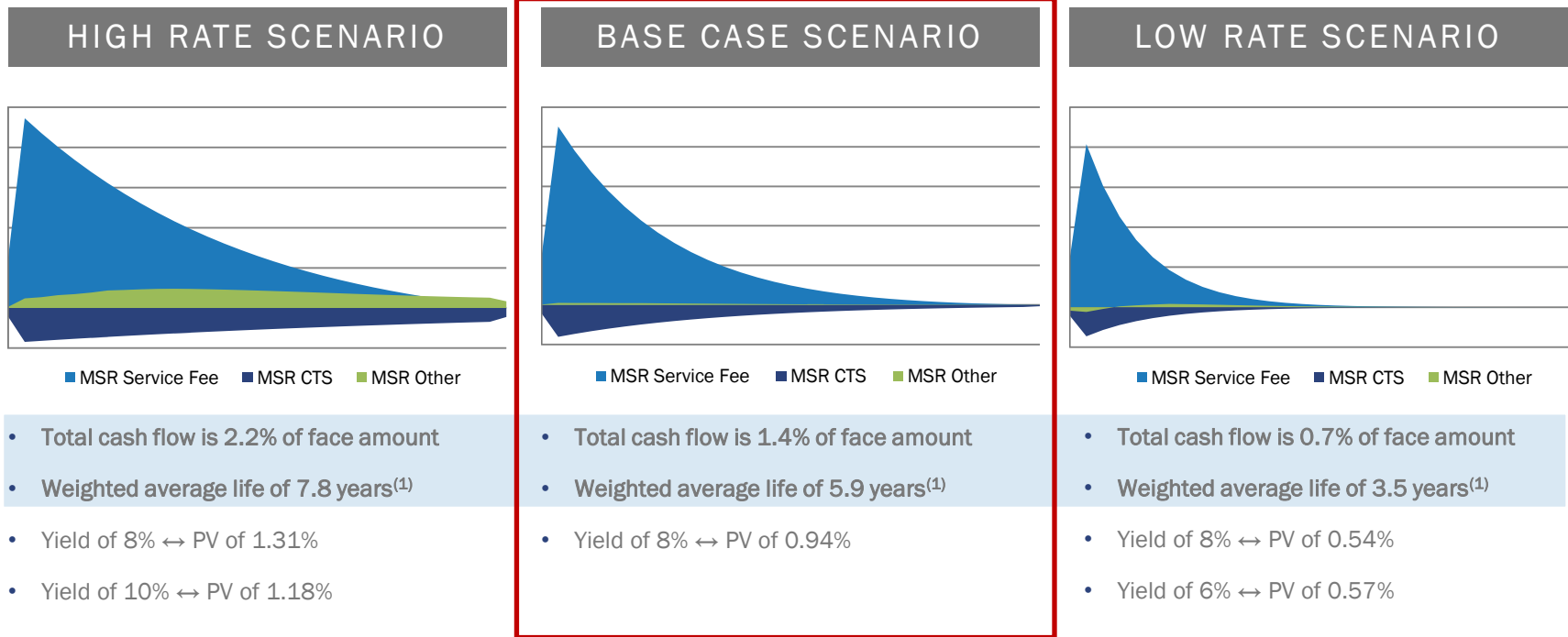
Note: The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



Illustrative MSR Cash Flow Scenarios

CHANGING RATE ENVIRONMENTS INFLUENCE AVERAGE LIFE AND YIELD OF MSR

- Effect of changing prepayments dominates the effect of changing discount rate.



MSR Yield	CPR	MSR Price
6%	24	0.57%
8%	12	0.94%
10%	6	1.18%

Note: The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.

1) Weighted average life for MSR is the time weighted average return of interest.



Impact of Interest Rates

MSR AND RMBS PRICE CHANGES MOVE IN OPPOSITE DIRECTIONS, PROVIDING A HEDGE FOR ONE ANOTHER IN CHANGING INTEREST RATE ENVIRONMENTS

- When interest rates rise, **Treasury** prices **decrease**. When interest rates fall, **Treasury** prices **increase**.
- When interest rates rise, **RMBS** prices **decrease**. When interest rates fall, **RMBS** prices **increase**.
- When interest rates rise, **MSR** prices **increase**. When interest rates fall, **MSR** prices **decrease**.
- Shifts in RMBS values can be hedged with MSR or with short Treasuries (or with Payer Swaps).

