Commercial Mortgage Insight®

Reprinted with permission from the December 2004 issue.

What Lenders And Borrowers Don't Know Can't Protect Them

Insight into the evolution of the early prepayment call protection feature.

BY RON KAMINKER

Historically, the two major sources of long-term commercial mortgages were savings and loans (S&L) and life insurance companies. The loans from S&Ls generally had no prepayment call protection or had a stepped penalty equal to a percentage of the prepaid amount. Typical stepped penalties were 5, 4, 3, 2 and 1%, or 3, 2 and 1%. Life insurance companies were more sophisticated and frequently added a yield maintenance prepayment penalty in order to insulate the relationship between their assets and liabilities from the negative impact of mortgage prepayment.

Ron Kaminker

With yield maintenance, the cash flows that would have been received had the loan not been prepaid are discounted to calculate the amount of the penalty. Usually the discount rate is the yield on the treasury most comparable to maturity, but sometimes the discount rate is the nearest treasury plus a spread. In effect, this allowed a lender receiving a mortgage prepayment to reinvest the proceeds in treasuries and still receive the identical yield as was expected on the mortgage investment.

One of the limitations on the growth of the CMBS market in the 1980s was the lack of call protection on the mortgages. This exposure to prepayment risk prevented the interest-only (IO) strip from being sold profitably. The few deals that were done during that period usually used the excess interest, which otherwise would have gone to the IO holder to pay down principal. The net result was a residual received by the issuer at the tail-end of the deal with its resulting phantom income and tax complications.

During the 1990s when most of the mortgages originated for securitization had yield maintenance protection, the IOs received most or, in some cases, all of the prepayment penalty, thus enhancing their marketability and value. The ability to realize material value through the sale of the IO has contributed to a thriving CMBS market.

A new innovation in call protection introduced in the last few years is defea-

Table 1: Consistent Treasuries Prices

Loan Terms		Current Yield Curve		Yield Curve at Origination	
Balance	10 million	1 Year	1.5%	1 Year	1.5%
Rate	7%	2 Year	2.5%	2 Year	2.5%
Term	120	5 Year	4%	5 Year	4%
P & I	$66,530	10 Year	5%	10 Year	5%
Amortization	360				

Month of Prepay	Years Remaining	Coupon	Treasury to Maturity	Coupon Minus Treas.	Yield Maintenance
0	10	7%	5%	2%	14.83%
12	9	7%	4.8%	2.2%	15.18%
24	8	7%	4.6%	2.4%	15.21%
36	7	7%	4.4%	2.6%	14.88%
48	6	7%	4.2%	2.8%	14.17%
60	5	7%	4%	3%	13.04%
72	4	7%	3.5%	3.5%	12.61%
84	3	7%	3%	4%	11.15%
96	2	7%	2.5%	4.5%	8.60%
108	1	7%	1.5%	5.5%	5.40%

Source: Condor Capital Research

Ron Kaminker is president of Condor Capital Advisors LLC, a Los Angeles-based firm that provides debt placement, whole loan sales and capital markets advisory, analytics and structuring services related to commercial mortgages, CMBS, B-pieces, CDOs, distressed debt and other asset-backed securities. He can be contacted at (310) 272-1390.

sance. With defeasance, the borrower is required to buy Treasury securities with cash flows that precisely mimic the cash flows from the underlying mortgage. In the event of a mortgage prepayment, the investor (either the direct lender or the CMBS bondholder) would see no divergence in their expected cash flow.

There are two advantages for investors who hold mortgages with defeasance over yield maintenance. One is that the collateral is risk-free Treasury securities, rather than more risky commercial mortgages. The other is that, since the risk of negative prepayment implications is eliminated, cash flows are more assured in amount and term, benefiting lenders and bond investors regardless of their position in the capital structure.

Yield maintenance vs. defeasance

On the surface, it appears as though there is no significant economic difference between yield maintenance and defeasance. However, a more thorough analysis reveals some critical distinctions. A defeasable loan, due to REMIC requirements, is generally locked out for the first two to four years of the mortgage term. Additionally, there is a large expense involved in the process of selecting the particular treasuries to mimic the cash flows.

