

# FINANCIAL ADVISORY

## Use the Internal Rate of Return Calculation to Consider the Time Value of Money

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In November of 2020, I published an article that explored a concept called the Time Value of Money. The bottom line from that article is that our investments could have much greater income and growth potential if we minimized taxes – therefore freeing up more of our principal to create wealth for us. The article featured a formula called the Internal Rate of Return that takes the time value of money into account. This month, I'd like to “dive deep” into the IRR measure, explain how it works, and show how it can help us real estate investors.

### AVERAGE ANNUAL RETURN MEASURE

First, we'll explore IRR's “cousin:” the Average Annual Rate of Return. This measure is used very often because it is comparatively easier to calculate than IRR. The Average Rate of Return seeks to answer the question “When I make this investment, earn this projected potential income over a number of years and sell at a potential profit, what will I be able to say I earned annually on my money.

Let's use three hypothetical investments:

1. I invested \$100,000, earned 5% annually for 10 years, and sold for \$150,000.
2. I invested \$100,000, earned zero income for 10 years, and sold for \$200,000.
3. I invested \$100,000, earned \$20,000 per year for 10 years, and sold for Zero.

If you were presented these offers, and assuming that these investments had identical risk levels that are acceptable for you, which would you take? I'd pull out my calculator to evaluate each of them.

This is where the limitation of this measure is exposed. To calculate the average annual return, the formula is:

$(\text{Sum of Returns} / \text{Number of Years}) / \text{Initial Investment}$

Our calculations are:

1.  $(\$100,000 / 10) / \$100,000 = 10\%$
2.  $(\$100,000 / 10) / \$100,000 = 10\%$

*Please turn to page 68*



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3.  $(\$100,000 / 10) / \$100,000 = 10\%$

So the Average Annual Return measure tells us all three of these cash flow streams are equal. I know this isn't true though – when given a choice between some money today and the same amount in the future, I want it today. The Internal Rate of Return measure uses this principle to evaluate cash flow streams.

## THE INTERNAL RATE OF RETURN

If you use Google to search “IRR Formula,” you'll be presented with a scary looking formula that uses symbols. Fortunately, the computation is much easier with a financial calculator – or better yet, an Excel spreadsheet. We'll calculate the IRR of these three scenarios below:

1. A \$100,000 investment earns \$5,000 per year and returns \$100,000 principal and \$50,000 profit in year 10. IRR = 8.39%
2. A \$100,000 investment earns \$0 per year and returns \$100,000 principal and \$100,000 profit in year 10. IRR = 7.18%
3. A \$100,000 investment earns \$20,000 per year and returns Zero principal and Zero profit in year 10. IRR = 15.1% (!!)

These results surprised me. Scenarios 1 and 2 have similar Internal Rates of Return, but scenario 3 shows a much higher return. Why? As I said

earlier – a return earned today is more valuable than a return earned next year. Although option three will not return my principal or pay a profit at the investment's end, it is paying me much higher income on an annual basis – enough to make up for the lack of a large return at year 10.

## IRR IS A USEFUL TOOL

I use the IRR calculation all the time when evaluating investment questions: Does this DST offer acceptable return potential? Should I refinance my property? If I spend \$100,000 converting the garage of my 4-unit to a 5th unit, what will the return on my investment be? Am I better off doing something else with that \$100,000?

As investors, cash flows are valuable to us. They are more valuable the faster they come. If you have any questions, my office number is (877) 313-1868.

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