



The Federal Reserve Board

Consumer Handbook on Adjustable-Rate Mortgages





Adjustable-rate mortgages (ARMs) are loans with interest rates that change. ARMs may start with lower monthly payments than fixed-rate mortgages, but keep the following in mind:

- Your monthly payments could change. They could go up—sometimes by a lot—even if interest rates don't go up. See page 20.
- Your payments may not go down much, or at all—even if interest rates go down. See page 11.
- You could end up owing more money than you borrowed—even if you make all your payments on time. See page 22.
- If you want to pay off your ARM early to avoid higher payments, you might have to pay a penalty. See page 24.

You need to compare features of ARMs to find the one that best fits your needs. See the Mortgage Shopping Worksheet on page 2.

This handbook explains how ARMs work and discusses some of the issues that borrowers may face. It includes ways to reduce the risks and gives some pointers about advertising and other ways you can get information from lenders and other trusted advisers. Important ARM terms are defined in a glossary. And the Mortgage Shopping Worksheet can help you ask the right questions and figure out whether an ARM is right for you. Ask lenders to help you fill out the worksheet so you can get the information you need to compare mortgages.

Mortgage Shopping Worksheet

Ask your lender or broker to help you fill out this worksheet.

Name of lender or broker and contact information
Mortgage amount
Loan term (e.g., 15 years, 30 years)
Loan description (e.g., fixed rate, 3/1 ARM, payment-option ARM, interest-only ARM)
Basic Features for Comparison
Fixed-rate mortgage interest rate and annual percentage rate (APR) (For graduated-payment or stepped-rate mortgages, use the ARM columns.)
ARM initial interest rate and APR How long does the initial rate apply?
What will the interest rate be after the initial period?
ARM features How often can the interest rate adjust?
What is the index and what is the current rate? (See chart on page 8.)
What is the margin for this loan?
Interest-rate caps What is the periodic interest-rate cap?
What is the lifetime interest-rate cap? How high could the rate go?
How low could the interest rate go on this loan?
What is the payment cap?
Can this loan have negative amortization (that is, increase in size)?
What is the limit to how much the balance can grow before the loan will be recalculated?
Is there a prepayment penalty if I pay off this mortgage early?
How long does that penalty last? How much is it?
Is there a balloon payment on this mortgage? If so, what is the estimated amount and when would it be due?
What are the estimated origination fees and charges for this loan?
Monthly Payment Amounts
What will the monthly payments be for the first year of the loan?
Does this include taxes and insurance? Condo or homeowner's association fees? If not, what are the estimates for these amounts?
What will my monthly payment be after 12 months if the index rate... ...stays the same?
...goes up 2%?
...goes down 2%?
What is the most my minimum monthly payment could be after 1 year?
What is the most my minimum monthly payment could be after 3 years?
What is the most my minimum monthly payment could be after 5 years?

What Is an ARM?

An adjustable-rate mortgage differs from a fixed-rate mortgage in many ways. With a fixed-rate mortgage, the interest rate stays the same during the life of the loan. With an ARM, the interest rate changes periodically, usually in relation to an index, and payments may go up or down accordingly.

Shopping for a mortgage is not as simple as it used to be. To compare two ARMs with each other or to compare an ARM with a fixed-rate mortgage, you need to know about indexes, margins, discounts, caps on rates and payments, negative amortization, payment options, and recasting (recalculating) your loan. You need to consider the maximum amount your monthly payment could increase. Most important, you need to know what might happen to your monthly mortgage payment in relation to your future ability to afford higher payments.

Lenders generally charge lower initial interest rates for ARMs than for fixed-rate mortgages. At first, this makes the ARM easier on your pocketbook than a fixed-rate mortgage for the same loan amount. Moreover, your ARM could be less expensive over a long period than a fixed-rate mortgage—for example, if interest rates remain steady or move lower.

Against these advantages, you have to weigh the risk that an increase in interest rates would lead to higher monthly payments in the future. It's a trade-off—you get a lower initial rate with an ARM in exchange for assuming more risk over the long run. Here are some questions you need to consider:

- Is my income enough—or likely to rise enough—to cover higher mortgage payments if interest rates go up?
- Will I be taking on other sizable debts, such as a loan for a car or school tuition, in the near future?
- How long do I plan to own this home? (If you plan to sell soon, rising interest rates may not pose the problem they do if you plan to own the house for a long time.)
- Do I plan to make any additional payments or pay the loan off early?

