MACRO Voices
with hosts Erik Townsend and Patrick Ceresna

Harley Bassman: The Magic of Mortgages

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Erik: Joining me now is Harley Bassman, Convexity Maven, as he is known, and also with Simplify Asset Management, where he runs several ETFs. Harley prepared a slide deck to accompany today's interview. Registered users will find the download link in your Research Roundup email. If you don't have a Research Roundup email, just go to our homepage, macrovoices.com, look for the red button above Harley's picture that says, *looking for the downloads*. Harley, it's great to get you back on the show. Let's start with the big picture on mortgage-backed securities, because there's something I've never understood about them. We all know about these things, everybody does. We're not talking about the esoteric securities that only professionals can trade, because they're not available on listed markets. We're talking about bonds here. Yet, for some reason, it seems to me like mortgage-backed securities are kind of a mystery world that are, all these bonds get sucked up into CDOs for some reason, and nobody trades the bonds directly. Am I missing something? What's going on here?

Harley: Well, there's a number of things. First off, thank you for having me back. It's a great compliment. You guys have the best financial show on the market, so it's great to be here. I think what's important to note is that when we say the word mortgages, people generally think, great financial crisis, subprime, default risk. That's fine. That is true. But that's not what I'm talking about here. When we say mortgage-backed securities, MBS, we're talking about basically the second largest asset class in the bond market, only behind US Treasuries, and certainly more than corporate bonds and junk bonds. And these securities, they would drive the whole mortgage process, because most homes are purchased with loans that get put into mortgage-backed securities that are wrapped guaranteed by Fannie, Freddie or Ginnie. Civilians, what I call retail non-professionals, have no contact whatsoever with these bonds. Almost no one buys these securities. They're not available because they're just dirty little animals. You will buy them on ETFs or mutual funds or others, lots of ways to do it. But most people do not trade mortgage-backed securities for a variety of reasons we could talk about.

Erik: Harley, let's go ahead and dive into some of those reasons. Why is it? Obviously, this is a very important part of the market that a lot of people are exposed to in their retail accounts indirectly, but it's not something people trade directly. Help me, I still don't get it.

Harley: Okay, let's break it into two pieces. One is the process of making these bonds, and two is the value proposition of why you want to own them in some manner, fashion or form. These mortgage bonds, what happens is, the loans are created ordinarily. As you go out and buy a house, the bank or entity that gets these mortgages, they put them all to Fannie and Freddie or

Ginnie. They then look at the bonds, these loans, make sure they're kind of high FICO, good numbers. They wrap them together, and they put them into one giant, billion-dollar pool. They stamp it and say this, bonds are guaranteed by the US government, more or less. And then they give them back to the market, and then they're sold into the market. The thing is, about these mortgage bonds, and if you own a house and you have a mortgage, you'll notice that when you pay your monthly check, so let's say you have a $500,000 loan, 6% coupon. You're paying $3000 a month, and a 6% loan. Of that, $2500 is going into interest and $500 to the principal. So, what's happening is, you're paying down your loan. It's amortizing over the course of 30 years, and the person who owns the mortgage-backed security has lent the money. He's getting this money back. Well, he has to go reinvest that principal basically every month, which is really a pain in the neck. On top of that, as the principal comes back to you, it's kind of a little mini trade. If you bought the mortgage bond at 95 when that 500 bucks comes back to you, it comes back at par at 100, so you've made five points. And if you bought it 105, you're losing five points a little bit each time, that's taxable. So if you own a regular mortgage bond, as I said, no one does, if you owned one, you have a massive accounting and process problem, you have reinvestment risk and a tax problem. And that's why you rarely ever see these bonds trade to civilians. They trade within ETFs and mutual funds to absorb all that. It's also why when you look at a 30-year mortgage bond, it's never really a 30-year security, even if it never prepays, because you're getting that principal back over time and it's paying down, because at the end of 30 years, the mortgage is gone. And so even in the worst-case scenario, mortgage bonds are rarely more than a 12-year security, because they're amortizing. So that's the process of the mortgage security.

