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Adjustable rate mortgages – the US experience

In the deregulated environment in the United States, the adjustable rate mortgage is now a permanent feature, says Michael Wilson

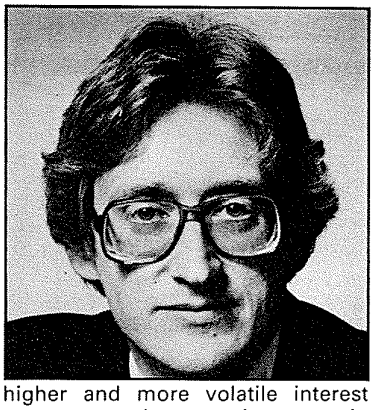
HOUSING finance in the United States has been extremely fluid since the early 1980s. Following an era dominated by the traditional fixed rate, fixed payment, 30-year maturity mortgage loan, the 1980s have witnessed an explosion of housing finance options. Over the years, however, none has received more attention — both favourable and unfavourable — than the adjustable rate mortgage (ARM).

Historical perspective

Prior to 1979, ARM-type loans were available in the US but only on a very limited basis. As far back as the early 1940s, state chartered savings and loans in Wisconsin were allowed to make loans that contained "interest rate adjustment" clauses. Rates on these loans were not tied to an index but changed at the lender's discretion.

The first large-scale experiment with ARMs occurred in the state of California. State chartered savings and loans were given authority to make variable rate mortgages in 1971. The so-called California VRM was indexed to the weighted average cost of money of member institutions of the Federal Home Loan Bank of San Francisco. (Members of this Bank included savings institutions in the states of Arizona, California and Nevada.) The interest rate on these loans could not change more than 0.5% annually.

In the late 1970s, the deregulation of savings accounts, coupled with



higher and more volatile interest rates, created an environment in which savings institutions recognised the dangers of investing in fixed rate products funded with short-term deposits. Pressure developed for financial regulators to grant ARM authority to savings institutions nationwide. It was clear that unless the asset side of the balance sheet was deregulated along with the liability side, the maturity mismatch of short-term liabilities and long-term assets would cripple a large number of savings institutions.

As a result, in January 1979 the Federal Home Loan Bank Board allowed federally chartered institutions to make what in essence was the California VRM, indexed to the national cost of funds at savings institutions. Interest rate changes were limited to 0.5% per year and to 2.5% over the life of the loan.

In April 1980, a variation on the VRM, the renegotiable rate mortgage or RRM, was introduced. The RRM was indexed to the average closing rate on conventional mortgages made on previously occupied homes by all lenders, not just savings institutions. In contrast to the VRM where the payment and rate could change annually, adjustments on an RRM only occurred every three, four or five years. At adjustment time, the rate could change no more than 0.5% for each year between adjustments and no more than 5% over the loan's life.

Institutions had no flexibility when making a VRM or RRM. The indices and adjustment features were clearly delineated by regulation. As such, these alternative mortgage instruments did not fully complement the accelerated pace of savings account deregulation. With an annual rate adjustment limited to one-half of 1% in the case of the VRM, these mortgages provided little in the way of protection against the extremely volatile cost of money of the early 1980s.

The needed ARM flexibility was finally granted in April 1981. Interest rate adjustments could be tied to any index that could be readily verified by the borrower and not controlled by the lender. The regulation imposed no specific limits on the annual and life-of-loan interest rate changes. This was properly left to the determination of market forces. The rate and payment no longer had to change simultaneously. It was possible for the rate to increase and the payment to remain constant or, in the

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presence of a payment cap, adjust only a portion of what would be needed to amortise fully the loan at the new rate of interest.

The increased flexibility was welcomed by the business, but it was too late to avert the looming crisis. The marginal amount of ARMs that could be added to the portfolios of institutions in the short run was insufficient to offset the drag of the much larger FRM portfolio. The high and volatile interest rates between 1981 and 1982 devastated the mismatched savings institutions. Suffering a total operating deficit of over $9 billion in these two years, the business lost nearly a third of its capital and over a fourth of its member institutions, which disappeared because of failure or, more commonly, through merger into stronger institutions.

The lessons of 1981-82 made it abundantly clear to the survivors, however, that managing interest rate risk was a necessity. In the calmer economic times following 1982, savings institutions in the US have made large strides in reducing their exposure to volatile interest rates. Adjustable rate mortgages have played a major role in this restructuring effort.

