



# **Structured finance in 2024: My observations on trading and risk management practices in the ABS, MBS, CMBS Markets**

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As Senior Managing Director and Product Manager for trading and risk management applications at PolyPaths, a Numerix company, I monitor the trends and market dynamics of a wide variety of structured fixed income securities, including those structured as ABS, MBS, and CMBS securities. I want to focus this brief paper on those specific asset-backed instruments and share my views and observations on the current environment participants in these products face.

## **The ABS, MBS and CMBS markets: Is it going to be a long and winding road in 2024?**

The markets for asset-backed instruments navigated a rough macroeconomic landscape in 2023. Record-high interest rates, high (but moderating) inflation, tighter lending standards and rising delinquencies in certain segments of the market provided challenges to firms in these markets.

In terms of the commercial mortgage-backed securities (CMBS) market, it faced several negative headlines in 2023, such as those spotlighting high-profile office loan defaults and sector-wide declines in valuations. Also, as referenced above, rising rates, tighter lending conditions, in addition to weakening fundamentals, created a difficult environment for the asset class.

In addition, CMBS issuance activity was low in 2023. Many market participants stayed on the sidelines waiting for more attractive real estate prices as the commercial real estate (CRE) market struggled to adjust to higher interest rates. For example, according to a November 2023 report by credit rating agency KBRA, CRE collateralized loan obligation (CLO) 2023 issuance volume was expected to total around \$7 billion, which was a 76.9% fall from 2022.

We will see if issuance volume in 2024 experiences a positive trend, which may occur if an increasing number of borrowers expect the Federal Reserve's tightening cycle to reach its end and for prices to start exhibiting signs of stabilization.

In regard to asset-backed securities (ABS, created from the pooling of non-mortgage assets), this market faced headline risk throughout much of 2023, particularly for auto and credit card ABS, behind growing concerns about consumer financial health in the face of rising interest rates and talk of a potential economic slowdown. We observed some signs of weakening in the fourth quarter, with a cooling labor market, a decline in household savings, and a rise in delinquencies on various segments of consumer debt. I think it is important to note, though, that these negative trends occurred in the context of overall actual consumer strength. Income levels experienced growth, the job market continued to reshape positively after the COVID-19 lockdowns, and unemployment remained below 4% for all of 2023. I would say that the outlook for ABS in 2024 is potentially attractive (if, for example, the U.S. Fed shifts its focus from price pressures to growth) but cautious.

For the mortgage-backed securities (MBS, created from the pooling of mortgages) market, there was a storm of factors that impacted the mindsets of investors and their counterparties in 2023. High inflation, rising rates, the collapse of several regional banks earlier in the year, and diminished market liquidity produced substantial discomfort —and those have not been forgotten as of yet. So today, we are in an unprecedented environment in an unpredictable MBS market. The outlook? Uncertain.



One type of participant in the market that should be closely watched is banks. If the Fed begins tapering its quantitative tightening program, it could lead to higher bank reserves, which could increase bank demand for MBS. However, what also needs to be watched is how banks respond to Basel III Endgame regulatory requirements, a potential wild card that could transform the regulatory capital regime for banks. The Basel III Endgame is a suite of rules that will change how much capital firms need to hold against credit, market and operational risk exposures.

With all this in mind, I want to identify what I have observed as the central themes, concerns, and risk management activities that I see Numerix clients focused on right now—all tied to trends developed in 2023.

## Where Numerix clients are focused today on managing the risks

### 1. Key factors being tracked in CMBS and ABS

In CMBS, we have seen market participants focused on forecasting defaults and losses at the asset level. For example, office loans had a particularly challenging year in 2023, and so many of our clients are concentrating on making granular assumptions—looking underneath a deal and analyzing particular types of loans, whether they are tied to retail or office space, or student housing vs. multi-family rental properties. Our clients are also making assumptions based on appraisal values, return to work policies, loan sizes, and consumer purchasing power. At the same time, these market participants are keeping track of aggregate metrics, such as the percentage of loans that are in special servicing for CMBS or on the watch list, to get an indication of where default risk lies.

To speak of the CMBS market overall, there are signs that commercial real estate will feel continuing pain. As reported by Fortune magazine, office vacancy rates reached a 30-year high of around 18% as of September 2023—the result of new remote and hybrid working norms. The most concerning figure, however, may be that, according to Mortgage Bankers Association projections, approximately \$929 billion commercial mortgages will mature this year—that is, loans coming due. This can mean that refinancing or property sales will be necessary, which would be happening during a period of uncertainty around interest rates and a general lack of clarity on property values.

In the ABS area, again particularly around auto and credit card ABS, clients are keeping an eye on increases in household debt levels and weighing that against the relative current health of the economy and whether a soft landing could be realized this year versus a recession. In both CMBS and ABS, with rates having risen so much, investors and lenders are focused on whether borrowers are able to service their debt, which means what-if scenario analysis comes into play in a major way. Fast run-ups in rates create a wide swath of scenarios market participants need to think about.



