PARLIMENT
CONSULTING SERVICES

Challenging Financial Paradigms

Learn To Sell Financial Options: Part One

Price the Embedded Options; Implant the Rest

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EXTRA. EXTRA. Buy your future high-rate CD at today's prices. On sale here. Today only! Supplies limited.

Did you ever buy something that you didn't need? Just to have it ready to use later? You know, one of those two-for-one or three-for-two sales.

People like to have reserves of stuff, just in case. That's why you pack the extra underwear. If you're my age, it's as a hedge against incontinence. If you're young, well é let's be safe and chalk it up to a "hectic pace"

Financial retailers are learning how to sell options é the opportunity to get more for less.

Some CD's are being sold with a built-in option for the buyer of the CD to raise the rate on the CD a designated time before it matures. The holder of this CD is buying a hedge against rising rates, if, and this is a big if, the opportunity to use the hedge presents itself. The hedge pays off if deposit rates do rise and if the holder chooses to exercise the option.

Financial institutions find they can sell options based on the value that the purchaser will realize on the option if exercised. The institution benefits from the probability that not everyone will exercise their option!

This is no new "brainstorm", just the application of some good, old-fashioned, retailing strategy.

The value of options already embedded within the financial products currently being offered and the value of options which can be invented and then "implanted" in redesigned products will be examined. Why? Because I think there's a buck to be made here!

When risk in the wholesale financial markets is bought or sold, options exchanged or traded, and futures purchased or cash flows swapped, etc. you can bet that the professional arbitrageur that set the prices on these options isn't leaving any money on the table.

Ask any banker about the CD's that depositors allow to roll over at low rates. Prepayment penalties go uncollected and mortgages are left un-refinanced. You can come up with a legion of stories why consumers leave options unexercised. So, here's the game plan.

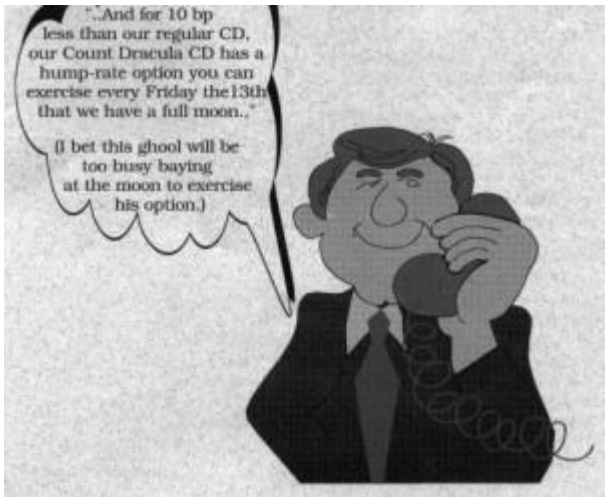
Because discussing options theory isn't high on anyone's list of favorite things to do, the loan and deposit products that you deal with every day will be examined. The economic value perceived by buyers and sellers of options shall be disclosed. The term "perceived value" is emphasized

because sometimes customers don't place the same value on product attributes or recognize value until you remind them about it.

A favorite example of an entire product line built on perceived value is deodorants. I mean, do we all really smell bad? I'd bet at least half of you out there really smell pretty good é on most days. But which half, and on which days? There you are slavering the stuff on your body every morning, hedging against the risk of smelling bad. The key to selling deodorants is not to help the customer discover whether or not they really do smell bad, but in creating grand scenarios about the risks of smelling bad.

Customer utility is perceived value. Right? What if some perceived value can be conjured up with respect to the financial products which we market every day.

Perhaps by the next issue, we'll try to adapt some of the terms and tools of options theory to use in the pricing of our retail products. We may find some use for discussing "puts", "calls" and "strike prices" yet.



Cash Flow, Cash Flow, Who Has the Cash Flow

Understanding the value of the options associated with financial products is gained by asking three questions:

1. What are the basic cash flows associated with the product?
2. Who owns and owes these cash flows?
3. How are the market values of these cash flows changed by further agreements (options) to alter these cash flows?

Take as an example the common home mortgage loan. We'll assume it's a fixed-rate loan to keep it simple.

Analyzing the Prepayment Option

The lender loans $100,000 to a borrower at a 9% rate for 30 years. The lender buys 360 monthly payments of $804.63 for a price of $100,000. The borrower winds up with $100,000 in mortgage debt. Essentially, the borrower has sold 360 monthly payments of $804.63 for a price of $100,000.

The market value of the mortgage loan, the present value of receiving 360 monthly payments of $804.63, will rise when mortgage rates fall below the 9% contract rate on the mortgage and will fall when mortgage rates rise above 9%.

So what can happen to change these cash flows and their resultant market values? If when mortgage rates drop (letôs assume this drop occurs immediately), the borrower elects to exercise an option to prepay the book value of the loan, $100,000, and re-borrow the money at a rate of 7%. The borrower has exchanged monthly mortgage payments of $804.63 for payments of $665.30.

Mama Mia, thatôs some valuable option! How much did the borrower pay for it? Sorry, I shouldnôt get cute. This is too painful of a reminder for mortgage lenders who sold prepayment options to borrowers é for nothing. Or so they think. Weôll see.

Now the lender who paid $100,000 to receive 360 payments of $804.63 only gets paid back the lousy $100,000 to reinvest at 7%. I mean the market value of 9% cash flows discounted at 7% is $120,941. A contract is a contract, right?