HYPOTHETICAL IMPACT OF CHANGING INTEREST RATE SCENARIOS

Hypothetical Mortgage Rate	Treasury Rate	MBS Yield	MSR Yield	CPR	Treasury Price	RMBS Price	MSR Price
3%	0.25%	1.25%	6%	24	103.72 ↑	105.72 ↑	0.57 ↓
4%	1.25%	2.25%	8%	12	98.79	104.24	0.94
5%	2.25%	3.25%	10%	6	94.12 ↓	98.04 ↓	1.18 ↑



MSR in a Portfolio Context



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Portfolio With MSR Has Higher Yield Potential

MSR HAVE POSITIVE YIELD; PAYER SWAPS HAVE NEGATIVE YIELD

RMBS & SWAPS PORTFOLIO

	Capital	Asset/ Liability	Yield ⁽¹⁾	Duration (years)	Change per 1 basis point shift in rates
Agency RMBS	\$100	\$900	2.30%	4.9	\$441
Agency Repo		\$798	(0.75%)	-	-
5-year Swaps		\$882	(0.70%)	(5.0)	(\$441)
Total	\$100		9%		-
ROE: 9%⁽¹⁾					

RMBS & MSR PORTFOLIO

	Capital	Asset/ Liability	Yield ⁽¹⁾	Duration (years)	Change per 1 basis point shift in rates
Agency RMBS	\$47	\$433	2.30%	4.9	\$212
Agency Repo		\$388	(0.75%)	-	-
MSR	\$53	\$85	8.00%	(25.0)	(\$212)
MSR Financing		\$32	(4.00%)	-	-
Total	\$100		13%		-
ROE: 13%⁽¹⁾					

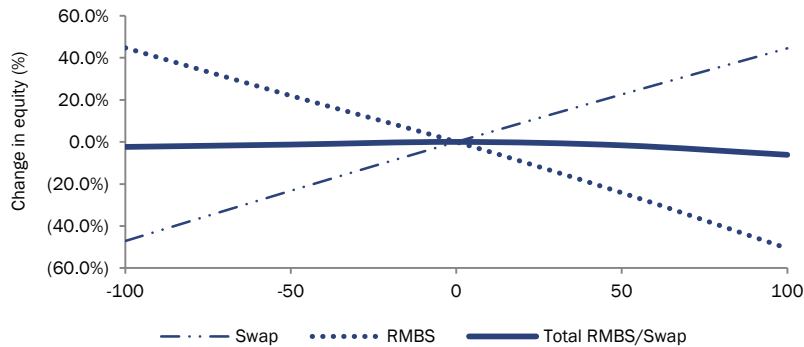
1) Illustrative market yields/returns as of October 11, 2016. Such yields/returns do not take into account the operational costs and expenses associated with portfolio management activities or the oversight of sub-servicers. Note: The above scenarios are intended to illustrate the potential benefits of hedging interest rates with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



