# Analyst and Investor Day Transcript

Two Harbors Investment Corp.

March 16, 2017

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## WELCOMING REMARKS

**Tim Perrott:** Well, good morning to everybody. Thank you. Welcome to Two Harbors' 2017 Analyst and Investor Day meeting. We appreciate those who were able to make it, brave the snow and the elements to get here with us and meet with us here at the New York Stock Exchange.

We're very excited to be here today not only to tell you a little bit more about the Company, but also to tell you something that we think is very exciting for us and that's our ability to have the opportunity to generate greater earnings in 2017 and do so while being sensible and continuing to be sensible in terms of our approach to risk management. I'd also like to welcome those of you who couldn't make it and who are on our webcast today.

Throughout the morning you will hear from members of our senior management team regarding our focus and our opportunities for 2017. I'd like to go through the agenda for the day, quickly. We're going to start off with a guest speaker many of you know and we're really excited to have her, Laurie Goodman. She's the Co-Center Director for the Housing Finance Policy Center. And she will speak and then we'll also have time for Q&A with Laurie. So, we're excited about that.

Following that, we're going to have a short break and then we will get right into our management presentations from our senior team including Tom Siering, Bill Roth, and Brad Farrell. We'll go through that in just a minute.

Before we begin I would like to cover our Safe Harbor page in our presentation, which is something we take extremely seriously. These pages are pretty elaborate in terms of the language, but we wanted to let you know that the remarks that are made by management today during the meeting, as well as the supporting slides, include forward-looking statements. And these statements reflect our views regarding future events and are typically associated with the words such as anticipate, expect, believe, or estimate or similar words. We caution investors not to rely unduly on these forward-looking statements.

They also imply risk and uncertainties and actual results may differ from expectations. We urge you to carefully consider the risks described in our filings with the SEC, which may be obtained on the SEC website at sec.gov. And we do not take any obligation to update or correct any of the forward-looking statements if later events prove them to be inaccurate.

So, here's our overview for the day and the agenda, which I have already covered. And I would note, as well, for those joining on the webcast that we have filed our presentation with the SEC yesterday that we will cover today and you can access this on the SEC website or our website in the Investor Relations section.

So, with that, I want to get right to our guest speaker, Laurie Goodman. Laurie is the Co-Center Director for the Housing Finance Policy Center at the Urban Institute. This center is dedicated to providing policymakers with data-driven analysis of housing finance policy issues that they can depend on for relevance, accuracy, and independence.

Prior to joining Urban in 2013, Laurie spent 30 years as a mortgage-backed security analyst and research department manager at a number of Wall Street firms including Amherst Securities, where she developed a reputation for her analysis of housing policy issues; and UBS, where she was a top-ranked research analyst. Laurie also spent time as a mortgage portfolio manager and a senior economist at the Federal Reserve Bank of New York.

Laurie has a B.A. in Mathematics from the University of Pennsylvania and a Masters and PhD in Economics from Stanford. She has published more than 200 articles in professional and academic journals and has co-authored or co-edited five books.

We're very excited to have Laurie here today. I would also point out that Laurie's comments today are that of her own and do not represent Two Harbors or its management team or the Urban Institute or its directors. So, with that, I'd like to have a warm welcome for Laurie. Laurie?

[BREAK]

## HIGHER EARNINGS POTENTIAL IN 2017

**Tim Perrott:** Okay, I think we're ready to start the management portion of the meeting if everybody could take their seats. Oh, that's great. Well, first off, Laurie is not back in the room, but just wanted to just give her a special thanks. I thought that was a great discussion and really appreciate her being here for us.

Now, what we'll do is we're going to start the management discussion for the meeting. What we're going to do this year is something a little different. We are going to have, although we don't have a fire going, but we are going to have a fireside chat type of format for the discussion. And I think it's very important for most of you that you want to get to Q&A so we'll leave plenty of time for Q&A.

So, as we said, we're very excited about 2017. We're excited about the year ahead of us and the direction for the Company. And, of all the information you're going to take away from today, there is one key message and that's what's on the screen now; which is, the actions that we've taken over the last couple of years and particularly in 2016 position us to realize greater earnings in 2017 and, in doing so, taking the same sensible approach to risk management and reducing volatility of our results and driving them to be more consistent. So, we feel like if we execute well on our plan for this year that that will result in driving stronger total shareholder returns. So, we're excited about that.

## INTRODUCING OUR TEAM

**Tim Perrott:** And, of course, as any base of a great plan that we have in front of us and the opportunity, is a great team. And in your presentation, and those who are on the webcast as well should have access to this, is the bios of our team who we have here with us today and a few that we don't, who were not able to make it in from the snowstorm. So, just really quickly what I'll do is I'll just touch a little bit on who we have today so we know who's in the room.

We have Thomas Siering, who, as most of you know, is our President and CEO. Tom has been with the Company from the very beginning, from its founding. He's on the board of Two Harbors, the board of Silver Bay. He's a partner with Pine River. Has a number of years' experience, over 30 years' experience. He's been our leader from the very beginning so we're happy to have Tom here today.

We have Bill Roth, our CIO. Bill is also, with the Company, he's on the board as well, has been with the Company since 2009. Many of you know Bill. Over 30 years' plus of experience. I don't mean to date you guys, but it's always good to have a very deep, deep wealth of experience.

We have our CFO here as well. His name is Brad Farrell. Most of you are familiar with Brad as well. He's been in his role since 2013, has been with the Company, again, for the last seven years, joined in 2009. A deep wealth of experience of over 15 years within the industry.

Unfortunately, we could not have Rebecca Sandberg, who is our General Counsel and Secretary, join us. Her flight was impacted from the snowstorm. But she is a very important member of our team, has been with the Company for seven years, again. A wealth of legal experience and has been a huge contributor to Two Harbors' success.

Now we'll go through some of the members of those that are also in the audience here. We have Victor Baev. Where is Victor? There's Victor. He is a Managing Director, a key member of the trading team, has been with the Company since 2009. His primary responsibility is in the non-agency and credit area for Two Harbors.

We have Bill Greenberg, who is over to my left, Managing Director. He's also the Head of our New York office. Five years with the Company. And he famously is the voice and the mind behind our MSR strategy and was on our webinar series for MSRs. So, he has that primary responsibility.

Matt Koeppen, who could not make it here today, also Managing Director, a key member of the trading team. Seven years with the Company, over 20 years' experience, responsible largely for our agency holdings.

We talk a lot about risk and risk management and we have Bob Rush, who heads that effort for us. He's raising his hand there, to the right. Over four years with the Company, responsible for risk management, as I had mentioned, 20 years' experience within the industry.

One of the newer members of our team in a very exciting area that we've been growing rapidly is in commercial. We have Jack Taylor. Jack Taylor is right there in the front table. He joined the Company about two-and-a-half, three years ago, built the team, and is a very, I would say, great leader for our commercial efforts. And that's an area that we're going to talk a lot about today. Jack has a wealth of experience, well over 30 years' experience in the commercial area. So, we're very happy to have Jack with us today.

We have Marcin Urbaszek, who is back here on this table. He's Managing Director, leads our business development efforts. Has been with the Company for four years. Prior to that, he was with Credit Suisse. He has a very deep background, over 15-plus years of experience.

And, of course, last but least here is me. I'm Tim Perrott. I'm Senior Director of Investor Relations. I joined the Company about nine months ago and I'm really happy to be part of such a great company and dynamic team.

## TWO HARBORS INVESTMENT CORP. OVERVIEW

**Tim Perrott:** So, with that, I'm going to start our discussion with Tom. And we're going to do this in a Q&A type of fashion. So, perhaps, Tom, a great place to start is for you to provide us with your thoughts on, really, when Two Harbors was formed, the environment at the time and how it's evolved over the last several years.

**Thomas Siering:** Sure. Before I do that, Tim, I just wanted to thank Laurie, since she is back in the room, for her marvelous presentation and particularly on her comments on MSR. Anyone who knows Laurie knows that Laurie says what Laurie thinks and only what Laurie thinks so we do appreciate it. And that's why she's so well respected as an independent voice within the housing sector.

But, to your question, Tim; when we started the Company in 2009, everyone knows the mortgage market was in tremendous disarray. And that was as a result of several things. Obviously the financial crisis, which was -- and the housing market was kind of ground zero for the financial crisis.

But I guess, more specifically, there was a lot of disarray in the mortgage market, which was created by the situation at the GSEs. So, Freddie and Fannie had used their balance sheets quite aggressively in the salad days leading up to the crisis. And when the government essentially took them over there was tremendous dis-investment by the GSEs, which lead to a lot of disruption and dislocation within the market.

So, the agency market was inefficient and the non-agency market -- I sometimes joke; I don't know if dead subject to gradation, but, if anything, there was nothing dead than the non-agency market for a variety of reasons including that there was an inability to finance non-agency securities. And, obviously, the ability to obtain financing and at the rate at which you can obtain financing is a key determinant in asset valuation.