Lenders and Brokers

Mortgage loans are offered by many kinds of lenders—such as banks, mortgage companies, and credit unions. You can also get a loan through a mortgage broker. Brokers “arrange” loans; in other words, they find a lender for you. Brokers generally take your application and contact several lenders, but keep in mind that brokers are not required to find the best deal for you unless they have contracted with you to act as your agent.

How ARMs Work: The Basic Features

Initial rate and payment

The initial rate and payment amount on an ARM will remain in effect for a limited period of time—ranging from just 1 month to 5 years or more. For some ARMs, the initial rate and payment can vary greatly from the rates and payments later in the loan term. Even if interest rates are stable, your rates and payments could change a lot. If lenders or brokers quote the initial rate and payment on a loan, ask them for the annual percentage rate (APR). If the APR is significantly higher than the initial rate, then it is likely that your rate and payments will be a lot higher when the loan adjusts, even if general interest rates remain the same.

The adjustment period

With most ARMs, the interest rate and monthly payment change every month, quarter, year, 3 years, or 5 years. The period between rate changes is called the *adjustment period*. For example, a loan with an adjustment period of 1 year is called a 1-year ARM, and the interest rate and payment can change once every year; a loan with a 3-year adjustment period is called a 3-year ARM.

Loan Descriptions

Lenders must give you written information on each type of ARM loan you are interested in. The information must include the terms and conditions for each loan, including information about the index and margin, how your rate will be calculated, how often your rate can change, limits on changes (or *caps*), an example of how high your monthly payment might go, and other ARM features such as negative amortization.

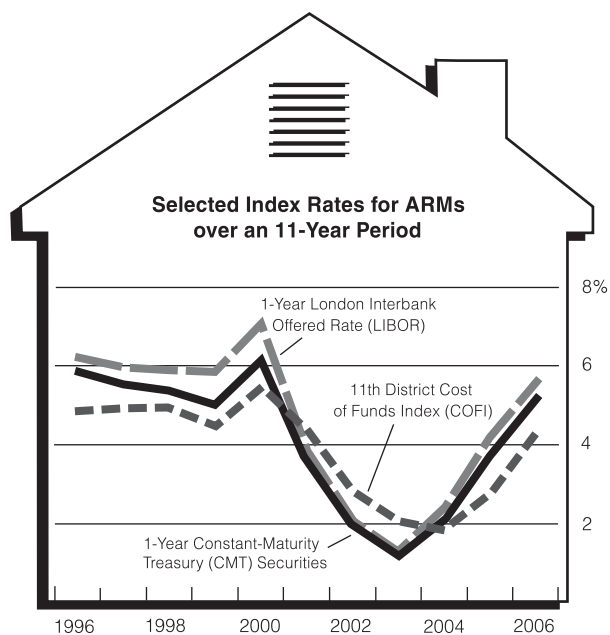
The index

The interest rate on an ARM is made up of two parts: the index and the margin. The index is a measure of interest rates generally, and the margin is an extra amount that the lender adds. Your payments will be affected by any caps, or limits, on how high or low your rate can go. If the index rate moves up, so does your interest rate in most circumstances, and you will probably have to make higher monthly payments. On the other hand, if the index rate goes down, your monthly payment could go down. Not all ARMs adjust downward, however—be sure to read the information for the loan you are considering.

Lenders base ARM rates on a variety of indexes. Among the most common indexes are the rates on 1-year constant-maturity Treasury (CMT) securities, the Cost of Funds Index (COFI), and the London Interbank Offered Rate (LIBOR). A few lenders use their own cost of funds as an index, rather than using other indexes. You should ask what index will be used, how it has

fluctuated in the past, and where it is published—you can find a lot of this information in major newspapers and on the Internet.

To help you get an idea of how to compare different indexes, the following chart shows a few common indexes over an 11-year period (1996–2006). As you can see, some index rates tend to be higher than others, and some change more often. But if a lender bases interest-rate adjustments on the average value of an index over time, your interest rate would not change as dramatically.



The margin

To determine the interest rate on an ARM, lenders add a few percentage points to the index rate, called the *margin*. The amount of the margin may differ from one lender to another, but it is

usually constant over the life of the loan. The *fully indexed rate* is equal to the margin plus the index. If the initial rate on the loan is less than the fully indexed rate, it is called a *discounted index rate*. For example, if the lender uses an index that currently is 4% and adds a 3% margin, the fully indexed rate would be

Index	4%
+ Margin	3%
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Fully indexed rate	7%

If the index on this loan rose to 5%, the fully indexed rate would be 8% (5% + 3%). If the index fell to 2%, the fully indexed rate would be 5% (2% + 3%).

