AllianceBernstein®

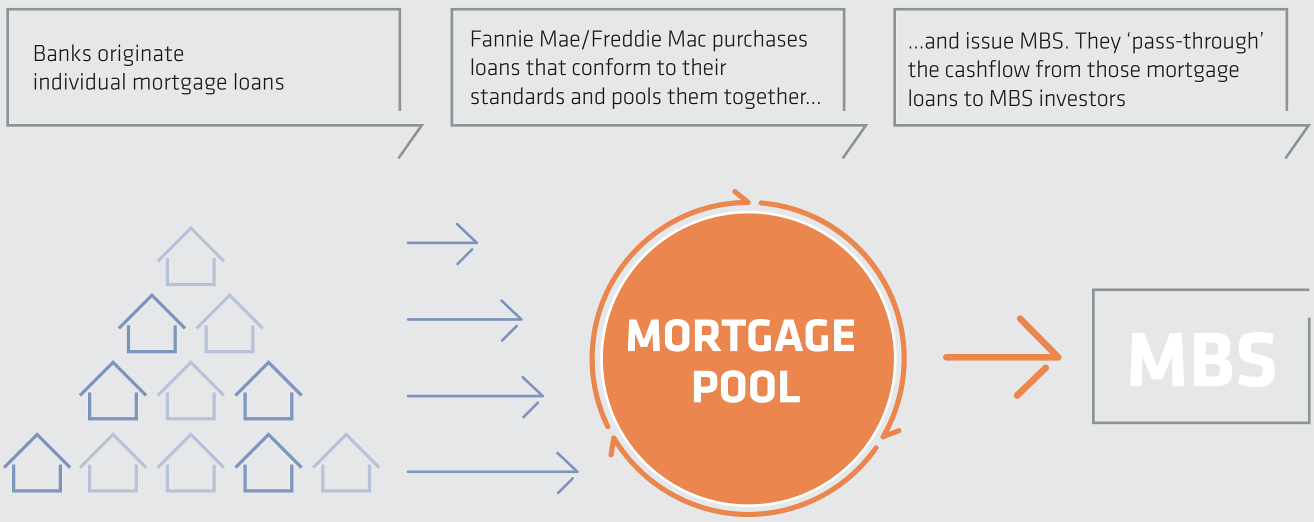
GUIDE TO MORTGAGE INVESTING

Mortgage-backed securities and mortgage-related fixed income instruments is a large, multi-trillion dollar bond market providing diverse sources of income in fixed and floating rate structures. In this guide, we provide an overview of the agency Mortgage-Backed Securities (MBS), Credit Risk Transfer (CRT) securities, non-agency Residential Mortgage-Backed Securities (RMBS), and Commercial Mortgage Backed Securities (CMBS) markets. This guide will also discuss the risk and return characteristics of these bonds to provide a perspective on how they could fit in your clients' portfolios.

AGENCY MORTGAGE-BACKED SECURITIES

Agency MBS (Mortgage-Backed Securities) are bonds backed by a pool of mortgages, issued by the U.S. Government-Sponsored Enterprises (GSE) Fannie Mae and Freddie Mac (and also Ginnie Mae). The mortgages that back agency MBS have to conform to the lending standards set out by those agencies, which today, for Fannie Mae and Freddie Mac MBS, are very strict. The principal and interest of Agency MBS securities are guaranteed by the agencies that issue them. All of the GSEs are backed by the US Treasury department.

THE AGENCY MBS CREATION PROCESS



For illustrative purposes only.
Source: AllianceBernstein (AB)

RISK AND RETURN CHARACTERISTICS OF AGENCY MBS

Agency MBS are guaranteed by the GSEs that issue them, and because of that, they are considered to have very little risk of default. Consequently, their yield is generally quite low, usually only offering a small pick-up over US treasuries.

