

IRA versus NON-IRA Returns

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Prof S G Badrinath
Rates of Return – Review and More:
Part 4

Purpose is to illustrate time-value calculations. There are lots of wrinkles and variations, Roths, Education IRAs and the like in different domiciles, with rules for the tax-free amounts investable depending on income.

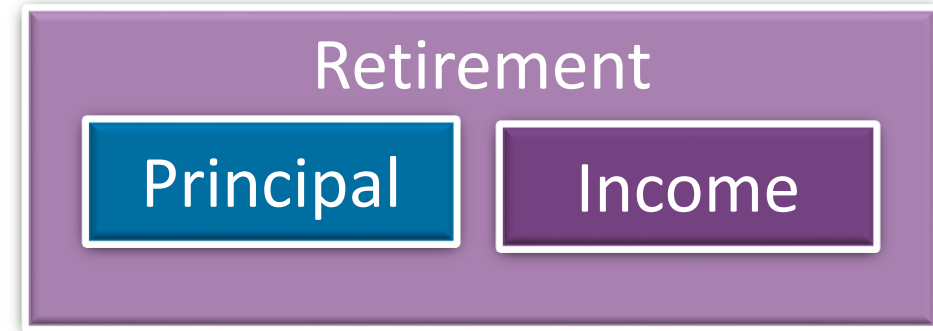
- Assume you have a single sum of \$ 2000 to invest
- Invest at 12% per year for 25 years until retirement
- Tax rate is 30% now, 15% after 25 years

Under IRA

Principal and income are both taxed at retirement.

$$\begin{array}{rcl} \text{FV} & = & 2000 * (1.12)^{25} & = & 34,000 \\ & & \text{Less: Tax} & & = & -5,100 \\ & & \hline & & \text{After-tax value} & & = & 28,900 \end{array}$$

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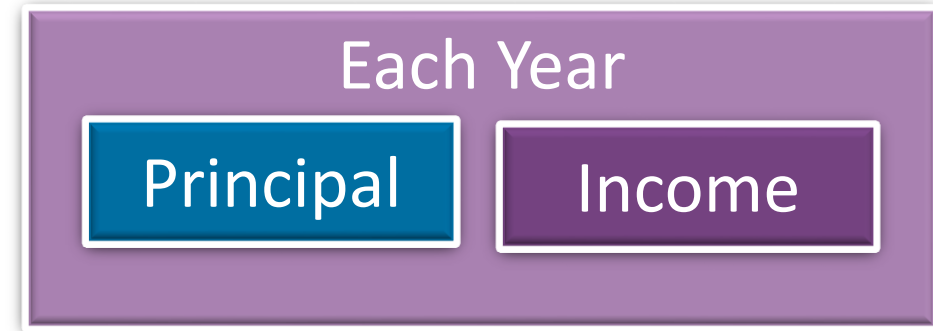


Outside IRA

Both principal and income taxed each year.

$$\begin{aligned} FV &= [2000 * (1-0.3)] * [1 + 0.12*(1-0.3)]^{25} \\ &= 1400 * (1+0.084)^{25} = 10516.23 \text{ (After-tax)} \end{aligned}$$

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Question

Q: What rate of return should be earned outside the IRA to make the two after-tax values comparable?

A: $1400 * (1+X)^{25} = 28,900$, $X = 12.87\%$ after-tax

This implies $12.87/(1-0.3) = 18.39\%$ pre-tax returns.

To be comparable to an IRA, an investment outside it should earn 18.39% (as opposed to 12%)

Question

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Q: What type of investment vehicles should be in an IRA? Stocks, bonds, municipal bonds?

A: Bonds throw off taxable income semi-annually.

Stocks have tax implications only if gains are realized.

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