Some lenders base the amount of the margin on your credit record—the better your credit, the lower the margin they add—and the lower the interest you will have to pay on your mortgage. In comparing ARMs, look at both the index and margin for each program.

No-Doc/Low-Doc Loans

When you apply for a loan, lenders usually require documents to prove that your income is high enough to repay the loan. For example, a lender might ask to see copies of your most recent pay stubs, income tax filings, and bank account statements. In a no-doc or low-doc loan, the lender doesn't require you to bring proof of your income, but you will usually have to pay a higher interest rate or extra fees to get the loan. Lenders generally charge more for no-doc/low-doc loans.

Interest-rate caps

An interest-rate cap places a limit on the amount your interest rate can increase. Interest caps come in two versions:

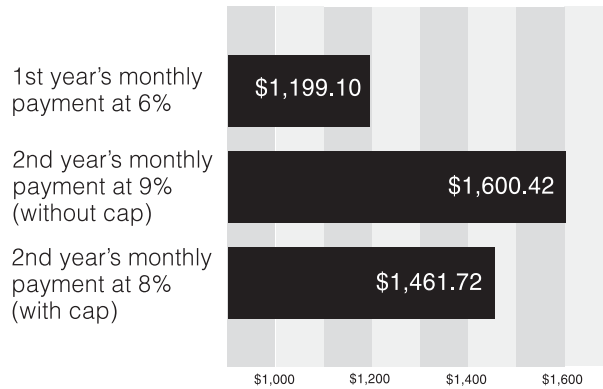
- *periodic adjustment caps*, which limit the amount the interest rate can adjust up or down from one adjustment period to the next after the first adjustment, and
- *lifetime caps*, which limit the interest-rate increase over the life of the loan. By law, virtually all ARMs must have a lifetime cap.

Periodic adjustment caps

Let's suppose you have an ARM with a periodic adjustment interest-rate cap of 2%. However, at the first adjustment, the index rate has risen 3%. The following example shows what happens.

Examples in This Handbook

All examples in this handbook are based on a \$200,000 loan amount and a 30-year term. Payment amounts in the examples do not include taxes, insurance, condominium or home-owner association fees, or similar items. These amounts can be a significant part of your monthly payment.



Difference in 2nd year between payment with cap and payment without = \$138.70 per month

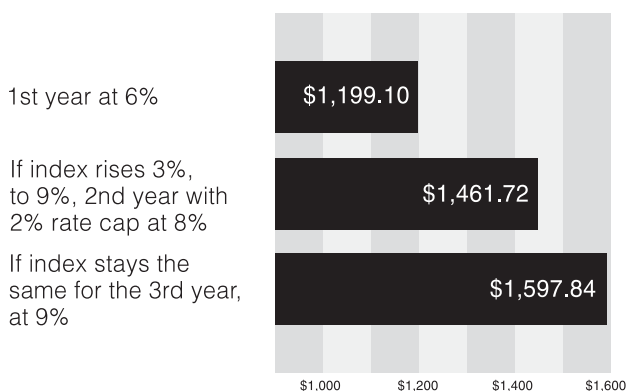
In this example, because of the cap on your loan, your monthly payment in year 2 is \$138.70 per month lower than it would be without the cap, saving you \$1,664.40 over the year.

Some ARMs allow a larger rate change at the first adjustment and then apply a periodic adjustment cap to all future adjustments.

A drop in interest rates does not always lead to a drop in your monthly payments. With some ARMs that have interest-rate caps, the cap may hold your rate and payment below what it would have been if the change in the index rate had been fully applied. The increase in the interest that was not imposed because of the rate cap might carry over to future rate adjustments. This is called *carryover*. So at the next adjustment date, your payment might increase even though the index rate has stayed the same or declined.

The following example shows how carryovers work. Suppose the index on your ARM increased 3% during the first year.