On the other side, what does a mortgage bond look like? A mortgage bond can be kind of modeled like a buy right. Like you're buying a 10-year Treasury at 100 and selling a call option struck at 105, that's kind of where the bond might start to prepay at. And so, the value of the mortgage security really depends upon the value of that call option that's being sold, because the 10-year Treasury part of it, the money you're getting back, is no different than Treasury that's amortizing over time. The uncertainty is not that principal, it's the call option. And so, what drives that call option? It's interest rates and implied vol like anything else where you're selling an option. And what I would propose right now is that mortgage securities, mortgage-backed securities, are probably the best way to invest, risk adjusted in the bond market. I would say they're the best thing out there right now,

Erik: Let's go a little bit deeper on why they're the best thing, and particularly mortgages. I mean, in general, you've been really hot on mortgages for the last couple of interviews we've done on MacroVoices. Give us the overview, again, of why mortgage-backed bonds instead of other bonds, and what the best ways are to acquire them, and what the best exposures are to hold in a retail account.

Harley: When you're buying a mortgage security, you kind of got to think, I'm selling a call option doing a buy right. When do I want to do a buy right? When I can sell that call option for a lot of money. What drives that call option is two things. One is where the interest rates are relative to the strikes of the market price versus the strike price, and the other is the implied vol.

What's really strange, and why mortgages tend to trade, let's call them 75 basis points over Treasuries, that's the historical number. It's gone up and down. And you can see this on slide 13. And usually, we might say that in that case, the Treasury you're buying is at 100, it's like a call option for four points, so you're not in the package at 96, that's kind of how it works out to get a 75 basis point spread over Treasuries. What happened in the last year and a half, two years, is that rates went up, but also the curve inverted. And when it did that, the way the option model works is, it looks at where is the market, but not today's price, but the forward price. Okay, let's stop and do forward price. You've probably all heard of this. Forward price is not a prediction. It's not a prediction of where the market's going to be in the future, the forward price is basically the back end of a calculation.

So for example, grandma could buy a 1-year Treasury at 3% or she could buy a 2-year Treasury at 4%. What should grandma do? Well, she's got to kind of figure out, what's my break even. If she earns 3% for the first year, she's got to earn 5% that second year to earn 4% over the whole time, I'm getting rid of compounding and that's kind of nonsense. That 5% is the 1-year rate, one year forward, break even. It's simply a calculation of where I break even if the curve is inverted. Same process, if I have the 1-year rate of 4%, the 2-year rate of 3%, that kind of means the 1-year rate a year from now has to be 2% to break even. And that's where these weird things have happened in the market, is that you've seen these inversions. The inversion of the yield curve has made these forward rates hugely lower than today's rate. So, looking at slides 10, 11, 12, all I'm doing there is saying, where would the 1-year rate, 1-year forward be? And right now, the market's moved a little bit before I made these slides. It's about 75 basis points on the 2-year, slide 11, you have to move 40 basis points. So, the market is kind of saying, if you want to go and buy these longer securities, you need rates to come down a lot now and then. And as I will, I suggest what we're going to talk about later on, is why I don't think it's going to happen, but the market is pricing these things in. When you look at slide 12, that's the 10-year rate, 3 years forward. And what's happening here is that forward, 10-year rate, 3 years forward, is below the spot the current rate because of the inverted yield curve. When the option model looks at pricing this package, it looks not at the current 10-year rate, but the forward rate. Remember, we're looking at a 3-year option on a 10-year for our construction of a mortgage bond. That kind of means, model thinks the options already in the money. So it prices the call option higher. And that's what's going on here, is when we've had this massive curve inversion that drives the forward rate, well, the spot rate, the Propellerhead PhDs who model up the stuff, the numbers pop into the system and they come out saying this option has gone from 4 points to 8 points. And that's why mortgage bonds moved from 75 over, to like 150, 160, 170 over. And the MOVE index, my favorite little buddy there on slide 7, which was cooking around at 50, 60, 70, for most of the GFC, last decade, popped as high as 160, 170. Recently it's now around 125. Well, if I have this inverted yield curve with a very high volatility, I get a very big option value. And when you buy a mortgage bond, it's kind of like buying that bond at like 92, right? 100 for the bond, 8 points for the call. That's why mortgage bonds got so wide. What has happened in the last two, three months, vols have come down. The curve has become less inverted, and now that option is worth about 6 points. So maybe we're 125 over the curve now. There's more to go, guys, okay? It's going to go back on down, because vol is going to come down and the curve is going to steepen. It's going to steepen slower than the market's pricing in,

