

**Portfolio Stochastic Design Scans:  
A Fractional Roth Conversion**

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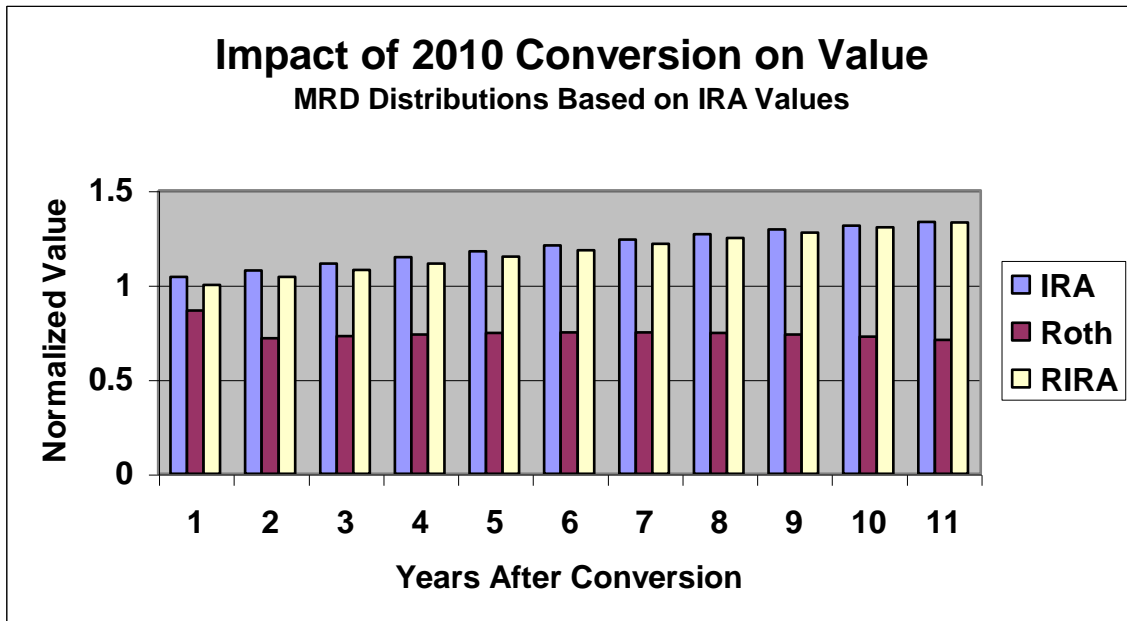
**“ In the end, how your investments behave is much less important than how you behave. ”**

**Benjamin Graham  
The Intelligent Investor**

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## A Fractional Roth Conversion

Next year, 2010, anyone can convert all or a part of their IRA to a Roth IRA regardless of income. You can also spread the 2010 taxes over a two-year period. That has produced many columns recently about the value of a Roth conversion from an all or nothing point of view and usually with the focus on the retiree himself. In my case and many other retirees a total conversion cannot produce the income that the IRA can for many years if ever. That's not what this White Paper is about. The focus here is on a fractional Roth conversion strategy for grandchildren. In this study I looked at the tradeoff between retirement income and Roth capital growth. A recent Morningstar essay argues that when it comes to financial and tax advice one size fits one. I agree with the sentiment but think there are groups of investors with common interests who can benefit from a comparative analysis. This study was complicated by IRS withdrawal requirements and taxes.



