Understanding Safe Withdrawal Rates

11.18.2015 | FPA Orange County

Michael E. Kitces

MSFS, MTAX, CFP®, CLU, ChFC, RHU, REBC, CASL

Partner. Director of Research, Pinnacle Advisory Group

Publisher. The Kitces Report, www.kitces.com

Blogger. Nerd's Eye View, www.kitces.com/blog

Twitterer. @MichaelKitces, www.twitter.com/MichaelKitces

KITCES.com

Advancing Knowledge in Financial Planning...

Handouts/Additional Materials at: kitces.com/FPAOC15

Basics of Safe Withdrawal Rates

- Fundamental client questions:
  - How much can I safely spend from this portfolio without needing to worry about the markets?
  - If I want to spend $XXX, how much money do I need in the account to safely retire?

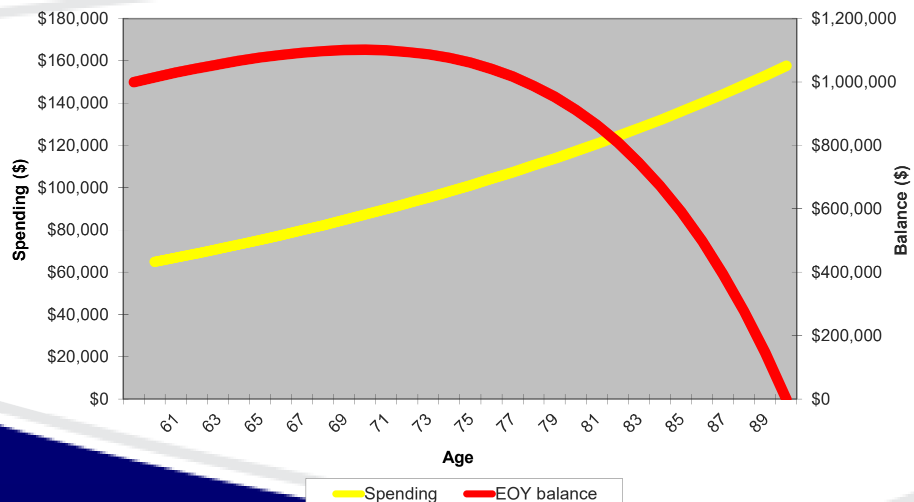
Linear Projections & Safe Spending

- Case example:
  - 60-year-old retiree for 30-year retirement
  - Inflation assumed to be 3%
  - 60% stocks, 40% bonds
    (rebalanced annually)
  - Stocks assumed to earn 10% (real 7%)
  - Bonds assumed to earn 5% (real 2%)
  - Average portfolio return 8% (real 5%)
  - Initial portfolio of $1,000,000

Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Linear Projections & Safe Spending



Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Linear Projections & Safe Spending

Year	Initial Balance	Portfolio Growth	Portfolio Withdrawal	End of Year Balance
1	$1,000,000	$80,000	($65,895)	$1,014,105
2	$1,014,105	$81,128	($67,872)	$1,027,362
3	$1,027,362	$82,189	($69,908)	$1,039,643
4	$1,039,643	$83,171	($72,005)	$1,050,810
5	$1,050,810	$84,065	($74,165)	$1,060,709
6	$1,060,709	$84,857	($76,390)	$1,069,176
7	$1,069,176	$85,534	($78,682)	$1,076,028
8	$1,076,028	$86,082	($81,042)	$1,081,068
9	$1,081,068	$86,485	($83,474)	$1,084,080
10	$1,084,080	$86,726	($85,978)	$1,084,828
11	$1,084,828	$86,786	($88,557)	$1,083,057
12	$1,083,057	$86,645	($91,214)	$1,078,488
13	$1,078,488	$86,279	($93,950)	$1,070,817
14	$1,070,817	$85,665	($96,769)	$1,059,714
15	$1,059,714	$84,777	($99,672)	$1,044,819
16	$1,044,819	$83,586	($102,662)	$1,025,742
17	$1,025,742	$82,059	($105,742)	$1,002,060
18	$1,002,060	$80,165	($108,914)	$973,311
19	$973,311	$77,865	($112,181)	$938,994
20	$938,994	$75,120	($115,547)	$898,567
21	$898,567	$71,885	($119,013)	$851,439
22	$851,439	$68,115	($122,584)	$796,970
23	$796,970	$63,758	($126,261)	$734,466
24	$734,466	$58,757	($130,049)	$663,175
25	$663,175	$53,054	($133,951)	$582,278
26	$582,278	$46,582	($137,969)	$490,891
27	$490,891	$39,271	($142,108)	$388,054
28	$388,054	$31,044	($146,371)	$272,727
29	$272,727	$21,818	($150,763)	$143,783
30	$143,783	$11,503	($155,285)	$0

