

30 Year Fixed Loans vs. 5 Year ARMS

A White Paper

Introduction

Many people ask me my opinion on the pros and cons of getting a 5 year Adjustable Rate Mortgage (ARM) versus a 30 year Fixed mortgage. What follows is a thorough analysis, a “White Paper,” backed up with a lot of numbers on amortization schedules, to document my conclusions.

What I’ve essentially analyzed is this: Does it make any sense to continually choose 5 yr. ARMS, with lower interest rates, versus a 30 yr. Fixed loan? Do the ARMS make sense under any circumstance?

You might think intuitively that the 30 yr. Fixed may be the better choice, since it eliminates so much risk, but over time, quantifying the difference might astound you.

In fact, until I did this analysis, I was a proponent of the 5 yr. ARM, but no longer, and you’ll soon see why.

Before I start throwing out a bunch of numbers, let’s get clear on some background assumptions and definitions.

The 30 Year Fixed

Let’s start with the 30 yr. fixed mortgage, as it is relatively simple to understand. Throughout my examples in this White Paper, I will use a mortgage of \$500,000 which is fairly standard in my area of California. For the 30 yr. Fixed, I will assume an interest rate of 6.0%. The monthly payment on that mortgage would be \$2,997.75. So, after a “quick” 360 payments, you’ve paid off your mortgage, and there is a ZERO balance. No more mortgage payment and you were guaranteed that the rate would never go up, i.e., it stayed fixed at 6.0%.

The Amortization Schedule

Once you start paying off the loan, you embark on what is known as an Amortization Schedule. With every payment, you are paying principal and interest. The payment is calculated such that after 30 years of payments, the loan balance has been reduced to zero. You can see that if you are paying some of the principal (some of the original \$500,000 loan amount) with each payment, and then after you make that payment, the amount you owe is now less. For example, at the outset, for a \$500,000 loan at 6.0%, the payment is \$2,997.75. The amount going to principal is \$497.75, and the interest is \$2,500.00. It is interesting to note that the amount of the payment that is applied to the principal is 16.6% of the total payment. You can now understand that when you make the *next* payment, since the total payment stays the same, the interest is a little less because of the lower loan balance, and the principal is a little more. Below is a little table which shows this dynamic.

	Principal	Interest	Payment	Principal as % of Payment
1st Payment	497.75	2,500.00	2,997.75	16.6%
At 5 Years	668.05	2,329.70	2,997.75	22.3%
At 10 Years	901.10	2,096.65	2,997.75	30.1%
At 20 Years	1,639.47	1,358.28	2,997.75	54.7%
Last Payment	2,982.84	14.91	2,997.75	99.5%

Note that after 5 yrs., the principal portion increases to \$668.05, and makes up 22.3% of the total payment. After 10 years, the principal climbs to 30.1% of the total, and of course, when the final payment is made, the principal is almost 100%, since so very little is owed by then.

The most striking benefit of the 30 year Fixed is that this long term strategy gets your loan paid off in 30 years, so if you think your income might decrease substantially at say, age 65, you should begin this strategy no later than age 35.

Other Numbers and Assumptions

An important item to note is the cumulative interest paid over the 30 years. For our example, that amount is \$579,191. Note that it is actually larger than the original loan balance of \$500,000. You'll soon see, though, that this ends up being a bargain compared to the ARM strategy.

Another item to note is that by just getting one loan spanning 30 years, you only have to pay closing costs once. In our example, we'll assume Non-Recurring Closing Costs (NRCCs) of \$3,000.

Finally, and admittedly of great importance, is that this example assumes that you are in just one house for the entire 30 years. While this may have been true for the previous generation, it is less true today as many people move several times throughout their "home ownership years."

However, this need not negate the above strategy, as you can always keep pace with the amortization schedule. This is a **VERY** important point so let me give an example.

Let's say you bought your first house at age 35 for \$700,000 and had a mortgage like we've been assuming for \$500,000 at 6.0%. Your intent was to have it paid off in 30 years. Or said another way, at age 65, you did **NOT** want to have a mortgage payment. The payment as mentioned above was \$2,997.75.

Now, let's say you decided to move after 10 years. During those ten years, you have moved down the amortization schedule so that you now owe \$418,429. Remember, your payment was \$2,997.75. My point is this: to be true to this strategy of having your home paid off by the time you are 65, keep paying \$2,997.75 per month, **OR**, pay enough so

that the new mortgage is paid off in 20 years, or when you are 65. You might be tempted to pay less because the new loan may start over for another 30 years, thus allowing for a smaller payment. This strategy, while attractive because you COULD make a smaller payment, simply prolongs your mortgage payments and increases the amount of total interest paid over the life of your loans.

