

Questions and Answers

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by Craig Israelsen

Email: craig@7TwelvePortfolio.com

Website: www.7TwelvePortfolio.com

Retirement Portfolio Analysis: A Multi-Decade Review

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Via Audio:
Craig Israelsen

Charles Rotblut

**Retirement Portfolio Analysis:
A Multi-Decade Review**

Craig Israelsen, Ph.D.

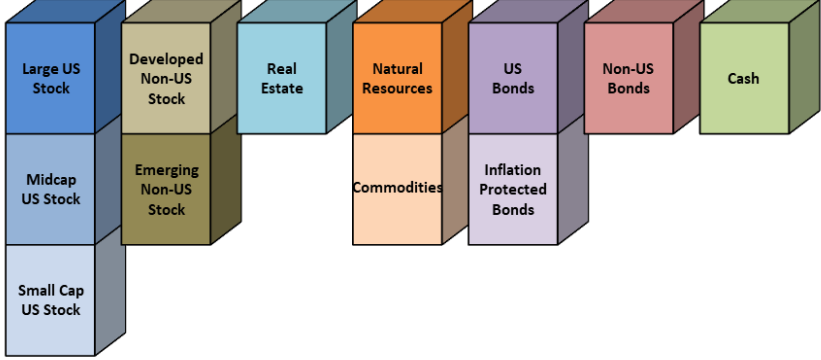
craig@7TwelvePortfolio.com

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Question	Answer by Craig Israelson
In Large or Small Cap, what is the mix between Growth and Value? Or, are these blend, such as S&P500? What about Mid Cap?	Yes, the historical performance data for stocks in the spreadsheet analysis is based on the following equity indexes (which are generally a blend of growth and value). S&P 500 Index, Russell 2000 Index, MSCI EAFE Index Midcap stock is not included because we do not have performance back to 1970 for midcap.
A great model! Do you take inflation into account?	In the 3rd tab of the Excel-based spreadsheet you can specify a COLA (cost of living adjustment) that is based on the actual historical rate of inflation (using the consumer price index back to 1970). A general comment about inflation: In the spreadsheet analysis tool ("35 Lifetimes") the key issue is the ability to observe 26 different 25-year periods between 1970 to 2019 and the sequence-of-returns that took place in each one and how a retirement portfolio held up under various withdrawal scenarios. Understandably, those returns took place historically and inflation was taking place. However, we are using the spreadsheet tool as a way of examining our own retirement portfolio and all the variables that apply to our own situation (amount of money, withdrawal rate, asset allocation, age, etc.) starting NOW. The spreadsheet allows us to observe best-case, worst-case, and average historical performance to give us a sense of how our portfolio might perform going forward. Thus, historical inflation is not the key issue. Rather, the sequence of returns is the key issue.
can we download the spreadsheets?	You are welcome to contact me via email and indicate your interest in purchasing the spreadsheet. The normal price is \$250, but I am offering it to AAll members for \$125 (50% discount). My email is craig@7TwelvePortfolio.com
How does your analysis help an individual who becomes 72 in 2020 determine what happens under a RMD withdrawal over the next 25 years?	The spreadsheet uses the RMD withdrawal rates that apply starting in 2020 for a 72 year old. In this way, you can analyze how your portfolio would have performed historically using the current RMD rates over 26 rolling 25-year periods from 1970-2019. It helps you by allowing you to see the future through the lens of the past. It is not a predictive view, but rather a view that provides a range of possible outcomes.
"if we buy the spreadsheet, will it be updated for the 'new' 50 year periods as we go forward?	Yes, I update the spreadsheet with each new year of performance data in January of each year. AAll members will always have access to the 50% discounted price for the spreadsheet each year. Just remember to indicate you are an AAll member when ordering the spreadsheet. Moreover, a discount of 50% is offered to AAll members for any report I sell that has a normal selling price of over \$100. A brochure that outlines the various investment portfolio research reports I produce is available by clicking the link below. http://www.7twelveportfolio.com/Downloads/Web7TwelveReport.pdf

