Paid Off Mortgage is Equivalent to a…Perpetuity?…Bond?…Dividend Paying Stock?

Having a fully paid mortgage sure does get a bad wrap around personal finance circles. I constantly see arguments about money being super cheap and that paying off the mortgage will lead to a loss of the interest tax deduction. I won't argue that **rates are historically cheap** and that eliminating your mortgage will lead to **eliminating the tax deduction**.

First, remember that with the tax deduction you get 30 cents on the dollar. So, although this is a step up from renting (in my opinion, and situation dependent), if you don't have to pay interest, why do it?

Why doesn't anyone talk about a fully paid mortgage as a bond substitute? Or compare it to that of a dividend paying stock (at least synthetically). Look I am not suggesting you pay off your mortgage in lieu of investing in the stock market. I know the conventional wisdom is to pay the minimum payment for the 30 year term and invest the difference. But there are two problems with this:

1. Most people won't invest the difference…that is just stating the facts.
2. What about asset allocation?

If you are going to allocate some of those funds to bonds anyways, why not consider early payment of the mortgage as a contender for that bond allocation? The rule of thumb for your bond allocation is 100 minus your age. So, at 29 this says I should be allocating 71% to riskier assets (those with potential for higher returns) and 29% to safer assets like bonds.

I have been thinking about this a lot lately especially in light of the fact that my wife and I plan to have our mortgage paid off in another 6 years as a part of our plan to kill it in 7 years and 3 months. Of course I want to make sure this doesn't make up more than 25% of our total net worth, but I think I can make a logical argument that it has a place in my asset allocation model (and potentially yours).

Let’s not ignore the fact that a mortgage that is paid in full does represent a freed up cash flow.

A Paid Off Mortgage Is Like A Perpetuity (but not really)

It probably makes sense to first define what a Perpetuity is. So, here is the definition from Wikipedia:

> *A **perpetuity** is an annuity that has no end, or a stream of cash payments that continues forever. There are few actual perpetuities in existence (the United Kingdom (UK) government has issued them in the past; these are known and still trade as consols). Real estate and preferred stock are among some types of investments that affect the results of a perpetuity, and prices can be established using techniques for valuing a perpetuity.[1] Perpetuities are but one of the time value of money methods for valuing financial assets. Perpetuities are a form of ordinary annuities*.

As the definition above states, a perpetuity is one of the time value of money methods for valuing a financial asset. I know that many if not most that read this blog do not have the finance background that I have, but hang in there with me. I don’t plan to get overly in depth here, but I do want to make sure those unfamiliar with these concepts do get a high level primer.

The time value of money is based on the simple idea that a dollar today is worth more than a dollar tomorrow due to the potential earnings from interest or other investment returns. You may be more familiar with the term present value, which essentially discounts future cash flows based on some assumed rate of return an converts it to its worth in today’s dollars.

Let’s get back to explaining how a paid off mortgage is like a perpetuity.

If you pay off your mortgage, you no longer have a mortgage payment, which essentially creates a new annual cash flow equal to what used to be your mortgage

payments. And this cash flow by definition never ends.

Real Life Example

We always like to use real life examples here on the GYFG blog. Let's use my primary residence as the example. As I have mentioned many times on the blog, my wife and I bought our current residence for $370,000, and the original loan for the 5/5 ARM was $352,000 @ 3.625%. Our current principal + interest payment is $1,605.30/month or $19,263.60/year.

Therefore when we officially pay off our mortgage we will be freeing up $19,263.60/year in free cash flow.

How do we value a Perpetuity?

That is a great question. The present value formula for a perpetuity is:

PV = A / r

Where **PV** = Present Value of the Perpetuity, **A** = the Amount of the periodic payment, and **r** = yield, discount rate or interest rate.

That said the value of this stream of cash flows from paying off the mortgage would be as follows:

PV = 19,263.60 / 3.625%

Or

PV = $531,409

Translation: Paying off your mortgage would be equivalent to investing $531,409 that pays you an annual return of 3.625% or $19,263.60 **forever**.

But this is only part right. Because this would assume no terminal value for the house itself in the event it was sold.

A Paid Off Mortgage Is Like A Bond (but not really)

I don’t think I have to go through a mathematical exercise to cover why a paid off mortgage is like a bond but different. It’s like a bond in that your annual savings of $19,263.60 would act as a 5.21% coupon payment.

Annual CF / Investment (purchase price)

$19,263.60 / $370,000 = 5.21%

But this is only part right as well. Because with a bond, at maturity, you would get the face value of your investment back. In this case the face value would be your original purchase of $370,000. Bonds can go up and down in value based on current interest rates, but at maturity there is no such thing as appreciation or depreciation, just face value.

Then what can we compare a paid off mortgage too?

A Paid Off Mortgage Is Like A Dividend Paying Stock

Okay, a paid off mortgage can be compared to that of a dividend paying stock. I would argue that it is a synthetic dividend paying stock.

Your dividend is equal to the formula we used above to compute the coupon payment for a bond.

Annual CF / Investment (purchase price)

$19,263.60 / $370,000 = 5.21%

The kicker is that you also get appreciation. Let’s be conservative and say that we can expect a 3% appreciation rate for real estate here in Southern California. Let’s also assume a 30 year holding period to line it up with that of a mortgage.

Over 30 years the $370,000 house at 3% appreciation increases in value to $898,087.

Let’s not forget 30 years of $19,263.60 in annual cash flow or $577,908. We will ignore investing this cash for this particular post to keep this simple.

This puts the total return at $1,105,995 or 300%.

[Calculation] (Appreciated Value – Purchase price) + (CF * 30)

= (898,087 – 370,000) + (577,908)

= $1,105,995

You have essentially 4X’ed your money in 30 years (898,087+577,908).

This is equivalent to a Compounded Return of 7.9%.

Now remember this assumes no investment of that annual CF savings of $19,263.60. For us, I can guarantee you that will not be the case, we will find ways to put that money to work in other investments.

So what say you? Does this shine a different light on paying off the mortgage early? Do you agree with the math?

-Gen Y Finance Guy

Gen Y Finance Guy

Hey, I’m Dom - the man behind the cartoon. You’ll notice that I sign off as "Gen Y Finance Guy" on all my posts, due to the fact that I write this blog anonymously (at least for now). I like to think of myself as the *Chief Freedom Officer* here of my little corner of the internet. In the real world, I’m a 30-something former C-Suite executive turned entrepreneur turned capital allocator. I am trying to humanize finance by sharing my own journey to Financial Freedom. I believe in total *honesty* and *transparency*. That is why before I ever started blogging, I decided that I would share all of my own financial stats. I do this not to brag, but instead to inspire motivate, and also to hold myself accountable. My goal is to be a beacon of hope, motivation, and inspiration for *you*, the reader, by living life by example and sharing it **all** here on the blog. My sincere hope is that you will be able to learn from me - both from my successes and my failures! Read More