The cost can run from $50,000 to $100,000 - regardless of the loan size. Moreover, from a borrower's perspective, if treasuries have risen above the coupon on the loan, it would actually be possible to prepay the loan at a discount! However, the lender will still receive the stated cash flows.

Assuming a positively sloped yield curve, the amount of the penalty is higher with defeasance. With yield maintenance, the penalty is based on the difference between the coupon and the yield of a Treasury closest to the remaining term. Thus, if a borrower wishes to prepay a 10-year loan at the end of year five, the coupon is compared to the five-year treasury.

With defeasance, since cash flows must be available each month of the remaining term, Treasury securities (usually purchased in the form of treasury strips) maturing from one month to five years will be required. Due to the lower yields of the shorter-term securities, the difference between those yields and the coupon would be greater, increasing the cost.

Prepayment penalty misconception

There is a large misconception regarding the amortization of the prepayment penalty under yield maintenance. The common thought is that the prepayment penalty declines in a generally straight-line manner from origination to zero at maturity. It is true that the penalty usually declines over time. However, the decay can be much slower than expected depending on the slope of the yield curve at prepayment.

Consider the following example of a 10-year mortgage issued at a spread of 200 basis points (bps) over the 10-year treasury yield (assuming no change in the yield curve from origination to date of prepayment).

If treasuries remain constant

As noted in Table 1, the prepayment penalty at origination is almost 15 points (the present value of the 2% shortfall for 10 years discounted at 5%). However, the penalty at the end of years one, two and three is actually higher than at origination because of the steepness of the yield curve. Seven years into the loan, the prepayment penalty has only declined by 3.68% - from 14.83% to 11.15% - and after eight years the penalty is still almost 9%. Thus, a borrower who wishes to sell his or her property after seven or eight years would most likely be surprised at the extent of the remaining penalty.

If treasuries decrease

However, for a loan that was originated in a higher-yield environment than at prepayment, the penalties can be staggering. Table 2 shows the types of penalties a borrower who mortgaged his or her property a few years ago may be currently experiencing.

If treasuries increase

On the other hand, for a loan that was originated in a lower-yield environment, the penalties can be quite small or non-existent. An interesting fact shown in Table 3 is that the penalties may even increase as the loan approaches maturity due to the steepness of the yield curve. If interest rates rise over the next few years, these are the magnitudes of penalties a borrower may expect.

Loans purchased at a premium

If loans are bought at a premium to par, the inherent call protection available to the initial lender is not fully transferred to the purchaser. With yield maintenance or defeasance, the originator has protection based on the difference between the

Table 2: Declining Treasuries Prices

Loan Terms		Current Yield Curve		Yield Curve at Origination	
Balance	$10 million	1 Year	1.5%	1 Year	3.5%
Rate	9%	2 Year	2.5%	2 Year	4.5%
Term	120	5 Year	4%	5 Year	6%
P & I	$80,462	10 Year	5%	10 Year	7%
Amortization	360				

Month of Prepay	Years Remaining	Coupon	Treasury to Maturity	Coupon Minus Treas.	Yield Maintenance
0	10	9%	5%	4%	30.16%
12	9	9%	4.8%	4.2%	29.44%
24	8	9%	4.6%	4.4%	28.30%
36	7	9%	4.4%	4.6%	26.69%
48	6	9%	4.2%	4.8%	24.58%
60	5	9%	4%	5%	21.96%
72	4	9%	3.5%	5.5%	19.98%
84	3	9%	3%	6%	16.84%
96	2	9%	2.5%	6.5%	12.48%
108	1	9%	1.5%	7.5%	7.38%

Source: Condor Capital Research

treasury security yield and the coupon, whereas the purchaser has protection based on the smaller difference between the purchase yield and the coupon. Consider the loan in Table 1 that prepays in month 48 with a 14.17% penalty. If the purchaser paid 110% for that mortgage, he or she would only receive a 4.17% gain - not enough to fully compensate him or her for the six years of lost interest. In a case where rates have risen after purchase, it is possible that there would be no prepayment penalty at all, and the purchaser would actually take a loss on that loan.

