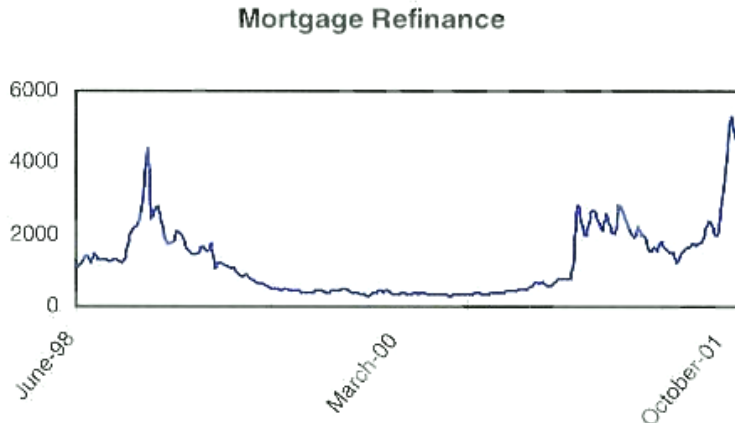


Better Risk/Return in Home Equity ABS

Over the past several months, and especially as the Fed has aggressively injected liquidity into the market after the events of September 11th, mortgage rates have fallen and refinancings have risen. This has made prepayment risk, the number one worry for mortgage investors, even more of a concern. In the refinance wave of 1998 and 1999 mortgage prepayments came in surprisingly fast (see chart below). This in turn caused mortgage performance to deteriorate as investors who owned premium mortgage pass-throughs received their principal at par and had to reinvest the proceeds at lower rates of return.



In the current environment prepayments on mortgages have again been, and likely will be, quite a bit higher than forecasted. This is the result of a variety of factors. One such factor is the increased efficiency in the marketplace that results from reduced refinancing costs. A second is the greater economic incentive many borrowers have to refinance. This incentive is a result of the recent strong housing market that has encouraged many homeowners to refinance their mortgages and take equity out of their homes while increasing their loan balances. Faced with higher loan balances, borrowers would be made significantly better off if they could lower their monthly mortgage payments.

While searching the mortgage sector for value in a high prepayment environment, we have determined that one place it can be found is in the mortgage related asset-backed securities. Specifically, we see it in the home equity securities. The following paper outlines the better risk/return profile of these investments.

Home-equity bonds, which are rated “AAA”, trade at a wide spread to Treasuries. This is due to an imbedded call option (i.e. the borrowers’ right to prepay the obligation), a characteristic that is similar to that found in mortgage securities. Therefore, to price a variable cash-flow security backed by mortgage of home equity loans we need to determine the value of the embedded option. We used customized collateral specific prepayment models to qualify the value of the option and then subtract it from the nominal spread of the bond. The resulting number is commonly referred to as option-adjusted spread (OAS). Utilizing option-adjusted spreads we are able to compare bonds from different sectors of the fixed income market on an apples basis, to identify value in the marketplace.

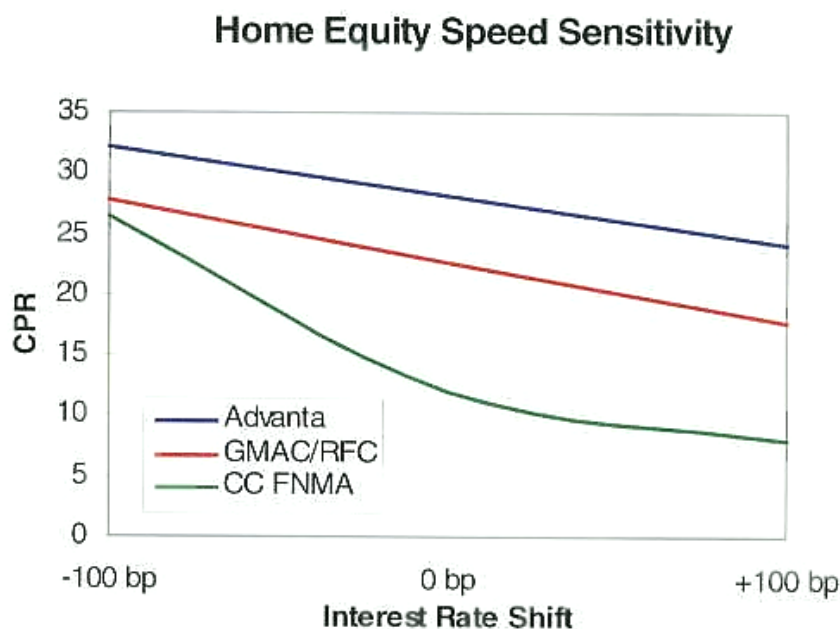
In our analysis of home equity bonds, we find that value of their call option is significantly lower than it is for mortgage-backed securities, which in turn gives the home-equity bonds a higher OAS yield and less negative convexity. This is because home-equity loans are inherently less