## **2. In MBS, prepayment risk is heightened, despite lack of consensus on Fed rate cuts**

Prepayment risk is now top-of-mind for a number of our clients active in the MBS market. Legacy collateral that is just a few years old has extremely low prepayment forecasts, as mortgage interest rates fell to historic lows in 2020 and 2021 during the Covid pandemic. These rates were already relatively low during the 10 years prior to that as well. That story changed in 2022. With inflation running hot, mortgage rates rose precipitously in response to the rising Fed Funds rate.

To provide background, in the United States most typical mortgages have a 30-year term, but most mortgages don't last that long. The average life is typically under 10 years. This is because a mortgage can be paid off at any time by the borrower, often without any penalty. Prepayment—paying down the mortgage ahead of the loan schedule maturity—could generally occur for one of three reasons: turnover, refinance, or curtailment. Turnover occurs when a borrower sells the house and the mortgage gets paid off as a result. Curtailment is shortening the length of a loan by making extra mortgage payments. Refinance occurs when a borrower enters into a new loan, sometimes with their current lender, sometimes with another one, but at more favorable terms. This is often what people think of in terms of prepay risk since this is rate driven.

That is the prepayment risk faced today, as there is some anticipation for mortgage rates to recede in 2024. However, there is a lack of consensus on whether the Fed is finished hiking rates or if and when it will start cutting rates, and by how much.

A U.S. Labor Department inflation report released on February 14 may provide some hints. The report revealed that the consumer price index rose 0.3% from December 2023 to January 2024, up from a 0.2% increase from the previous month. So, inflation ran higher than expected at the start of 2024. I would say this pours a bit of cold water on hopes for any imminent interest rate cuts.

### **2a. Role of machine learning in managing prepayment risk**

Prepayment risk is extremely complex due to a large number of factors. You need to estimate prepays, you need to look at geography and types of properties, you need to look at loan and borrower characteristics, such as the size of the loan, the loan to value ratio, and a borrower's credit rating. You also have to put all that alongside economic factors, such as interest rates, unemployment numbers, and home prices. Additionally, at its core, the prepayment option is often not rationally exercised by individual borrowers, meaning there are idiosyncratic behaviors that you also have to try to model.

With machine learning and neural network models, which are a branch of machine learning models, you could input a very large data set of historical prepayment experience on a large set of mortgages and let the model discover all the risk factors, including idiosyncratic behavior. Essentially, you are shifting the prepay risk model from being a human labor-intensive traditional model to a computationally intensive model. It is important to note that as with any modeling framework, you want to make sure these models are not used in a vacuum but are subject to human review and intervention. You want to keep in mind what data the model was trained on, test out-of-sample data, test across different time periods, and, importantly, run sensitivity analysis to shock input factors and make sure the model results make sense.





### **3. Inflation and interest rates are prominent risk factors and are impacting risk management strategies**

We see clients paying more attention to inflation as a risk factor and are taking approaches to incorporating inflation as a risk factor into Value at Risk (VaR) analysis, particularly looking at the impact of inflation duration to both sensitivity-based and full-valuation VaR over various time periods.

Some products clients have been looking at to mitigate inflation risk exposure include Treasury Inflation-Protected Securities (TIPS) or Consumer Price Index (CPI) linked notes, as well as zero coupon inflation swaps. They are also reviewing the duration profile of their fixed income portfolios since, of course, interest rate risk and inflation risk often go hand in hand.

In terms of interest rate risk, it really comes down to uncertainty. We are at a pivot point. There is much focus now on the timing of rate cuts: how long current rates will hold and when will rates start to come down and the velocity with which rates will come down. There does not seem to be a lot of consensus on any of that.

Regarding inflation risk and interest rate risk impacting modelling and risk management strategies, robust analytics are crucial in battling these risks. To effectively hedge any risk factor, you first need to be able to measure it. Right now, as I mentioned, we seem to be at this very interesting pivot point with the recent rate pause by the Fed and a lot of different expectations for what happens longer term with rates and inflation. Having this on the radar is key. For the most part, one of the best analytical frameworks is being able to look across multiple future outcomes. Being able to build in future forecasts of rates alongside the different inflation factors can give people confidence that their hedges can hold out regardless of what happens. A lot of our clients want to look at the efficacy of their hedges and in order to that they need very granular rate forecasts, and they also need to run multiple what-if scenarios.

### **Structured finance: It plays a crucial role but needs really sound risk management**

The structured finance market is a complex domain that plays an important role in the global financial landscape in terms of meeting the diverse financial needs of institutions. The market also presents different degrees of complexity, in particular in terms of securities valuation, data usage, and the management of risks.

Underestimating any or all of the risks associated with structured finance products can produce bad results. All transactions must be rigorously analyzed with appropriate data and models for rating, pricing and testing the products. This may imply a greater investment in risk management for many market participants, but now, perhaps as much as ever, there is a requirement to pursue robust risk management strategies in the structured finance arena in order to achieve portfolio success.

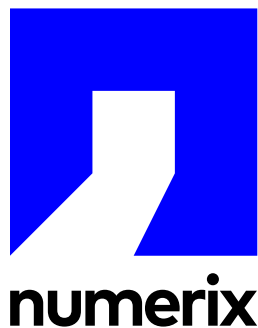
To learn more about PolyPaths' advanced solutions for fixed income and structured finance analytics and risk management, please reach out to [sales@numerix.com](mailto:sales@numerix.com).

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