Their main risk factors are interest rate risk and pre-payment risk. The interest rate risk stems from the fact that because they are considered to have little risk of default, historically, they have a very high correlation with US treasuries (~0.8). Pre-payment risk is the risk that the underlying mortgage borrowers re-pay their mortgages earlier than expected (e.g. selling their house or refinancing their mortgage), which reduces the amount of future interest payments from the mortgage pool. This can negatively impact the price of the affected MBS, especially if the bond is trading at a premium to par.

On the other hand, the agency MBS market is one of the most liquid fixed income markets in the world, with trading volumes typically in the trillions of dollars per year, involving many different types of investors.

SUMMARY CHARACTERISTICS

Current range of yield:	1.75 – 2.5% (mostly fixed)
Main risk factors:	Interest rate risk and Pre-payment risk
Liquidity:	High
Ourperforms when...	Interest rates are stable and mortgage prepayments are low
Underperforms when...	Interest rates are volatile and/or mortgage prepayments are accelerating

CREDIT RISK TRANSFER SECURITIES

Credit Risk Transfer securities (CRT) are mortgage-related bonds issued by US housing agencies Fannie Mae and Freddie Mac. CRTs issued by Fannie Mae are called CAS (Connecticut Avenue Securities), and the ones issued by Freddie Mac are called STACR (Structured Agency Credit Risk). These bonds generally offer higher yields than agency MBS, because they are not guaranteed by the housing agencies, but instead transfer a portion of the credit risk (defaults) of these mortgage pools from Fannie Mae and Freddie Mac to the CRT investor. Currently, Fannie and Freddie's mortgage pools feature very solid, prime credit metrics due to the significant tightening in mortgage lending standards in the US after 2008, which we think will likely underpin very low default rates for the current outstanding CRTs. It is important to understand that these prime mortgages are much better quality than subprime mortgages pre-2008.

HOW DID CRTs COME ABOUT

During the Financial Crisis of 2008, the US government took over Fannie Mae and Freddie Mac due to the losses they had suffered during the unprecedented downturn in the US housing market. Thereafter, the government looked for ways to diversify some of this risk (AB was consulted by the US Congress on how to do this), and ultimately, it was decided that Fannie Mae and Freddie Mac would 'share' the risk of their mortgage portfolio with investors, paying them a floating rate coupon to partially take on the guarantee on their mortgage pool. In many ways, this is like Fannie and Freddie buying reinsurance on their mortgage portfolio.

In return for partially taking on the guarantee for the mortgages underpinning Fannie Mae and Freddie Mac's MBS, investors receive a floating rate coupon benchmarked to USD 1 month Libor + a spread. This feature about CRTs is particularly interesting in today's environment, given that the Federal Reserve is expected to continue to hike interest rates.