Wrong. Unless your loan documents specify otherwise, the option to prepay the mortgage at par is embedded in the mortgage. In this case, it appears the lender gave away an option valued at over $20,000 that the borrower should have purchased. Granted this is the maximum value for that prepayment option. The prepayment optionôs value declines as the mortgage matures and will have value only if mortgage rates fall below the contract rate on the loan.

Pricing the Embedded Prepayment Option

How does a lender charge for prepayment options that previously have been given away? Letôs challenge the assumption that these options have been completely free. Secondary market pricing of mortgage securities builds in an óoption-adjusted spreadô risk premium. This premium is the difference between the treasury yield curve and the mortgage loan rate. Thus, the borrower already pays an interest rate which compensates the lender for some portion of the prepayment option.

Second, the lender can capture additional option value by charging varying amounts of loan origination ópointsô (percentage of the loanôs face value). The amount of ópointsô fee income will

depend on the nonconforming characteristics and other indications of the level of competition inherent in the loan package.

Indeed, market competition ensures that an implicit rather than an explicit option fee is charged on some estimate of the average value of the prepayment option to the investor. Ah! My confidence in the efficiency of the market is restored. That's right, Virginia, there really is no "free lunch."

In fact, I'm encouraged to see portfolio lenders selling the perceived value of "home-grown" servicing and anything else that permits them to charge a higher rate or increased fees going into the loan.

Interestingly, the more frequent rate resetting of adjustable rate loans also serves to lessen the value of the prepayment option. It does this by reducing both the length of time and the extent to which market rates will be below the contract rates on the loan.

Implanting Options on Loans

What other options can lenders attach to the basic loan that they can sell to the borrower?

Some lenders have been selling borrowers the option to convert their ARM to a FRM at some fixed date in the future. This allows the borrower to exchange uncertain for certain cash flows, hopefully when rates are low. The lender supposedly can charge a slightly higher rate on such loans than would be the case for straight ARM loans. When the borrower exercises the option to convert to a fixed-rate loan, the lender has the option to sell the loan into the secondary market, escaping the implicit prepayment option of the FRM.

The option to convert from FRMs to ARMs is also offered.

The success of an option strategy is defined by being able to collect enough option fees from the sale of individual products to more than offset the cost to the institution of a certain percentage of the options being exercised.

A Look At the Options On Deposit Products

To analyze the value of options on deposit products, remember that the position of option owner is now reversed. The depositor owns the asset, a series of cash flows promised by the financial institution. The institution is the debtor with a liability on its books.

Since the institution remains in the role of retailer, they'd be trying to earn fee income by selling options to the depositor.

The Withdrawal Option

One of the options institutions will try to sell depositors is the right to sell CD assets back to the bank when market rates rise above the contract rate on the CD. This is unlike the situation when the institution was selling the option to prepay mortgage debt and collecting an upfront fee or rate premium.

This time a fee is charged when the depositor exercises the option. This ówithdrawal penaltyô takes away the economic advantage of exercising the option, if it is a full mark-to-market charge. And when they charge this option fee, theyôre going to add insult to injury by calling it a ówithdrawal penalty.ô

My gosh, a ówithdrawal penaltyôindeed. No wonder institutions never try to sell these options, they just write them into the contract and hope you never try to exercise it. I even had a tomato thrown at me once when I was giving a speech at a marketing convention after I had advocated the necessity of charging mark-to-market penalties to preserve the remaining term to maturity of CDs and avoid being sent to A/L hell by your CFO.

One of the marketing managers who was present at the meeting observed that the option to withdraw CDs was not uniformly exercised when it seemed to become appropriate to do so. As a result, they decided to charge a lesser penalty on each certificate, since this was a competitive issue at the time. They anticipated that on average the ópenaltyôincome would make up for their risk exposure. The manager had a point if they would have had to raise the offer rate on the CD to make up for a harsher penalty.

On the other hand, a slight adjustment in the way the option was being offered may have made more sense. What if the depositor was offered a órate-bonusôeach time he reached a ómaturity-milestoneô In this way, the depositor is forced to pay an option fee based on his expectation of

the value of the withdrawal option regardless of whether he exercises the option. At the very least, this approach would get rid of that awful term, ópenaltyô

The ‘Bump-Rate’ CD

To return to where this discussion started, take the option being sold to the depositor another step beyond the scheduled bonus-rate as an alternative to the withdrawal penalty. If the depositor commits their CD for a certain term, the institution can propose to sell the depositor the option to capture the current market rate on a certain term-to-maturity at some point in the future. For instance, buy a two-year CD at 6.25% today, and one year from the date of issue you can bump your rate to whatever rate is offered on any term CD as long as you agree to the term of the new CD. Such a deal!

It makes a great difference whether you offer the depositor an option at a series of discrete time points in the future, or, whether the option is left open all throughout a given time period. The options offered have different values to the depositor, and should be priced accordingly.

The Option Dilemma: What Price to Charge

Iôve reached a point where the value of my words ceases to be meaningful. (Donôt say it, Farin.) Our discussion has clearly pointed out the value that can be attributed to consumer options both embedded and implanted in retail products. But the specific value of the option will be a function of the probability of the option being exercised, which is even further complicated in the situation facing retail options.

We will have to dabble in a little options theory to see if we can get some guidance in the pricing of these retail options. It looks like I can make a few bucks selling them to customers, so the work is probably worth it.

Next time.