but it will steep as the Fed pulls rates down and you're going to see these mortgage bonds tighten a lot.

Erik: Let's expand on what you just said earlier, because when you just said it's got a lot more to go, folks, it sounds to me like you're expressing a secular view toward higher inflation and or higher Treasury rates. Is that the right conclusion? And if so, what's the rationale or justification for that conclusion?

Harley: I don't need the 10-year rate to move one lick. All I need is for the front end to come down relative to the longer rate, and that will go and drive it. Slide 16, you know, you need a few cocktails to look at this thing. But in a nutshell, what I've done here is that, and these are, once again, it's a little old, is taken this older yield curve from before the Fed cut. And then all I did was rotate the curve, the green column, to where we have a 2.5% front end and a 4% back end, and the option price goes from 6 points to 4 points. Basically, it's just the bond math of how the yield curve rotating changes a longer dated option. And so, yeah, do I think back end rates are going up? Yeah, a little bit, sure. But I'm more convinced that you're just going to see a rotation around this 10-year point, and that's going to go make newly issued, higher coupon mortgage bonds go up in price, because the option, embedded option will come down. Now, this is very different than the mortgage index, which is what almost all of you own, because if you don't own my ETF, you own someone else's, which is a mortgage index. The mortgage index has a very low coupon. That's slide 18, where you can see that almost 70% of all mortgage bonds have coupons from 2% to 3.5%. This is where public policy was good, that Fed pulled rates down with QE, they bought mortgage securities in the market, and the whole universe of people refinanced their 30-year mortgages to much lower rates. That's a good thing, but the mortgage index is a very low coupon, long duration security. What you really want to own is the newly issued mortgage bonds with 5%, 5.5% coupons. That's where you have the biggest option. That's the near the money option. It's bonds trading near 100 and those bonds will be the most impacted because you're selling the meatiest option. So it'll be the biggest option that comes down in price. So far, we have the only ETF out there, or mutual fund, for that matter, where you could buy only newly issued mortgage bonds in any ETF form.

Erik: Harley, I know you've covered this in past interviews, but let's go a little deeper on why, specifically newly issued bonds. What's wrong with the long-time-ago-issued-bond that just has a little bit of maturity left on it?

Harley: It's not a maturity issue, it's a coupon issue. If I could buy a Fannie, 5.5% mortgage that was issued five years ago, I'm fine with that. What I care about is, I don't want to own mortgage bonds with 3% coupons on them. So, slide 17, taking the math from the prior slide, I was saying the 10-year rate was 4% and therefore the embedded option is 6 points. If I go look at a Fannie 3, that's kind of like saying the option is 200 basis points out of the money. That option is lower with a point, that's a pretty bad bond to own. And I'll just tell you, in general, when you do a buy right strategy, the idea is, I think rates are going to be or the underlying asset is going to be relatively contained with a small range, and I'm going to earn that money from selling the option. What you don't want to do is sell a deep out of the money option for

pennies, because you get very little money in with unlimited loss. And that's why you generally should never sell options for pennies. It's just a bad idea and a Fannie 3 mortgage index, kind of structure looks and barks like a deep out of the money call, just like for a point which is just a lousy risk return.