And so, when we started the business -- I had had a long background in distressed investing, but I really needed a key partner who was really expert in the mortgage market. And I found that partner in Bill Roth, who started his career in 1981 at Salomon Brothers and really was there for the dawn of the modern mortgage market as we know; securitization, etc.

So, getting back to you were afraid of dating us, I think our faces do that probably just fine so no worries there.

And so, really what we were trying to bring to the market -- we are a mortgage REIT and we're subject to the trading restrictions and investment restrictions attendant to being a real estate investment trust. But, really, what we wanted to do was bring a hedge fund sensibility to the market, which is to say we thought we could deliver on superior security selection and also bring more sophisticated hedging techniques to the market.

So, we started as a hybrid REIT, as everyone knows. And we started with $124 million, which was a start, but a rather uncomfortable one. Today, our market capitalization is $3.3 billion and that's after consideration to the distribution to our shareholders of Silver Bay. So, essentially, we've grown from $124 million to $4 billion viewed through that lens. Silver Bay, people might know, was recently -- there was an announcement around positive M&A activity for that company.

But we've always had a very prudent approach to capital raising. And so, our primary duty when we raise capital is to make sure it's a good deal for our existing shareholders and we've always really clung to that mantra. And so, today, our business has evolved into, seven years later, it has -- seven-plus years later, wow; time marches on -- into three business strategies, which are rates, credit, and commercial real estate. And Bill is going to talk more about those with greater granularity.

## ATTRACTIVE RETURNS WITH LOWER RISK

**Tim Perrott:** That's great. I appreciate that, Tom. I think one of the key aspects of our business and maybe our secret sauce is the way we manage risk and the way we approach risk management. And I thought maybe you could touch on what makes it unique for Two Harbors and how it sets us above others within the space in terms of the way we think about risk and the way we manage it.

**Tom Siering:** Sure. Well, I think it really begins with security selection because we're of a size where we can seek shelter, if you will, at appropriate times from pockets -- into pockets of the mortgage market where we think we can drive alpha. Because hedging, for instance, an agency security is difficult because of the variability of the life of the mortgage. And so, it has a dynamic duration. And that's obvious why it is. It's because the homeowner has the ability to refinance.

And so, the key starting point is trying to have cash flows in the portfolio which are more predictable. And if you achieve that then hedging them becomes much more easy. So, that's the first step.

The second thing is I talk about bringing the hedge fund sensibility to the space. And so, Bill and his team use hedging techniques to hedge a variety of risks in the portfolio, which are atypical to the space, which include things -- we use swaps like many people do, of course. But we use swaptions, mortgage options, IO, and, importantly, MSR, which we're going to talk about in greater detail. But we do very granular risk analysis. And we run Monte Carlo simulations to simulate different moves in rates, basis, credit, etc. And Bob Rush -- where did Bob go?

**Tim Perrott:** He's right over there.

**Tom Siering:** I think I spend more time with Bob Rush than maybe I do with my wife. And my wife thanks you for that, Bob. But I think what we really do a very good job of is seeking both probable and improbable outcomes and making sure that we're well-insulated from those.

The other thing that we spend a lot of time on is liquidity management. And our sophistication in that has come an awful long way. Because the amount of liquidity that you ultimately have in the portfolio is really driven by, well, a lot of things, but one of them is the volatility of the instrument within the portfolio. And so, to the extent that you can dampen volatility, again, that makes liquidity management much more easy. And so, liquidity management is something, you don't want too much of it because it dampens return, right? But it's critical that you have enough always. And that's our mission.

So, I think we have a slide on -- yes, we do. Thank you. And so, what this slide really attempts to show is that we have a competitive yield with lower leverage and lower exposure to interest rates and prepayment risks. And a goodly amount of our portfolio, for instance, has some form of either implicit or explicit prepayment protection, which is quite -- and so, this book value and income stability, it manifests itself in pretty positive ways.

So, our book value has grown by over 7% since inception compared to a peer average of negative 17%. And we're only one of two companies within the cohort that have increased book value when you look back since our beginning. Also, our volatility has been much less, 7.8% historically, compared to the average mortgage REIT of 12% and the hybrid mortgage REIT average of 14.5%. And I think book value stability is really critical. Bill and I really believe in the notion of Sharpe ratios, information ratios.

And I think that's also very -- retail is present within the mortgage REIT space, for sure, because of the dividend stream that the group produces. And having stability of book value I think helps the retail investor not to do the wrong thing at the wrong time in respect of his own investment.

## FOCUS ON BOOK VALUE PERFORMANCE & DELIVERING RESULTS

**Tim Perrott:** That's great. I appreciate that, Tom. So, that's a great review of how we think about risk and how we manage risk and it's manifested itself into actually growing book value, but also and, most importantly, in stability. And how has that manifested itself into returns for shareholders?

**Tom Siering:** Well, we're proud of the fact that -- I said our mission back in 2009 was to drive alpha and you can see that we have been successful on doing that.

And when we particularly shine is in periods of volatility and especially higher interest rates compared to the cohort. For instance, in 2013, during the taper tantrum, we tremendously outperformed the competitive cohort. And in the fourth quarter of 2016, additionally, we had -- you know, albeit perhaps uninspiring from an absolute standpoint, but we had a positive return to our shareholders when measured by book value. And I think that as we anticipate the future and we contemplate a landscape of a relatively active Fed and higher interest rates, I think we'll continue to do quite well.

It's kind of funny in respect to MSR, when interest rates were falling people were somewhere between disliking MSR or just neutral about it. But the fourth quarter was a really vivid example of how this can fit really well within our portfolio because not only does it help us hedge interest rate risk, but also basis risk, which is obviously a concern within the mortgage market.

## POSITIONED TO INCREASE EARNINGS

**Tim Perrott:** That's great, Tom. That's a very important point, appreciate that. When we look at our accomplishments for 2016, obviously we accomplished our strategic objectives. We drove very strong return for shareholders. But we're even more excited, I think, about the year ahead in 2017 and what lies before us. Can you give us some insight on, number one, the reasons for that excitement and, number two, some of the goals that we're trying to set out to accomplish?

**Tom Siering:** Sure. So, as everyone knows, I think, who follows us closely anyway, and I don't want to be presumptuous that everyone does, we did a really thorough review in 2016 of our various business units. And a result of that was to close our conduit and securitization business because we just felt that it was underperforming relative to alternatives and very likely to continue to underperform in both the respect of revenues that it generated and the expenses attendant to that activity. And so, we closed that. And it's never a fun decision to close a business unit. Obviously, there's a human aspect of it. But our mission is, obviously, to do what's right for our shareholders.

And so, we repositioned the Company in 2016 and it's starting to manifest itself in the results. We increased the dividend from $0.23 to $0.24 in the fourth quarter and then we announced, just in the past 36 hours, that we increased our dividend in the first quarter to $0.25.

And so, our mantra is a very simple one. At the end of the day, investors are interested in one thing; how do I make money owning your security? And we are on a mission to let our shareholders achieve that by making more money at Two Harbors in 2017.

**Tim Perrott:** That's great, Tom. Can you be specific on 2017 in terms of the specific drivers of that enthusiasm?

**Tom Siering:** Yes. So, the question we sometimes get; are you going to achieve that by taking on more risk? And the answer to that is no. You can very much expect that we will continue to manage the portfolio as we have historically, which is to take minimal interest rate risk. Occasionally, we'll lean a bit one way or the other, depending upon our collective mindset. But, typically, we're very close to home in that and manage leverage very prudently.

But it really comes from three opportunities that we see. One is we have more attractive investment opportunities especially in MSR and commercial real estate. So, that's exciting. And they're certainly more attractive, for instance, than the securitization business.

The second thing is by very rigorously managing our expenses. One thing that we said was that we expected the closure of the conduit to save about $10 million in expenses without consideration to the increased revenue.

And then, thirdly, we're managing our balance sheet and our capital structure more aggressively. So, recently -- well, in 2016 we repurchased 2.3% of our shares outstanding, or about $61 million at an average cost of $7.64. So, obviously, in retrospect, that was a good decision.

But, recently we issued a convertible bond and a preferred stock. And let me break those two down. So, what we've seen in the MSR space, despite the great efforts of Brad and his financing and treasury team, MSR financing is, to this point, has been expensive, very short-term, and not particularly scalable. And I guess, given that -- there's reasons for that I suppose, which perhaps is a discussion for another day.

But what we found with the convert was that -- the convertible bond, excuse me -- that it allowed us to finance that more efficiently and on a much longer-term basis. Obviously, it's a five-year convertible bond and it's unsecured so it allows us to finance, really, whatever we choose to. But, specifically we're targeting it at MSR because it fits very nicely in respect of the return versus the coupon we pay, but also the extended term of the convert.