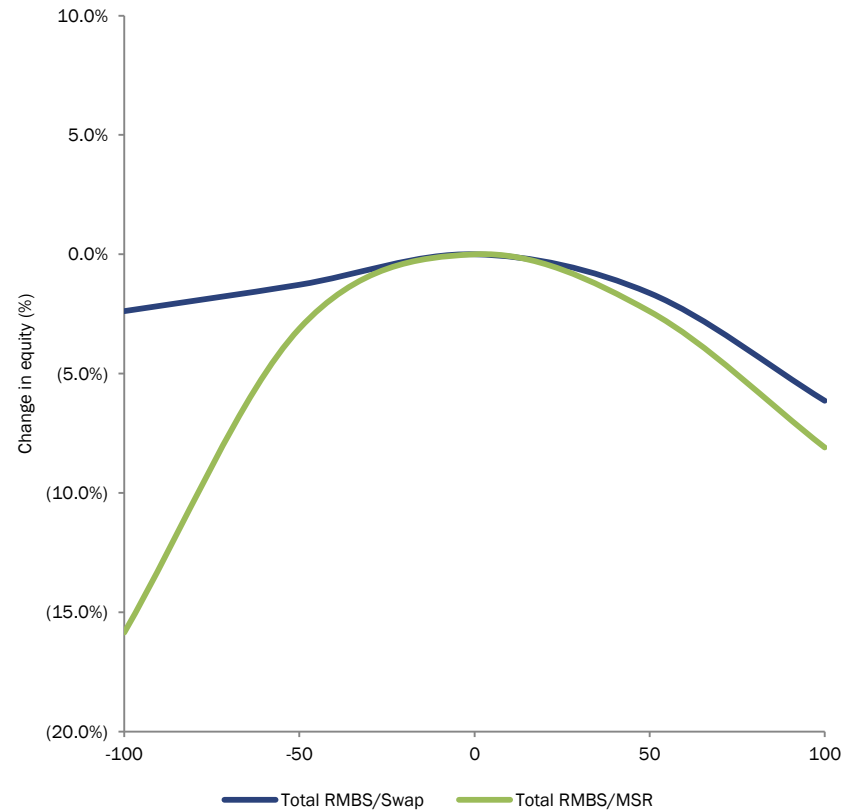
Higher Yield of MSR Portfolio is Not Free

A PORTFOLIO OF RMBS + MSR IS MORE NEGATIVELY CONVEX...

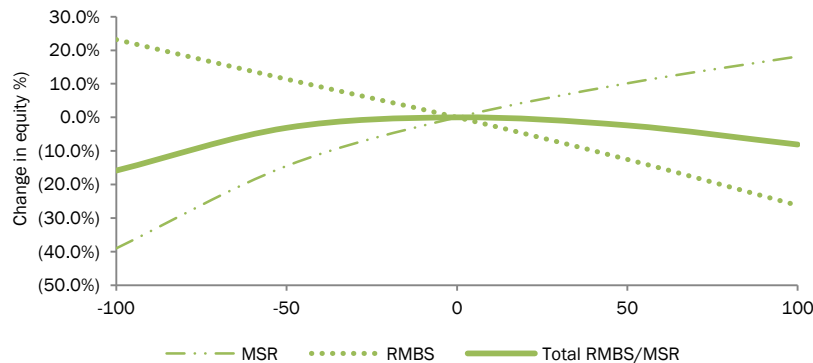
RMBS + SWAPS⁽¹⁾



INSTANTANEOUS SHOCK⁽¹⁾



RMBS + MSR⁽¹⁾



1) Graph illustrates the impact of a theoretical instantaneous and parallel shift in interest rates to the portfolios detailed on slide 20.

