

The Impact of Market Valuation on Safe Withdrawal Rates

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Safe Withdrawal Rates 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?

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Safe Withdrawal Rates

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 the historical returns of the markets, how high of a withdrawal rate would have survived any historical market scenario?
- What is the optimal portfolio allocation to survive the volatility?

■ Research:

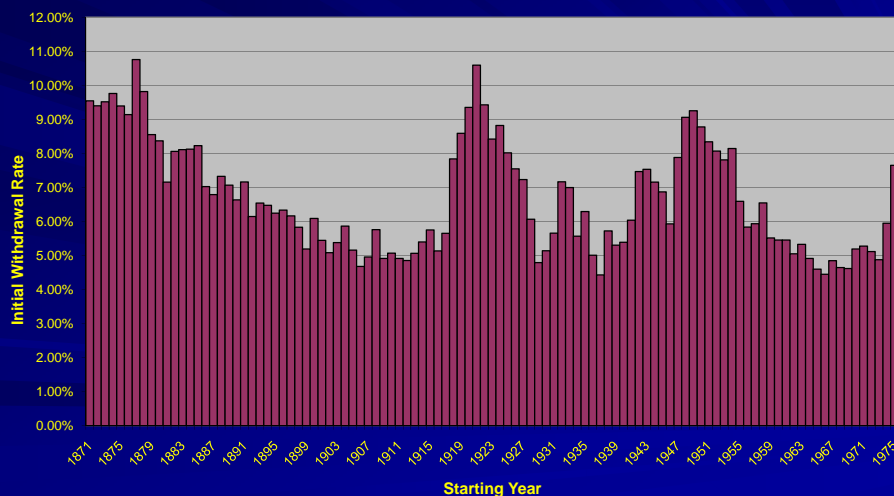
- Determine which portfolio mixes sustained what maximum withdrawal rates over rolling historical time periods or using Monte Carlo analysis

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Safe Withdrawal Rates

Current Research on Safe Withdrawal Rates

Safe Initial Withdrawal Rates by Starting Year w/ 60% equity portfolio



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Safe Withdrawal Rates

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)

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Safe Withdrawal Rates

The Timing Paradox

- The Timing Paradox – Sensitivity to Initial Conditions
 - Client A and Client B both have \$1,000,000
 - Client A decides to retire this year
 - “Safe” spending is stated to be \$45,000
 - Client B continues to work
 - The aggregate portfolio declines by 20%
 - Client B (account balance now down to \$800,000) retires at the start of year 2
 - “Safe” spending is stated to be \$36,000
 - But Client A’s safe spending is up to \$46,350!
- Is there anything we can do to predict or adjust?

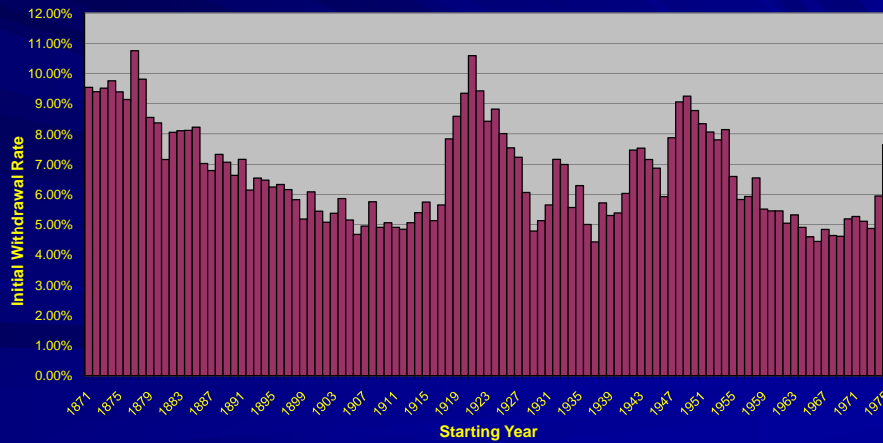
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Safe Withdrawal Rates

The Timing Paradox

■ Are low safe withdrawal rate scenarios “random”?