Erik: Harley, let's put some context around this. In terms of your view, longer term about the fixed income outlook, what is the current outlook at Simplify, in terms of, you know, for a while it was secular inflation. I think you guys have kind of shifted more toward a range bound outlook. What's the rationale there?

Harley: Well, first off, let's just be clear, this is my personal view. I'm not speaking for Simplify. Let's go and focus on why I like mortgage bonds, the underlying concept and the risk process that drives me there. So looking at slide 3, if you are in bond land, and I'm not talking equities or currencies or combined, I'm talking in bond land, you have three buttons you could push: duration, credit, convexity. Duration is when you get it back. So, a 2-year or 30-year credits, if you get it back, might default, convexity is how you get it back. And if there was some AI supercomputer that was investing, it would look at all three of those and move money between those three vectors as each one offered a better or lesser opportunity. Well, duration, the curve is still inverted in LIBOR space and still pretty flat in cash space. You're not paid any money at all to take on more risk. To go from a 2-year that can move 1.8 points per point, to a 30-year that could move 14,15 points. You're not getting any extra income for taking on more risk. Credit. You have IG at about 53 you have junk bonds at 335, those are both near the tighter end of their range. And so, therefore, you're going to hold on a cushion, if you're wrong on this credit aspect. Convexity, the move is probably going to print. Oh, and this thing airs around 125-ish, somewhere up there. That is very high relative to the usual range it's been in. I mean, it's well over double what it was three years ago.

Erik: Partly as the inventor of the MOVE index, what's your opinion on the number that tells you, okay, if it gets this high, that means the Fed lost control of the bond market.

Harley: Well, the MOVE index is actually a real number. It's not some kind of fake thing. You could take the MOVE divide it by 16, which is the squared of trading days in the year, and that tells you how much the market kind of thinks we're going to move every day. So, 100 divide by 16 is getting close to 6. That's kind of what the market, MOVE of 100 means 6 points a day. That used to be kind of the average we'd see. We'd see the market go the MOVE from 80 and 120, that changed during the GFC, if they put their thumb on the scale. But before then, 80 to 120 was kind of the range. When you see that MOVE getting up into 130, 140, you got a problem. Now, I'll tell you when it gets to 130, 140, truth be told, you should be selling options. Those are very big numbers. Unfortunately, when the MOVE's at 140, you're probably hiding under your desk crying for your mother. So, it never really works like it should. And when the MOVE gets into 60, 70, you should be buying it. But right now, where implied vols are for interest rates, they're very high relative to how much the market's moving and what's in the future. I mean, right now with the MOVE at 125, the actual realized MOVE is about 75 right now. And it's the options, the implied vol's 125, that's a huge spread. Usually what you will see for

most liquid instruments is implied vol for one month will be 8% to 12% over realized vol. If you look what's out there, in general, the implied realized ratio, interest rate vol is the highest out there. So, I want to go and push my chips to selling convexity risk, selling optionality on interest rates. And I think right now, it's very propitious to do this for the reasons I think we're right. We're there. We're done. Bonds are cooked. Let's think of the big picture here.

Erik: Clarify what you mean by bonds are cooked. That means that bond rates have gone as low as they're able to go?

Harley: Yeah, I think they ain't going a whole lot lower and putting that a whole lot higher either. If the Fed wants a 2% inflation rate, fine, let's say they get there in a couple of years, they're going to put their target rate at 250. Right now, they're kind of conservative, and they raised it to 290, but let's call it 250 is where they want to go to eventually. So a 50 basis point real rate. Historically, funds to 2s is half percent, 50 basis points, that puts the 2-year at 3%. Historically, 2s to 10s is 100, that's 4%, we're there. We're at 100 right now, 4% right now. I mean, and if you look at Fed funds to the 10-year, historically, it's been around that number there. So, I mean, I don't see how we're going to move a whole lot more. 350 to 450? Fine, that's kind of the range we're going to be in. And if I could sell a big, meaty option with no credit risk, that's a pretty good deal to me. I mean, right now, mortgage bonds are trading 125 over treasuries, and I have IG credit trading 53, I'm almost 75 bps higher with no credit risk. Ding dong, wrong price. I mean, these mortgage bonds are way too cheap to credit, so that's why I like them.