## **Conversion Requirements and Constraints**

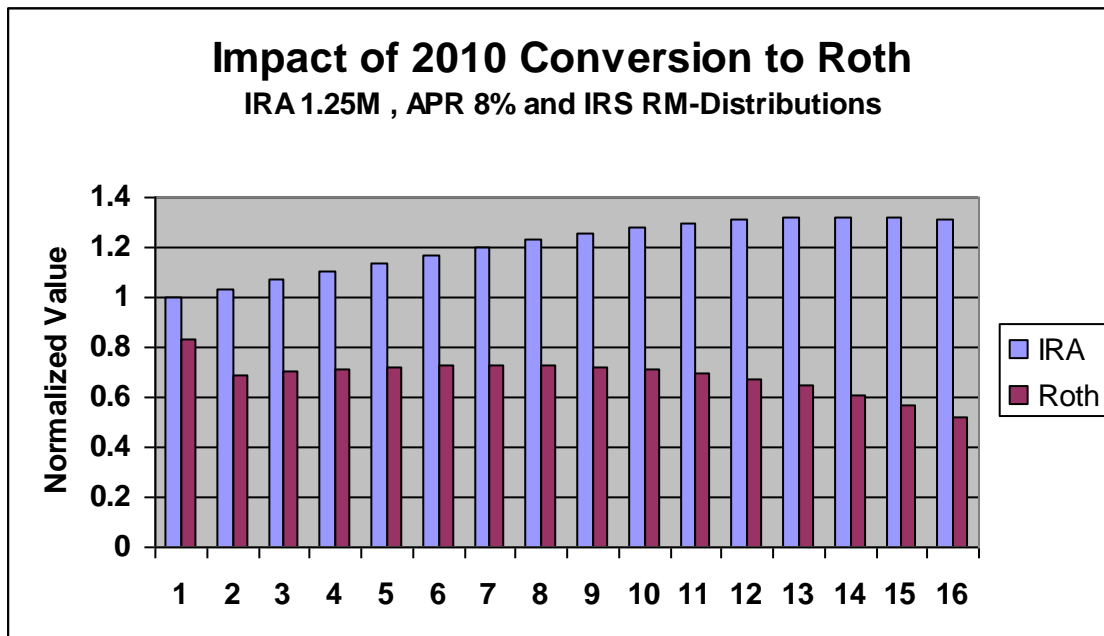
**The basic question is how large a fraction can be converted and still meet retirement income and other financial needs. My first analysis convinced me that a total conversion could not meet income requirements without spending some of the principal for IRAs of up to 2 million. Capital preservation is a requirement not a goal for me. Others will have their own income and capital requirements. This study analyzes the impact of a fractional Roth conversion on combined Roth and IRA values as a function of conversion fraction, minimum required withdrawals, investment return rates and taxes. Not knowing what future tax rates will be I used 2009 IRS 1040 Married Joint Return rates in the study.**

**Three scenarios were analyzed; total conversion, a one time fractional conversion and no conversion at all. I normalized the results but the tax rates used were specific to this study values. The time period studied was over 10 years to show nonlinear long-term trends. The chart on page 1 is for a 1.25M IRA with an 8% return for all investments. The fractional Roth conversion was 100K for the RIRA, which stands for Roth and IRA. These parameters were varied in the study to show the impact of conversion fraction on the value of the IRA, Roth and fractional RIRA options over time.**

### **All Roth Conversion**

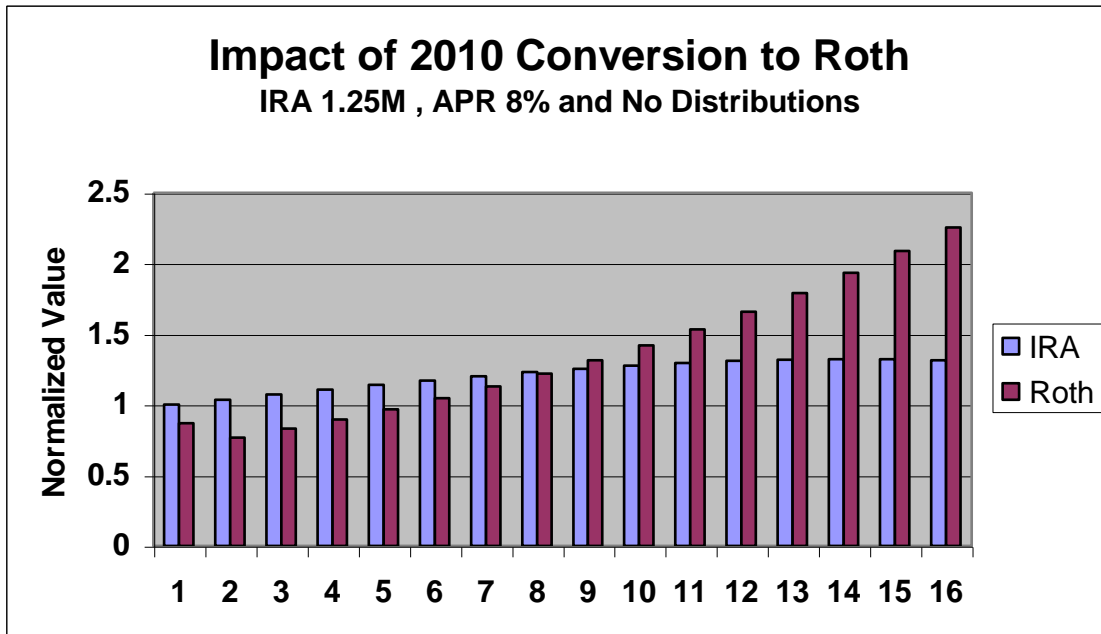
**First the study looked at converting IRAs completely to a Roth IRA in 2010. The MRD withdrawal rates used in the study assumed that you were 70.5 in 2010. The growth of the original IRA and the Roth conversion**