In respect to the preferred stock, it's just this; when I was in finance school, we spent a lot of time on cost of equity capital. And so, I ran a lot of models around that. But the thing about this job is you walk in every day and if you look at where the stock trades relative to the dividend you get a pretty good feel for where the market is pricing your equity, right?

And so, if you look over the past few years, pretty dependably the market has priced our equity at 11% to 12%. And so, the preferred obviously allowed us to increase our equity base and obviously much more cheaply than what we could have done with a secondary stock issuance. And also, we have been historically very, very, very reluctant to ever do a dilutive deal to our shareholders. And given that our share prices, for a while, have traded below book value, this is just an expression of being good stewards to our common shareholders.

And, of course, most importantly, both those transactions are accretive to our earnings going forward.

## DIVERSIFIED CAPITAL ALLOCATION

**Tim Perrott:** Yes. That's a great point, Tom. And so, Tom, you've given us a great overview of the Company, what we're setting out, our excitement in 2017 and our opportunity to drive earnings higher and execute, and also do so while keeping the same mindset in terms of the way we manage risk because we want stable and relatively stable results.

So, I'm going to switch gears a little bit here and I'm going to take it to Bill Roth. So, Bill, what I'd like for you to do is maybe dig into the details a little bit and how they accomplish these goals that are in front of us today. So, maybe the best place to start is to get your view on where you see the opportunities for investment, for capital deployment, and the expected returns for the year ahead.

**Bill Roth:** Sure. Thanks, Tim. For those who are listening on the webcast, I will be referring to some slides and we're currently on slide number 24.

So, I guess maybe the best way to start is if you look at our capital allocation over time you'll see that it has moved around. One of the benefits of being a hybrid REIT is, in at least the way that we think of the world, is there are different opportunities that present themselves in different sectors at any given point in time.

So, if you look at this slide, you'll see that our rate strategy generally has ranged somewhere in the 50% plus or minus of our capital allocation (inaudible - missing audio) effectively zero. And now, it's roughly $700 million. And, obviously, if you include some of the financing, our ability to leverage going forward and grow, that becomes a meaningful part of the rate strategy. And we'll talk a little bit more about why we're excited about that.

You'll see that the credit part of the book has come down. A lot of that was due to the closure of the conduit because, if you listen to Laurie's remarks about mortgage credit and housing, and we're going to talk further about that in a minute, we're very excited about the opportunities that we have in our holdings there.

And then, commercial, several years ago we sort of recognized this huge refinancing wave and the increasing conservativism of underwriting. And so, we were fortunate to be able to bring Jack Taylor and his team onboard. And that's obviously grown from zero to a meaningful part of our capital allocation and continuing to grow.

So, if you look on the right-hand side of this slide, you'll see that our expectations are to be achieving low- to mid-double-digit gross returns on deploying capital to these areas and, as Tom mentioned, particularly commercial real estate and the MSR combined with pools. So, that's sort of how we are thinking about driving those higher earnings is deploying capital in those areas.

## RATES: THOUGHTFULLY MANAGE AGENCY PORTFOLIO AND BUILD OUT MSR

**Tim Perrott:** That's great, Bill. Thanks. So, just looking at the chart here, the rate strategy and our agency position is approximately 60% or so of the portfolio. MSR, as we had mentioned, is a real key aspect to the way we manage the business and hedge our exposure there. So, maybe, Bill, you can give us a little more insight on, number one, why is agency the size it is and, number two, the role that MSR plays in a more specific basis.

**Bill Roth:** Yes, sure. Well, first of all, agencies are -- they are rate sensitive, but there's really no credit risk. They're extraordinarily liquid. It's a massive market. The ability to deploy capital quickly or remove capital as the opportunities change is very easy. So, obviously, as a REIT, we also benefit from the ability to meet the whole pool test by being involved in agency. So, if you look at that, you'll see that our agency holdings over the last year or so have averaged about -- our agency pools, anyway, have averaged about $10 billion or so. But that's moved up and down as opportunities change. And so, that will continue to be a key component of the rate strategy.

The MSR, and I think we can't actually talk too much about how important that is to the strategy, the combination of pools and MSR drives a much higher return. We are able to hedge both interest rate risk as well as basis risk. And so, it's a much better profile vis a vis hedging with other instruments. Not that there's not value to hedging with other instruments; we just find this is a much better -- you get higher return and you have less risk.

## RATES: FOCUS ON NEW ISSUE MSR

**Tim Perrott:** That's great, Bill. Thanks. And mortgage servicing rights is a pretty broad term, MSRs. It means a lot of different things to different people at times because there are many types of MSRs. Can you maybe shed some light in terms of where we focus on a more specific basis and how we think about that and maybe the portfolio at a glance that just came up?

**Bill Roth:** Yes, certainly. And that's a great question. And we've gotten questions over time about; well, did you look at the XYZ portfolio or different types of things?

Basically, if you look at our holdings, which are shown in somewhat in detail on slide 26, we are focused almost exclusively on high-quality new-issue GSE conventional MSR. So, to give you an idea of the quality of that, in the red box you'll see that the FICOs are in the 750s, LTVs are low, and delinquency, 60-day delinquencies are just a touch above zero. And if you look down below that, you'll see that it's almost exclusively new issue and the coupons are really quite low.

And the reason for this is because if you think what we're trying to accomplish is we're looking for MSR that is reactive to moves in interest rates and mortgage rates. We're not interested in distressed servicing where you have a huge workforce that's going to interact with the borrower. And the returns to that can actually be quite attractive if you do it right. But, as Laurie's presentation has shown, the cost of servicing those is enormous and so you need to be in that business. And those, as you can imagine, have a huge credit component, not a rate component. So, what we're focused on is something that moves with rates and will be a good hedge against the high-quality agency pools that we have.

**Tim Perrott:** That's great, Bill. Thanks. So, MSR being a very effective hedge to interest rate risk to basis risk, essentially positioning us to generate more income while taking less risk. Can you be a little more specific in terms of some of the mechanics behind it and maybe a few examples of how that works?

**Bill Roth:** Yes. The nice thing about this fireside chat is the way Tim can tee me up to get into a little commercial.

**Tim Perrott:** It's amazing how that happens.

**Bill Roth:** So, I think we had a preview of this commercial earlier. So, we actually, in the fall, published the ninth in a series of webinars addressing topics that we thought would be of particular interest to our investors and our analysts. And I think probably the best thing to do is to get a little bit of an excerpt from that, which is led by Bill Greenberg, as we talked about before, and talk about why the combination of pools and MSR is so valuable for our business.

**Tim Perrott:** We will roll that portion of the webinar. So, hopefully we'll roll the -- it worked in dress rehearsal? Hang on. I hear something rolling. Give us just one moment here. The sound is not on. Here we go.

## EXCERPT FROM MSR WEBINAR – BILL GREENBERG, MANAGING DIRECTOR

### PORTFOLIO OF MSR HAS HIGHER YIELD POTENTIAL

In the first part of this webinar, we have talked about the background of MSR, and in the second part we have talked qualitatively about how the cash flows and prices of MSR and RMBS react to changes in interest rates, and how RMBS and MSR are similar and how they are different. In this section, we will bring this all together and take a look at how we can use MSR in a portfolio context with Agency RMBS.

Moving to slide 20, let's look at how a zero duration portfolio of MSR and RMBS can yield more than a zero duration portfolio of RMBS hedged only with interest rate swaps. We consider two illustrative portfolios each with $100 of capital. In the left-hand table, we have added some leverage to the initial capital amount to buy $900 of Agency pools. Against this we have borrowed in the repo market and entered into payer swaps to hedge to a duration neutral position – these activities are summed up in the "Agency Repo" and "5-year swaps" lines. In the columns on the far right we have calculated the duration and the dollar change per 1 basis point change in rates. This portfolio, with a neutral duration position, yields a 9% return on equity.

On the right-hand side of this slide, we have a portfolio of MSR and RMBS. In this example we have chosen to use approximately the same leverage on the RMBS portion of the portfolio as the example portfolio on the left-hand side of the slide. Furthermore, we have chosen to hedge the interest rate risk of the RMBS with MSR instead of swaps. Note that the MSR has a large negative duration, in this case, minus 25, compared with the 5-year duration for the 5-year swap. This is consistent with what we concluded on Slide 18 about the MSR having a much larger percentage price move for a given change in interest rates. We have also applied some leverage to the MSR using indicative market terms. These assumptions create a portfolio resulting in $47 of capital allocated to RMBS and $53 to MSR. Again, this portfolio is duration neutral, but yields a greater return on equity than the sample portfolio on the left, at 13%.

## HIGHER YIELD OF MSR PORTFOLIO IS NOT FREE

And that sounds pretty good, doesn't it? Well, it is! The extra yield generated by the RMBS and MSR portfolio is attractive, but it doesn't come for free.

