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Finding Value in the Mortgage-Backed Sector During Times of Interest Rate Volatility

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A headline in the *Philadelphia Inquirer* business section on Wednesday, August 7, 2003 screamed, "Keep the bond traders happy." This note came on the heels of the recent unprecedented volatility and increase in interest rates. On June 13, the 10-year Treasury note yielded a mere 3.11%. In six short weeks, the yield advanced to 4.41% on July 31 before backing off to 4.24% in early August. In addition to assessing any potential impact on the economy, readers of that article (and many others like it) were probably asking the question if bonds still had a place in their asset allocation.

In answer to that question, we say an emphatic "Yes." Bonds should always be a part of a well diversified portfolio, especially for aging "baby boomers" who are attempting to preserve their wealth. What is important in times of volatility and upward interest rate trends is the allocation within the fixed income component of a portfolio. In this type of environment, we argue that not only is the Mortgage-Backed Security (MBS) component essential in the fixed income portfolio, but drilling down to the security selection within this sector is just as important.

To define value in various asset classes through all types of markets, firms like Andre Capital Management (ACM) believe that one must fully understand the indices that are used as benchmarks of performance and the asset classes that make up those benchmarks. This overview will look into one of those asset classes – mortgage-backed securities – and our capabilities surrounding this very important component of our management style.

The largest asset class of the Lehman Brothers Intermediate Aggregate Index is the mortgage-backed security component. At over 40% of the index, it is a large determinant of the total return. Additionally, the mortgage-backed sector of the index is composed of 100% mortgage pass-through securities.

By definition, a mortgage-backed pass-through security provides its owner with a pro rata share in underlying mortgages. Pooling individual illiquid mortgages, securitizing them and passing through the cash flows to investors (see Figure 1) create mortgage pass-through securities.

When new mortgage pass-throughs are created, they are issued and traded on a generic or to-be-announced (TBA) basis. In a TBA trade, the seller and buyer agree on the type of security, coupon, face value, price and settlement date at the time of the trade, but do not specify the actual pools to be traded. Two days before settlement, the seller identifies the specific pools to be delivered to satisfy the commitment. Trading in agency pass-throughs may take place on any business day, but TBA securities usually settle on one specific date each month.

The principal advantages of the TBA market are high liquidity and low execution costs. There is a very narrow bid/ask spread and there is ample supply of the various agency-backed pass-throughs. The primary disadvantage of the TBA market is that when you take delivery of the actual pool at settlement, you are playing the lottery with the underlying characteristics of the security you receive. We believe that with a thorough analysis of the underlying characteristics of specific pools, one can substantially reduce the risk associated with prepayment sensitivity of a pass-through compared with taking delivery of a TBA security. We believe this provides the end-investor with reduced prepayment volatility and enhanced total return prospects when compared to straight TBAs. We also believe that this pool-specific fundamental analysis is particularly useful when combined with longer term forecasts of the economy and interest rates.

Figure 1.

Mortgage Pass-Through Characteristics

On June 5, 2003, Freddie Mac provided new disclosures on the loan characteristics backing their MBS pools. FNMA followed closely behind with similar disclosures. We believe in times of increased prepayment volatility (such as the past year) a full understanding of these new disclosures, combined with other descriptive characteristic information, provide a competitive advantage to the informed investor. At Andres Capital Management (ACM), we have taken the time to understand the new disclosures and their impact on the prepayment characteristics of specified pools. Accordingly, one of the purposes of this overview is to inform our clients how ACM uses all available information to find value in the mortgage pass-through market.

In the following section, we will outline the various MBS pool characteristics and how they affect the prepayment characteristics of a mortgage pass-through.

1. **Pool Geographics (Geos)**. The geographic composition of a pool is one of the most important determinants of prepayment speed. This field identifies the percentage of the overall pool that is comprised of mortgages from different states. Numerous factors affect the prepayment speeds in a state such as demographics, taxes, and housing market strength. Table 1 shows the state-specific multipliers that UBS Warburg has developed to apply to standard prepayment models to adjust for the anomalies that affect the prepayment speed of the overall pool.

Table 1.