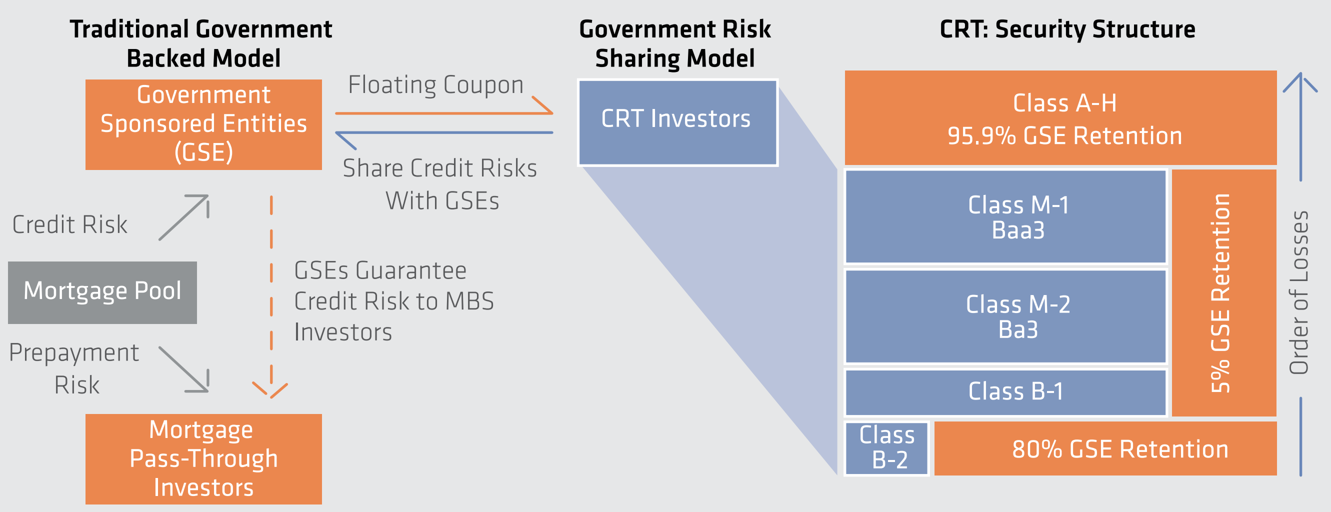
STRUCTURE OF CRTs

CRTs are structured in tranches, with losses from defaults flowing from the bottom-up, i.e. any losses will be first absorbed by the bottom tranches before the upper tranches are affected. Investors can invest in classes M1, M2, M3, B1, and B2, depending on their income requirements and risk tolerance. At every tranche, potential losses from defaults in the underlying mortgage pool are shared with the housing agencies at specific ratios. For example, in the below illustration where we look at a recently issued Fannie Mae CAS, we can see that Fannie Mae retains 80% of the potential losses in class B-2 tranche (in green) while investors retain the remaining 20% (in blue). Meanwhile classes M-1, M-2, B-1 retain 95% of the potential losses, and Fannie Mae retains only 5%.

Because the bottom tranches absorb losses first, they also provide the highest coupons among the various tranches. Conversely, because the upper tranches are the last to take losses (that is, they are protected by the bottom tranches), they would offer lower coupons relative to the bottom tranches.

CRTs are issued effectively at 10-year maturities and they are not callable during this period. This is an important distinction, because unlike bank loans, which are callable on the first day they are issued, the fact that CRTs are not callable for 10 years will ensure investors will receive that floating rate coupon during the life of the bond (unless the bond defaults).

THE CREDIT RISK TRANSFER MODEL



For illustrative purposes only. As of 31 March 2017
Source: Freddie Mac, Fannie Mae, and AllianceBernstein (AB)

CREDIT RISK TRANSFER SECURITIES

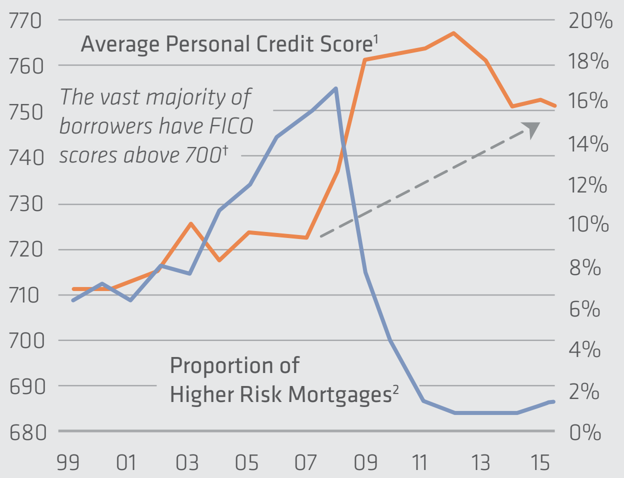
RISK/RETURN CHARACTERISTICS OF CRTs

CRTs provide yields ranging from Libor + 100bps to as high as Libor + 800bps of floating rate coupons (paid out monthly). Their performance is generally correlated with the credit markets, such as US high yield, but it's historical volatility has been meaningfully lower than high yield bonds. If the Federal Reserve continues to hike interest rates in the US, the coupons on CRTs will also adjust higher in line with short-term interest rates.