We have already talked about the high barriers to entry of the MSR business, which include operational costs and ongoing responsibilities. In addition, though, a portfolio of RMBS and MSR, while having higher yield, comes with increased negative convexity compared to an RMBS portfolio hedged only with swaps.

Let's take a look at the charts on slide 21. All three of the charts on this slide show the change in portfolio equity on the y-axis as a function of instantaneous change in interest rates. We assume that the yield curve moves in parallel and that mortgage rates move uniformly with all other rates.

The top left graph depicts a portfolio of Agency RMBS hedged with swaps. The dotted line is how the RMBS behaves when rates change, and the dashed line, which depicts the swap, does the opposite. The solid blue line is the net of the RMBS and swap positions. It is relatively flat, indicating that the hedged portfolio of RMBS and swaps neither makes nor loses a significant amount of money for instantaneous parallel changes in rates.

The lower left graph depicts the same analysis, but RMBS is hedged with MSR instead. The combined position, in solid green, shows the net return of the RMBS and MSR portfolio for parallel and instantaneous changes.

If both of these combined positions are placed on the same scale, as shown on the larger chart on the right-hand side of the page it can be seen that the portfolio of RMBS and MSR, which is represented in green, is more negatively convex than the RMBS and swaps portfolio shown in blue. When rates go down or up a lot instantaneously, an investor loses more money in that instant with the MSR and RMBS position than with the RMBS and swaps position. So while the base case yield is higher, the potential outcomes in extreme rate moves are worse…which raises the question, is hedging with MSR really better?

**MSR PORTFOLIO GENERATES MORE REVENUE**

The answer is "yes," we think MSR is a better hedge, and for a number of reasons. Let's start on slide 22. Here we show a similar analysis as shown on slide 21, but taking into account the effects of the positive income and positive yield of both portfolios over a period of time. Specifically, this analysis shows the change in the equity value of each portfolio as a result of shocking interest rates, in parallel, and then waiting for one year, and earning whatever expected income is due to each portfolio while also accounting for prepayments. The result, shown in the large graph on the right-hand side of the slide, shows that the effect of the higher yield of the RMBS and MSR portfolio is so significant that that portfolio would be expected to outperform the RMBS and swaps portfolio in almost every scenario, except for very severe downward interest rate shocks.

There are different ways to think about that "tail risk" of the severe downward rate shock. One way is to assert that rates are low and the next move in interest rates is expected to be up and not down, and therefore not to worry about that potential outcome. Another way is to continuously monitor the portfolio and rebalance our hedges as the market moves in order to manage the additional convexity like we always strive to do at Two Harbors. Yet another way is to buy some protection in the form of interest rate or mortgage options.

**ENHANCED MSR PORTFOLIO OUTPERFORMS**

Let's take a look at how the additional revenue from the extra yield attributed to MSR can be spent buying swaptions, which provide a right but not an obligation to engage in swap transactions. The results of this are shown on slide 23. Swaptions are options on interest rates that cost a little bit of money up front, but can pay off in a big way if rates move in a certain direction and by a certain amount. In this sample portfolio, we added options to protect against a severe decline in interest rates. The calculations and assumptions used here are identical to those on slide 22 – they reflect a parallel shock in interest rates and with the portfolio held constant for one year. The curve representing the RMBS and MSR portfolio on this slide is shifted down a little compared to the prior slide – reflecting the option premium paid - but now the portfolio including MSR outperforms in every scenario. While the assumptions used in this example are simplified, and these results are not predictions or forecasts of expected returns, they illustrate the main reason why Two Harbors invests in MSR as a pair with RMBS – a portfolio of MSR and RMBS provides a natural hedge to RMBS with higher return potential.

**MSR PORTFOLIO HAS LESS BASIS RISK**

This sounds great so far, but that's not all! Moving to slide 24, I want to talk about an additional benefit of hedging an RMBS portfolio with MSR, which is the ability to neutralize value changes with respect to changes in the mortgage basis. The mortgage basis is the difference between mortgage rates and swap rates. In all of the rate shock scenarios considered in the previous slides, it was assumed that current and future mortgage rates moved in tandem with swap rates, so that in all of those scenarios, the mortgage basis was unchanged. MSR values are heavily influenced by prepayment speeds, which depend on the rate available to borrowers - the mortgage rate - and not the swap rate. So, what happens if mortgage rates and swap rates don't move together?

This can be looked at in one of two ways – either a scenario where the mortgage rate is unchanged and swap rates move, or a scenario where swap rates are unchanged and mortgage rates move. Either point of view is acceptable and will lead to the same the result if done carefully. For ease of discussion, we will consider the representation where swap rates are unchanged and mortgage rates move.

First let's consider the portfolio of RMBS hedged with swaps. In a case where swap rates don't move, the swap portion of the portfolio can be basically ignored. And slide 16 showed that when mortgage rates rise, the prices of RMBS fall, and when mortgage rates fall, the prices of RMBS rise. In this sense, a portfolio of RMBS hedged with swaps is totally unhedged with respect to changes in the mortgage basis. These results are depicted in the graph in the upper left of slide 24. Here the x-axis no longer refers to instantaneous parallel changes in all interest rates but only to instantaneous changes in the mortgage rate by the indicated amount, while leaving all other rates unchanged. As mortgage spreads widen, which is represented by increasing x-values, the changes in the portfolio equity value become more negative.

But a portfolio of RMBS hedged with MSR is different. MSR cash flows depend on the mortgage rate in a different way than RMBS. As slide 17 showed, when mortgage rates go up, prepayments slow and MSR becomes more valuable, not less like RMBS. Furthermore, if swap rates and all other rates are kept unchanged, the yield or discount rate is also unchanged. This is the result depicted in the lower left graph.

This is very important. While it sounds almost the same as what we discussed in previous slides, it is actually a quite different. An RMBS portfolio hedged with MSR is not only hedged with respect to interest rates – when all rates move together – but it is also much more effectively hedged with respect to changes in the mortgage basis – that is, when mortgage rates move but swap rates do not or vice versa. The large graph on the right-hand side summarizes this discussion. The green line depicts the return profile of the portfolio with MSR and the blue line that without. Clearly, the RMBS and MSR combination has far more stable outcomes as it related to mortgage spread risk.

**PORTFOLIO WITH MSR HAS LOWER LEVERAGE**

But, wait, there is even more! On slide 25, the tables from slide 20 have been replicated and we have included the swaptions mentioned on slide 23. The result on the right-hand side of this slide is essentially similar to slide 20, but now I want to emphasize something slightly different. Namely, while not only does the RMBS and MSR portfolio have the potential to earn a higher return, it also employs substantially lower overall leverage. As I described earlier, the RMBS portfolios of each example portfolio have roughly the same leverage, but owing to the portfolio on the right-hand side having approximately half its capital only levered a small amount rather than 8 times, the overall leverage of the portfolio is much, much lower. To the extent that margin calls and excessive leverage have typically been the cause of historical market stress events, a portfolio that has less leverage is clearly preferable, all else equal, to one with higher leverage.

**CONCLUSION**

Wrapping things up, I ask you to turn to slide 26. In this webinar, we have discussed the background for MSR, its creation, and the market. We have discussed how the cash flows of RMBS and MSR are different, how they are similar, and how they react to changes in the interest rate environment. Finally, I showed you why we believe MSR and MBS can be combined in a portfolio to create higher return potential, lower mortgage basis risk, and lower leverage than a portfolio of Agency RMBS and swaps.

In closing, we are very excited about the MSR opportunities before us, and to be able to share our strategy for superior portfolio construction with our investors. And with that, I'll turn it back over to Tim.

**RATES: FINANCING MSR ENHANCES RETURNS**

**Tim Perrott:** Thank you. Bill and Bill, we appreciate that. We're back live here. And, no, that's a great discussion. In fact, that's our ninth installment, I think, Maggie, in terms of our webinar series. So, we really encourage you to -- it's not just on MSR, but it's on other topics -- to take advantage of our webinars. They are very informative. So, we want to mention that.

Also, Bill Greenberg might have a future a radio host. Your voice sounds great.

But that's great in theory. So, this is a great theoretical discussion in terms of the way MSRs work and how they hedge interest rate and basis risk. So, Bill Roth, how did MSR perform in the volatile environment of the fourth quarter?

**Bill Roth:** Yes. Well, actually, we're very pleased that it performed exactly as we expected. We saw rates move up dramatically. Mortgages extended. Spreads widened. And a key driver of our total return for the fourth quarter was the fact that we had MSR as a significant contributor to the hedge value. Now, granted, we didn't have all of our pools hedged with MSR, but, nonetheless, the MSR values increased significantly, just as Bill pointed out in the webinar, and it was a tremendous benefit to our returns in the fourth quarter.