State	Mult (%)	State	Mult (%)
Massachusetts	158	Nevada	75
Michigan	151	Pennsylvania	74
Illinois	145	Florida	73
Wisconsin	141	Maine	72
Colorado	130	Louisiana	72
California	122	Texas	70
Missouri	122	Tennessee	69
Utah	109	South Carolina	69
Minnesota	103	Mississippi	67
Ohio	98	Alabama	66
Washington	97	Idaho	65
Arizona	97	Hawaii	64
Virginia	96	Vermont	63
Nebraska	95	Arkansas	60
Maryland	93	New York	60
Indiana	93	Oklahoma	58
New Hampshire	88	Montana	57
Georgia	87	New Mexico	57
Kansas	84	Puerto Rico	51
Kentucky	83	Delaware	51
Iowa	83	South Dakota	48
Rhode Island	83	District of Columbia	45
Oregon	83	Alaska	39
New Jersey	82	West Virginia	39
North Carolina	81	Wyoming	32
Connecticut	81	North Dakota	21

*Source: UBS Warburg

2. **Average Loan Balance**. Each pool specifies the 25th, 50th, 75th percentiles and the high and low loan balances of the pool. This information is important because, in general, pools with lower average loan balances will prepay slower than high average loan balances. The logic: There is more of a savings incentive to refinance when an individual's mortgage has a higher balance.
3. **Weighted Average Loan Age (WALA)**. The weighted average loan age is the number of months a mortgage pass-through (and the underlying mortgages) has been outstanding. A "1" WALA pool has only been in existence for one month. This is another important characteristic as, in general, lower WALA pools prepay at a slower rate. Again this makes sense because someone is much less likely to refinance and/or move if they have just completed the borrowing process.
4. **Weighted Average coupon (WAC)**. The WAC is the average coupon of the pool's underlying mortgages. This is different than the coupon of the mortgage pass-through due to servicing costs that cause a spread between the WAC and the security's coupon. The spread between the WAC and security's coupon is different for every pool based on the originator of the pass-through. In general, when comparing pools with equal coupons, pass-throughs with lower WACs will tend to prepay slower than similar coupon pools as there is less (albeit marginally less) incentive to refinance a mortgage with a lower interest rate.

The remaining characteristics are a result of the new disclosures distributed by both FNMA and Freddie Mac. Bear Stearns* has performed some research on how these new characteristics affect standard prepayment assumptions. We believe that these new disclosures, when combined with other available characteristic information, provide the mortgage analyst with

a competitive advantage in any interest rate environment when selecting a specified pool for purchase. The following is a recap of the analysis Bear Stearns has performed on how these new disclosures will affect prepayments for specified pools.

- **Borrower Credit**. The analysis performed by Bear Stearns shows that FICO, or credit bureau score, is clearly the most important of the new disclosures issued by FNMA and FHLMC. FICO scores are provided to lenders by the three major credit agencies: Equifax, Experion and TransUnion. FICO scores show an analyst in a single score the credit history of the borrowers that comprise the pool. A FICO score ranges from 300 to 850 (the lower the number, the higher the credit risk of the borrower) and is based on numerous factors such as payment history, length of credit history, types of credit used, etc. The general theme with this characteristic is the lower the FICO score, the higher the refinancing transaction costs and therefore, the lower the likelihood to refinance. The interesting outcome of the Bear Stearns analysis is that there is a natural breakpoint at FICO scores of 700. Pools with FICO scores below 700 exhibited a marked reduction in prepayment sensitivity across the entire interest rate spectrum. In an environment with positive refinancing incentives, low FICO pools paid as much as 22% slower than their higher FICO counterparts. Another interesting fact is that low FICO discount pools actually tend to slow less than high FICO discount pools. In general, prepayments of discount pools with FICO scores less than 680 are consistently faster than pools greater than 700. In summary, MBS backed by low FICO loans offer investors increased positive convexity, meaning they are expected to perform well versus the universe of straight pass-throughs in both rising and declining interest rate environments.
- **Loan-to-Value**. The loan-to-value (LTV) ratio is a measure of the loan amount in proportion to the overall value of the property being purchased and is a close second to FICO scores in terms of influence on prepayment behavior. In general, purchase loans have a high LTV as many of these borrowers are first-time homeowners who have less of a downpayment and have not had the luxury of property appreciation. As with FICO scores, the Bear Stearns analysis finds a LTV of 80% to be a natural breakpoint in terms of prepayment tendencies. The rationale for this is that most loans originated with LTVs above the 80% standard require additional mortgage insurance and face greater underwriting scrutiny than loans below the 80% threshold. The analysis shows that high LTV loans (> 80%) pay significantly slower than their lower LTV counterparts. This is because low LTV borrowers have few, if any, constraints on their ability to refinance and may actually have more incentives for a cash-out refinance if their property has appreciated in value. Unlike FICO scores, there is an implicit trade-off in high LTV pools. When interest rates rise, high LTV pools are likely to prepay slower than low-LTV pools which increases extension risk. This can however be partially mitigated by the size of the premium purchased. Another potential risk in purchasing a pool solely on the merits of