Linear Projections & Safe Spending

- Question: How much can be safely spent?
- Answer: $65,895, or about 6.6%

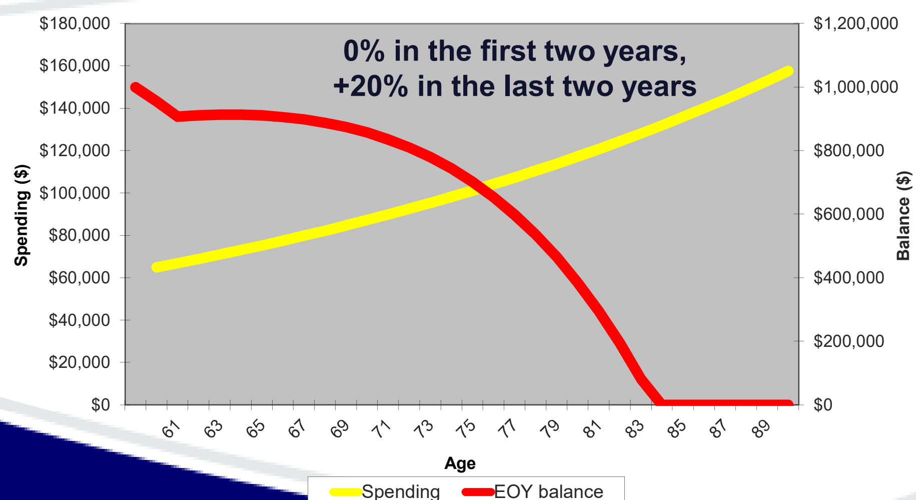
- Is 6.6% the “safe withdrawal rate”?
  - Safe withdrawal rate versus Initial withdrawal rate

- Primary Challenge:
  - Assumes returns are the same each and every year

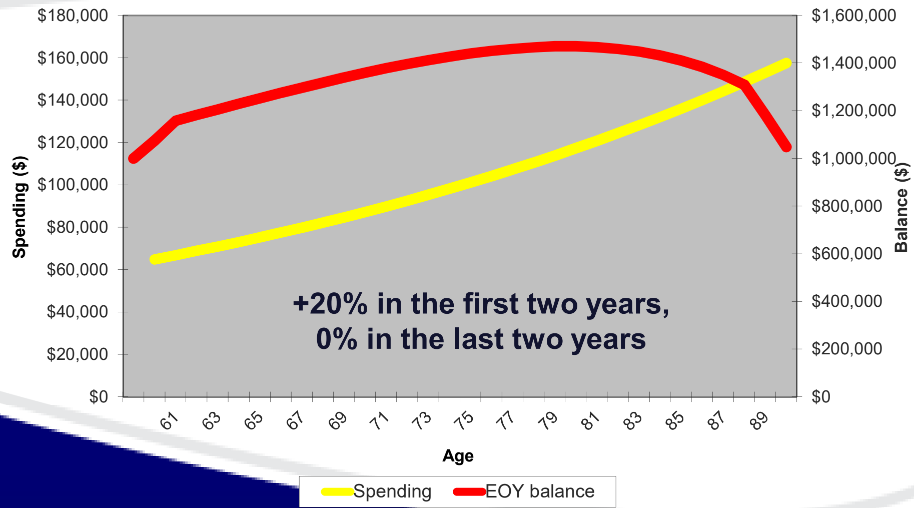
Return Sequencing

- Consequences of return sequencing:
  - What happens if the *average* return of stocks is 10%, but the returns vary from year to year?
  - What if the first two years are 0%, and the last two are 20%?
  - What if the first two years are 20%, and the last two are 0%?