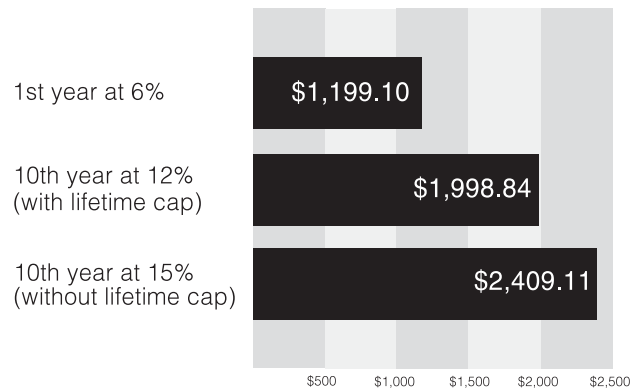
Because this ARM limits rate increases to 2% at any one time, the rate is adjusted by only 2%, to 8% for the second year. However, the remaining 1% increase in the index carries over to the next time the lender can adjust rates. So when the lender adjusts the interest rate for the third year, the rate increases by 1%, to 9%, even if there is no change in the index during the second year.



In general, the rate on your loan can go up at any scheduled adjustment date when the lender’s standard ARM rate (the index plus the margin) is higher than the rate you are paying before that adjustment.

Lifetime caps

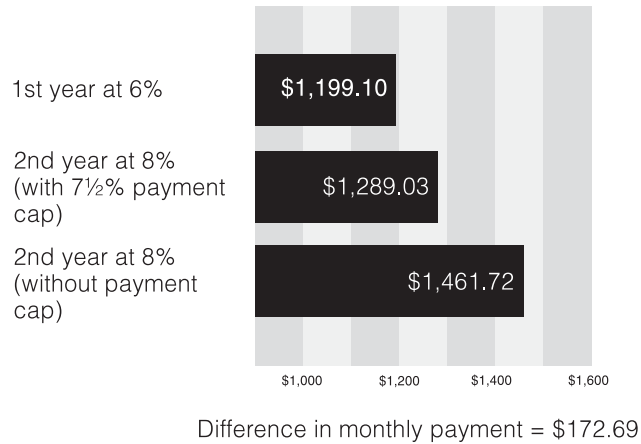
The next example shows how a lifetime rate cap would affect your loan. Let’s say that your ARM starts out with a 6% rate and the loan has a 6% lifetime cap—that is, the rate can never exceed 12%. Suppose the index rate increases 1% in each of the next 9 years. With a 6% overall cap, your payment would never exceed \$1,998.84—compared with the \$2,409.11 that it would have reached in the tenth year without a cap.



Payment caps

In addition to interest-rate caps, many ARMs—including payment-option ARMs—limit, or cap, the amount your monthly payment may increase at the time of each adjustment. For example, if your loan has a payment cap of 7½%, your monthly payment won't increase more than 7½% over your previous payment, even if interest rates rise more. For example, if your monthly payment in year 1 of your mortgage was \$1,000, it could only go up to \$1,075 in year 2 (7½% of \$1,000 is an additional \$75). Any interest you don't pay because of the payment cap will be added to the balance of your loan. A payment cap can limit the increase to your monthly payments but also can add to the amount you owe on the loan. (This is called *negative amortization*, a term that is explained on page 22.)

Let's assume that your rate changes in the first year by 2 percentage points but your payments can increase no more than 7½% in any one year. The following graph shows what your monthly payments would look like.



While your monthly payment will be only \$1,289.03 for the second year, the difference of \$172.69 each month will be added to the balance of your loan and will lead to negative amortization.

Some ARMs with payment caps do not have periodic interest-rate caps. In addition, as explained below, most payment-option ARMs have a built-in recalculation period, usually every 5 years. At that point, your payment will be recalculated (lenders use the term *recast*) based on the remaining term of the loan. If you have a 30-year loan and you are at the end of year 5, your payment will be recalculated for the remaining 25 years. The payment cap does not apply to this adjustment. If your loan balance has increased, or if interest rates have risen faster than your payments, your payments could go up a lot.

Types of ARMs

Hybrid ARMs

Hybrid ARMs often are advertised as 3/1 or 5/1 ARMs—you might also see ads for 7/1 or 10/1 ARMs. These loans are a mix—or a hybrid—of a fixed-rate period and an adjustable-rate period. The interest rate is fixed for the first few years of these loans—for example, for 5 years in a 5/1 ARM. After that, the rate may adjust annually (the 1 in the 5/1 example), until the loan is paid off. In the case of 3/1 or 5/1 ARMs

- the first number tells you how long the fixed interest-rate period will be and
- the second number tells you how often the rate will adjust after the initial period.