values were compared and they show what you would expect; taxes on an all Roth conversion reduces the initial IRA value by about one-third. There is a period after the total conversion-taxes are paid when the Roth increases a bit but ultimately MRD withdrawals reverse the trend. I know there are no required withdrawals for a Roth but there are in this retiree focused comparative study. I first used annual IRS minimum required withdrawals as a proxy for income. In this scenario the minimal IRA withdrawal each year is income that a retiree would also take from the Roth to meet trust and other expenses. The difference being there is no tax on the Roth income. This scenario does not provide enough income for most retirees but it may be of interest for those who are trying to increase a family trust portfolio, provide money for educational expenses or other family business.



The analysis results say it is not a good idea if you take MRD distributions from the Roth as we already knew. If

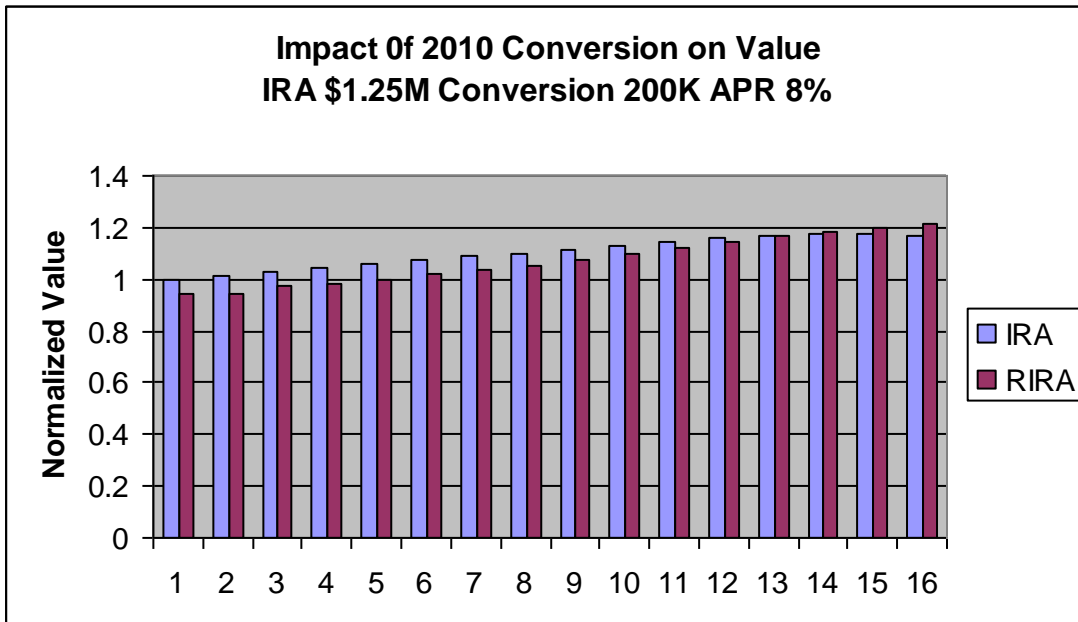
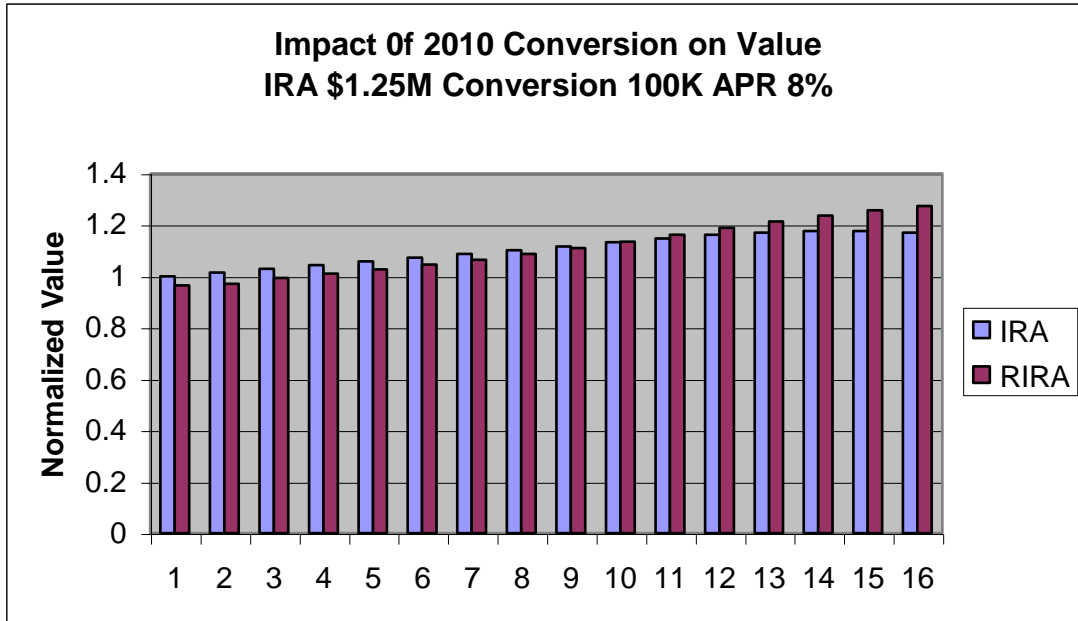
**you do not take distributions from the Roth, which is what some investors might be doing, the conversion pays off handsomely over time. Recall that the IRA still has to take distributions because you are over 70.5 years old. This makes the Roth conversion a good choice only if you won't need the money for a long time.**