With stepped prepayment penalties, it is even more important to factor in the prepayment penalties. A rigorous analysis of yield-to-worst or price-to-worst that calculates what the price or yield would be assuming the loan paid off at the worst possible time, is prudent. A buyer who pays more than this amount may be subject to yield degradation if the loan is prepaid at an inopportune time.

Loans purchased at a discount

As opposed to loans purchased at premiums, those purchased at a discount to par offer superior call protection. With yield maintenance or defeasance, the originator has protection based on the difference between the treasury security yield and the coupon, whereas the purchaser has protection based on the larger difference between the purchase yield and the coupon. Under all prepayment penalty types, the call protection provided by discount loans (or bonds) is stronger than investments bought at a premium or par because: the prepayment penalty will be greater; the loan is at a below market rate with the consequent lower likelihood of prepayment; and the effective LTV is reduced.

Summary

Prepayment penalties have evolved from none, to stepped, to yield maintenance, to defeasance. Even though defeasance and yield maintenance appear similar in their impact, there are significant differences between the two. Contrary to most conceptions, yield maintenance penalties do not decline in a straight-line manner and, in fact, may remain quite high for the majority of the life of the loan. For borrowers, lenders and buyers of CMBS bonds and IOs, as well as purchasers of loans in the secondary market, it is imperative to determine the likelihood of prepayment as well as the yield and spread consequences of the early payment. This is especially important if the investment is being purchased at a premium or a discount. ●

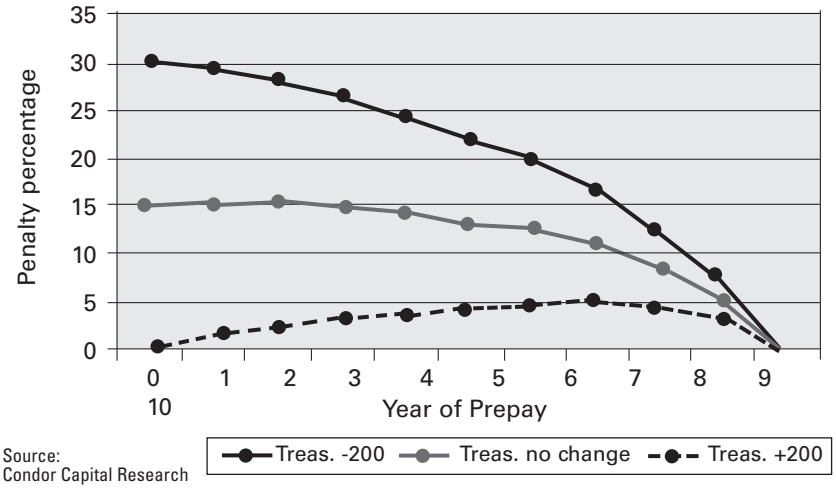
Table 3: Increasing Treasuries Prices

Loan Terms		Current Yield Curve		Yield Curve at Origination	
Balance	$10 million	1 Year	3.5%	1 Year	1.5%
Rate	7%	2 Year	4.5%	2 Year	2.5%
Term	120	5 Year	6%	5 Year	4%
P & I	$66,530	10 Year	7%	10 Year	5%
Amortization	360				

Month of Prepay	Years Remaining	Coupon	Treasury to Maturity	Coupon Minus Treas.	Yield Maintenance
0	10	7%	7%	0%	0%
12	9	7%	6.8%	.2%	1.27%
24	8	7%	6.6%	.4%	2.36%
36	7	7%	6.4%	.6%	3.22%
48	6	7%	6.2%	.8%	3.83%
60	5	7%	6%	1%	4.14%
72	4	7%	5.5%	1.5%	5.20%
84	3	7%	5%	2%	5.41%
96	2	7%	4.5%	2.5%	4.68%
108	1	7%	3.5%	3.5%	3.40%

Source: Condor Capital Research

Yield Maintenance Penalties Assuming Instantaneous Parallel Shift In Yield Curve



Source:
Condor Capital Research