What if you want to change your allocation assumptions at different times over the 25-year period? Is there a way to do that with this spreadsheet?	At present, this is not possible. But, it is something I will look into adding as a new feature. When I update/improve the spreadsheet during the year each person who has already purchased that year's release will automatically receive the updated version.
I saw your 7twelve presentation a few years ago. I see you still have 7 asset classes. Do you still break that down into 12 categories?	Yes, the 7Twelve portfolio model still uses 12 actual "investment buckets" as shown below. Several of the asset classes shown below don't have a performance history going back to 1970. The spreadsheet analysis tool utilizes the seven asset classes to do have a 50-year performance history. 
I gather that you cannot use a cola with an RMD but must use a fixed withdrawal	Correct. The RMD and a COLA above and beyond the RMD is not a withdrawal option at this time.
Does the spreadsheet include the raw index data that we can see?	At present the "tab" that houses the historical data is hidden, but I unhide it for those who want to see the historical returns.
"On RMD, if you enter an age below 70, does it assume zero withdrawals for the early years, until you turn 70?	At present, the spreadsheet requires that the minimum age be 72 if you are selecting RMD as the withdrawal option.
This is dealing with your tax-advantaged portfolio vs. your portfolio including taxable, right?	The various parts of your portfolio (taxable, tax-deferred, tax exempt) can be analyzed using the spreadsheet tool. However, it may take several iterations of analysis. In other words, if your total portfolio is \$1 million where you have \$500k in tax-deferred, \$250k in taxable, and \$250k in tax-exempt, you will likely want to run three waves of analysis using the three different amounts as the starting balance and the appropriate withdrawal option for each portion of your portfolio.
Discuss different techniques for making withdrawals to meet the RMD and how do they affect the rolling 25 year balances. What technique does your model use?	RMD withdrawals can be monthly throughout the year (monthly, quarterly, semi-annually) or at the end of each year. The spreadsheet assumes annual withdrawals on the first day of each year.
How do you determine the average withdrawal?	It is the average withdrawal in each of the 25 years of the withdrawal period. There are 26 rolling 25-year periods, so the "average" withdrawal is the average of a LOT of withdrawals.
How do you manage a portfolio going forward from	That is a difficult question to answer in a general sense. There are many individual variables that have to be understood first. However, it is safe to say that a

2020 at a retirement age of 65?"	retirement portfolio needs to be diversified across a variety of asset classes (U.S. and non-U.S. stocks, diversifiers such as real estate and commodities, various types of domestic and international fixed income, and cash. The actual asset allocation across these asset classes is a personal choice.
If you were to forward model, would you include the growth period pre-2008, as these returns will probably not occur again. Would you use a lower set of returns?	The spreadsheet allows a user to lower the historical returns for any of the seven asset classes to any level you wish.
Does your spreadsheet allow a lower retirement age than 65?	The actual age of retirement is not important (unless the RMD is being examined). Otherwise, the spreadsheet is simply evaluating rolling 25-year periods. If you are retiring at the age of 50, the analysis then pertains to the period from age 50-75. Then, 25-years from now, you can re-run the analysis that will apply to your next 25 years to age 100.
How do you manage the increased health care costs and frequency in later life withdrawals? Your annual withdrawals in later life don't seem to reflect this.	When withdrawing a percentage of the portfolio's annual ending balance, such as 4%, the amount withdrawn generally goes up about 75% of the time. So, those increases will hopefully be adequate to handle whatever costs increase as we age. Clearly, no spreadsheet can anticipate all the variables of our complicated lives.
Are dollar figures nominal or real (inflation adjusted)?	The dollar figures are presented in nominal terms.
Can the RMD table be updated? Can we replace it with our own sequence of withdrawal percentages?	Yes, the RMD table is located in a separate tab and could be replaced by your own pre-determined withdrawals rates (that could change up or down each year).
How closely is the example retirement portfolio mix correlated with the market? If it is correlated is the results worse or better?	The asset allocation a user chooses can be 100% correlated to the S&P Index if you selected a 100% large U.S. stock portfolio. Generally speaking, a retirement portfolio is not designed to mimic an all-equity index such as the S&P 500 because the volatility is too extreme.
You can pretty easily account for inflation by adding it to "cost" field	Good suggestion. The "cost" field being referred to is the expense ratio of the portfolio. By raising the expense ratio of the portfolio you are effectively lower the returns of the portfolio—which is what inflation is essentially doing.
How do taxes impact the model?	In the 3 rd tab of the spreadsheet you can input a tax rate. The first two tabs (or spreadsheet modules) to not account for taxation.
OK, But what etf's are recommended?	I sell a variety of 7Twelve Portfolio research reports that provide specific guidance on selecting ETFs and mutual funds. There is a Vanguard 7Twelve report, a Fidelity 7Twelve report, a Schwab 7Twelve report, etc. More info in the link below. http://www.7twelveportfolio.com/Downloads/Web7TwelveReport.pdf
It seems to me that the total 25 year withdrawals and the average annual withdrawals are being strongly influenced by the returns achieved in the first 20 brackets, i.e. those up to 1999 as ending year. Any	Good observation. The impact of 2008 on the ending balance of a retirement portfolio is profound. The spreadsheet allows a user to lower the historical returns for any of the seven asset classes to any level you wish to create a less-optimistic future version of the past.