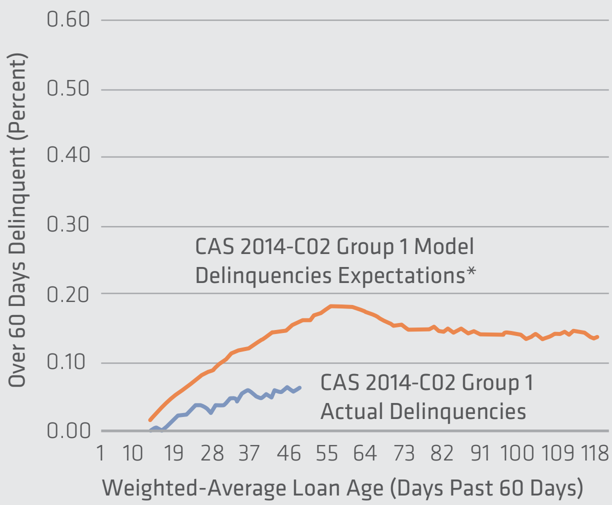
The risk to investors when they invest in CRTs are potential defaults in Fannie Mae and Freddie Mac's mortgage pools. However, we believe losses from the mortgage pools should only be about 0.2% (compare that to the high yield market's current default rate of ~3%) over the next few years driven by several factors including:

+ Each CRT references a highly diversified pool of about 80,000 – 110,000 mortgages.
+ The US labor and housing markets remain robust.
+ Underwriting standards have tightened up significantly post 2008, examples include FICO scores (US borrower credit risk scores, which range from 300 to 850) are strong, and roughly 98% of borrowers have debt-to-income ratio below 50% (see charts below).

LENDING STANDARDS HAVE TIGHTENED SIGNIFICANTLY



DEFAULT RATE REMAINS LOW



Historical analysis does not guarantee future results.
As of 31 March 2017
* Based on AB's proprietary model forecast expectations of delinquencies; CAS 2014-C02 Group 1 is a pool of mortgages that consists of mortgage loans with loan-to-value ratios less than or equal to 80%.
† FICO score is a type of credit score that helps lenders assess borrower's credit risk. Typically, scores above 650 indicated a very good credit history. FICO scores and Debt to Income ratios is for borrowers backed by Freddie Mac.
Source: Freddie Mac and Alliance Bernstein (AB).
1 Personal credit score as measured by FICO score in the US.
2 Higher risk mortgages defined as mortgages with debt to income ratio greater than 50%.