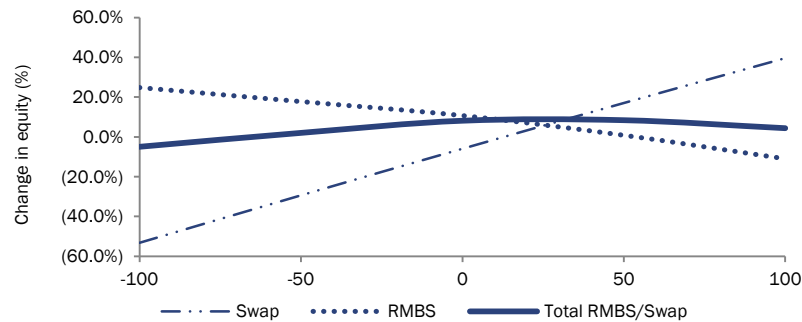
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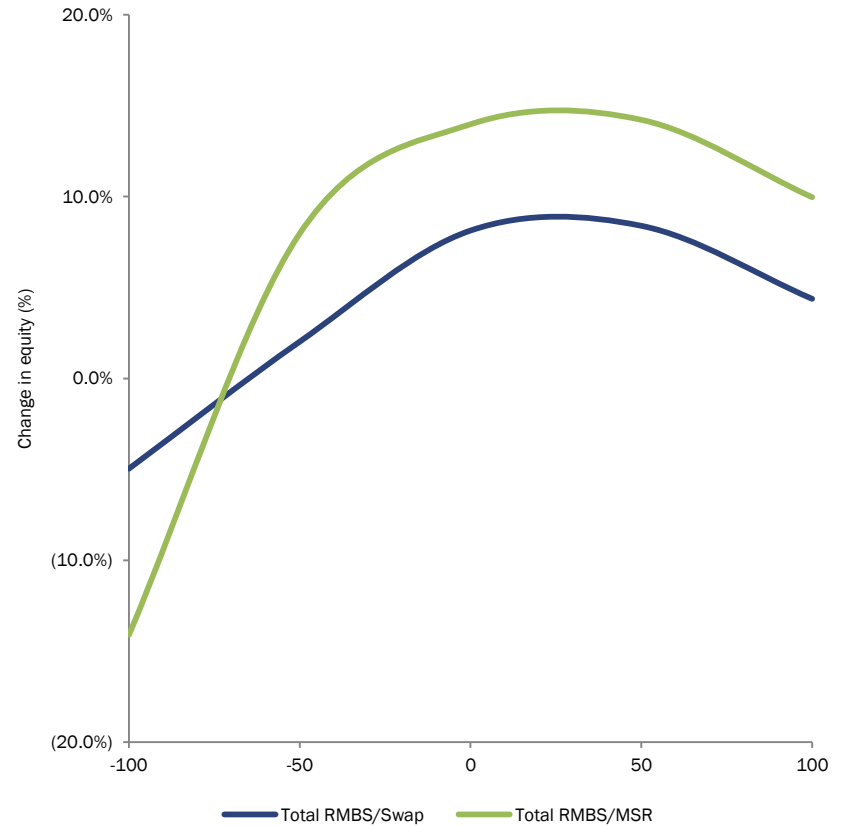
MSR Portfolio Generates More Revenue

...BUT OUTPERFORMS AN RMBS + SWAPS PORTFOLIO IN MOST SCENARIOS OVER TIME

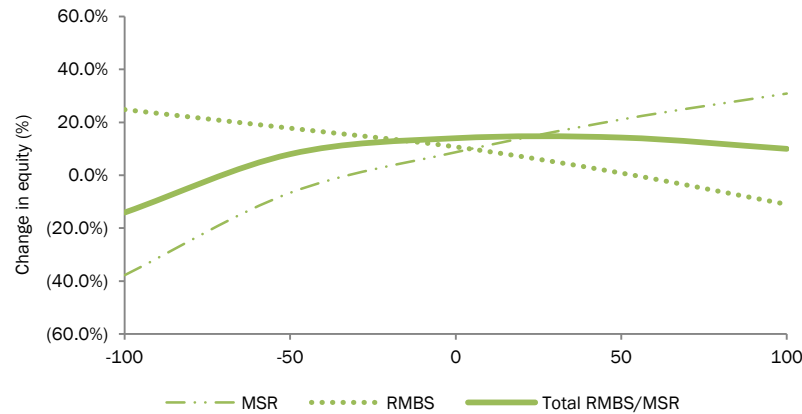
RMBS + SWAPS⁽¹⁾



HORIZON SHOCK⁽¹⁾



RMBS + MSR⁽¹⁾



1) Graph illustrates the impact of a theoretical immediate parallel shift in interest rates held constant for one year to the portfolios detailed on slide 20.

