

FRBSF WEEKLY LETTER

October 5, 1984

Call to ARMs

The Adjustable Rate Mortgage (ARM), once an oddity in the residential mortgage industry, now commands a major share of new mortgage originations. In the first quarter of 1984, for example, ARMs of various types represented over 60 percent of home mortgages originated by banks, savings and loan associations and other institutional lenders. Some real estate analysts predict that in a few years the traditional, fixed-rate mortgage (FRM) will be the oddity, representing only ten or fifteen percent of new originations.

This *Letter* examines the adjustable rate mortgage trend and evaluates its effect on both the lending industry and the housing sector in general. We find that although the ARM is an important addition to the existing array of mortgage instruments, it is not likely to be the salvation of the lending and housing industries that it is sometimes professed to be.

The ARM

An adjustable rate mortgage is simply a mortgage instrument that provides for periodic adjustment of the contract interest rate. At contractually specified intervals, a new monthly payment is computed using the remaining principal, the revised contract rate, and the remaining life of the mortgage. In the purest form of the ARM, the adjustment and recomputation of the payment occur very frequently and the adjustments in the contract rate are tied to movements in a short-term market rate. Such an instrument has a value in the marketplace dependent only upon the outstanding principal of the loan and thus can be considered free of interest-rate risk to the holder of such debt.

The characteristics of this "pure" ARM contrasts with an FRM (fixed rate mortgage) which, by virtue of its fixed contract rate and payment, will have a value in the secondary market that depends upon ambient interest rate conditions. It is, of course, this feature of the FRM that caused so much difficulty for mortgage lenders during the 1970s and early 1980s when interest rates rose sharply and unexpectedly and drove down the implicit market value of the mortgage loan portfolios of most lenders.

To "immunize" or not

The rise in mortgage rates drew the lenders' atten-

tion to the ARM because the instrument offered the prospect of "immunizing" the lender's portfolio from interest rate risk. A portfolio consisting of adjustable rate mortgage assets and short-term liabilities would not be subject to fluctuations in net worth that result from fluctuating interest rates. Although perfect immunization is possible with ARMs in concept, there are a number of reasons that interest rate risk considerations alone are unlikely to encourage the mortgage market to make "pure" ARMs the predominant form of mortgage instrumentation.

First, with a perfectly immunized portfolio, a lender is implicitly abandoning one of the major functions of a financial intermediary: interest rate intermediation—the funding of fixed rate loans with short-term liabilities. Presumably, institutional lenders have performed this function because they enjoy a comparative advantage over households in doing so. They have superior access, for example, to financial expertise and to mechanisms such as futures markets to manage their risk-taking. If banks and savings and loan associations abandon this function, they may lose the market to some other form of institutional lender.

Put differently, because borrowers cannot manage interest rate risk as cost-effectively as lenders, lenders are likely to find that pure ARMs are attractive to borrowers only at implicit yields that are lower (after adjusting for risk) than those enjoyed on fixed rate instruments. This observation appears to be borne out by the available data on the characteristics of the ARMs. For example, most of the ARMs issued are actually hybrids of FRMs and ARMs, with interest rate and payment "caps" that implicitly reintroduce some interest rate risk to the lender. Apparently, pure ARMs appear to have been difficult to market.

Default risk tradeoff

The second reason that the market share of ARMs probably will be limited is the likelihood that "adverse-selection" processes will make the ARM borrower more likely to default than the FRM borrower. This problem arises because ARMs probably are most attractive to borrowers who believe that interest rates have peaked and are likely to decline

FRBSF

over the remaining life of the instrument. These same borrowers are likely to have structured their other financial affairs in a manner consistent with this expectation. Thus, if interest rates rise (contrary to these borrowers' expectations), they may be pushed into default.

This notion, too, is consistent with the available data. Present default rates on ARMs are about 40 percent higher than for FRMs of similar value issued in recent years. In addition, private mortgage insurance corporations charge a higher premium on ARMs than on FRMs and often will not insure the "pure" ARMs at all.

ARMs and "affordability"

Risk considerations are not the only determinants of the ultimate marketability of ARMs. One alleged advantage of the ARM over the FRM is that it relaxes the "affordability" constraint facing borrowers, thereby permitting home purchases when the characteristics of the household or market conditions normally would not.

The affordability constraint applies to the relationship between mortgage payments and family income. In recent years, as interest rates and home prices have risen, the mortgage payment on an average newly purchased home has risen faster than income. Since the payment/income ratio is one of the underwriting criteria that lenders employ in qualifying borrowers for mortgage loans, it is argued that an increasing number of families find themselves unable to qualify for home financing. The ARM is claimed to provide relief from the affordability constraint since its initial contract rate is lower than that of the conventional FRM, making the initial (or qualifying) payment also lower.

It is not clear that the method of housing finance has anything but a transient effect on the "affordability" of housing. Housing prices have risen relative to prices of other goods and services in recent years primarily because of growing demand in an environment of land use controls and other developmental restrictions that have prevented supply

from keeping pace with demand. In such a market, financing constraints would reduce housing demand and prices and thereby partially offset the effect of the financing constraint. Mechanisms, such as ARMs, that provide relief from affordability constraints, are self-defeating since the relief they provide could be capitalized into still higher home prices. For example, housing economist James Follain has argued that the home price boom of the 1970s was partly initiated by the relaxation of the affordability constraint caused by the inclusion of spousal income in calculating the payment/income ratio.