Now, if you think we're going to hard land or crash land tomorrow, like some people might say, then sure, then the Fed funds rate won't be going to 3%, or 2.5% will be going to 1%. And if it goes to 1%, then everything else comes down with it. That's fine. But I'm not a believer in a hard or crash landing. I kind of think things are going to cook along just fine. Why do I think that? At the end of the day, what's the big idea? GDP is people times hours worked, times productivity. That's it. And I think what we're having now is this concept of where we have people are working. We had immigration, which brought more people in. Now you can go and cry about whether you think about that's good or bad. I don't care about your politics on that. What I'll say is, we've had an influx of people who are working, and they're going to go contribute to our GDP and contribute to the economy. I think the hard part here of GDP versus inflation versus unemployment is that we have this number, large number of people who've come into the country, and we kind of lost track of them, and that's why it's so hard to get these numbers to work. Why do I think inflation is going to stay elevated? So, I'm in your camp, I'm with Jim Bianco's camp. I think that inflation will stay higher. It's not going back to 9%, ain't going to 2% either. And I think that for two reasons, well, one reason really, just demographics. What are the two reasons going on here? Number one, so looking at slide 2, the boomers are retiring faster than we expected, and they're retiring because we had COVID, which kind of pushed them out of their jobs, but also they made all the money. Okay, sorry, millennials, but we took all your money. We made it in stocks and bonds and houses and gold and art and jewelry and everything else. Okay, the Fed printed money trying to create inflation. The idea was to create inflation for workers. It didn't work. They got asset inflation instead. I mean, they tried, but it

didn't work. And now the boomers have all these assets, they can retire earlier and leave the workforce. And the boomers are the older, more experienced, more productive. So, we're losing supply of goods and services. And on the other side, millennials, they get married later. First child in San Francisco, 32, first child in New York, 31. People get married 3, 4, 5, 7 years later than they did a generation or two before that. Okay, and so millennials, we saw 3, 4, 5 years ago, household formation was lagging behind trend. Well, trend was assuming the old style of when you get married, when you have a kid, household formation is swooping back up to the trend line because they're getting married later. And when you get married, you buy a house, you buy a car, you buy a baby carriage, buy all this stuff, and there's only this demand from the millennials running head on into a lack of supply from the boomers. I think that's going to go and keep inflation elevated more than we expect. And by the way, this is exactly what happened in the 70s and 80s. You did have the Johnson's guns and butter concept, but more importantly, you had the boomers entering the labor force. And there are some great charts out there of labor force growth rate versus 10-year rate that tracks the whole thing in the 70s and 80s. Was Volcker a hero? Yes, I suppose. We got really lucky that the boomers were kind of pushing out of the household formation area. I mean, everything is really the boomers. Okay, it's the pick of the Python, you know, processing this giant boomer generation is where everything is. Did you want to really follow economics? Just follow the boomers. The millennials actually are bigger by number, but they're smaller by percent of population, and so that's why what you've seen here going on now is, basically the boomers processing themselves, and eventually they're going to pass these assets wealth on to their kids, which I guess is a good thing, but that's going to take a little time to do. They're going to go spend it first on a Carnival Cruise or going to Las Vegas or whatever, before they give to the kids.