ARM types today

Since many savings institutions are making ARMs to keep for restructuring purposes rather than for sale into the secondary market, a wide range of ARMs is available. Some standardisation has occurred over the years, however, as lenders discovered certain combinations acceptable to borrowers under a wide range of interest rate scenarios.

According to data compiled by the US League of Savings Institutions, three major categories of ARMs exist in the US, each accounting for about one-third of the ARM market. The first is an ARM indexed to the one-year Treasury yield as reported by the Federal Reserve Board. The second is indexed to the national or a regional cost of funds index, with the one released by the Federal Home Loan Bank of San Francisco — called the 11th District Cost of Funds — being among the most popular. The remaining third of ARMs are tied to a variety of shorter and longer term Treasury securities. Recently, some ARMs have been made with a LIBOR index in an effort to further the secondary market's appetite for ARMs.

ARM rates equal the index value plus a margin, which in theory should allow the lender to cover both money and operating costs. The typical margin is equal to 2.5%. Usually during the first six or 12 months of an ARM's life, the lender discounts the fully margined initial rate by 2% to 2.5%. With the discounted rate, a borrower has a payment structure based on what is in essence a below-market interest rate.

When the discount period ends, the rate on the ARM goes to the current index value plus the margin.

Rate adjustment frequencies vary considerably but usually occur at one-year intervals on the one-year Treasury indexed ARM and monthly on the 11th District Cost of Funds indexed ARM. For the Treasury indexed ARM, the marketplace has established the norm of a 2% maximum interest rate change each year, with a life-of-loan interest rate cap equal to 5% over the fully margined initial rate.

In instances where the rate adjusts yearly, the payment also adjusts yearly. On the monthly adjustable Cost of Funds indexed ARMs, the payment still changes only once a year. If a payment increase is required, the new payment is often capped at some percentage — usually 7.5% — over the previous year's payment.

If the borrower elects to cap his payment, negative amortisation or deferred interest is added to the outstanding loan balance if the payment is insufficient to cover the interest due on the loan. If the borrower elects to pay each month the amount required by the interest rate in effect that month, the negative amortisation will not result.

The ARM experience

The reception of the ARM in the US has been generally positive. Of the $1,545 billion of residential mortgages made in the US between 1983 and 1987, $621 billion or 40% were

Residential ARMs Outstanding at FSLIC-Insured Institutions

End of Month	Year	ARMs Outstanding at Savings Inst. ($ billion)	Total Mortgage Investments Outstanding ($ billion)	Arms as a % of Total
December	1982	$46.8	$555.7	8.4%
June	1983	$52.6	$567.5	9.3%
December	1983	$76.3	$647.2	11.8%
March	1984	$105.9	$673.9	15.7%
June	1984	$121.9	$713.2	17.1%
September	1984	$135.6	$740.8	18.3%
December	1984	$146.7	$751.6	19.5%
March	1985	$155.4	$763.4	20.4%
June	1985	$166.2	$773.2	21.5%
September	1985	$175.3	$797.7	22.0%
December	1985	$181.8	$805.6	22.6%
March	1986	$187.2	$814.9	23.0%
June	1986	$191.1	$837.2	22.8%
September	1986	$195.1	$846.1	23.1%
December	1986	$201.1	$855.0	23.5%
March	1987	$205.4	$854.7	24.0%
June	1987	$210.4	$879.9	23.9%
September	1987	$231.1	$900.7	25.7%
December	1987	$255.2	$923.3	27.6%

Source: Federal Home Loan Bank Board, US League.

ARMs. Savings institutions which accounted for 49% of all originations over this period were the most prodigious producer of ARMs — $384 billion or 62% of the total.

Initially, critics worried about borrower "payment shock" resulting from a jump in the ARM rate once the initial discount terminated. These same critics warned about the possibility of massive borrower defaults.

These worries have not materialised, partly because an interest rate cycle like that of 1981-82 has not been experienced since ARMs have taken root. But these critics also have failed to give credit to the increasing sophistication of borrowers. Home buyers today in the US are very mature, not only in terms of age (the median age of a home buyer is 37 years) but also in terms of selecting a mortgage which best suits their financial needs. The US home buyer has shown himself to be quite adept at understanding the intricacies of the mortgage options currently available.

From a credit risk perspective, ARMs have been very good investments for savings institutions. Stringent ARM underwriting standards have resulted in lower delinquency rates on ARMs than on FRMs. Compared with the FRM borrower, the ARM borrower is typically older, has a higher income, buys a more expensive home and makes a larger downpayment.