Safe Initial Withdrawal Rates by Starting Year w/ 60% equity portfolio



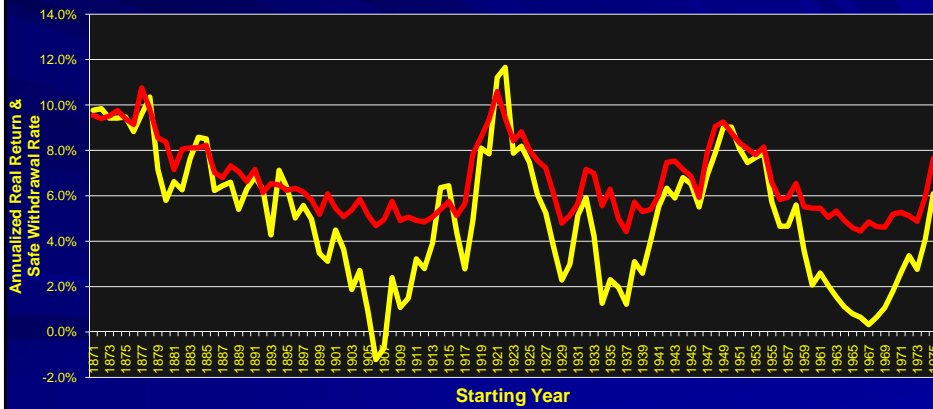
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Safe Withdrawal Rates

The Timing Paradox

■ The SWR is heavily influenced by early returns

Annualized real returns of 60/40 for 15 years vs. 30-yr safe withdrawal rate



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Safe Withdrawal Rates The Timing Paradox

- Low safe withdrawal rates are not random
 - Move in broad trends over the span of many years
- Safe withdrawal rates are highly correlated with early returns
 - Safe withdrawal rate has a 0.91 correlation with real returns over the first 15 years
 - Relationship holds for low safe withdrawal rate scenarios, *and* for high safe withdrawal rate scenarios!
- If early returns can be predicted, safe withdrawal rate trends would be predictable as well
- What can be done to forecast returns?

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Safe Withdrawal Rates Forecasting Market Returns

- Components of long-term stock returns
 - Dividend yield
 - Earnings growth
 - Change in P/E multiple
- Forecasting return components:
 - Earnings growth – in the aggregate, tends to grow at the rate of nominal GDP
 - Dividend yield – stated yield, tends to move inversely with prices (at least in the short-run)
 - P/E multiple – tends to move in long trends over time with market sentiment

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Safe Withdrawal Rates Forecasting Market Returns

■ P/E multiples

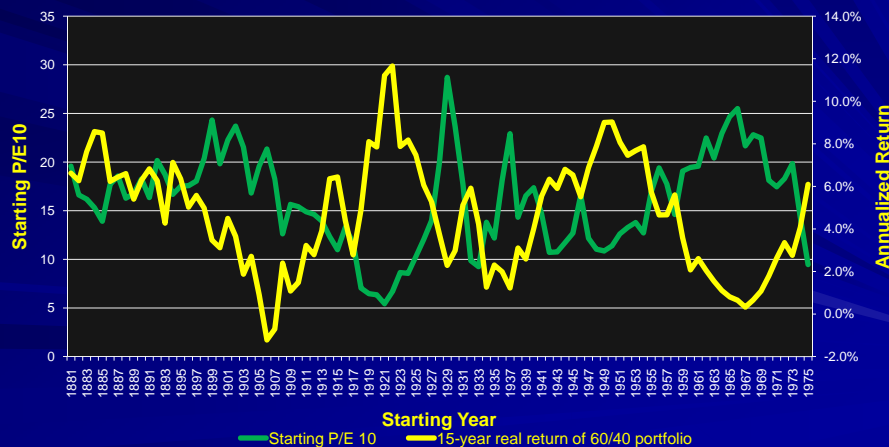
- Represents a headwind or tailwind for price returns in the market
 - Tend to have a significant impact on growth over 10-15 years
- Moves cyclically over multi-year trends
 - Extremes in valuation are ultimately unsustainable
- May be a material factor in predicting long-term total returns
- Can be smoothed out using multi-year averages of earnings to adjust for shorter-term market cycles

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Safe Withdrawal Rates Forecasting Market Returns