Erik: Tell me a little bit more about credit, going back to page 3, in the context of mortgages, because on one hand, I could make the argument that, look, if we're talking about an agency bond Ginnie Mae or Freddie Mac, okay, doesn't quite have that same guarantee of a treasury of full faith and backing of the US government, but it's as close as they get. Those agency bonds are pretty darn secure in terms of the government assurances that are on them. So, if I look at it in terms of what are they promising, it seems to me like it's an extremely safe, extremely creditworthy investment. But if I take another step back and think about the position the government's in, well, hang on a second. I mean, we know that the government is way over indebted already. We know that we've got what I think is kind of an overvaluation of housing prices, and we know that with increasing interest rates, there's going to be downward pressure on those housing prices, in order to maintain the same level mortgage payment. So, it seems to me like there's plenty of reasons to be kind of concerned, structurally longer term about the security and the credit of mortgages. But then again, the government does backstop that with the assurances they provide in the agency bonds. So how strong is that backstop? Should we be betting on that?

Harley: Erik, usually our views of the world are pretty much aligned. In this case, sorry, man, just dead wrong.

Erik: Okay, fixed income is not my trip, so I may be totally out to space. Educate me.

Harley: Fannie and Freddie are not going down. If you think they have a chance of going down, you can buy gold, guns and cans of tuna, live in a cave. That is what life will be like if Fannie and Freddie go bankrupt. So that's not going to happen. Number two is, to get a loan into a Fannie or Freddie security, it's got to be a lot better than they used to be. Do you know what subprime actually means? Fannie and Freddie, they only accept loans that are prime loans. They have FICO above 720, if you're 719, that's a subprime bond. It used to be, once upon a time, that Wall Street would trade subprime bonds from 680 to 719, and that was a sweet spot, actually, to go trade these things. What went crazy in the GFC period, pre GFC, was we started trading bonds with 500 FICO scores. That's nutty. Those days are gone. The government put through with Dodd-Frank, plenty of rules about know your customer and making sure people have high FICOs, that they have income available to go and pay their loans. The Fannie Freddie bonds, yes, the government is backstopping them, but most defaults rates are microscopic.

Now, if you get into subprime loans, not agency loans, that's different story entirely. And if you want to go there, be my guest. But what I'm talking about here is agency Fannie, Freddie, Ginnie bonds, and I have very few worries about that. And on top of that, most of these loans are very low coupon loans with a heck of a lot of equity in them, because housing prices are up significantly from where they were 3, 4 years ago. So, the default rate of the loans Fannie and Freddie are guaranteeing is microscopic. And the reason why people get hung up on this is because they never see real mortgage bonds available. The mortgage bonds you think you see are Fannie and Freddie callable debentures. Those are available to be purchased by, from your broker, or in Fidelity or some other system. You'll never see a mortgage bond on one of the investment systems. As I said, it's very rare for the public to trade them. Most mortgage trading happens what's called the TBA, to be announced market. 90% of all trading happens in that and what a TBA is, it's a one-month mortgage futures or forward, a forward or a future. Future, it's just a listed forward. What we do is, almost everyone is trading the TBA market, and every month, we sell Oct. and buy Nov., sell Nov., buy Dec., rolling the bonds forward. So that's where most trading occurs.

The other market, this 10%, is called the specified pool market. This is for the professionals. Professionals will go and they'll look and say, okay, I have a bond here that's mostly from Iowa, another bond that's mostly from California. They both have 5% coupons. What do I think about that? Well, you'll pay more for the Iowa bond because it'll be a slower prepayment, because people in Iowa don't change jobs as often as California. Also, the Iowa bonds, the loans are smaller in size, so you might have on average, $200,000 in Iowa, where it might be $500,000 in California. If it costs a fixed dollar amount, you know, $3,000 to refinance your loan, $3,000 versus $500,000 is different than $3000 versus a $200,000 loan. There are some rules out there with loans as small as $75,000. I mean, you love those loans if you're a specified pool buyer, because they're not going to prepay. It's just too expensive to go do all the paperwork. And so, when you buy, and that's when you get deep dive into mortgages. But we're not talking about that here. We're talking about trading generic mortgage, TBA bonds, which is where everything

trades. That's the generic construct, same thing with oil or corn, where they have different gradings. Well, these are the mortgage futures they trade.