**Tim Perrott:** That's great. It's a great example. So, we have financing facilities in place for MSR and other areas of our business and we recently issued a new convert to enhance the returns over on the MSR side of the business. Can you perhaps show us the benefits of adding leverage and show how this helps us on our returns in MSR agency pair?

**Bill Roth:** Sure, absolutely. For those who are listening on the radio, we're on slide 36. And I think the key part of this slide to take away is we basically do a comparison of MSR and agencies, on the left, which is still quite attractive return with taking no duration risk and keeping our basis exposure targeted at zero. But when you add -- but that model assumes that we've paid for the MSR completely in cash. In other words, it's entirely equity-funded with no debt or leverage.

On the right, you'll see that by adding a modest amount of leverage we were actually able to increase our expected returns by about 200 basis points. And the key driver there is the fact that by using some leverage on the MSR, we're actually able to, for the same $100 of capital, buy more MSR and, therefore, more pools. So, if you look at the overall debt to equity in the high 2s when it's unlevered, you're able to use a little bit more higher portfolio leverage to drive a much higher return although, still, as pointed out in the webinar, low overall leverage quotient.

## CREDIT: CAPITALIZING ON VALUABLE LEGACY NON-AGENCY RMBS

**Tim Perrott:** That's great, Bill. Thanks. Why don't we move on now to our credit strategy and our legacy non-agency position? We've often talked about the performance of our legacy non-agency RMBS and it's been performing well and we've attributed a lot of this performance to some of the macro factors and tailwinds that we've seen. Can you give us some more information about the tailwinds and what these are and how they relate to our position on the credit side?

**Bill Roth:** Yes, certainly. And I think probably the audience, after hearing Laurie speak, was probably waiting for this part of the discussion. As she pointed out, affordability is good. We've seen good economic growth. There is upward tailwinds to housing prices, which I think she covered quite nicely.

So, if you want to talk about, really, why we're so excited about the legacy part of our credit book, which is the vast majority of it, it really comes down to the fact that if you look at the way we've positioned the portfolio, we've purposely picked very long average life securities because the loans in these deals are over 10 years old. And, as you'll see, the mark to market LTV or our estimate of the mark to market LTV on loans underlying is about 75%.

And so, if you look forward, because the statistics that come out today are whatever they are in terms of prepays and defaults, but if you look forwards and you -- seasoned loans amortize faster than new loans so the forward-looking LTVs are lower. If housing prices increase, and what we've shown here is roughly 3% and 6% per year as a base in an upside, so if you throw in the amortization and you throw in some HPA, you can see the forward-looking LTVs drop considerably, which basically bodes extremely well for credit performance and also for the ability for people who have been in their homes a long time to move or to sell their home or to trade up.

So, we think that the reason we're excited is because not just the tailwinds behind housing, but because of the holdings actually can capitalize nicely on that

## CREDIT: SIGNIFICANT RUNWAY FOR LEGACY NON-AGENCY RMBS

**Tim Perrott:** That's great. And I think that's one of the reasons why we've -- it's even maybe outperformed our own original expectations and we've been releasing reserves over the last couple of years against our credit book. And, in fact, I think we released about $75 million of reserves in 2016.

I think one of the questions I often get from analysts and investors is; how much juice is left? What is the runway left for the credit book on the legacy side? Maybe you can give us some comments there.

**Bill Roth:** Yes, sure. Yes, we've really benefitted over the years from having this as part of our holdings. But we think that the story is definitely not over yet.

And so, to provide a little bit of an example of that, if you take -- this slide we're on, slide 38 now, what we try to do here is show if you took our legacy non-agencies and you looked at -- okay, and these numbers on this slide are based on our amortized cost. On the left you'll see these are results from the fourth quarter. So, the entirety of it has about a little under 30% delinquencies, had a realized yield of 9%, and you can see the amount of loss severity and prepays.

So, what we did is we said, "Okay. Well, let's take the assumptions we're looking at today's market and we're defaulting almost 40% and we're running this to forward LIBOR." And you can see, based on this, that the go-forward yield to forward LIBOR is about 11% and a lot of the difference between 9% and 11% is from the fact that LIBOR going forward is higher.

The key takeaway from this slide, though, is that if you relax your assumptions a little bit and you say that prepay speeds move up over time and you default fewer borrowers, although we're still defaulting more than are currently delinquent, and severities drop ever so slightly, you can actually realize a substantial pickup in realized yield. And so, that's very exciting.

Furthermore, if you said, "Well, gee, the market says, 'Oh, okay. Well this is what's going to happen', I need to reprice these securities to those new assumptions." You could actually receive a revaluation well over $100 million of potential upside, which could be, obviously, very beneficial to our book value if that were to occur.

So, if it doesn't occur, we think we have good upside to higher yields in the future, but if it does, obviously, that would benefit our book value.

## COMMERCIAL: SELECTIVE PORTFOLIO FOCUS

**Tim Perrott:** That's great. So, a lot of upside left, runway ahead for the credit legacy book. Maybe we turn the discussion now to commercial, a topic that we've been very excited to discuss. And one of the things I hear a lot of analysts and investors and you read in the other publications about the late-innings cycle for the commercial cycle. I didn't want to use cycle twice, but I had to. Maybe you can comment a little bit on that statement and that view and then we'll outline some of the opportunities here in the future.

**Bill Roth:** Sure. Yes, I think we do get that question and I do think we've all read the articles in the paper talking about the high-end condos in New York City or certain segments of the market where there's very high-priced trophy properties. And those are the ones that get all the press. And it's hard to dispute that.

On the other hand, from our standpoint, we're not focused on anything remotely close to that part of the market. If you look at where we are focused our average loan size is $40 million, which not only wouldn't finance the building of those condos, but probably wouldn't even cover one condo. But it's primarily tier-two markets, very stable, high sponsor equity, good cash flows, it's not construction lending, etc. So, while I agree with you that we have seen those articles, that's not really what our strategy is focused on.

The opportunity is actually very exciting. We're focused primarily on leveraged first mortgage loans, which we see as being low- to mid-double-digit returns. They're LIBOR floating rate loans. So, as the Fed raises rates this year, you'd see those returns bump higher. And they're attractive returns with very strong risk metrics. Obviously, people know about the refinancing volumes that are taking place, but actually transaction volumes, in other words people buying and selling buildings, is very high. So, the pipeline is really very deep.

## COMMERCIAL: OFFICE – MEIER & FRANK BUILDING

**Tim Perrott:** That's great. I appreciate that. I thought it would be good maybe that we can jump to a couple of examples of properties and recent transactions that I think would be interest of our investors to learn more about. So, maybe you can cover that, Bill.

**Bill Roth:** Yes, I'd love to. Our disclosures, we think, are really very strong, but it typically says Loan A, Loan B, Loan C. So, we're going to take a look at three different loans today, one in each of our top-three segments. So, our highest allocation, roughly half, is in the office sector.

So, on slide 40, we made a loan on the Meier & Frank building in downtown Portland. And, as you can see by the little Google graph on the bottom left, it's right near the river, right in the heart of downtown. This is a conversion of an old department store that occupied -- in a lot of cities, right in the center of town was a department store in one of these buildings and it's four or five stories. And so, this is a conversion that's going on, converting that to retail and office space.

And so, besides the return profile, which is shown on the right, the things that we like about this are the LTVs are low. The sponsor, which is a very key component of our underwriting, is one of the top-10 global office owners, very long-term holder, very stable. This is a transaction, this is a purchase transaction. And, additionally, if you look at the demographics in Portland, the vacancies have been very stable and low over the last 10 years.

So, this is a loan that not only return metrics quotes out well, but all the supporting things that we look at are very key. And you can see a photo of the building on the right there. It's a great location, great sponsor, and very strong LTVs going in.

## COMMERCIAL: RETAIL – LAHAINA CANNERY MALL

**Bill Roth:** The second one we're going to look at is maybe a little bit out of left field from what people in the audience might have expected because it's in Hawaii and it's retail. So, people have asked questions about; well, like is retail, do you want to make any retail loans? So, this is an example of a retail loan that is actually very different from what people might have in their minds.

So, you can see, on the right, a photograph. Somebody on our team actually had to go do due diligence on this in December and there was actually a queue to see who had to go do that work. But the thing about this one is you'll see in the photo that there's a very well-known national grocery store in the space. They've been there for a long, long time and they've actually acquired more space and are growing their footprint there. There's also a national drugstore. So, this mall is actually like the key destination for buying your groceries and going to the drugstore. This isn't your typical Midwest Sears, Macys, Penney's kind of mall.

Additionally, the owner, the majority owner is a BBB-rated insurance company. And, as you can imagine, for anybody who's been to Hawaii, there is extraordinarily supply-constrained markets. So, basically this mall has been there a long time. It's a good sponsor with very, very strong anchor tenants. And you can see what the LTVs are going in and what the return metrics are. So, this is a retail loan that we feel very, very strongly and very good about from a return and a quality perspective.