Linear Projections & Safe Spending



Linear Projections & Safe Spending



Return Sequencing

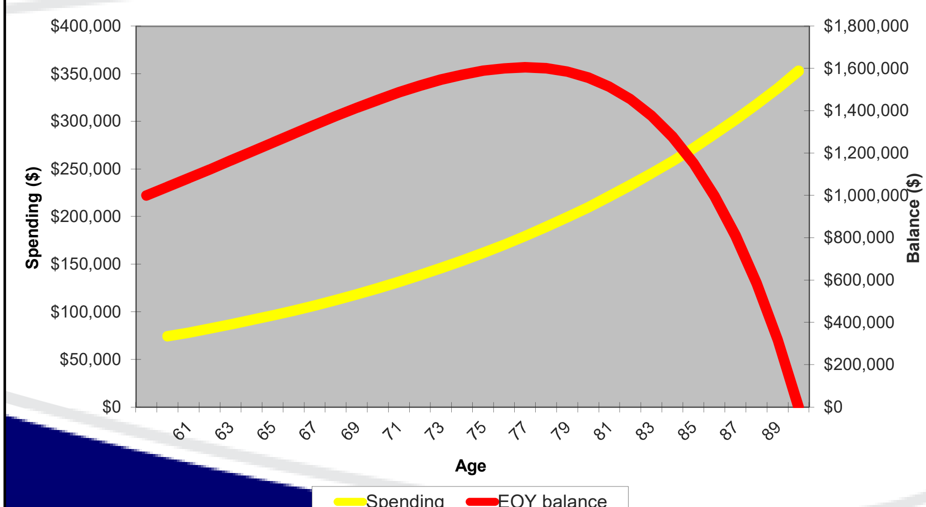
- Consequences of return sequencing:
  - What happens if inflation varies as well?
  - What if inflation is 3.5% instead of only 3%?
    - Funds are extinguished in only 26 years!
  - What if inflation is 2.5% instead of 3%?
    - Funds last for 35 years instead!
  - A 1% fluctuation in inflation can shift a 30-year target by 9 years!

- The combined effect of both can be especially severe…

Return Sequencing

- Retiree environment from 1969 to 1999
  - Inflation: 5.33%
  - Equities (S&P 500): 13.39% (8.06% real)
  - Bonds (5-year Treas.): 8.62% (3.29% real)
- What is the (linear) safe withdrawal rate?
  - 60% equities, 40% fixed portfolio
  - Average portfolio return: 11.48%

Linear Projections & Safe Spending



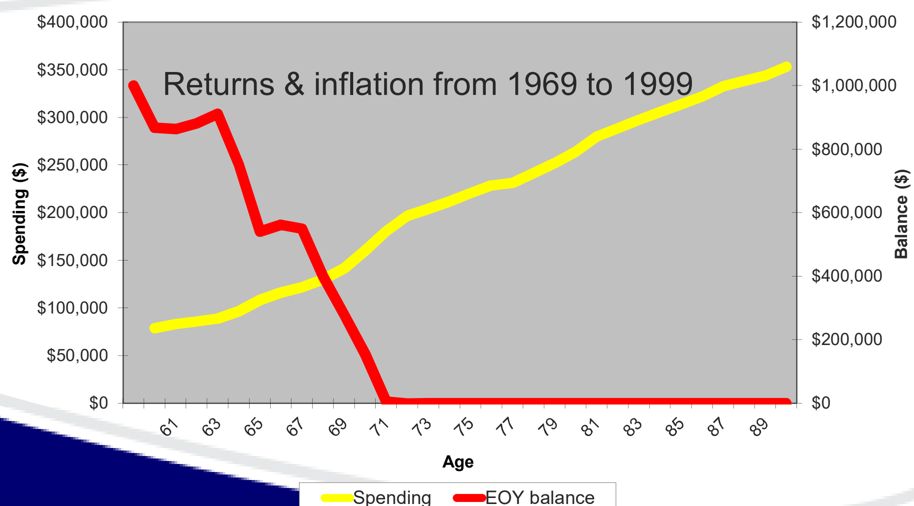
Linear Projections & Safe Spending

- Question: How much can be safely spent with 1969-1999 returns?
- Answer: $74,308, or about 7.4%!

- What happens when we take into account the order of returns and inflation?

