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Hybrid ARMs

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Where can credit unions turn when looking for more income today with protection from higher interest rates in the future?

With primary mortgage rates back on the rise after 30-year fixed rates reached historical lows, many credit unions have been apprehensive to buy longer maturity securities to increase their investment yields/income, mainly because of the price risk.

However, the upward swing of primary mortgage rates presents **hybrid ARM** issuance as an attractive alternative to longer, and perhaps riskier, maturity securities

What are Hybrid ARMs?

Hybrid ARM loans (an adjustable-rate mortgage loan) can provide significant income with less price risk than long-term fixed rate mortgage securities, by providing for adjustments to its interest rate annually or semiannually. The adjustment is determined by changes in a published market index, such as LIBOR or the yield on U.S. Treasury securities with a remaining maturity of one year. Some ARMs start with low initial interest rates that last until the first adjustment.

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Hybrid ARMs provide for a fixed rate of interest for their first several years, after which they convert to having annual or semi-annual rate adjustments. The ARM MBS market uses a short-hand terminology to describe the key terms of hybrid ARMs. For example, a hybrid ARM with a five-year fixed-rate period followed by interest rate adjustments that occur annually is called a "5/1" hybrid ARM. Similarly, a hybrid ARM with a three-year fixed-rate period followed by annual adjustments is called a "3/1" hybrid ARM. There are also "7/1" and "10/1" hybrid ARMs. Today, hybrid ARMs are much more common than regular ARMs.

Making it Work

Hybrid ARMs contain elements of both a fixed rate mortgage and adjustable rate mortgage. The mortgage rate is fixed for an initial period of time (generally 3, 5, 7 or 10 years), and then the rate is adjusted. With a hybrid ARM, borrowers are protected from interest rate fluctuations during the fixed rate period and typically pay a lower initial rate than they would with a traditional 15-year or 30-year fixed rate mortgage.

Once the fixed period has expired, the interest rate paid by the borrower adjusts on an annual or semiannual basis. The rate adjustment depends on the **index**, **margin** and **cap structure**.

- **Index:** Also known as benchmark, including LIBOR or London Interbank Offered Rate are used for conventional hybrid ARMs.
- **Margin:** The gross margin is added to the index to determine a new interest rate at each rate adjustment. The net margin is the difference of the MBS guarantee-fee and servicing amount from the weighted average of the borrower note rates, which is also referred to as the GWAC (gross weighted average coupon).
- **Cap structure:** Three parts to a typical cap structure include the *initial adjustment cap*, the *periodic adjustment cap* and the *lifetime adjustment cap*. For the standard ARM products issued by the GSEs (Government-sponsored Enterprise), the 5/2/5 and 2/2/5 cap structures' are by far the most common.

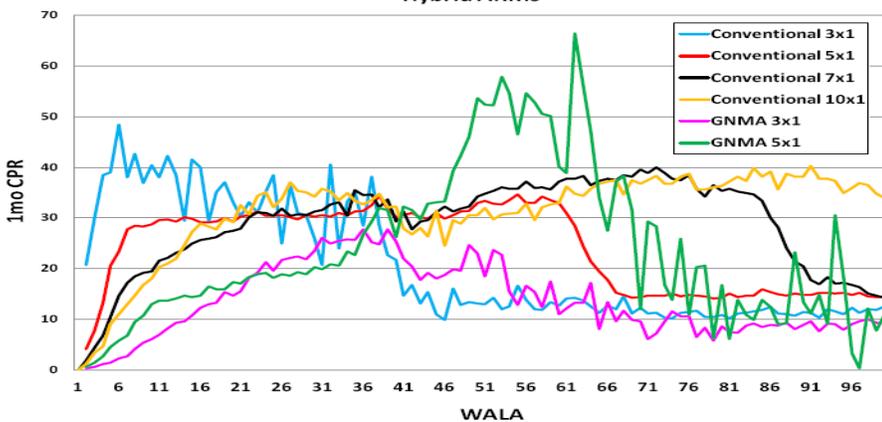
Note: Hybrid ARMs do not have an explicit or stated floor; its stated margin effectively becomes the floor. Thus, if the margin value is 2.25%, the borrower's rate could not adjust any lower than 2.25%, even if the benchmark rate fell to zero.

Prepayment Risk

As with any mortgage product, one of the largest sources of risk inherent in Hybrid ARMs lies with prepayments. Prepayments can be broken into three main categories: **demographic**, **lower financing costs** and **program specific reset dates**.

- **Demographic:** Unplanned events (relocation, divorce, death, natural disaster or default) occur more frequently as time passes, with the exception of default. *How does this impact a borrower?* Prepayments for ARM borrowers differ from those of fixed-rate primarily because they are driven by the terms selected by the borrower. For instance, borrowers who selected a 3/1 loan have likely done so because they plan to be moving within the next three years. Possibly, they expect to trade up to better home or expect to relocate. This would suggest that 3/1 borrowers would have a faster demographic prepayment speed than 5/1 or 10/1 borrowers, simply because of the fixed-rate time frame specified by the borrower. *This pattern is reflected in the graph below.*