## COMMERCIAL: MULTIFAMILY – JASMINE AT TAMARAC

**Bill Roth:** Then the last loan is actually, I'm not embarrassed to say, one of my favorites. And the reason -- there's a couple of reasons. First of all, it's a multifamily loan. We do get questions about," Well, is there a bubble in multifamily? Is there oversupply? Are you concerned about multifamily?" So, this is a loan west of Fort Lauderdale in Tamarac, Florida. You can see the return metrics on the right.

The reason that this is one of my favorites is because if you look on the left you'll see that the going in debt service coverage is very strong. The LTVs are strong. But the thing that you don't see on this slide is that within -- if you drew a circle around this property and you looked at other comparable projects, the vacancy rate is virtually nil. In other words, the multifamily in this area is extraordinarily strong. The rents on this property are below market and the sponsor's plan is to basically put some improvements into the buildings and move the rents, which, in this project, are below market, up to market.

So, the thing that's nice about this is even if the guy doesn't execute, the sponsor doesn't execute well, we're still covered. And so, you have a great location in the market. You have great dynamics. And, yet, even if it doesn't work exactly as they had planned it, we're still in very good shape.

So, these are the kind of projects that we like to focus on. Strong sponsors, good equity, decent cash flow upfront, and in markets where you have good location and very strong supporting dynamics.

**HEDGING TO PROTECT BOOK VALUE AND EARNINGS**

**Tim Perrott:** That's great, Bill. Thanks so much. So, we've covered our three strategies. I want to wrap up for a moment with you on risk management. I think, just taking us back to what Tom said a little earlier, the importance of how we manage risk and providing stability in book value and income results through different environments, is really, I would say, the secret sauce of Two Harbors.

And maybe you can give us some views here, particularly our agency position, the one that has that exposure. And we've talked a lot about how we hedge. But perhaps you can give us a little more insight to both book value and interest income exposure to changes, for example, in rates.

**Bill Roth:** Yes, sure. I mean I think we've talked about the exciting return possibilities in some of our different strategies. And if you think -- the way we like to think about managing not just our business, but the risk, is we're in this to extract the spread. I think Tom said at the beginning security selection. That also relates to loan selection. But, basically, we believe that we can drive returns by getting better spreads and better spreads with lower risk and not generate return by taking outsized interest rate risk or duration positions, etc.

And so, if you look at the theme, right, our commercial loans we think are good returns, but the risk metrics are very solid. Pools and MSR, same kind of thing; higher return, lower risk. In the non-agency book, we think we're going to get good return and upside.

So, what this slide shows is our exposure to those risk metrics. We don't believe we need to take that to generate the return and our book value volatility shown at the beginning shows that. So, what we see here is that as of the end of the year and instantaneous shock up 100 has very little impact on our book value as a result of all the hedging tools we use. And, furthermore, you'll see that our net interest income barely budges per rate moves. And I think that's particularly important in a year when the Fed has pretty much told us they're going to raise rates. They just did it yesterday. They're going to raise it probably two more times. We expect to generate roughly the same amount of income regardless.

**DIVERSIFIED FINANCING PROFILE PROVIDES COMPETITIVE ADVANTAGE**

**Tim Perrott:** That's great. That's great. So, what we're going to do now is we're going to turn it to our CFO, Brad Farrell. A few questions for Brad and then we'll get to Q&A.

So, Brad, a lot of feedback I have, I'd like to cover the financial profile. Several of the analysts and investors have commented to me about the attractiveness of the profile, the current -- the way it's constructed and the opportunities. And some have said it's one of the best in the industry, if dare use that word. But maybe I could turn it over to you and you can give us some thoughts on the diversified financing profile for Two Harbors and directionally where we're headed.

**Brad Farrell:** Thanks, Tim. I would hesitate to use the word best. First, because I think the mortgage REITs generally have improved their management of the balance sheet since the financial crisis, which I comment on that because I think that's good for the investor confidence in the sector. But what I do think is something that we're quite proud of is that I think we're very forward-looking and dynamic about how we position ourselves from a financing perspective and a liquidity management.

First, I mean, as many of you know, we were the first mortgage REIT to form a captive and became a member of the FHLB. And, while the FHFA rule-making potentially put some constraints on the overall benefit of that long term, end of the day we still have four years of membership and over $2.5 billion of advances that extend for 18 years. And the reality is, is that that's an extreme competitive advantage for us. It's a strong counterparty with a strong balance sheet that we can use to diversify our stability.

In broad strokes, I think we carry a more diversified and longer or laddered maturity profile than many of our peers. We understand, just like insurance for hedging, there's costs to that. There is cost of trying to create a laddered profile, but it prevents -- it reduces risk in liquidity significantly during times of strain especially on our credit assets.

And where I do think we maybe can use the word best or where we're most proud is our ability to -- the team and the tools that we have to manage excess liquidity projections, to stress the portfolio, to navigate periods, such as Q4, when rates move. That is where I think we're probably most proud of what we can do and how we feel that demonstrate our strength in risk management and it kind of carries over to the liability side of the balance sheet.

## DIVERSIFIED FINANCING PROFILE PROVIDES COMPETITIVE ADVANTAGE

**Tim Perrott:** That's great, Brad. So, the profile continues to evolve. And maybe you can give us a little bit more color around how we're growing the financing of our assets and the outlook going forward.

**Brad Farrell:** As I commented, it's how much you do that's not even shown. And we're extremely active behind the closed doors. We're continuously evaluating opportunities to either be creative or to expand our toolbox, if you will.

I guess we've all commented on the convertible debt. I think it is a great example of what most recently we did. If you think about security MSR financing, while we do have some capacity on a couple small lines that we feel are attractive, pricing at spreads of kind of LIBOR plus 365, 375, the reality is that market is still not fully back. There are some transactions in the market right now that are pricing opportunity (inaudible) collateral. But you're looking at 500 to 550 spreads. And when you can add a convertible debt issuance, five-year term, at 6.25% that can complement our MSR portfolio, we felt that was an extremely good opportunity to expand our toolbox.

We do this -- and we do think there will be opportunity in MSR secured financing. We are continuously working with counterparties to think about what might make sense for conventional product. The one slight deviation is that, for Fannie and Freddie, it requires an acknowledgement letter for a financing counterparty whereas Ginnie Mae it does not. So, that market will come back. We think there will be opportunities. But, in the meantime, a convertible debt issuance made a lot of sense for us at a very appealing rate.

And then, jumping over to commercial real estate, continuously evaluating how we're going to finance that book as it grows. In this capacity, there is a significant number of counterparties out there in the market who both have the knowledge and the balance sheet to support that growth. And that will continue to be our focus. In the first quarter we have expanded one of our facilities from $250 million to $400 million. And we expect more counterparties to be added in the near term. So I think that's probably the key components about how we think about our toolbox.

## OPERATING EXPENSE MANAGEMENT

**Tim Perrott:** That's great, Brad. Thanks so much for that. Maybe we change the discussion to expenses for a moment. Late 2015, early 2016, we were somewhat on an upward trajectory for expenses. And we took significant steps and action to improve the overall efficiency in the business. Maybe you can expand a little bit on that and the steps that we took and as well as what the outlook is on the go-forward basis.

**Brad Farrell:** Yes. I think, as Tom mentioned, it was a reflective year. We assessed our entire business model and, of course, a big part of that was evaluating our expenses. We discussed earlier the conduit business didn't make sense from a variety of factors and a big part of that was the expenses that supported it. End of the day we didn't feel the return was there for that product and it made sense to shut it down, which obviously did have incremental impacts on expenses.

But I think it's really important as we evaluate these business models, we really thought about what were the expenses buying us, just like an investment. What lens could we look at on the risk and return profile of our investments? And we did look at our other business models and we felt the expenses did make sense; that they were supportive of incremental ROE that we can generate to our shareholders.

So, I had a couple comments there. One, I feel if we stripped away our expenses supporting MSR and CRE and just strip it down to kind of corporate RMBS, I do think we would compare very favorably or at least consistently with peers in our industry. So, then, taking a step back is, if you look at our MSR and CRE, doing that deep dive we really feel that the incremental returns, as Bill outlined, make sense to carry that expense ratio we carry. But what we're getting, and obviously every day is focused on efficiency and being responsible, but the incremental expenses really does generate additional returns for us on an overall basis.

And then, as mentioned a few different times, based on our current business model, our capital allocations and our capital base, we do feel that we can move to kind of the 1.6% to 1.8% expense ratio in 2017. That's the objective we set for ourselves and we think that's doable based on what we know today and the objectives we have.

## DELIVERED STRONG DIVIDENDS TO STOCKHOLDERS

**Tim Perrott:** That's great, Brad. Thanks. So, maybe wrapping up with you, Brad, and the discussion, you can give us a few thoughts around how we think about taxable income and dividends.