Erik: Harley, let's come back to where the rubber meets the road, which is the time of issuance of the bond. I'm still struggling a little bit. Tell me again, in terms of portfolio construction, your strategy is not to buy mortgage-backed securities as they're issued, and hold them to maturity. It's to roll them and do something else according to a strategy which is what and for what reasons, specifically?

Harley: Most mortgage strategies out there are matching the mortgage index. That mortgage index is going to have very low coupon and a pretty long duration, because the embedded option value is very small, because the odds of prepayment are pretty slim. A Fannie 3 has a 3% mortgage bond has maybe a 3.75 loan inside of it. We would need rates to get down to, you know, mortgage rates to get back to a 3% level, to get someone to refinance and prepay those bonds. So that's why they're very long maturity, because it would take a massive rally to go and get those bonds to prepay. The bonds, I suppose, are fine. They're not going to default, but they're going to trade closer to, like seven, eight year duration security, and you have a much lower income and much lower yield of maturity on this thing. And you can see that on slide 19. What we've done is devise a strategy where you could buy basically near par mortgage bonds, newly issued current coupon mortgage bonds. So, what we try to do is buy mortgage securities, and we target keeping the portfolio between 97 and 101, and we'll buy and sell securities to stay right in that sweet spot. That sweet spot is going to be the best risk return mortgage bonds, it'll be the mortgage bonds where the embedded option is the largest. And you can see from these table over here, you have a much higher distribution, a much higher yield of maturity, and a much shorter duration. The strategy is active per the SEC's rules, but it's really more rules driven. I want to go and try and keep these mortgage securities in that range of 75 to 101, because it'll give you a good profile.

Now, if you think that rates are going to drop by 200 tomorrow, I suppose you'd rather have a longer duration instrument. But really, if you're that bullish, you shouldn't own any mortgage bonds. Mortgage bonds are callable. You've sold a call option above the level of the market. And if you think rates are going down a lot, you just want to buy treasuries. You know, buy something that's going to move. I don't think it's going to happen. And I think it's not going to happen because I think that we finally found the high and the low. We know the Fed's told us where we're kind of going to go, where the target is, and I think we're going to be hovering around this 4%ish level in the 10-year rate, and that means you're going to go and see the market not move all that much. We've clipped the tails off up and down for where rates can go, and therefore, selling volatility, doing a covered call strategy, is what you want to go and do.

Here's other ways to do, what I also like, similarly, is called the muni bonds. So muni bonds trading 99 to 100, somewhere in that area there, 99 to 101, those too will have these big embedded options. And that big embedded option is going to be goosed up because interest rate implied volatility is very high, and the yield curve is still inverted, and that inversion makes the forward rate below the spot rate, which makes the model think the option is in the money.

We know it's not in the money. We all know that, but the model doesn't care. The model looks at the forward price and the inverted curve does that. Why does it matter about this? It matters because professional arbitrageurs can recreate these securities using derivatives, and if the price of these bonds gets too far away from its theoretical reconstruction, you could buy one, sell the other, and create an arbitrage opportunity. This, by the way, out of the book, *Liar's Poker*. This is how these guys made all this money. Is because what happened is, that they started trading financial futures on the exchanges, ‘80, ‘81 and options on these futures. And ’81, ’82, ‘83 by the way, this is when I got into Wall Street right when this happened. They made their money because once you had futures contracts trading on the exchange, there was a visible price of the forward, because you're trading, whenever you buy a future, you're buying something that will settle tomorrow, next month, next year, and you're locking in that forward price. If that forward price versus the spot price, the current price is different by more than the interest rate to finance owning it, that's free money. That's arbitrage. These guys figured out how to arbitrage these spot to forward before anyone else could. As a matter of fact, that's what I did the beginning of my career. I did this in mortgage securities, is I can arbitrage the current price to the forward price to where I could borrow money from Merrill Lynch. And that's why the arbitrageurs will keep prices kind of in line. They will go and buy, once again, buying gold in London, selling it in New York. If it gets wider than the price to insure it and ship it, someone's going to do that trade. Same thing in oil, right? You know this, Erik, what’s my price’s move around there relative to the price of how much storage is available and what it cost to go in and put the oil in a ship to store it. It's all the same. When you look at your contango versus backwardation, do the exact same math, you’re doing on oil, I'm doing interest rates.