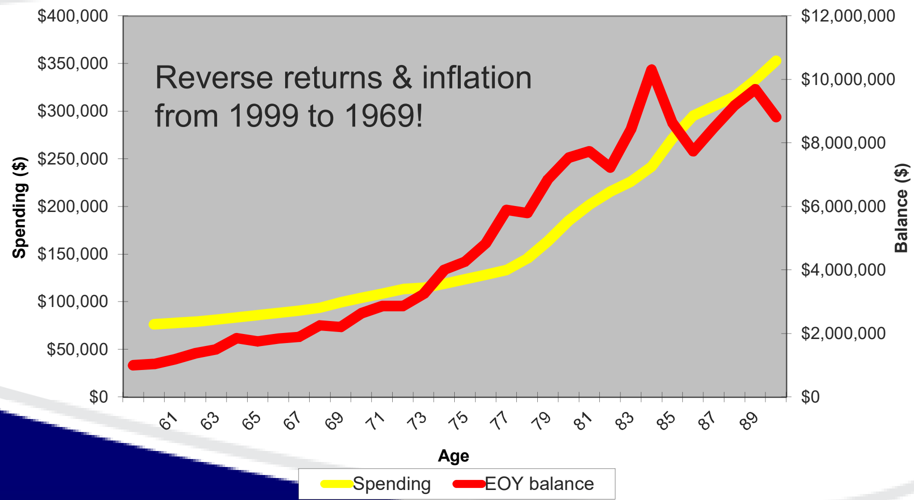
Handouts/Materials: kitces.com/FPAOC15
@michaelkitces

Linear Projections & Safe Spending



© 2013 Michael Kitces | kitces.com
Handouts/Materials: kitces.com/FPAOC15
@michaelkitces

Linear Projections & Safe Spending



Return Sequencing

- The sequences of returns matter, a lot!
- Disparities in the early years have a magnified effect over time!
- The extent of volatility matters too!

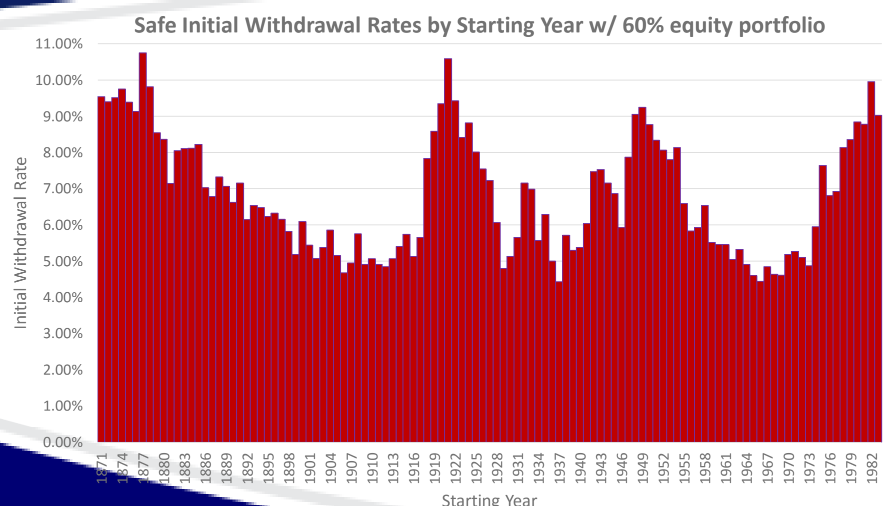
Current Research on Safe Withdrawal Rates

- The challenge of safe withdrawal rates:
  - Given the impact of volatility, how much of a “safety margin” is necessary?
  - Given historical market returns, how high of a withdrawal rate would have survived any historical market scenario?
  - What is the optimal portfolio allocation to survive the volatility?
- Research:
  - Determine which portfolio mixes sustained what maximum withdrawal rates over rolling historical time periods or using Monte Carlo analysis

Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Current Research on Safe Withdrawal Rates



Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Current Research on Safe Withdrawal Rates

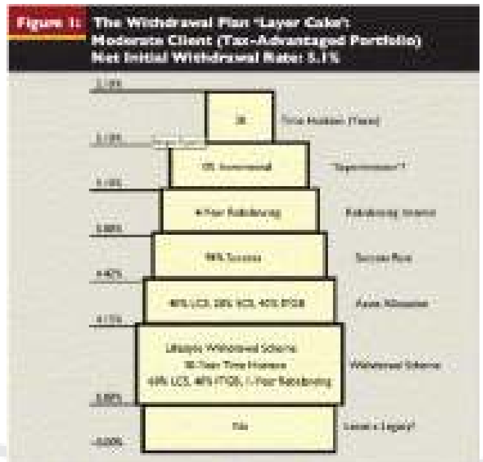
- The challenge of safe withdrawal rates:
  - Given the impact of volatility, how much of a "safety margin" is necessary?
    - ~2% less than the historical average
  - Given the historical returns of the markets, how high of a withdrawal rate would have survived any historical market scenario?
    - ~4% - 4.5% of the initial account balance
  - What is the optimal portfolio allocation to survive the volatility?
    - ~60% in equities (varying from 40%-70% in some studies)