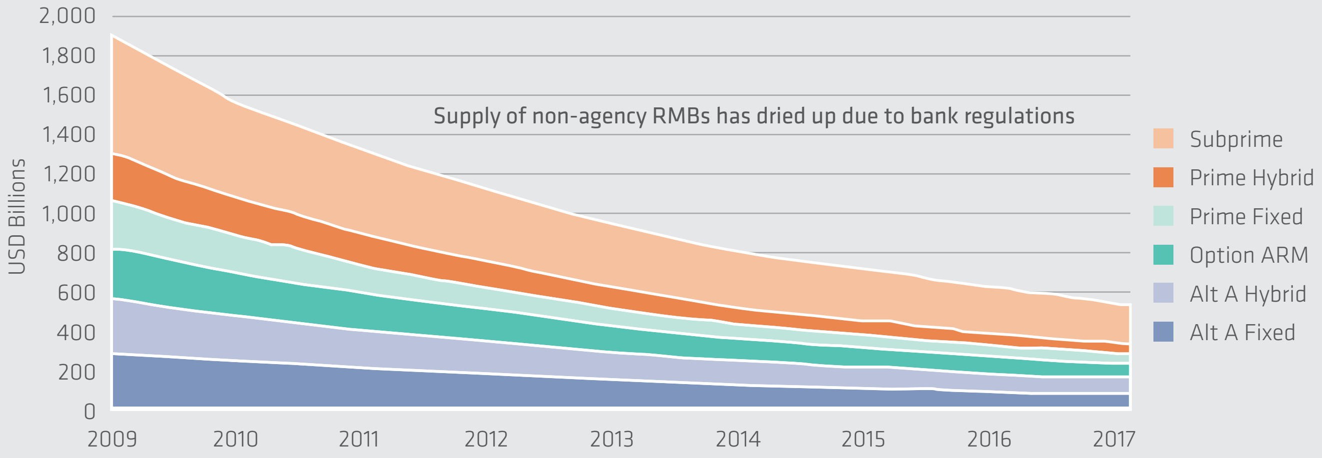
SUMMARY CHARACTERISTICS

Current range of yield:	2 – 9% (floating rate)
Main risk factors:	Defaults in Fannie Mae and Freddie Mac's mortgage pool
Liquidity:	Low to medium (comparable to high yield corporates)
Ourperforms when...	Economy is strong and housing market is solid
Underperforms when...	Economy is weak and/or housing market is stressed

NON-AGENCY RMBS

Non-agency residential mortgage—backed securities (RMBS) are private-label RMBS issued by banks, and not by the housing agencies Fannie Mae or Freddie Mac. Their underlying collateral generally consists of mortgages which do not conform to the requirements for inclusion in agency mortgage-backed securities due to their size, documentation, loan-to-value ratios, or other reasons. New issuance of these bonds has essentially dried up after 2008 due to banking regulations and the market continues to shrink every month.

SHRINKING SUPPLY OF THE NON-AGENCY RMBS
SIZE OF THE NON-AGENCY MARKET



Past performance does not guarantee future results. Historical information provided for illustrative purposes only. As of 31 March 2017.
Source: Case-Shiller, Corelogic, Federal Reserve Board, Freddie Mac, J.P. Morgan, National Association of Realtors.

TYPES OF NON-AGENCY MORTGAGES

Jumbo Prime Mortgages are high-quality mortgages that meet underwriting guidelines similar to those set for agency mortgages by Fannie Mae and Freddie Mac. These mortgages tend to fall into the non-agency market because loan balances are greater than those allowed by Fannie Mae and Freddie Mac for conforming loans.

Alternative-A (Alt-A) Mortgages fall between Prime and Subprime. Credit scores of these borrowers are typically average or above average, but looser loan documentation requirements or larger loan size disqualify these from conforming to Fannie Mae or Freddie Mac underwriting guidelines.

Option Adjustable Rate Mortgages (Option ARMs) are a type of Alt-A loan that is unique due to its flexible repayment terms. Option ARM mortgages allow for several payment options including making interest only or less than interest due payments. As a result, the outstanding loan balance can increase over time (negative amortization). These loans were designed to start with an attractively low rate of interest (the “teaser rate”) to attract borrowers.

Subprime is a class of mortgage extended to borrowers with low credit ratings. In general, these borrowers have damaged credit or limited credit history, and provide minimal income and asset verification. Due to the default risk associated with these borrowers, lenders tend to charge a higher interest rate on subprime loans.