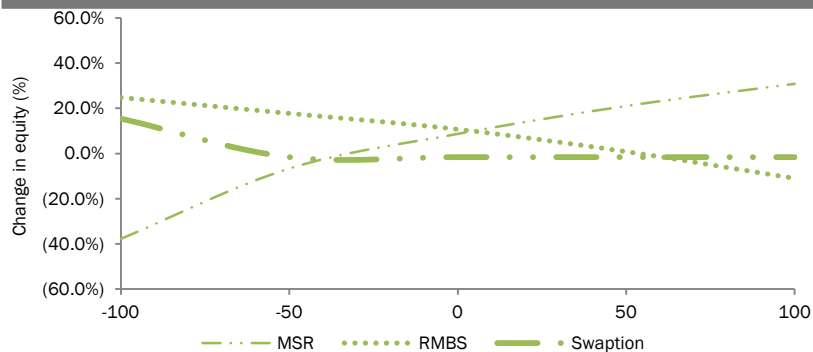
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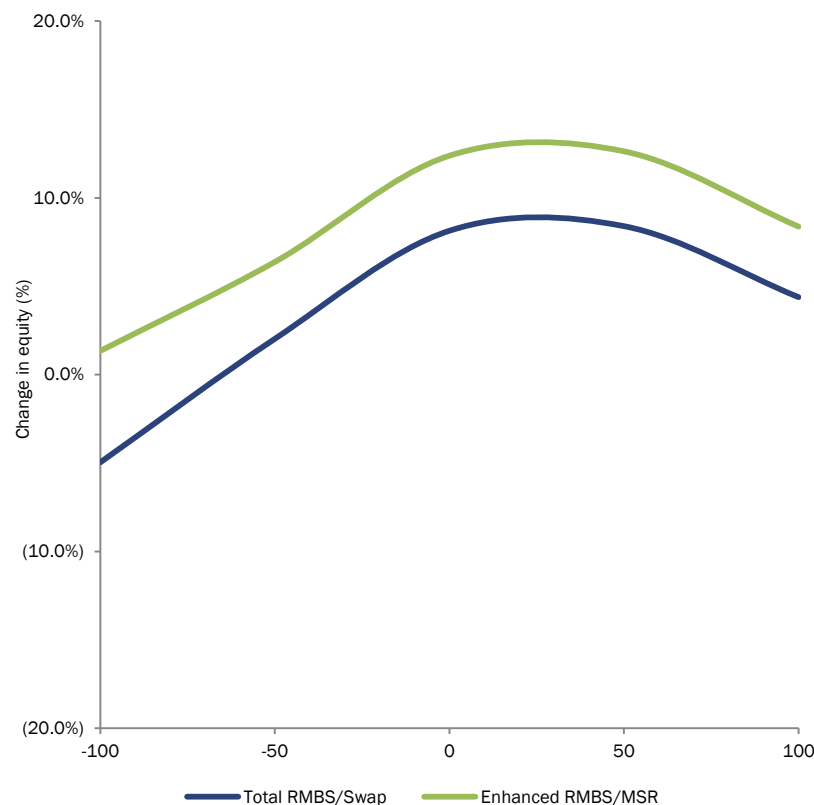
Enhanced MSR Portfolio Outperforms

...EXCESS REVENUE CAN BE USED TO PURCHASE SWAPTIONS THAT CAN HEDGE THE NEGATIVE RETURNS IN THE -100 SCENARIO

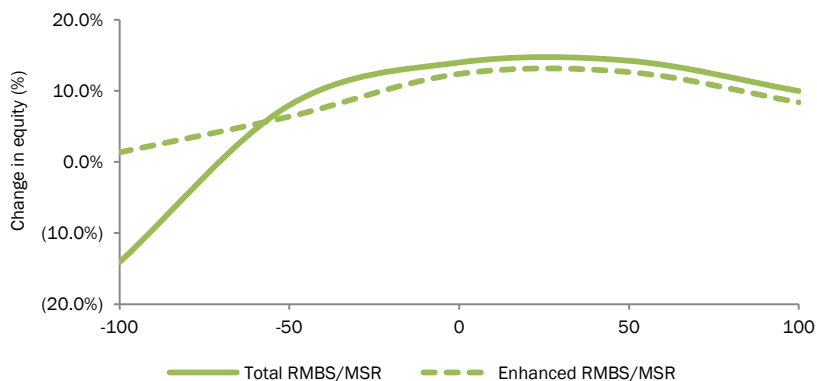
MSR, RMBS, AND SWAPTIONS⁽¹⁾



ENHANCED MSR VERSUS RMBS PORTFOLIO⁽¹⁾



TOTAL VERSUS ENHANCED⁽¹⁾



1) Graph illustrates the impact of a theoretical immediate parallel shift in interest rates held constant for one year to the portfolios detailed on slide 20.