Safe Withdrawal Rates

- Adjustments to Safe Withdrawal Rates
  - Fees / Alpha
  - Taxes
  - Time Horizon
  - Diversification
  - Spending Flexibility
  - Risk Tolerance
  - Valuation & Tactical Shifts
  - Legacy/Longevity Hedging

Safe Withdrawal Rates

- Baking the SWR "layer cake"
  - Bengen (2006): Withdrawal rate factors can be stacked to adjust overall SWR
  - May be positive or negative adjustments



Safe Withdrawal Rates

- Current research summary:

Base Withdrawal Rate	4.0% - 4.5%
Adjustments	
Fees/Alpha	-1% to 1%
Taxes	-0.25% to -0.75%
Legacy/Longevity Hedge	0% to -0.4%
Time Horizon	-0.5% to 1%
Diversification	0.5% to 1%
Spending Flexibility	0% to 1%
Risk Tolerance	0% to 1%
Valuation Environment	0% to 1%
Tactical Asset Allocation	0% to 0.2%
Final Withdrawal Rate	**Sum Total of Adjustments**

Safe Withdrawal Rates

- Sample scenario:
  - Conservative client couple
  - Pays fees of 1.2%
    - Assuming no alpha creation
  - Moderate tax rate of 15% on capital gains and 25% on ordinary income; all taxable accounts
  - Couple is already late 60s; planning 25-year time horizon
  - Extensive diversification across asset classes

Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Safe Withdrawal Rates

- Sample scenario (con’t):
  - Couple has some spending flexibility in discretionary expenses if market declines
    - But doesn’t want to increase likelihood of spending adjustments even further
  - Valuation environment and interest rates are moderate relative to historical standards
  - Couple is willing to make tactical adjustments to protect against high-risk environments
  - Couple would like to leave at least full principal as legacy (and to serve as safety margin)

© 2013 Michael Kitces | kitces.com

Handouts/Materials: kitces.com/FPAOC15

@michaelkitces

Safe Withdrawal Rates

- Sample client couple scenario:

Base Withdrawal Rate	4.0%
Negative Adjustments	
1.2% fees	-0.4%
Moderate Taxes	-0.5%
Legacy/Longevity Hedge	-0.25%
Positive Adjustments	
25-year Time Horizon	0.5%
Significant Diversification	0.75%
Some Spending Flexibility	0.5%
Moderate Valuation/Rates	0.5%
Tactical Asset Allocation	0.2%
Final Withdrawal Rate	**5.3%**

Safe Withdrawal Rates

- Important Caveats
  - Unclear whether all factors are additive
    - May be some interaction effects?
  - Not all factors have been fully tested
    - The future can always be different?
  - Some clients have materially uneven spending
    - E.g., onset of Social Security for an age-55 retiree?
    - Monte Carlo ultimately necessary for such scenarios

Safe Withdrawal Rates

- Summary
  - Safe withdrawal rate research has been expanded significantly over the past 20 years
  - Adjusting factors based on client-specific circumstances can greatly refine recommendations
  - Can be an effective anchor for setting reasonable client expectations
  - Monte Carlo analysis and other tools may still be necessary for further refinement for unusual situations
    - In many situations, though, safe withdrawal rates with adjustments may be more than accurate enough!

Further Reading

- Ameriks, John, Veres, Robert, & Warshawsky, Mark J. "Making Retirement Income Last a Lifetime". Journal of Financial Planning, December 2001.
- Bierwirth, Larry. "Investing for Retirement: Using the Past to Model the Future". Journal of Financial Planning, January 1994
- Bengen, William P. "Determining Withdrawal Rates Using Historical Data". Journal of Financial Planning, October 1994.
- Bengen, William P. "Asset Allocation for a Lifetime". Journal of Financial Planning, August 1996.
- Bengen, William P. "Conserving Client Portfolios During Retirement, Part III". Journal of Financial Planning, December 1997.
- Bengen, William P. "Conserving Client Portfolios During Retirement, Part IV". Journal of Financial Planning, May 2001.
- Bengen, William P. "Baking a Withdrawal Plan 'Layer Cake' for Your Retirement Clients". Journal of Financial Planning, August 2006.
- Blanchett, David M. "Dynamic Allocation Strategies for Distribution Portfolios: Determining the Optimal Distribution Glide Path". Journal of Financial Planning, December 2007.
- Blanchett, David M., & Blanchett, Brian C. "Data Dependence and Sustainable Real Withdrawal Rates". Journal of Financial Planning, September 2008.