**Brad Farrell:** Yes. First, and I think we've touched upon this a little bit and we've made this comment, I think, probably since our inception, is that the biggest driver of long-term sustainable dividend is the ability to protect book value. And I think we've -- so, really, the super metric that we really evaluate is comprehensive income. Over our time is the ability to generate return, protect book value during volatility. End of the day that's going to create an ability for us to generate dividends over the long term.

An example of that is our book value per share was $9.08 at 12/31/2009. Our book value was $9.89 at 12/31/2016. And during that period we distributed over $10.24 of dividend. So, again, comprehensive income, the ability to generate total return, is the super metric that we evaluate ourselves and it's going to establish that sustainability of any dividend that we form.

But getting back maybe just a little bit more direct to taxable income and what this slide does try to demonstrate is we're extremely thoughtful about how we're looking forward. And when we do declare a dividend we're very comfortable about the sustainability of our dividend, the factors that help us manage our portfolio, and weigh those appropriately. And consistently, at least frequently, our taxable income has exceeded our dividend declaration. So, we've consistently carried forward undistributed taxable income, which obviously, as a REIT, we at the end of the day have an obligation to distribute 100%.

So, moving into 2017, for example, we carried over $24.3 million of ordinary income, which is about $0.07 per share. So you think about that being well placed for 2017. The earnings and the objectives that we've set, that Tom has spoken to, we feel we are very well-positioned to declare our dividend in Q1 of $0.25 and make that incremental announcement. So, I think that kind of hits your key points to your question.

## STRONGER EARNINGS POTENTIAL IN 2017

**Tim Perrott:** Great. No, it does, Brad. Thanks so much. Well, prior to turning it over to Q&A, Tom, any final thoughts and wrap up? Tom?

**Tom Siering:** Yes, thanks, Tim. So, as I said, our strategy is really quite simple for 2017; continue to deploy and increase allocation to the most attractive investment options. I think Bill has delineated those quite nicely in his discussion. To continue to manage expense, as Brad discussed. And then, lastly, to continue to manage our balance sheet and our capital structure in a prudent way to optimize earnings and shareholder return.

And so, obviously, the future is not guaranteed to any of us. It's all subject to market conditions, which obviously can be ephemeral. But, right now, we feel quite good about our mission to make more money in 2017 for Two Harbors.

## Q&A

**Tim Perrott:** That's super. Appreciate that, Tom. So, now, it's the time that we turn it over to you to ask questions of the management team. So, we'll start the Q&A process now. So, please feel free to as a question. We have a question right here from Mark.

**Unidentified Audience Member:** Thanks. You indicated that one of things that got you excited about the commercial mortgage opportunity was the wave of refinancings you saw and I think, Bill, you indicated you still see a pretty active pipeline. The latest data I've seen or the last data I saw on kind of a CMBS maturity wall made it look as if it was more concentrated in 2016 and 2017 and then as you get beyond that it starts to trail off. Could you just talk about the opportunity to continue to deploy capital into that business as some of those maturities start to play out?

**Bill Roth:** Yes, sure. Yes, the data is pretty straightforward because it's pretty much the loans that were made roughly 10 years ago.

I think there are a couple things. First of all, a number of the loans that are in these deals aren't underwriteable on the old metrics and so some of those will extend beyond their stated maturity as they get worked through. That doesn't mean it's a bad property. It might just not be worth the same amount. So, if a property was worth $100 million 10 years ago, maybe it's worth $60 million or $70 million today and underwrites extremely well. So, there could be some extension there.

The bigger thing is, over and above that, is the transaction volume is very high. There's a huge amount of capital inflows to the U.S. particularly from overseas investors who fancy the U.S. as a really attractive place to deploy capital either from a currency basis or a stability basis. So, there are a lot of transactions taking place. And then, we see that continuing on past 2017.

Then the last point I would make is that, given our size and our capital deployment, we expect to run about $100 million in loans per month, roughly $30 million of equity, so we actually don't need -- I mean, so to give you an idea, our current number of deals under review is about close to $2.5 billion, $3 billion. There is no way we can make even a fraction of those loans. So, even if that pipeline went down by half or a third there would still be plenty for us to choose from a go-forward basis.

**Unidentified Audience Member:** Going to the MSR, I think in the past you've talked about 20% up to that capital allocation. With the leverage, does that capital allocation stay the same and this is an opportunity to grow that asset by more?

And a related question is just on the corporate-level leverage. If you see more opportunities to grow the MSR, is there room to grow leverage through preferred or convert or anything else?

**Bill Roth:** Sure. I think the -- well, the short answer to your first question is yes. So, we've said, I think consistently, that we're expecting $2 billion to $3 billion a month in UPB, which is call it roughly $25 million a month of new investment in MSR assuming we don't look at any bulk deals. So, on a gross basis, that's about $300 million. Now, granted there will be pay downs, but you can see how it's very easy for us to continue to grow that business.

And we particularly like the flow programs because they actually trade a little bit cheaper, not massively cheaper, but a little bit cheaper than bulk. And we can price all the characteristics that we like. So, when you buy a bulk package, and there's nothing wrong with that, it's sort of you get what you get as opposed to the flow where you can price characteristics the way you like them.

So, the answer is we definitely expect for our notional amount to go up. And because we've added financing, you could think of that as bringing the capital allocation down and then floating back up.

**Brad Farrell:** So, I think maybe to the second part of the question, and hopefully that came across, I think we are hopeful that in the next six months to 12 months that there are opportunities to use secured MSR financing at rates that will be a bit more competitive or appealing in the market. There are counterparties out there evaluating and trying to work through some of just the machine of pursuing that. And I think we'd measure that against any other corporate opportunities.

We also need to think forward. In 2022 is we have to be very thoughtful, too, about having maturities -- how timely we want to measure those across each other when the debt, that five-year period comes up. So, yes, we'd evaluate corporate opportunities. We think about how close we want those to mature against each other as well as evaluate secured MSR financing opportunities in the market, which we hope to have come back in this next six to 12 months.

**Tom Siering:** Yes. Because if you look at existing financing spreads in that space, Bose (ph), you have to think they only have one way to go, which is lower. Eventually, it will attract more capital and we're optimistic that those financing rates will improve going forward.

The other thing that Laurie spoke about, which I think is important here, too, in perhaps an indirect way in her remarks, if you look at the origination business for the next couple years, we think it's going to continue to be quite challenged because of the increase in rates and the lower refinancing activity. And so, while that might mean that volumes of MSR in the market might be somewhat lower, there is going to be a continued need for small and mid-sized originators to sell MSR. So, we're quite optimistic about the pricing and the runway going forward.

**Tim Perrott:** Great. A question right over here.

**Unidentified Audience Member:** Thank you very much for the presentation. It was very helpful. It just gives us some view on how you think about the business.

I have one question about the internal versus external management question on hybrid mortgage REITs. And internally-managed mortgage REITs tend to trade better and get a premium valuation, expenses are lower, and that's been proven by different mortgage REITs; case in point, Chimera, one that comes to mind the recent past. I know this is a tough question to ask, but how do you think about that? And you've done a good job in lowering expenses. But I mean how do you evaluate that and what are the tradeoffs that you think about? Thank you.

**Tom Siering:** Sure. It's a perfectly, fair question and we don't feel put on the spot at all by it. So, thank you for the question.

It's certainly true that if you internalize your expenses go down. There's no doubt. We don't even need a calculator for that one, right? But it comes at a cost and the cost is the dilution that's created by buying out the external management contract.

So, I'll be honest, and I've said this in public forums before, if you look at the most vivid recent example of that, it's not -- the economics around that are, I guess, in respect of the value to the shareholder in that proposition, I would say they're somewhat unclear to us.

And so, we're going to view this always through the lens of one thing, this and any other issue, through one lens, which is; what is the best deal for our shareholders? We really feel that the fact that we're externally managed is not a gating factor for us because the old knock on external managers was, "Well, you'll just raise money, raise money, raise money, raise money, and you don't give a good hoot about your shareholders." And I think that we've demonstrated over time that we take the stewardship of our shareholders very seriously and do not do that. But we will always continue to evaluate options to make shareholders more money including that option.

**Unidentified Audience Member:** Thanks. Just a quick follow-up on that. I think Two Harbors has done a really good job in terms of capital allocation. You guys have bought back stock at low prices, at significant discounts to book value, not issued stock below book value, raised convert and preferreds, which are not necessarily dilutive. This is not a comment on your capital allocation. I think the comment is about the market in general and how the market perceives it.

I think the comment about external manager and the dilution from buying the external manager is -- I mean Chimera effectively bought back 4% or 5% of the company to offset some of that. So, I mean during periods of time when you've traded below book value, significantly below book value, I think it's just a very interesting option to look at.

**Tom Siering:** Sure. But keep in mind, as an external manager, we bought back 2.3% of the Company last year. Why? Because it was the right deal for shareholders. We bought it. In retrospect, it was a very good deal and, obviously, that lowered our management fee.