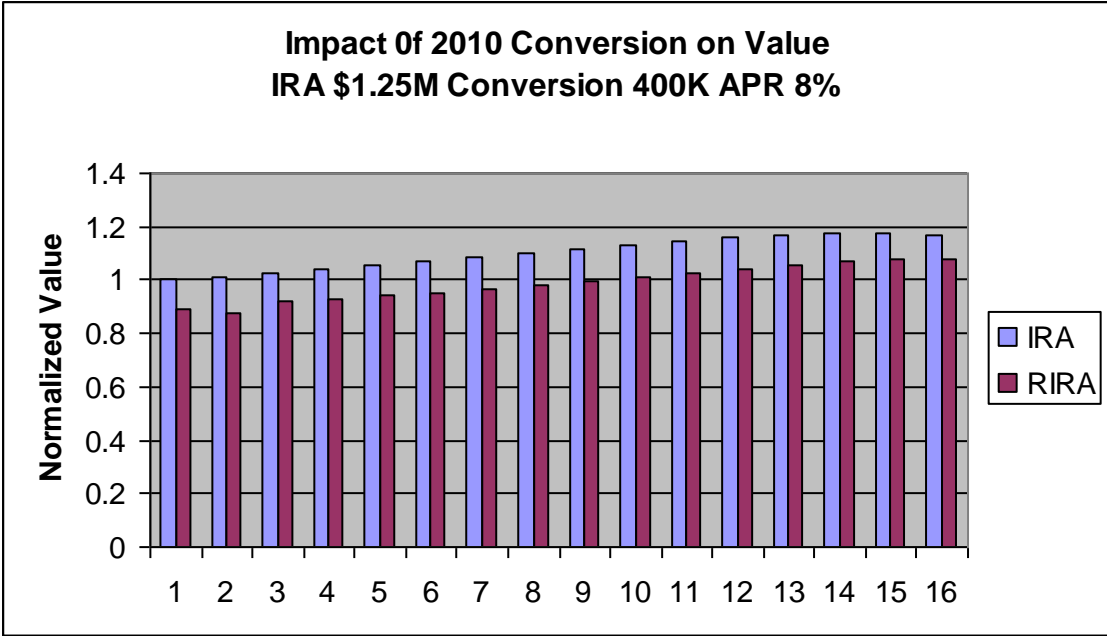


## **Fractional IRA Conversion Analysis**

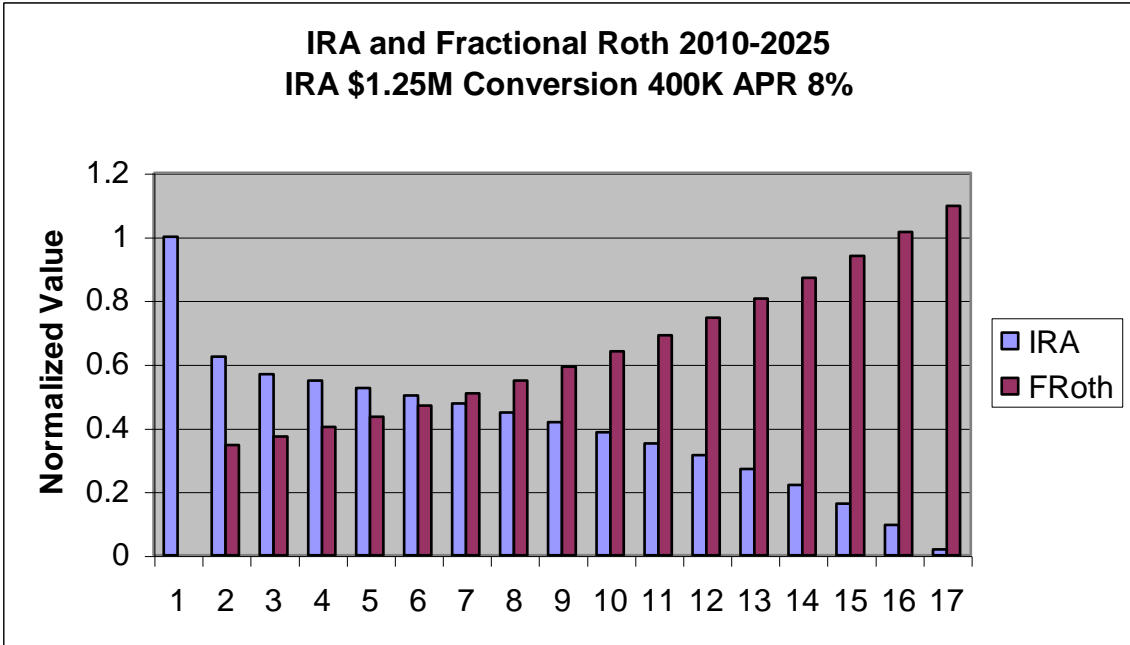
**So is there a fractional IRA conversion that covers income and trust needs? The scenario is now a hybrid in that you do need to withdraw from the IRA for retirement but may be able to do a fractional Roth transfer to a trust. My interest in this topic is post 2008. Prior to the Black Swan I did not have much financial incentive to do anything that added risk. In this study I started with a 100K conversion and increased it until the IRA was out of money by 2025 for a 400K conversion. The following charts show the crossover year moving out until it never crosses. At 400K the value of the IRA in**

**2025 is 22.7K and the next withdrawal will have to come from the Roth, which is now \$1.377M and a bit larger than the original \$1.25M IRA.