ARMs and the housing cycle

Although ARMs are thus unlikely to improve long-term housing affordability, they may provide relief at peaks of the interest rate cycle, offering the prospect of a less erratic housing investment cycle. The relationship between interest rates and housing starts is complex (see Chart 1). Research conducted at the San Francisco Reserve Bank suggests that the level of housing starts is relatively insensitive to the trend level of interest rates but reacts significantly to interest rate "shocks": (In particular, we find that the steady-state level of housing starts is approximately 1.6 million units annually but that each sudden one percentage point rise in long-term interest rates causes a transient reduction of about 250,000 units on an annual basis.) This phenomenon is consistent with the notion that affordability is of greater cyclical than secular concern. Thus, if the availability of ARMs provides affordable financing during interest rate peaks, it is possible that ARMs smooth out the housing cycle.

Unfortunately, we have had too little experience with ARMs to determine their effect on the housing cycle conclusively. The data on the share of ARMs among home mortgages is consistent with the notion that ARMs can relieve cyclical affordability problems for the homebuyer. As Chart 2 indicates, the ARM share rises sharply when interest rates rise above trend and falls sharply thereafter. However, the size of the swings in recent housing start cycles is not statistically different (after controlling

Chart 1
Housing Starts and Long-Term Interest Rates
1965-1984

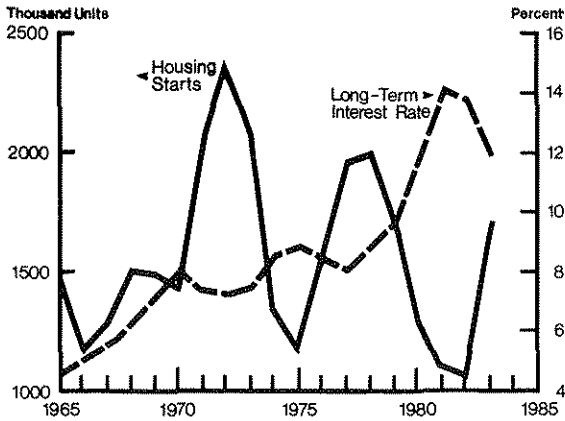
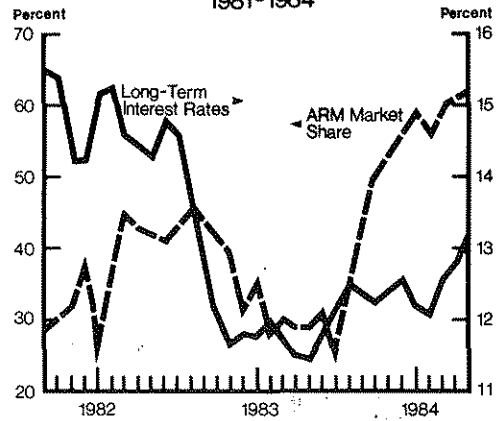


Chart 2
ARM Share of Mortgage Market
and Long-Term Interest Rates
1981-1984



for the effect of interest rate and general economic conditions) from those of earlier periods when ARMs were not available. This suggests that during periods of positive interest rate shocks, borrowers who would have used FRMs simply use ARMs instead, gambling on a subsequent decline in rates.

In summary, ARMs appear to be something less than the panacea for the lending and housing

industries that they are sometimes thought to be. However, they do provide a mechanism for tailoring the interest-rate risk characteristics of lender and household portfolios, and they do provide the mortgage market with an additional mechanism for coping with a world of volatile and uncertain interest rates.

Randall J. Pozdena

Alaska Arizona California Hawaii Idaho
Nevada Oregon Utah Washington

Research Department
Federal Reserve
Bank of
San Francisco

PRESORTED
FIRST CLASS MAIL
U.S. POSTAGE PAID
PERMIT NO. 752
San Francisco, Calif.

BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 9/19/84	Change from 9/12/84	Change from 12/28/83	
			Dollar	Percent Annualized
Loans, Leases and Investments ^{1 2}	182,932	442	6,907	5.3
Loans and Leases ^{1 6}	163,971	523	8,616	7.5
Commercial and Industrial	48,939	286	2,976	8.8
Real estate	60,947	39	2,048	4.7
Loans to Individuals	29,911	177	3,260	16.7
Leases	5,050	3	13	0.3
U.S. Treasury and Agency Securities ²	11,787	89	720	7.8
Other Securities ²	7,175	10	988	16.5
Total Deposits	188,986	4,012	2,011	1.4
Demand Deposits	44,007	3,165	5,230	14.5
Demand Deposits Adjusted ³	29,021	275	2,310	10.0
Other Transaction Balances ⁴	12,170	474	605	6.4
Total Non-Transaction Balances ⁶	132,808	374	3,823	4.0
Money Market Deposit Accounts—Total	37,671	314	1,926	6.6
Time Deposits in Amounts of \$100,000 or more	40,888	232	2,723	09.7
Other Liabilities for Borrowed Money ⁵	21,915	8	1,092	6.4
Weekly Averages of Daily Figures	Period ended 9/10/84	Period ended 8/27/84		
Reserve Position, All Reporting Banks				
Excess Reserves (+)/Deficiency (-)	23	60		
Borrowings	39	68		
Net free reserves (+)/Net borrowed(-)	15	7		

¹ Includes loss reserves, unearned income, excludes interbank loans

² Excludes trading account securities

³ Excludes U.S. government and depository institution deposits and cash items

⁴ ATS, NOW, Super NOW and savings accounts with telephone transfers

⁵ Includes borrowing via FRB, TT&L notes, Fed Funds, RPs and other sources

⁶ Includes items not shown separately