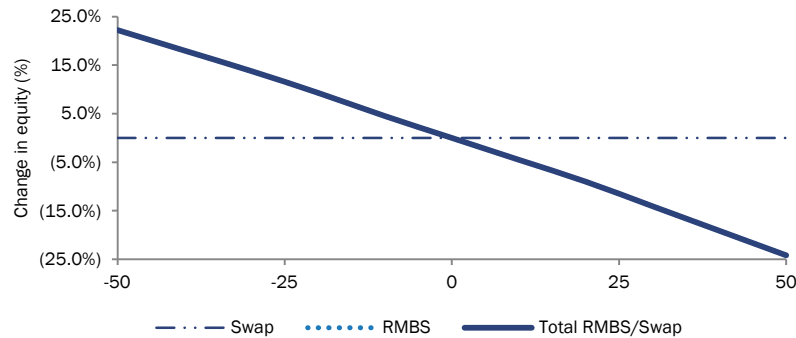
Note: The above scenarios are intended to illustrate the potential benefits of hedging interest rates with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



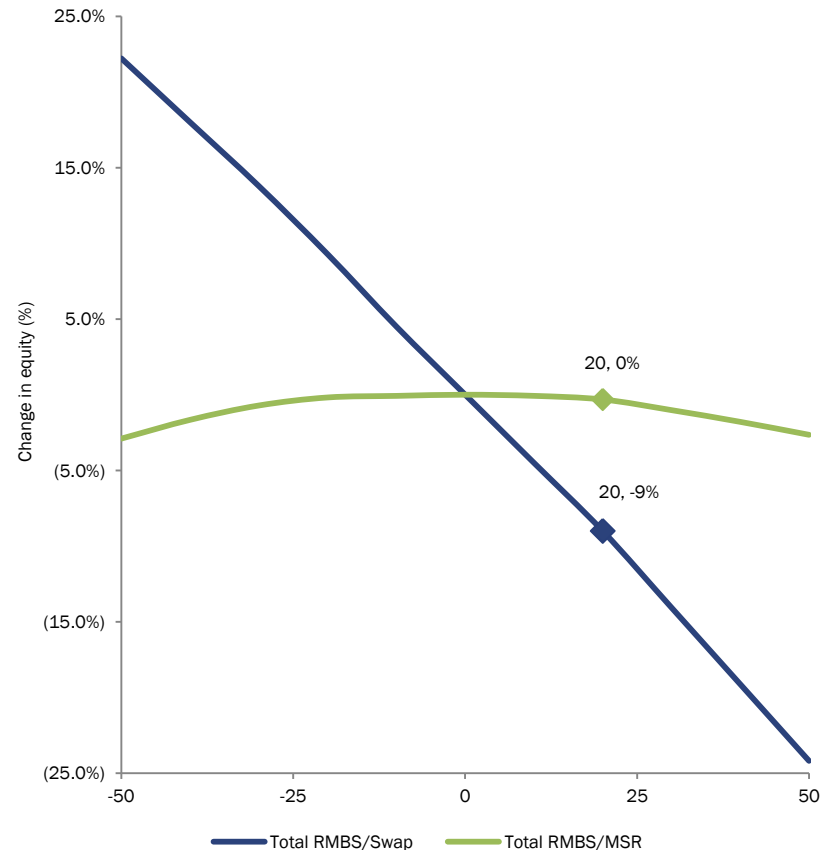
MSR Portfolio Has Less Basis Risk

THE “RMBS + SWAPS” PORTFOLIO IS EXPOSED TO CHANGES IN THE BASIS; THE “RMBS + MSR” PORTFOLIO IS HEDGED WITH RESPECT TO BASIS CHANGES