It is more difficult to ascertain whether the ARM has provided savings institutions with significant protection against interest rate fluctuations. Some of the risk has been passed on to the borrower, but not all. Because many ARMs only adjust yearly, an interest rate spike such as occurred in April and again in September 1987 can cause savings costs to rise without a concomitant increase in the ARM rate. Because of the presence of interest rate caps, ARMs would not fully protect an institution from a massive surge in interest rates.

Savings institutions must also cope with the variable popularity of the ARM. When the yield curve is relatively flat and long-term rates are under 10%, the FRM is extremely popular, accounting for 75% or more of all loans originated. Borrowers naturally want to lock in at a low rate. To compensate and retain market share, ARM originators will increase the initial discount to heighten the attractiveness of the ARM. In this instance, the discounted rate sometimes fails to cover the cost of money, much less operating expenses. Subsequent adjustments help, but the initial loss may never be recovered.

When the yield curve is steep, ARMs surge in popularity and in turn account for 75% or more of originations. Even a relatively small discounted initial rate becomes very alluring to borrowers. However, once rates drop, borrowers will often refinance to an FRM. In response to this trend, lenders have been offering

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US ARM Data on a Quarterly Basis

		Average Effective Closing Rate on:			Share of Loans Closed that were ARMs at:	
Quarter	Year	Fixed-rate Loans	Adjustable Rate Loans	Spread: FRM Over ARM (B.P.)	All Lenders	Savings Inst.
First	1983	13.43%	13.15%	28	31%	33%
Second	1983	12.84%	12.48%	37	30%	28%
Third	1983	12.94%	12.22%	72	34%	39%
Fourth	1983	12.97%	12.14%	83	53%	61%
First	1984	12.83%	11.76%	107	58%	64%
Second	1984	12.99%	11.66%	133	63%	68%
Third	1984	13.47%	12.28%	119	67%	73%
Fourth	1984	13.41%	12.46%	95	57%	66%
First	1985	12.97%	11.70%	126	48%	56%
Second	1985	12.82%	11.23%	159	53%	55%
Third	1985	12.13%	10.55%	158	51%	53%
Fourth	1985	12.00%	10.33%	167	49%	53%
First	1986	11.17%	10.09%	108	39%	46%
Second	1986	10.42%	9.70%	72	26%	30%
Third	1986	10.52%	9.37%	115	27%	34%
Fourth	1986	10.27%	8.92%	135	32%	43%
First	1987	9.55%	8.58%	98	27%	42%
Second	1987	9.64%	8.39%	125	29%	39%
Third	1987	10.28%	8.49%	179	51%	61%
Fourth	1987	10.48%	8.57%	191	64%	73%
First	1988	10.24%	8.51%	173	62%	74%

Source: Federal Home Loan Bank Board, US League.

US ARM Data on an Annual Basis

	Average Effective Closing Rate on:			Share of Loans Closed that were ARMs at:	
Year	Fixed-rate Loans	Adjustable Rate Loans	Spread: FRM Over ARM (B.P.)	All Lenders	Savings Inst.
1983	13.05%	12.50%	55	37%	40%
1984	13.17%	12.04%	113	61%	68%
1985	12.48%	10.95%	153	50%	54%
1986	10.60%	9.52%	107	31%	38%
1987	9.99%	8.51%	148	43%	54%
1988	10.24%	8.51%	173	62%	74%

Source: Federal Home Loan Bank Board, US League.

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ARMs with FRM conversion options that borrowers can exercise with payment of a fee.

The role of the secondary mortgage market cannot be ignored. With a voracious appetite for FRMs to serve as collateral for various types of mortgage-backed security products, the secondary market has made ARM originations even more difficult to accomplish at all interest rate levels. In addition, the secondary market has also found a liking for some types of ARMs. The result has been increased standardisation. Gradually, the ability of savings institutions to tailor ARMs that best met their portfolio needs is being eroded.

The most difficult part about making ARMs is pricing them properly. The attributes of an ARM have to be captivating enough to entice a borrower to favour it over an FRM. On the other hand, the lender has to make sure the deal is not so favourable to the borrower than the lender is left with an investment that provides less interest rate protection than an FRM.

This is the basic dilemma facing the ARM originator today. The benefit of resolving this problem seems to be worth the effort. A properly structured ARM will not only provide current profits but guarantee future ones as well.