its LTV is a strong housing market where price appreciation quickly brings the average LTV of the pool below 80%.

The remaining characteristics have less impact on the overall prepayment sensitivities of an overall pool because they correlate (either positively or negatively) with FICO scores and LTV ratios. They are still valuable as additional information when choosing between two similarly priced pools.

- **Occupancy Status**. This field breaks out the percentage of each pool that is either investor-owned or owner-occupied. The Bear Stearns analysis highlights a number of interesting observations regarding this characteristic. First, pools with a high concentration of investor properties tend to have lower FICO scores, higher LTVs and smaller loan sizes than non-investor property pools. Second, these correlated characteristics would tend to suggest that investor properties face significant refinancing barriers. This is confirmed in the analysis that showed investor concentrated pools (> 20% investor loans) prepaid 15% to 20% slower than the non-investor sample at rate incentives ranging from 50 to 150 basis points. Third, it seems that like low FICO pools, investor property pools have the added benefit of increased positive convexity. This makes them less prepayment sensitive than pools with fewer investor properties.
- **Loan Purpose**. This field is represented as a percentage breakout of two types of transactions: purchase and refinance. A refinance transaction involves an existing borrower with an established prepayment history and typically some property appreciation. The reverse is true of the average purchase transaction as it typically involves first-time buyers. Bear Stearns indicates the correlation of FICO scores and LTV ratios by showing that in their sample, the average purchase borrower had a 692 FICO and 86% LTV compared with a 722 FICO and 72% LTV for a refinance borrower. In general, the analysis shows what one would expect: A significantly slower refinance response from the purchase universe than the refinance universe.
- **Property Type**. The property type field breaks down the percentage of each pool that is single family, 2-4 family or second home properties. Although the single family property type dominates this field (average share of 97%), the Bear Stearns analysis shows that pools with greater than 15% 2-4 family properties show many of the same characteristics that enhance the convexity profile of other loan types: a below average FICO (694), above average original LTV (79%), and a significant rate premium.

Conclusion

In general, mortgage pass-through market prices reflect some of the characteristic information defined above. However, we believe it will take some time before the market fully prices in the new disclosures by FNMA and FHLMC. ACM sees this as an opportunity to combine our proprietary research techniques to capture value caused by this market inefficiency.

Currently, ACM's economic forecast is for interest rates to remain in a trading range with a slight bias towards higher interest rates. In this type of environment, we favor higher coupon mortgages with favorable characteristics. By this, we mean mortgage pass-throughs with slower paying states, low loan balances, low WALA, low WAC, low FICO scores, high LTV, etc. Refinance rates have hit an all-time high which means there is value to finding securities that are somewhat protected from such high prepayment speeds. In a stable to rising interest rate environment, one can purchase these high coupon pass-throughs to reduce the speed of principal paydowns and improve the total return. This improved total return is due to the fact that the holder retains the coupon payments longer than assumed by "standard" prepayment assumptions.

In the words of a friend of the firm, "If fixed income is at the top of the market with rates having gone as low as they can, there is a need for wise counsel on how to use fixed income more cautiously." Accordingly, our investment approach and philosophy is simple and is predicated on the concept of active management utilizing mortgage-backed securities and other spread products to mitigate risk and enhance return. Characteristic analysis of mortgages is just one of the tools we use to deliver on that promise. ■

Note

*Bear Stearns, "Mortgage Research: A Roadmap to New Pool Disclosures from FNMA and FHLMC," June 12,2003.

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