So, we're going to continue to evaluate all options for the Company. We're going to continue to use our balance sheet and our capital structure in a prudent way. And that's our commitment. But we examine all options that are available to enhance shareholder value.

And I'm not saying that you're drawing this conclusion at all, but a lot of times people get the sense that the lower expense ratio is just money that fell from the sky and, of course it's not. It has to be measured through the lens of the dilution that's attached to it. Because, obviously, to the extent that it is dilutive, it reduces book value, which reduces the ability to earn money for our shareholders, too. So, we constantly ponder that math and we'll continue to do so.

**Tim Perrott:** A question up here. Doug.

**Tom Siering:** Doug, I like your socks, by the way.

**Unidentified Audience Member:** Thank you. So the examples you gave around MSR and agency MBS was all around kind of the instantaneous parallel shift. How does the shape of the curve, either flatter or steeper, impact those return outcomes.

**Tom Siering:** Well, I'm going to give it to Bill. But one thing, the market has become addicted to this parallel shift of 100 basis points. And I can assure you that's -- we run that primarily because we put it in the Q, which Bill and I've been in the markets for collectively 400 years, I think. And we've never seen that and I will bet you a steak dinner wherever you want that we won't see that as long as I'm above ground.

So, I mean, honestly, we don't -- it's a standard disclosure and I think it's great because it gives people a broad sense of interest rate exposure. But I can assure you that when we truly run what we think our interest rate exposure is, we, as I said earlier, run Monte Carlo simulations moving rates and curves up and down and sideways. And so, we simply don't rest or hedge based on that metric. It's simply one that gives the market a broad sense of interest rate exposure.

But, frankly, I'll be honest, when Bill and his team are together or when I'm with Bob Rush talking about interest rate exposure, we don't even bring that up, honestly, because it's -- it's good for what it is, but one should definitely not be married to it because it doesn't exist in the real world. I don't know, Bill, if you wanted to add something?

**Bill Roth:** Yes. Well, to your question, the shape of the curve absolutely matters. I mean if you think about MSR -- if you think about the primary mortgage rate and you think about that driving current coupon mortgages and those coupons around it or the value of MSR, it's driven to the mortgage rate. So, if the 10-year doesn't move at all and the two-year moves 10 basis points, the odds are the primary mortgage rate didn't move at all, right? So, the shape of the curve is absolutely impactful.

So, without getting to math-y on you, basically think of it this way. The MSR particularly is important with hedging the longer part of the curve and the mortgage basis, but if you think about -- and in webinar number three maybe -- was it? We had a webinar that talked about and it showed, we have this slide, I believe, that talked about MSR particularly hedging the longer part of the curve.

But you do have to hedge other components of the curve, which we do. We don't actually, as you can imagine, we don't just sort of buy some pools and have some MSR and then go play paddle tennis or golf or whatever your favorite leisure activity is, right? We look at our exposures across the curve on a daily basis. And those change as the curve changes.

But if you look at our swap position and our swaptions position, they are typically oriented towards the shorter end of the curve because of the fact that you're talking about, which is the longer part might not move, but the shorter part could move. And what you find, actually is, is that MSRs and pools will move in opposite directions if the curve flattens or steepens, but we hedge out the other components of the curve using other instruments.

**Tom Siering:** Yes. We've actually had a slide on that in the past. But, essentially, swaps hedge out the preponderance of the short end, MSR the long end, and then we use other, primarily derivatives, in between. But it's very important not to hedge nominal duration, but hedge points along the curve. That's critical.

**Tim Perrott:** Do we have other questions? We have one right here. Rob?

**Unidentified Audience Member:** I guess as you think about kind of building up your MSR portfolio, I guess we saw one competitor bring in another party to stream off some of that equity exposure. How do think about it longer term, in terms of sourcing MSR? And do you always run that internally or would you ever consider an external equity partner?

**Bill Roth:** I don't think that's something we've given a lot of thought to, to be honest with you. Our capital base is sufficient and especially since we've added financing capabilities to be able to continue to grow MSR. I mean I don't think you should think of us as having 100% of our capital in MSR. Although, I guess there's some scenario where we could, but that's not really where we're headed.

The nice thing about the flow program is that it's a very nice way to add MSR on a measured basis. And so, from allocating capital standpoint, that's fairly easy. I don't really see a scenario where we would have an additional capital partner.

**Tom Siering:** Yes, I can't envision that. We have the internal capital. We have the internal expertise to run it. But inviting a third-party source of capital, and I'm not speaking on anyone else's business model, it just invites complications. Today, we feel under-allocated to MSR and so, certainly, we'd like to up that allocation. That's our near-term objective.

**Brad Farrell:** I mean some of the structures out there, looking, tend to be more like securitization or term note issuances to spread some of that financing risk, but that's a different form, I think, than what your question was about.

**Unidentified Audience Member:** Thank you. That's helpful.

**Tom Siering:** Thank you.

**Bill Roth:** Thanks.

**Tim Perrott:** A question back here.

**Unidentified Audience Member:** A longer-term question. With the residential credit market obviously shrinking, the legacy stuff going away, roll forward two or three years, what do you think your capital allocation would look like?

**Bill Roth:** Yes. So, that's a great question. I think the first and most important thing to remember is if you think back to whatever slide number it was, is we've positioned our holdings -- Maggie is going to find it for us here -- we've positioned our holdings such that the average, our average holding, our average bond holding -- it's a little forward.

**Tom Siering:** Yes.

**Bill Roth:** Is roughly 10 years. So, if nothing happens, three years from now our average bond will still have seven years to go. And I think -- so, you could see here on slide 37, the weighted-average life of the bonds is 10.2 years. So, three years from now, we still have a lot -- three years from now we still might be talking about it unless they're all trading at par or higher. So, specifically, that we're not too concerned about.

That being said, the opportunity to deploy capital to credit we think can be very important and can be very attractive depending on what form it takes and what the pricing is like. I think Laurie mentioned that the CRT market today is trading at very tight spreads. We've obviously observed that. We don't own any CRT today. That market can be very volatile because, given it's at the bottom of the capital structure and generally thin slices, if you get a whiff of concern about housing prices or loan performance -- it wasn't that long ago that those bonds were trading at 700 over or wider. And so, with a 10-year duration, those bonds could be $50, $60 pretty quickly.

Now, I don't want to scare anybody because we don't think that's going to happen anytime soon, but the gist of it is, is that we think there will be opportunities whether it's CRT or potentially the growth of the securitization of non-QM products, I think somebody asked about, which probably is a number of years off.

I think our view is, is that the credit box will continue to open slowly. There will continue to be dissemination of credit to private investors such as ourselves. And we're set up to take advantage of that. But, today, we see the best value in the legacy side and, in fact, we've had a few opportunities this quarter to pick up securities that we thought were particularly attractive and where there was upside possibilities.

**Tom Siering:** Yes. If I could comment on that slide and I think my comments are going to make Vic smile. Vic is in the back of the room and, as Tim said, runs our non-agency portfolio. He looks like the bad guy in a James Bond movie, but he's the nicest guy in the world. That's a compliment all the way around.

So, if you look at the metrics on that, if you like risk you want something that has a longer weighted-average life. And, for all the reasons that we've talked about and a lot of reasons that Laurie talked about, we like this risk. And I would say that in the near term if the allocation over the next few years is really a problem to this (inaudible) it's because of some of the math there, right?

You look at the forward LTV, right? If that shortens up a lot, it shortens up for, in my view, a particular reason; that this cohort is able to refinance their mortgages. And if that happens, yes, the allocation shrinks. But, to our shareholders, that's high-class problem, right? Which means we've made them money.

But this isn't going away anytime soon. And if it is going away anytime soon, in my opinion, it's for a very -- it's a very fortuitous outcome for our shareholders. I think that's important for people to walk away. That we truly believe.

**Bill Roth:** Yes, I mean average dollar price is in the 70s. So, if it goes away tomorrow, which it won't, but if it did, that's a big windfall.

**Tom Siering:** Yes. I mean one of the real positives -- prepayment speeds in this sector have upticked some, certainly. But, forever, you were essentially able to buy prepayment optionality for nothing. But if you look at those forward LTVs, is it possible that there is some or significantly more refinancing? I certainly think some additional is in the cards or it's certainly potential. And, as I said, if that book starts to go away, I think it's for good -- it's a high-class problem for our shareholders.

**Tim Perrott:** Great. Do we have other questions? We have no questions from the webcast currently.

**Tom Siering:** I'd like to thank Laurie again for coming and braving the weather. Her presentation was great, as it always is. And I'd like to thank everyone who's listening to us via the webcast for listening to us. And, importantly, thank you to everyone in the room for braving the elements today. Thanks for coming.

**Tim Perrott:** Thanks. Appreciate it.