comments on how things might look if, going forward, returns are more like the periods after that time?	
what if you have 70% in stock and the rest in cash?	You can enter that information in the spreadsheet and then see the results
What is the reason the retirement window starts in 1970 vs any other year?	1970 is the earliest common starting point for actual historical data for the seven core asset classes in the portfolio
Please explain the reason for starting years, 1970 in one and 1980 in the other.	The spreadsheet that starts in 1980 does so to correlate with the Almanac of Asset Allocation.
I am unclear what is determining the annual withdrawal amount.	It can be a fixed amount of money set by the user. Or, a percentage of the portfolio's ending account balance each year. Or, the RMD.
I note in each of your examples, you tend to allocate 20% of the portfolio to cash. Why do you presume such a high cash percentage?	Safety factor. Of course, each person can set their own asset allocation.
With respect to the US Bonds portion of each portfolio, is that S/T bonds, L/T bonds, or what index are you using for determining the average rate of return for the US Bonds portion of the portfolio?	The bond asset class is represented by the Barclays Aggregate Bond Index, which is classified as intermediate term.
This is great, but can you turn this around and enter a negative annual withdrawal to simulate the accumulation phase.	No need to do that as the 1 st tab of the spreadsheet has an "Accumulation" calculator for the pre-retirement years.
what items fall into the commodities category?	Crude Oil & Other Oil, Gasoline, Heating Oil, Natural Gas Gold, Corn, Wheat, Soybeans & Oil, Sugar, Aluminum, Copper, Zinc Silver, Lean Hogs, Coffee, Cotton, Live Cattle, Nickel, Lead, Cocoa
"I agree that using the RMD will protect a portfolio from reaching zero. But can a person actually live by spending only the RMD amount? Probably not.	Yes, I agree. A retirement portfolio is not designed to provide all the needed money in retirement. The RMD + pension + social security is the more common solution.
Can a fixed withdrawal amount be indexed for inflation?	By definition a fixed amount withdrawal is not indexed to inflation because it is not increasing. However, in the 3 rd tab of the spreadsheet the COLA can be set to equal the actual inflation rate historically.
Will spreadsheet work on Mac & windows?	I believe so based on feedback from some AAIL members.
"Assuming RMD's start at age 70.5 before 2020 or pretending it was age 72 the	Assuming RMD started at 72 historically (to match the current RMD guidelines).

whole time to match the new rule?	
Is there research using more rolling periods by doing it monthly? such as Jan 1975-Jan 1999, Feb 1975-Feb 1999, etc.: might offer more fluctuations reflecting seasonal ups & downs as well as annual ones, plus closer to what really happens?	Good idea, but monthly performance data for several of the indexes are not available.
Could the historical performance adjuster allow us to introduce an inflation effect?	Yes, that is one way to account for the dampening of nominal returns due to inflation.
Are there AAll articles that you wrote that made use of this Excel analysis?	Yes, see my article in the Sept 2019 issue.
Your model looks at annual performances of multiple indexes for past years, but doesn't account for variation of index performances - it assumes if large cap stocks was 10% and bonds for that same year was 4% that will always be true - and that's not how markets perform over the years. Any ideas for how to deal with this issue.	The spreadsheet uses the annual returns for all seven indexes exactly as they occurred historically. There is no assumption made that stocks or bonds return a certain percentage.
One key strategy for managing portfolios containing IRAs is to find an optimal annual Roth conversion to gradually build up the Roth, reduce the RMD and manage the taxes created, while looking at the overall performance over 20 plus years. Any ideas? Does your model allow using its data in a larger user model?	Good point. No, this spreadsheet is not designed to deal with the Roth conversion issue. Not certain I understand the second part of the question. If you are asking about the ability to export the historical data to another model I would direct you to my website where you can see the historical data. http://www.7twelveportfolio.com/Back-Tested.html
Given the successive 25 year periods, the trend in total or average rate of return is declining. What happens if we project the trend reduction into the next 25 year period? What would be the average rate of return from present over the next 25 years?	Good observation. As noted previously, the impact of 2008 on any investment portfolio that contains equities, was profound. The spreadsheet allows a user to lower the historical returns for any of the seven asset classes to any level you wish.