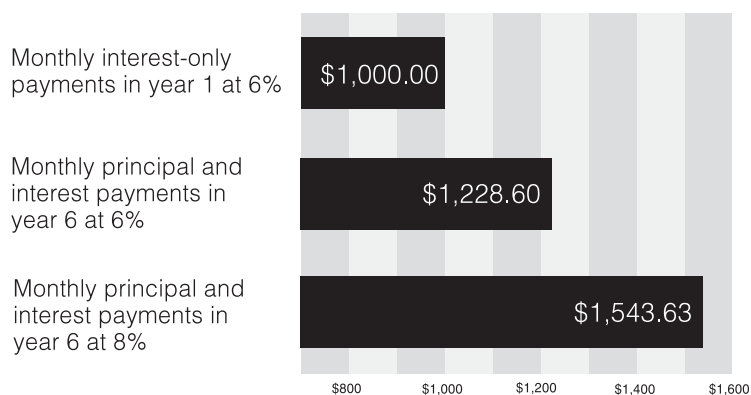
You may also see ads for 2/28 or 3/27 ARMs—the first number tells you how long the fixed interest-rate period will be, and the second number tells you the number of years the rates on the loan will be adjustable. Some 2/28 and 3/27 mortgages adjust every 6 months, not annually.

Interest-only ARMs

An interest-only (I-O) ARM payment plan allows you to pay only the interest for a specified number of years, typically between 3 and 10 years. This allows you to have smaller monthly payments for a period of time. After that, your monthly payment will increase—even if interest rates stay the same—because you must start paying back the principal as well as the interest each

month. For some I-O loans, the interest rate adjusts during the I-O period as well.

For example, if you take out a 30-year mortgage loan with a 5-year I-O payment period, you can pay only interest for 5 years and then you must pay both the principal and interest over the next 25 years. Because you begin to pay back the principal, your payments increase after year 5, even if the rate stays the same. Keep in mind that the longer the I-O period, the higher your monthly payments will be after the I-O period ends.



Payment-option ARMs

A payment-option ARM is an adjustable-rate mortgage that allows you to choose among several payment options each month. The options typically include the following:

- *a traditional payment of principal and interest*, which reduces the amount you owe on your mortgage. These payments are based on a set loan term, such as a 15-, 30-, or 40-year payment schedule.

- *an interest-only payment*, which pays the interest but does not reduce the amount you owe on your mortgage as you make your payments.
- *a minimum (or limited) payment* that may be less than the amount of interest due that month and may not reduce the amount you owe on your mortgage. If you choose this option, the amount of any interest you do not pay will be added to the principal of the loan, **increasing the amount you owe and your future monthly payments**, and increasing the amount of interest you will pay over the life of the loan. In addition, if you pay only the minimum payment in the last few years of the loan, you may owe a larger payment at the end of the loan term, called a *balloon payment*.

The interest rate on a payment-option ARM is typically very low for the first few months (for example, 2% for the first 1 to 3 months). After that, the interest rate usually rises to a rate closer to that of other mortgage loans. Your payments during the first year are based on the initial low rate, meaning that if you only make the minimum payment each month, it will not reduce the amount you owe and it may not cover the interest due. The unpaid interest is added to the amount you owe on the mortgage, and your loan balance increases. This is called *negative amortization*. This means that even after making many payments, you could owe more than you did at the beginning of the loan. Also, as interest rates go up, your payments are likely to go up.

Payment-option ARMs have a built-in recalculation period, usually every 5 years. At this point, your payment will be recalculated (lenders use the term *recast*) based on the remaining term of the loan. If you have a 30-year loan and you are at the end of year 5, your payment will be recalculated for the remaining 25

years. If your loan balance has increased because you have made only minimum payments, or if interest rates have risen faster than your payments, your payments will increase each time your loan is recast. At each recast, your new minimum payment will be a fully amortizing payment and any payment cap will not apply. This means that your monthly payment can increase a lot at each recast.

Lenders may recalculate your loan payments before the recast period if the amount of principal you owe grows beyond a set limit, say 110% or 125% of your original mortgage amount. For example, suppose you made only minimum payments on your \$200,000 mortgage and had any unpaid interest added to your balance. If the balance grew to \$250,000 (125% of \$200,000), your lender would recalculate your payments so that you would pay off the loan over the remaining term. It is likely that your payments would go up substantially.

More information on interest-only and payment-option ARMs is available in the Federal Reserve Board's brochure titled *Interest-Only Mortgage Payments and Payment-Option ARMs—Are They for You?*