The moral of the story is this: Stay committed to the original amortization schedule so your mortgage is paid off in 30 years.

The Adjustable Rate Mortgage (ARM)

We have laid a lot of groundwork above exploring amortization schedules and the goal of paying off a mortgage in 30 years. The basis behind these assumptions is that income drops for many people at age 65, so not having a mortgage payment is a very good thing, and we'll proceed along these lines for the balance of this White Paper. We now turn our attention to the Adjustable Rate Mortgage, known as ARMs in the industry.

Before proceeding, we need to take some time to more fully explain exactly what an ARM is. Besides being a body part, ARMs are simply loans that are fixed for a certain period of time, at a lower interest rate (called the "teaser" rate) and then they adjust to a higher interest rate for the balance of 30 years. ARMs can be for a variety of years, but the most typical are the 3 year, 5 year, 7 year, and 10 year. For our example, we will use the 5 yr. ARM.

Here's how a typical 5 yr. ARM works. Let's say the initial rate for a 5 yr. ARM is 5.75%. This is the teaser rate, and means that the loan is fixed at 5.75% for the first 5 years. So far so good.

But – what happens after 5 years? That's exactly the question that is starting to plague millions of Americans – their loans are adjusting upward, and they simply cannot afford the new, higher payments. If they can't make the payment, they become late, and a foreclosure could be the end result. Homes go back to the bank, the market gets flooded with sellers, home prices drop, and it creates a spiral of people not being able to refinance. If you've read the news at all over the last several months, this certainly is not news to you. But let's get back to the mechanics of the ARM.

The ARM Adjustment

The question is: what does the loan adjust to?

It depends on the original terms of the loan, but here is a common example. The ARM, after 5 years (or whatever the original term was), will adjust to what is known as the Index + Margin.

The Index

The Index is a number that varies. One of the most common indexes for ARMs is the LIBOR, which is defined below (excerpted from a well known financial website)

London Inter Bank Offering Rates (LIBOR)

London Inter Bank Offering Rate (LIBOR) is an average of the interest rate on dollar-denominated deposits, also known as Eurodollars, traded between banks in London. The Eurodollar market is a major component of the International financial market. London is the center of the Euromarket in terms of volume.

The LIBOR is an international index which follows the world economic condition. It allows international investors to match their cost of lending to their cost of funds. The LIBOR compares most closely to the 1-Year [CMT](#) index and is more open to quick and wide fluctuations than the [COFI](#) rate, as shown on our graph.

There are [several different LIBOR rates](#) widely used as ARM indexes: 1-, 3-, 6-Month, and 1-Year LIBOR. The 6-Month LIBOR is the most common.

You don't need to become an authority on indexes, but suffice to say, if and when your loan adjusts, it will adjust to whatever that index is at the time, and on top of that will be added the bank's "margin," or profit.

For example, as of this writing, the 6 month LIBOR as published on Bankrate.com is 4.91%. A typical margin for a lender is 2.25%. The margin never changes as opposed to the index, which can change every day. So, if you got a 5 yr. ARM, and the index never changed, your loan would adjust to 4.91% + 2.25%, or 7.16% after the 5 year period.

Significantly Higher Payment Possible

You can readily see that your payment would increase significantly after 5 years. For example, your initial payment (assuming an amortized loan of \$500,000 at 5.75%) is \$2,917.86. However, if you were unable to either sell your home or refinance, your payment at 7.16% would increase to \$3,325.61 or \$407.75 higher each month. Ouch!

Even more dramatic is to compare what your loan might adjust to if you had gotten an interest only ARM. Your original payment, again assuming a 5.75% \$500,000 loan would have been \$2,395.83. Once it adjusts, it then becomes a **FULLY AMORTIZED** loan, and it is now amortized over 25 YEARS. Accordingly, the new payment would be \$3,585.09, which is **an increase of \$1,189.26, or 49.6%!**

That last paragraph should be read at least twice. Now you know why I believe the interest only ARM is a ticking time bomb, and why I believe it is extremely hard to justify. I'm not saying it doesn't serve a purpose – but far too many people simply don't understand the risk.

But let's move on to more fully explore the benefits of the ARM and how it stacks up to the 30 year Fixed.

ARM Benefits

There are two main benefits of the ARM that I see. The first is that it usually carries with it a lower interest rate. I say usually because in today's upside down market, the ARM rates are very near, and in some cases, actually ABOVE the 30 year Fixed rates. When that happens, there would absolutely be no reason to opt for a higher risk loan with a higher rate.