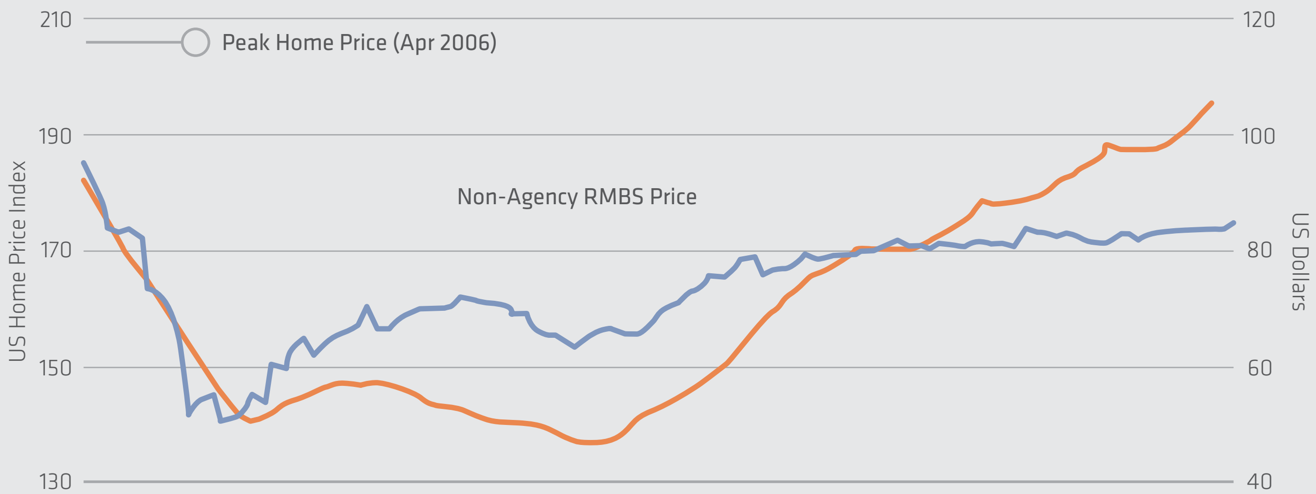
NON-AGENCY RMBS

RISK AND RETURN CHARACTERISTICS OF NON-AGENCY RMBS

The risk of non-agency RMBS is the credit risk of the mortgage pool underlying these securities, and as described above, credit quality is highest for Jumbo Prime, followed by Alt-A and Option ARMs, and the lowest quality being subprime.

The risk profile of non-agency RMBS have changed dramatically after the Global Financial Crisis in 2008. In the immediate aftermath of the crisis, many of these securities experienced considerable defaults within the securitization, and so credit ratings and prices have since adjusted to reflect these defaults (typically CCC ratings, with prices ranging generally between $70 - $95). Consequently, we don't expect investors in these bonds will receive the securities' full face value, but will likely get back between $85 to $95 at maturity. Because the prices of these bonds currently already reflect this, these bonds are not really CCC risk, in our opinion, as even if investors do not receive par value at maturity, they would still likely earn a mid-single digit level of yield to maturity.

NON-AGENCY RMBS HAVE RECOVERED WITH HOME PRICES



Past performance does not guarantee future results. Historical information provided for illustrative purposes only.
Home prices as of 31 January 2017 and non-agency RMBS prices as of 31 March 2017
Source: Case-Shiller, Corelogic, Federal Reserve Board, Freddie Mac, J.P. Morgan, National Association of Realtors

SUMMARY CHARACTERISTICS

Current range of yield:	3.5 - 5% (fixed, except for Option ARMs)
Main risk factors:	Defaults in underlying mortgage pool
Liquidity:	Easier to sell, harder to purchase
Ourperforms when...	Economy is strong and housing market is solid
Underperforms when...	Economy is weak and/or housing market is stressed