Erik: The strategy that you're describing requires trading futures and or forwards, which are definitely institutional or professional instruments. Back in the day, the restrictions were so extreme that not only were those traded by professionals, but even if pros were doing the trading, if they were contained in a fund or an instrument that couldn't be sold to the public for suitability reasons, they've changed those rules. And I believe it's that change in the rules that really opened the door to you launching the ETF that trades this fairly complex strategy that we've been talking about today. Is that right? And what's the rule change? What else does it affect? What's going on here? How come the rules changed?

Harley: Ding, ding, ding, right answer. That's it. I mean, I was retired. Okay?

Erik: I made up for earlier, when I got the credit question wrong.

Harley: I was retired. I came out of retirement to work for Simplify, because what happened was 4 or 5, 6 years ago, there was a rule change in the SEC that allowed you to put derivatives, futures, options, etc., into ETFs. And I'm a derivatives guy, and that's what we did. So, our first trade was my big interest rate hedge, which we brought to market few years ago, and it was up like 91% a couple years ago. Is the biggest moving ETF in the market, where we put a 7-year put option, interest rate, put option into an ETF. This is the same idea, as a matter of fact, we are really, you know, PIMCO Redux. Most people don't know this, but what PIMCO did, what Bill Gross did in the 80s is, he was the first person to put derivatives into a 40 act mutual fund, and

no one else did that. And that gave him a huge advantage, because you can do a lot of interesting stuff with derivatives. It's just one more tool to play with. Most people had three toys, he had five toys, so he could do more stuff. What we're doing is the same thing. We're the first guys, really, to go and put derivatives into ETFs, which allows us to go and we could do fun, clever ideas, but could also do just bread and butter better beta. This strategy here is just bread and butter, better. Better beta. You saw all the big bond kings, six months ago, told about mortgages being the best bonds on the planet, when they were trading like 150, 160, 170, over treasuries. What was strange is that what they meant was newly issued mortgage bonds. They did not mean the mortgage index, which struck me as strange that someone else did not bring my strategy first. In fact, truth be told, I'm still stunned. I've not been copied because this strategy is just so obvious. The bonds you want to own in mortgage land are the newly issued higher coupon mortgage bonds, not the legacy older index bonds. This is the meaty stuff you want to own, and no one else is doing it, we basically do the reinvestment for you. We do everything else inside this structure of rolling these mortgage forwards every month and basically all the principal that might be returned keep it in the fund via the roll process and never gets returned to you unless you want to sell.

Erik: Listeners, please understand, for compliance reasons, that Harley cannot be the one to tell you that the ticker for his ETF is MTBA. Harley. I can't thank you enough for a terrific interview. Really look forward to getting you back on the show for an update in a few months. Meanwhile, please tell us where our listeners can contact you or follow your work.

Harley: I know this has been a kind of a heavy lift over here, but you can go to my website, convexitymaven.com, where I have my archive. I also have a section called the Classroom, and there I have a selection of commentaries that are kind of general, as opposed to trade focused. I publish every four to eight weeks, depending on mood I'm in. Send me an email and I will add you to my list. It is free. And I also do a Song of the Month, which seems to get more interest than my commentaries on mortgages, but whatever, I got to live with that.

Erik: Patrick Ceresna and I will be back as MacroVoices continues right here at macrovoices.com.