**





The two components of the RIRA are the IRA and a fractional Roth. You can see in the next chart how paying the same distribution as the original IRA takes the IRA down as the fractional Roth grows.



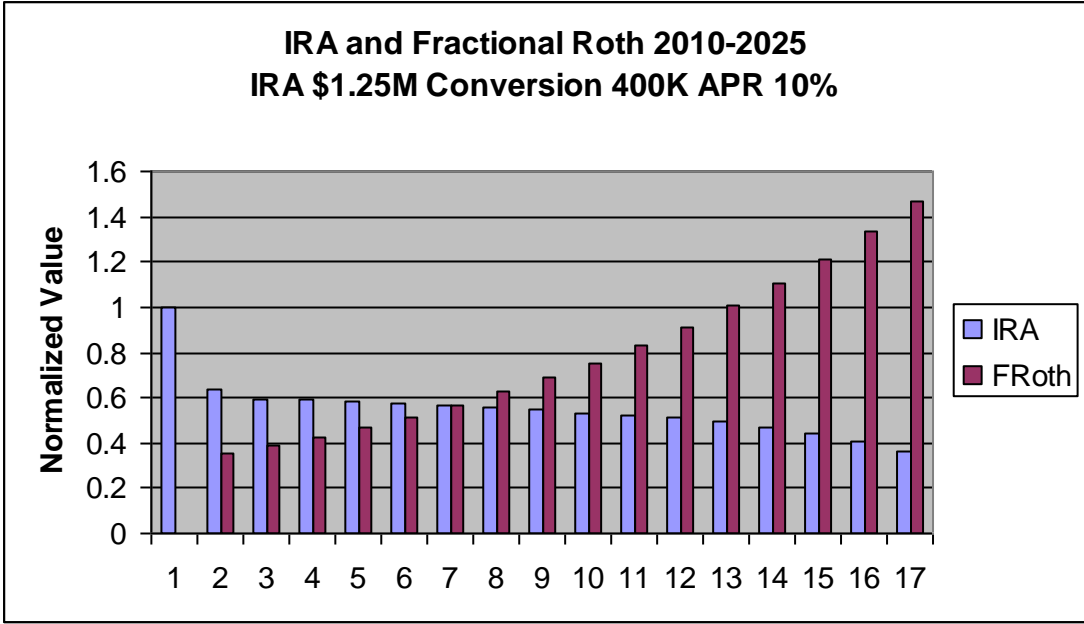
## Design Sensitivity Analysis

Now that we know a fractional conversion is feasible as a designer it is time to analyze performance sensitivity to the study parameters; conversion fraction, and APR percent. Before we start that lets sum up the results so far. It is clear that any conversion will reduce the growth of your IRA investment for a long period of time. The table below shows the 2025 value of the IRA and Roth for different conversion fractions given the APR of 8% and IRA initial value of 1.25M