Is it true that going back to earlier time frames prior to 1975 increases the risk of running out of money?	That would depend entirely on your retirement portfolio's asset allocation. If entirely in bonds, there were periods in the 1940s and 1950's where bonds produced very low returns.
the start of retirement date seems the most important of all. is it the timing of the market crashes that have this impact?	The simple answer is yes. When stocks have major declines AND your retirement portfolio is largely in stocks, the impact on the retirement portfolio's ending balance (and in rare cases, survival) can be profound.
I thought the initial withdrawal years would be higher than the later withdrawal years in retirement - is this not the norm?	For some it might be. The RMD, however, is an escalating percentage over time.
"Is US Real Estate only REITs, or does it also include individually held investment properties?	The real estate asset class is using the historical returns of the Dow Jones US Select REIT Index, which is based on commercial REITs. Individual real estate is not accounted for in the spreadsheet.
"I don't think all of these time frames are relevant. Most people want to know about their own future and so making assumptions about future years is the only way to do this..... he hasn't provided anything but historic data.... we don't live in history!	Historical variation in performance gives us a clue to the future. At the very least, it allows us to see the range of performance between best-case and worst-case.
Wade Pfau and others suggest given future projected returns, the 4% rate is too high. Why do you disagree?	Based on the last half-century, a well-diversified portfolio easily sustained a 4% withdrawal rate.
"Can the model be adjusted for a 40 year retirement instead of 25 years?	Not presently, but of course the analysis can be repeated 10 years later...and then 10 years after that.
How do you determine return percentages to use going forward for each category?	You don't need to. This analysis uses actual historical returns for seven core indexes.
Sequence of returns risk can mean that a retiree's money will *not* last as long as they do. The 4% rule is now being called into question. Is it not?	The sequence of returns is a double-edged sword---it's not always a bad thing. When only withdrawing 4% from a portfolio's ending balance it is not possible to kill the portfolio within 25 years. What kills a portfolio is an unreasonable COLA on TOP of a 4% initial withdrawal rate.
Bonds have enjoyed a 40 year bull market because interest rates in 1980 were 10% or more on long-term bonds. This is *not* true today.	Correct. This is why the historical returns adjuster is available for those who want to dial down the historical returns of bonds.
How have you validated the formulas and results in your calculation sheet?	Yes, many times and in many ways.

Is it possible to simulate taking out 8% every two years?	No. That is not an option.
Is the Average Gross Return for each asset category adjusted to each particular rolling period, or are the returns over the 50-year period applied to all rolling periods? If not adjusted, why not?	The spreadsheet uses the annual returns for all seven indexes exactly as they occurred historically—year-by-year. There is no assumption made that stocks or bonds return a certain percentage.
Do you have shorter than 25 rolling years, to reflect more recent years like past 10 or 15 years	The spreadsheet that comes with the Almanac of Asset Allocation that I wrote uses rolling 20-year periods.
Is it possible to get historical performance of the 7twelve portfolio?	Yes, on my website. www.7TwelvePortfolio.com
My takeaway from what I've seen so far is that people shouldn't be concerned about RMD and/or 5%+ withdrawals during retirement. My question to Craig is... "Looking at all this data what are your key takeaways? What can retirees do in terms of maximizing their withdrawals without losing sleep at night?"	Biggest single key takeaway: Worry less.
There are substantial "end of life" balances in ALL scenarios. Can retirees spend more during retirement than the conventional 4% or RMD withdrawals?	In many cases yes. But, that will be a year-to-year decision.
What if you need more than RMD, eg- 110%?	You can use another percentage rate that you specify (which is higher than the RMD) OR you can enter a fixed dollar amount that meets your needs.
Can the allocation include international bonds?	Sorry, don't have the historical data back to 1970. The 7Twelve model, however, incorporates non-US bonds.
Should one put mid-cap stocks in the small-cap category?	Yes, correct.
How can you adjust this required RMD up or other % up to get more money in earlier years than in latter when you're less mobile, etc.	You can simply enter a percentage withdrawal that is higher than the RMD for that particular year.
"is rebalancing annually or daily or something else"	Annual rebalancing is assumed in the analysis.

Do your examples assume that all RMD are spent by the investor annually or is any excess RMD reinvested? Is it different if you are using the straight RMD withdrawal method or withdrawing a certain percentage of the portfolio annually (4% for example).	The assumption is that the RMD is fully spent. Yes, there are significant differences in the ending account balance if assuming RMD vs. a set 4% withdrawal.
as far as the investment class of real estate and commodities can you still build them with ETF's and low cost MF	Yes, both of those asset classes are well represented by a number of ETFs and mutual funds. ETFs tend to have lower expense ratios.