Ageing Curve Analysis | Last 24 Months
Hybrid ARMs



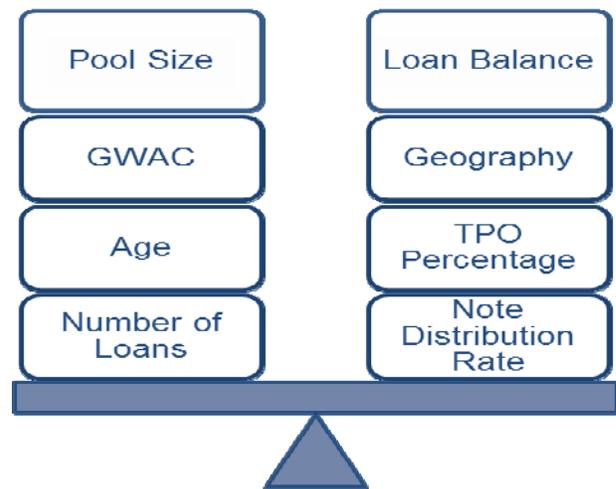
Source: FTN Financial, KDS Global

Over the past 24 months, conventional (FNMA /FHLMC) ARM prepayment speeds have ramped up quickly and then leveled off at approximately 30 CPR (conditional payment rate), until the initial reset date. The speed of the initial ramp-up varies by reset type with 3x1s accelerating the fastest and both 7x1s and 10x1s ramping more gradually. Post reset prepayment declines significantly to 12-15 CPR.

- **Lower Financing Costs:** As with fixed-rate borrowers, ARM borrowers will respond to opportunities to save when interest rates fall. Some borrowers will prefer the peace of mind from the known payments on a fixed-rate loan. In fact, such borrowers may even be willing to pay some premium for this security (in the form of a higher rate than they currently have on their ARM). Alternatively, a certain percentage will prefer to go after the lowest rate available and thereby stick with an ARM.
- **Reset Dates:** As the reset date approaches, prepayment activity picks up. After the reset date, prepayment activity dampens quickly. The reset date creates a voluntary balloon mortgage of which many borrowers avail themselves. On subsequent reset dates, the remaining borrowers will tend to show less responsiveness, exhibiting a burnout of sorts.

Balancing Risk:

In addition to the prepayment risk, investors must be aware of other risk factors.



Pricing & Total Rate of Return Analysis

Pricing for hybrid ARMs is often quoted as an N or Z Spread. The N spread is the static spread to a single point on the swap curve. Z spread is defined as the zero volatility spread to the U.S. Treasury curve. The street traditionally prices newly originated ARMs at 15 CPB (conditional prepayment on the balloon). While this is the street pricing convention, it is not sufficient to use only 15 CPB to determine a Hybrid’s risk and cash flow profile or valuation.

Total Rate of Return: The tables on the following page show the 12 and 24 month comparative total rate of return performance of the 5/1 FNMA Hybrid ARM versus a 15-year fixed rate MBS pass through security. The total rate of return analysis shows that in an increasing rate environment, the 5/1 ARM has a much better risk/return profile than the 15-year fixed rate pool (*See blue highlighted area*). The FNMA 5/1 superior relative outperformance is primarily attributable to two factors.

1. As the security nears its reset date, it takes on more characteristics of a floating rate security.
2. Hybrid ARMs tend to have faster prepayment speeds in a rising interest rate environment than fixed rate mortgage-backed securities. A borrower will take on the lower initial mortgage rate of the ARM at the risk of potentially higher mortgage payments later, because they do not believe they will be in their home long enough to experience the higher rates. This so-called “self-selection” bias leads to higher base case prepayment speeds, shorter average lives and therefore less interest rate risk.

Total Rate of Return Comparison-(12-Month/Aged)

Security	5/1 Agency Arm	15 year FNMA MBS
Yield to Maturity	1.87	2.461
Effective Duration	3.59	4.82
Total Return*		
300	-7.765	-10.677
200	-3.729	-6.249
100	-0.048	-1.608
50	1.650	0.730
0	3.021	2.808
-50	3.888	4.420
-100	4.456	5.751

Total Rate of Return Comparison-(24 month/Aged)

Security	5/1 Agency Arm	15 year FNMA MBS
Yield to Maturity	1.87	2.46
Effective Duration	3.59	4.82
Total Return*		
300	-2.141	-5.576
200	0.968	-1.892
100	3.421	1.834
50	4.409	3.595
0	5.099	5.047
-50	5.386	6.025
-100	5.437	6.722

**All projected returns are based on an aged parallel shift in the yield curve using IDC's Bondedge's prepayment modeling and cash flow assumptions.*

Final Thoughts

There are many unique considerations and moving parts when investing in hybrid ARMs. Hybrid ARMs can be complex and misunderstood. Prepayments are more volatile and less predictable than traditional fixed rate mortgages. Pricing can also be a challenge due to the fact that a TBA market does not exist and the market is not homogeneous. Thus, in determining the suitability of ARMs, it is critical that one analyzes each ARM security in detail and models prospective cash flows under various interest rate scenarios before purchasing.

However, given the current steep yield curve environment; hybrid ARMS compare favorably to 15-year fixed rate mortgages (or comparable duration agency debentures/CMOs). As such, they are an attractive investment for credit unions looking to enhance income today while reducing the price risk of the portfolio should interest rates rise in the future.

More Information

For more information about credit union investment strategy, portfolio allocation and security selection, please contact the author at tom.slefinger@balancesheetsolutions.org or 800-782-2431, ext. 2753.

Tom Slefinger, Senior Vice President, Director of Institutional Fixed Income Sales, and Registered Representative of ISI, has more than 30 years of fixed income portfolio management experience. He has developed and successfully managed various high profile domestic and global fixed income mutual funds. Tom has extensive expertise in trading and managing virtually all types of domestic and foreign fixed income securities, foreign exchange and derivatives in institutional environments.

At Balance Sheet Solutions, Tom is responsible for developing and managing operations associated with institutional fixed income sales. In addition to providing strategic direction, Tom is heavily involved in analyzing portfolios, developing investment portfolio strategies and identifying appropriate sectors and securities with the ultimate goal of optimizing investment portfolio performance at the credit union level.

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