refinanceable than traditional mortgages. A major cause of this is prepayment penalties. Prepayment penalties, which started appearing in a large percentage of home-equity loans in 1999, allow borrowers to get a lower rate on their loans in exchange for paying a penalty if they choose to refinance the loans within a specified time, usually three to five years. Currently, the typical newly issued securitized home-equity deal has prepayment penalties on 70-90% of the loans that make up the pool. This significantly reduces the borrowers' incentive to refinance those loans because the amount of the penalty must be taken into account when determining if the refinancing is economically justified.

A second factor that significantly reduces prepayments is the credit quality of the borrower. Home equity loans are typically loans to "B" and "C" grade credit borrowers: whereas conforming agency mortgages are underwritten to "A" borrowers. "B" and "C" grade credit borrowers typically have one of the following characteristics: they have had one late payment within the last 12 months; they have not been at their current job over twelve months; or they have a high loan to value percentage because they did not put up a large enough down payment. Because of these mitigating factors "B" and "C" grade borrowers have limited opportunities to refinance their loans. Also, when conventional mortgage rates fall, rates on subprime loans do not move as dramatically. This further inhibits these borrowers from refinancing as rates drop.

The last major factor in prepayments is loan size. In a typical mortgage pass-through the average loan balance is between \$150,000 and \$250,000 dollars, on a home equity loan it averages around \$70,000 to \$90,000. Therefore the reduction in the borrowers' monthly payment, after adjusting for the costs of refinancing, has less economic impact. All these factors contribute to the reduced callability or "refinance-ability" of home equity loans.

The following graph compares the prepayment sensitivity of home-equity loans to traditional mortgage pass-throughs. The mortgage-backed security (CC FNMA) has a much higher sensitivity to prepayments than the home-equity bonds (Advanta and GMAC/RFC). That is, an interest rate decline of 100 basis points results in a change of more than 10 CPR for the mortgage security and only about 5 CPR for the home equity issues.



Another positive aspect of home-equity bonds is their structure. Home-equity bonds are structured sequentially so only the front tranche can receive prepayments. This effectively locks

out the other tranches from prepayments until the front tranches pays off allowing the investors in those tranches to continue to receive the coupon on the full principal balance for a longer period of time. Typically home equity bond tranches are structured so they only receive principal payments during a specified tight window of time. This is different from a mortgage pass-through where, as the name implies, all payments of principal and interest from the underlying borrowers “pass-through” to the investors.

The last risk that we will examine is extension risk. Mortgage pass-throughs have a high sensitivity to prepayments. In a market rally, as interest rates decrease, prepayments increase and the duration of the bond decreases forcing investors to reinvest their assets at the prevailing lower rates. Conversely, in a market sell off, as interest rates rise, prepayments slow and the duration of the bond increases. Thus when rates are going up investors’ cash flows are being pushed farther into the future not allowing them to reinvest at the higher rates. This is known as negative convexity. A home equity bond with a more stable duration profile will outperform in a market rally as its duration does not shorten as much as that of a pass-through. It will also outperform in a market sell-off since its duration does not extend as much as that of a pass-through.

Asset-backed home equity securities’ prepayment are much less interest rate sensitive, both as interest rates are decreasing and as they are increasing. This is because home equity bonds prepay for non-interest rate related reasons. Their prepayments are stabilized by a phenomenon called “credit curing”. Credit curing occurs when a borrower’s credit improves enough to qualify them for a lower interest rate conforming mortgage loan. This will generally result in a prepayment of the higher rate home equity loan in exchange for the lower rate mortgage loan. Because credit curing is only loosely correlated to changes in interest rates, home equities benefit from a relatively stable undercurrent of prepayments.

In conclusion home equity offer higher option adjusted spreads, better convexity and more stable duration due to greater prepayment certainty than mortgage pass-throughs. These are all very important characteristics in a high prepayment environment. On this basis home equity securities offer investors a high credit quality asset, with a very attractive risk/return profile.