The second benefit is that you can more readily get an interest only ARM, which will certainly result in a lower payment, but we've already talked about the huge risk inherent in that type of loan. Nevertheless, many people will always choose to stretch their budgets and buy more house than they can "afford," and take the risk of choosing the artificially low payment. While I do agree that this strategy can work, suffice to say it is a risky maneuver, which could lead to a huge increase in payments, or, you run the risk that unless/until you switch over to an amortizing strategy, you'll be faced with a mortgage payment when you get to an age where you may not be able to generate enough income, so your financial planning and ability to generate passive income later in life becomes paramount.

ARM RISKS - Amortizing

Let's assume that you are attracted to the lower interest rate, (assuming there is one). Also, you think you may only be in the home for 5 years or less. At first glance this may seem the best way to go, since you're paying less in interest. If that was the end game, you'd be right.

But let's explore what happens if you must refinance, (or sell) because your loan is about to adjust (which is what is happening to millions right now across the U.S.) What was wrong with their strategy? There are many risks. Below I list five of them.

1. The value of your home may go down, so your loan to value ratio worsens, making it harder, if not impossible to refinance. This is a major cause of foreclosures, and is a HUGE risk. This risk alone should convince you to go with a 30 yr. fixed.
2. Your personal financial situation worsens. For example, your income could drop, (you lost your job) or you become self employed, or you could experience a financial setback where your FICO score drops. All of these things could make it much more difficult if not impossible to refinance.
3. Rates could be the same or higher. There is a big chance that this will happen. You wouldn't want to refinance into a higher interest rate if you can help it. Plus, you need to factor in the cost of the refinance. If we assume a standard \$3,000 for NRCCs on a \$500,000 loan, this equates to \$600 extra cost per year, or \$50 extra cost per month. This is the most conservative view which assumes you are able to wait till the last minute before your loan adjusts, so your interest savings lasted the entire 60 months. What does this equate to in interest rate? On a \$500,000 loan, \$600 per year equates to .120%. Let's call that an eighth, which is .125%. So, absolute break-even is one-eighth. So, you would always need to refinance

into a new loan that is at least one-eighth ***lower*** to cover the closing costs. I wouldn't want to take that bet.

4. You had planned to sell, but for a variety of reasons, the market is bad, or you cannot qualify for a new home. Because of the cyclical nature of real estate, you just don't want to sell at a "bottom," or, it may be near impossible to sell because it has become a "buyer's market," and you would lose too much equity by giving away your house. This is what is happening today across the U.S. in late 2007 and should extend into 2008 and maybe beyond according to some experts.
5. The Amortization schedule starts over. This is a little known effect that is often overlooked. Remember that for a 30 yr. fixed, you're amortizing your loan over 30 years. ***This is important so stay with me.*** Let's assume you take out your loan on Jan 1, 2008. You would have your loan paid off in 30 yrs. or at the end of 2037.

Now, let's compare this strategy with a series of 5 yr. adjustables where you were always able to get a lower interest rate, say .25% lower, so you think you truly are saving money after considering \$3,000 of closing costs every 5 years. We'll further assume that everything goes perfectly – that rates never increase, that your financial condition and that of the lending industry, and your home's value all behaved perfectly over 30 years. What would this look like?

For the 30 yr. fixed, total interest paid over the years is \$579,191, plus the original \$3,000 of closing costs. The total cost of the loan is then \$582,191.

Now let's compare that to refinancing 6 times for 5 years each, at 5.75%. Again, this is a huge assumption that rates will never go up at the time you need to refinance. (Granted, rates could go down, but you could always refinance your 30 year fixed too, so we don't need to explore that scenario).

The big thing you'll notice is that every time you refinance, the amortization schedule starts over. For example, after the first 5 years, interest paid is \$138,883, and the balance is \$463,811. Now we refi that again. Interest over the next 5 years is \$128,831, and the loan balance is \$430,241. Now we refi a 3rd time. Interest is \$119,506, and the loan balance is \$399,101.

Let's do a comparison at this half way point. For the 30 year fixed, we've paid cumulative interest of \$394,840, closing costs of \$3,000, and the principal balance is \$355,244.

For the 5 Yr ARM strategies, interest paid has been \$387,220. Closing costs are \$9,000, and the principal balance is \$399,101.

On a net worth basis, for the 30 yr., costs are \$397,840. For the 5 yr., costs are \$396,220, so it's actually almost a wash. However, the loan balance for the 30 yr. is \$43,857 lower.

And, you've incurred zero risk in not having to refinance.

Note: I have prepared amortization schedules on Excel spreadsheets to back up all numbers in this White Paper. Upon request, I can send them to anyone who asks.

Let's look at a table which summarizes the above.