Further Reading

- Cooley, Philip L., Hubbard, Carl M., & Walz, Daniel T. "Retirement Savings: Choosing a Withdrawal Rate That Is Sustainable". AAII Journal, February 1998, Volume XX, No. 2.
- Cooley, Philip L., Hubbard, Carl M., & Walz, Daniel T. "Does International Diversification Increase the Sustainable Withdrawal Rates from Retirement Portfolios". Journal of Financial Planning, January 2003.
- Cooley, Philip L., Hubbard, Carl M., & Walz, Daniel T. "Portfolio Success Rates: Where to Draw the Line". Journal of Financial Planning, April, 2011.
- Ervin, Danny M., Filer, Larry H., Smolira, Joseph C. "International Diversification and Retirement Withdrawals". Mid-American Journal of Business, 2005, Vol 20, No 1.
- Finke, Michael, Pfau, Wade D., and Williams, Duncan. "Spending Flexibility and Safe Withdrawal Rates". Journal of Financial Planning, March 2012.
- Frank, Larry R., Mitchell, John B., and Blanchett, David M. "Probability-of-Failure-Based Decision Rules to Manage Sequence Risk in Retirement". Journal of Financial Planning, November, 2011.
- Guyton, Jonathan T. "Decision Rules and Portfolio Management for Retirees: Is the 'Safe' Initial Withdrawal Rate *Too* Safe?" Journal of Financial Planning, October 2004.
- Guyton, Jonathan T., & Klinger, William J. "Decision Rules and Maximum Initial Withdrawal Rates". Journal of Financial Planning, March 2006.

Further Reading

- Kitces, Michael E. "Resolving the Paradox - Is the Safe Withdrawal Rate Sometimes Too Safe?" The Kitces Report, May 2008.
- Kitces, Michael E. "Dynamic Asset Allocation and Safe Withdrawal Rates". The Kitces Report, April 2009.
- Kitces, Michael E. "Investment Costs, Taxes, and the Safe Withdrawal Rate". The Kitces Report, February 2010.
- Kitces, Michael E. "The Next Generation of Monte Carlo Analysis". The Kitces Report, February 2012.
- Kizer, Jared. "Drawing Down and Looking Abroad: International Diversification and Sustainable Withdrawal Rates". Journal of Indexes, May/June 2005.
- Klinger, William J. "Using Decision Rules to Create Retirement Withdrawal Profiles". Journal of Financial Planning, July 2007.
- Pfau, Wade D. "An International Perspective on Safe Withdrawal Rates: The Demise of the 4 Percent Rule?" Journal of Financial Planning, December 2010.
- Pfau, Wade D. "Can We Predict the Sustainable Withdrawal Rate for New Retirees?" Journal of Financial Planning, August 2011a.
- Pfau, Wade D. "Safe Savings Rates: A New Approach to Retirement Planning over the Life Cycle". Journal of Financial Planning, May 2011b.

Further Reading

- Pfau, Wade D. "GLWBs: Retiree Protection or Money Illusion?" Advisor Perspectives, December 13, 2011c.
- Pfau, Wade D. "Capital Market Expectations, Asset Allocation, and Safe Withdrawal Rates". Journal of Financial Planning, January 2012.
- Pye, Gordon B. "Sustainable Investment Withdrawals". Journal of Portfolio Management, Summer 2000.
- Pye, Gordon B. "Adjusting Withdrawal Rates for Taxes and Expenses". Journal of Financial Planning, April, 2001.
- Solow, Kenneth R., Kitces, Michael E., and Locatelli, Sauro. "Improving Risk-Adjusted Returns Using Market-Valuation-Based Tactical Asset Allocation Strategies". Journal of Financial Planning, December 2011.
- Spitzer, John J., Strieter, Jeffrey C., Singh, Sandeep. "Guidelines for Withdrawal Rates and Portfolio Safety During Retirement". Journal of Financial Planning, October 2007.
- Tomlinson, Joe. "A Utility-Based Approach to Evaluating Investment Strategies". Journal of Financial Planning, February 2012.

Questions?

Handouts & additional materials:
www.kitces.com/FPAOC15

Contact: michael@kitces.com