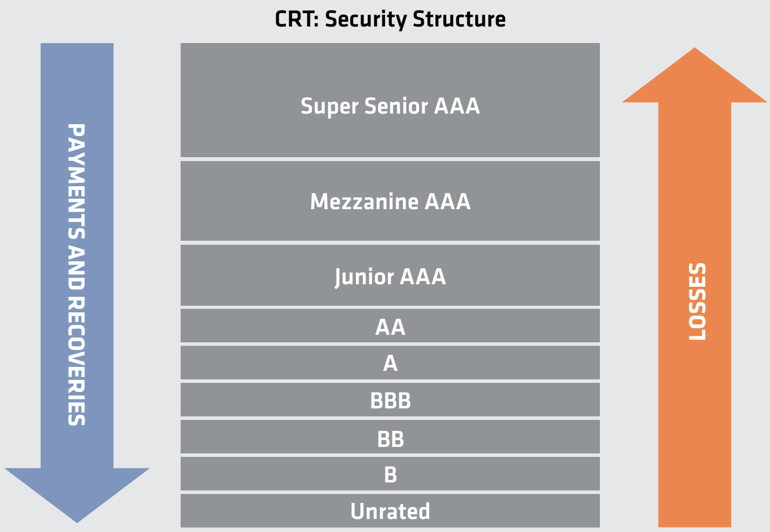
COMMERCIAL MORTGAGE-BACKED SECURITIES

Commercial Mortgage-Backed Securities (CMBS) as their name implies, are bonds backed by pools of commercial mortgages. Commercial mortgage pools typically are combinations of loans that finance a variety of properties. These include office buildings, hotels, 'multifamily' housing such as apartments or condominiums, retail properties including shopping malls, and industrial buildings such as warehouses and factories. These mortgages are securitized and used as collateral for CMBS bonds created through a special-purpose vehicle.

Most loans have maturities of 10 years, but they do not completely amortize over that period, and so the borrower will make a large 'balloon' payment of principal back at maturity (usually through a refinancing of the loan or sale of the property). These bonds are issued in a tranched structure, with different tranches having different degrees of loss protection (protection provided by lower tranches that absorb losses first), yields and duration. A typical CMBS structure would look like the below:

TYPICAL CMBS STRUCTURE

Tranches have a sequential payment structure: the more senior bonds are paid first and the subordinated bonds absorb the first losses. Consequently, the senior bonds tend to offer lower yields while the subordinated tranches offer higher yield.



For illustrative purposes only.
Source: Alliance Bernstein (AB)

RISK AND RETURN CHARACTERISTICS OF NON-AGENCY RMBS

The main risk factor to consider when investing in CMBS is the extent of defaults in the underlying mortgage pool (and how far up they flow in the securitization). The sector recently has come under pressure because of negative headlines about some retailers struggling in regions and locations that haven't gotten as much of a boost from the economic recovery. When we invest in CMBS that include the underlying loans in these locations, we think it is critical to stress-test the assumptions behind to understand the extent of the ultimate losses, or to avoid buying securities with these loans in their mortgage pools.

We do believe there is a secular trend underway of consumers increasingly turning towards online retail, but we think the pessimism may have become excessive and that the market expects the losses to happen too quickly. However, it is precisely because of this excessive pessimism that has created very attractive valuations in the CMBS space (e.g. some BBB-rated tranches are now trading at US high yield corporate levels). We think the opportunity lies in mortgages originated between 2010 – 2014 when underwriting standards were still quite conservative.

SUMMARY CHARACTERISTICS

Current range of yield:	4 - 8% (fixed)
Main risk factors:	Defaults in underlying mortgage pool
Liquidity:	Lower for subordinated tranches, high for AAA-rated tranches
Ourperforms when...	Economy is strong and commercial property market is solid
Underperforms when...	Economy is weak and/or commercial property market is stressed

GENERAL SUMMARY

Sector	Yield	Risk	Liquidity	Outperforms when...	Underperforms when...
Agency MBS	1.75-2.5	Interest Rate Risk Prepayment Risk	High	Interest rates are stable	Interest rates are volatile
CRTs	2.0-9.0 (floating)	Defaults in Fannie Mae and Freddie Mac mortgage pools	Low to Medium (similar to high yield corps)	Strong economy/ labor markets and solid housing market	Weak economy/ labor markets, and poor housing market
Non-Agency RMBS	3.5-5.0	Defaults in mortgage pools	Easy to sell, hard to buy	Strong economy/ labor markets and solid housing market	Weak economy/ labor markets, and poor housing market
CMBS (mezzanine)	4.0-8.0	Defaults in mortgage pools	Low for sub-tranches, high for AAA Super Seniors	Strong economy and solid commercial property market	Weak economy and declining commercial property market

LEARN MORE

ALLIANCEBERNSTEIN.COM