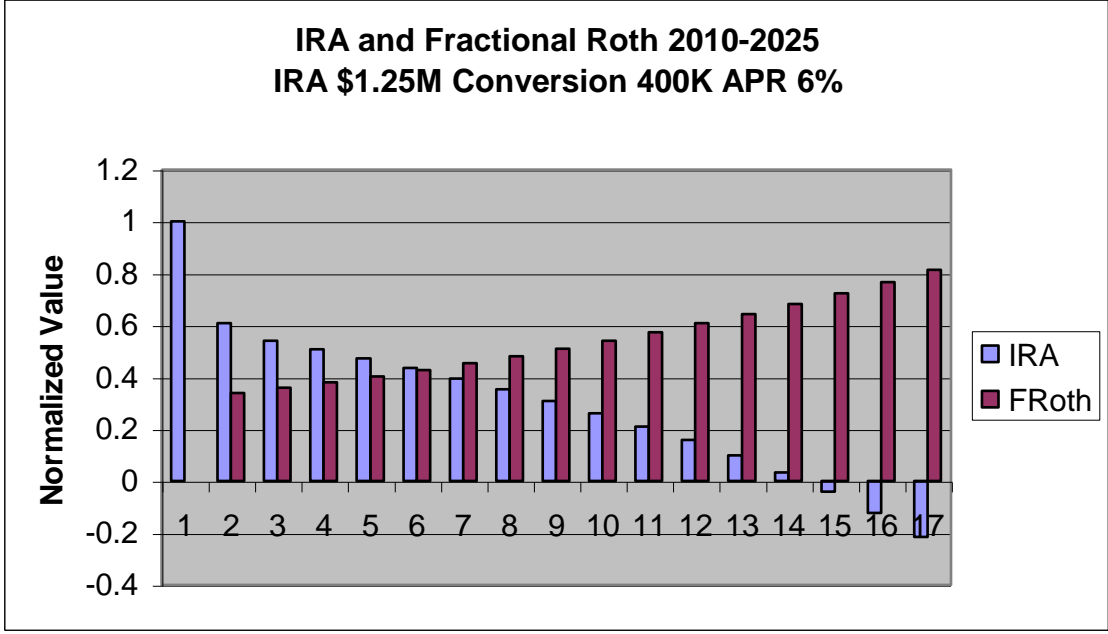
| Roth Conversion | Roth & IRA 2025 Value |
|-----------------|-----------------------|
| 0               | 1.700M                |
| 100K            | 1.629M                |
| 200K            | 1.552M                |
| 300K            | 1.471M                |
| 400K            | 1.377M                |

As the table shows the \$1.25M IRA with no fractional Roth conversion grows to \$1.700M even with distributions each year for an 8% APR.

The next parameter I looked at was APR and the charts on page 9 show the IRA and Fractional Roth values for the period from 2010 to 2025 with the initial IRA still \$1.25M and the conversion 400K. The first chart is like the chart on page 7 but now the IRA is not out of money in 2025. It is still able to continue paying distributions for several more years or said differently the maximum conversion could be increased. Also note the Roth has grown to almost 50% more than the initial \$1.25M IRA.



**The other side of that coin is sobering. If the APR is only 6% the IRA goes negative in 2022 and the Roth has grown to less than 80% of the original \$1.25M IRA by 2025. The message is simple a 25% lower APR places the fractional Roth below the line; capital preservation has failed at this conversion level and APR.**



## **Final Remarks**

**This study was a small subset of all the possible fractional Roth conversion scenarios. In particular I did the analysis for myself mostly and decided to share the results with other retirees for what they may be worth. The IRS required withdrawals were increased in the first few years during the study to analyze the impact of that scenario as well. The all Roth conversion used the IRS MRDs exactly but some of the RIRA cases used higher withdrawal rates the first few years. Readers may want to redo this study with their own conversion scenarios. Keep in mind that all models are wrong but some are still useful.**