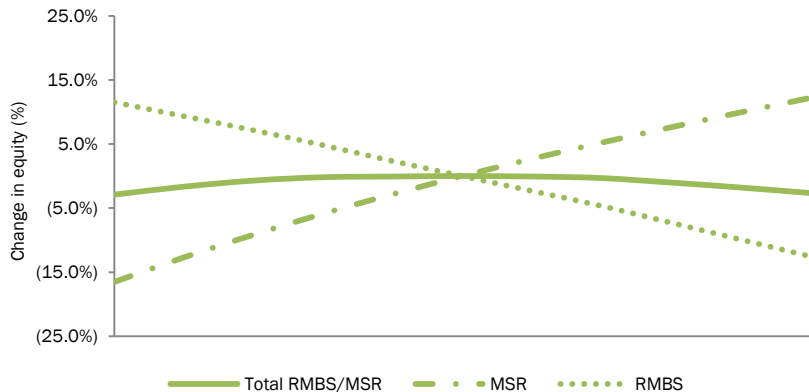
RMBS + SWAPS⁽¹⁾



MORTGAGE BASIS SHOCK⁽¹⁾



RMBS + MSR⁽¹⁾



1) Graph illustrates the impact of a theoretical instantaneous shift in the mortgage basis to the portfolios detailed on slide 20.

Note: The above scenarios are intended to illustrate the potential benefits of hedging mortgage basis with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



Portfolio With MSR Has Lower Leverage

MSR HAVE POSITIVE YIELD; PAYER SWAPS HAVE NEGATIVE YIELD

- It's better to get paid to hedge instead of paying to hedge

RMBS & SWAPS PORTFOLIO

	Capital	Asset/ Liability	Yield ⁽¹⁾	Duration (years)	Change per 1 basis point shift in rates
Agency RMBS	\$100	\$900	2.30%	4.9	\$441
Agency Repo		\$798	(0.75%)	-	-
5-year Swaps		\$882	(0.70%)	(5.0)	(\$441)
Total	\$100		9%		-
ROE: 9%⁽¹⁾					
Debt-to-Equity: 8.0x					

RMBS & MSR PORTFOLIO

	Capital	Asset/ Liability	Yield ⁽¹⁾	Duration (years)	Change per 1 basis point shift in rates
Agency RMBS	\$46	\$425	2.30%	4.9	\$212
Agency Repo		\$377	(0.75%)	-	-
MSR	\$52	\$83	8.00%	(25.0)	(\$212)
MSR Financing		\$31	(4.00%)	-	-
Swaptions	\$2	\$2	-	-	\$29
Total	\$100		13%		\$29
ROE: 13%⁽¹⁾					
Debt-To-Equity: 4.2x (8.3x on Agency / 0.6x on MSR)					

1) Illustrative market yields/returns as of October 11, 2016. Such yields/returns do not take into account the operational costs and expenses associated with portfolio management activities or the oversight of sub-servicers. Note: The above scenarios are intended to illustrate the potential benefits of hedging interest rates with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.

Conclusion



A PORTFOLIO OF RMBS AND MSR HAS HIGHER RETURN POTENTIAL, WITH LOWER MORTGAGE SPREAD RISK, AND LOWER LEVERAGE

	Expected Gross Return on Equity (ROE) ⁽¹⁾	Debt-to-Equity	Impact of 20 Basis Point Rate Increase	Impact of 20 Basis Point RMBS Spread Widening
RMBS + Swap	8-10%	8.0	0%	(9%)
RMBS + MSR	12-14%	4.2	0%	0 %

1) Illustrative returns reflective of a duration neutral position. For more details, see slide 20.

Note: The above scenarios are intended to illustrate the potential benefits of hedging Agency RMBS with MSR. The numbers used in the scenarios above are hypothetical amounts and are not based on our financial results, nor are they projections of our results. The above scenarios are provided for illustration purposes only and may not represent all assumptions used. Actual results of a portfolio may differ.



Closing Remarks

CONTACT INFORMATION

Investor Relations

612-629-2500

investors@twoharborsinvestment.com



TWO HARBORS
Investment Corp.

A Pine River Capital Managed Company