The ARM experiment that began in earnest in 1983 continues today. Since then, the ARM has pulled the housing market through some brief interest rate cycles that would have drastically slowed it down in the past. It has enabled savings institutions to maintain a strong market presence in the face of intense competition.

It is clear in this deregulated environment that the ARM is a permanent feature of the mortgage finance market. As the 1981-82 period proved, the combination of long-term assets and short-term liabilities is deadly. The ARM is one way to prevent a repeat of the past. ■

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US ARM Data on a Monthly Basis

Month	Year	Average Effective Closing Rate on: Fixed-rate Loans	Adjustable Rate Loans	Spread: FRM Over ARM (B.P.)	Share of Loans Closed that were ARMs at: All Lenders	Savings Inst.
January	1983	13.54%	13.52%	2	36%	37%
February	1983	13.47%	13.02%	45	28%	30%
March	1983	13.29%	12.91%	38	30%	31%
April	1983	12.82%	12.68%	14	29%	29%
May	1983	12.92%	12.48%	44	29%	26%
June	1983	12.79%	12.27%	52	31%	28%
July	1983	12.80%	12.08%	72	25%	29%
August	1983	12.89%	12.18%	71	33%	38%
September	1983	13.13%	12.41%	72	45%	51%
October	1983	12.94%	12.26%	68	50%	59%
November	1983	12.97%	12.19%	78	53%	62%
December	1983	13.00%	11.97%	103	56%	63%
January	1984	12.82%	11.80%	102	59%	64%
February	1984	12.85%	11.74%	111	56%	63%
March	1984	12.82%	11.75%	107	60%	66%
April	1984	12.91%	11.52%	139	61%	66%
May	1984	12.96%	11.65%	131	62%	69%
June	1984	13.09%	11.80%	129	65%	68%
July	1984	13.46%	12.03%	143	66%	73%
August	1984	13.47%	12.32%	115	68%	75%
September	1984	13.47%	12.49%	98	66%	70%
October	1984	13.67%	12.57%	110	64%	70%
November	1984	13.41%	12.53%	88	60%	68%
December	1984	13.16%	12.29%	87	48%	60%
January	1985	13.10%	12.05%	105	50%	60%
February	1985	12.93%	11.69%	124	46%	55%
March	1985	12.87%	11.37%	150	49%	53%
April	1985	12.90%	11.29%	161	50%	52%
May	1985	12.94%	11.30%	164	52%	55%
June	1985	12.63%	11.10%	153	56%	59%
July	1985	12.23%	10.76%	147	53%	57%
August	1985	12.14%	10.56%	158	52%	51%
September	1985	12.02%	10.32%	170	49%	50%
October	1985	12.12%	10.41%	171	50%	52%
November	1985	11.99%	10.36%	163	49%	53%
December	1985	11.88%	10.22%	166	48%	54%
January	1986	11.41%	10.17%	124	46%	53%
February	1986	11.24%	10.14%	110	40%	49%
March	1986	10.87%	9.97%	90	31%	37%
April	1986	10.56%	9.87%	69	29%	35%
May	1986	10.33%	9.76%	57	27%	30%
June	1986	10.38%	9.48%	90	21%	26%
July	1986	10.51%	9.47%	104	23%	27%
August	1986	10.58%	9.40%	118	28%	34%
September	1986	10.47%	9.25%	122	31%	40%
October	1986	10.39%	9.07%	132	30%	42%
November	1986	10.28%	8.87%	141	30%	42%
December	1986	10.13%	8.81%	132	35%	46%
January	1987	9.81%	8.83%	98	28%	42%
February	1987	9.50%	8.54%	96	29%	46%
March	1987	9.35%	8.36%	99	24%	38%
April	1987	9.32%	8.36%	96	22%	35%
May	1987	9.61%	8.43%	118	27%	37%
June	1987	9.99%	8.37%	162	37%	46%
July	1987	10.29%	8.51%	178	49%	58%
August	1987	10.30%	8.51%	179	50%	63%
September	1987	10.26%	8.45%	181	54%	63%
October	1987	10.45%	8.46%	199	60%	68%
November	1987	10.57%	8.59%	198	64%	74%
December	1987	10.43%	8.67%	176	69%	78%
January	1988	10.43%	8.58%	185	65%	78%
February	1988	10.24%	8.55%	169	64%	76%
March	1988	10.05%	8.39%	166	57%	69%

Source: Federal Home Loan Bank Board, US League.