ARMS			30 Yr. Fixed		
	Interest Paid	Loan Balance		Interest Paid	Loan Balance
1st Refi	138,883	463,811	After 5 yrs.	145,137	465,272
2nd refi	128,831	430,241	After 10 yrs.	133,022	418,429
3rd refi	119,506	399,101	After 15 yrs.	116,681	355,244
Total	387,220		Total	394,840	
Closing Costs	9,000		Closing Costs	3,000	
Total Loan Costs	396,220		Total Loan Costs	397,840	

The above clearly demonstrates the power of the amortization schedule. Notice that with each 5 year segment, interest paid drops much faster with the 30 Yr. Fixed. And, the Loan Balance drops much faster too.

Let's go to the end. After 30 years, total interest paid for the 30 yr. is \$579,191, and of course the loan balance is zero. For the 5 yr., after 30 years, total costs are \$714,300, and the loan balance is still \$318,564.

Here's the final table:

ARMS			30 Yr. Fixed		
	Interest Paid	Loan Balance		Interest Paid	Loan Balance
After 6 refis	696,300	318,564	After 30 yrs.	579,191	-
Closing Costs	18,000		Closing Costs	3,000	
Total Loan Costs	714,300		Total Loan Costs	582,191	
Extra Loan Costs	132,109				
Extra Loan Balance	318,564				
Total Amount Worse Off	450,673				

Summary: for the 30 yr. fixed, your total costs are \$582,191 with a zero loan balance and you've taken NO RISK in having to refinance.

For the 5 Yr. ARM strategy, total costs are \$714,300, or \$132,109 **HIGHER**, and your loan balance is \$318,564, so you are **worse off by \$450,673**. Plus, you have taken a **huge risk**.

The above clearly illustrates that when you take a longer term view, the 30 year fixed is the wise choice. Even if the numbers were close, the elimination of risk of having to continually refinance would still make it the winner.

Now, one could argue that you are better off on the 30 yr. fixed because you are making higher payments (and of course higher payments to principal), which naturally reduces interest and the loan balance. And, you can achieve the same result if you made those higher payments with the ARM loan. This is true, to keep pace with the amortization schedule. But let's be honest – most people won't do that, and if you could, then why not go with the 30 year in the 1st place, and avoid all the risk of having to refi 6 times??

Conclusion

We established at the outset that the only reason to do the amortizing ARM was to get a lower interest rate and save money each month. We've concluded that you end up paying far more interest over time, and at the end of the day, you still have a big mortgage payment and owe hundreds of thousands on your mortgage.

Conclusion: there is huge risk in getting a loan that will adjust several years down the road. It is a ticking time bomb – and is literally exploding across America right now with severe financial ramifications to millions of Americans. Learn the lesson and don't let this happen to you.

Is there a positive side? Sure...but only in the short term. I see no positive over time. Plus, you have to weigh the short term positive and hope that home values always go up, nothing bad ever happens to your job, income, or FICO scores, and rates **are the same or lower every single time**.

A Final Word about Interest Only (IO)

I think it's clear that there just isn't enough benefit to getting an Amortizing Arm versus a 30 yr. fixed. However, many clients do seem to prefer the “instant gratification” of saving even more money by choosing an Interest Only (IO) ARM versus an amortizing loan.

I won't repeat what was said above, but let's just recap the main points and quantify the financial ramifications.

Before I list the numbers, it should be pointed out that many lenders have tightened up guidelines for IO loans. In other words, they are harder to qualify for. They are also getting more expensive, which is easy to understand because the lender perceives more risk in giving out these loans since the borrower is not paying it down at all.

Having said that, let's compare some numbers.

The IO payment on a \$500,000 loan, at say, 5.75%, is \$2,395.83. That compares to the 30 yr. fixed payment of \$2,997.75 which has been mentioned repeatedly above. So, the IO payment is a whopping \$601.92 lower. That is very tempting to reduce a family's overhead by \$602 per month. That can translate into a better lifestyle, or a family can buy more house, and that's why they do it.

Buy what is the long term view???

Let's enter fantasyland and assume that every 5 years, home values always go up, income or your employment situation never gets worse, your FICO score never has a problem, and interest rates ALWAYS stay the same or go lower.

Over 30 years, you have total loan costs of \$880,499, and you still have a balance of \$500,000. You are now that theoretical 65 years old, and your income may decline substantially. What do you do? Did you have a plan?

Compare that scenario to the 35 yr. old that planned ahead. After 30 years, his total loan costs were \$582,191 and there is a ZERO loan balance. **He is ahead by \$798,308!!!**

Many books have been written and opinions offered about how you might be better off not paying down your mortgage, so time doesn't permit that discussion here. The main argument is that if you can invest that savings at a higher interest rate, you may be better off. I leave it to the reader to assess whether that is practical, and whether it outweighs the "ticking time bomb risk" of the ARM.



Rick Pelleriti

Upfront Mortgage Planner

[MortgageFit Community Lender](#)

www.upfrontmortgageplanner.com

rick@upfrontmortgageplanner.com