■ P/E ratios strongly related to subsequent returns

Starting P/E 10 vs. subsequent 15-year return of balanced portfolio



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Safe Withdrawal Rates

Forecasting Safe Withdrawal Rates

- Predicting safe withdrawal rate scenarios
 - High P/E ratios inversely correlated to 15-year returns (-0.61)
 - High valuation environments associated low-return periods
 - Low valuation environments associated high-return periods
 - 15-year returns positively correlated to safe withdrawal rates (0.91)
 - Strong 15-year returns associated with higher SWRs
 - Weak 15-year returns associated with lower SWRs
 - Thus, valuation environments are predictive of safe withdrawal rates

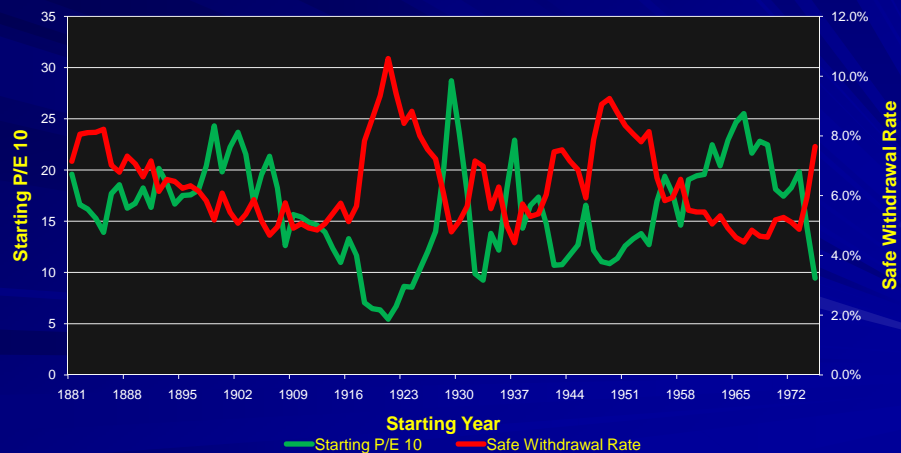
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Safe Withdrawal Rates

Forecasting Safe Withdrawal Rates

- Using P/E ratios to predict safe withdrawal rates

Starting P/E 10 vs. Safe Withdrawal Rate over subsequent 30-year period



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Safe Withdrawal Rates

Forecasting Safe Withdrawal Rates

- Quantifying the relationship between P/E & SWR
(#1 quintile = most favorable valuation & vice versa)

60/40 Safe Withdrawal Rates based on P/E10 quintiles					
P/E Quintile	Lower P/E	Upper P/E	Lowest SWR	Highest SWR	Average SWR
1	5.4	12.0	5.7%	10.6%	8.1%
2	12.0	14.7	4.8%	8.3%	6.7%
3	14.7	17.6	4.9%	8.1%	6.3%
4	17.6	19.9	4.9%	7.2%	5.8%
5	19.9	28.7	4.4%	6.1%	5.1%

- Extreme quintiles have significant impact
- Trends hold across lowest, higher, and average SWR

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Safe Withdrawal Rates

Forecasting Safe Withdrawal Rates

- Quantifying the relationship between P/E & SWR
(#1 quintile = most favorable valuation & vice versa)

P/E10 with varying equity exposure						
P/E Quintile	Safe withdrawal rate w/ equity exposure of:					
	0%	20%	40%	60%	80%	100%
1	2.5%	3.8%	5.2%	5.7%	5.8%	5.8%
2	2.5%	3.5%	4.5%	4.8%	5.0%	5.0%
3	2.4%	3.3%	4.3%	4.9%	5.0%	5.0%
4	2.5%	3.4%	4.2%	4.9%	4.7%	4.5%
5	2.5%	3.2%	3.9%	4.4%	4.3%	4.0%

- Supports 60% equity exposure in risky environments
- Significantly diminishing returns for higher equity exposure

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Safe Withdrawal Rates

Forecasting Safe Withdrawal Rates

■ Developing rules based on P/E ratios

Rules for adjusting Safe Withdrawal Rates	
<i>P/E10</i>	<i>Safe withdrawal rate impact</i>
Above 20.0 “overvalued”	Utilize base safe withdrawal rate of 4.5%
Between 12.0 and 20.0 “fairly valued”	Increase safe withdrawal rate by 0.5% to 5.0%
Below 12.0 “undervalued”	Increase safe withdrawal rate by 1.0% to 5.5%

■ Factors to increase the safe withdrawal rate:

- NOT being in an overvalued environment
- Actually being in an undervalued environment

■ Should apply as an overlay on top of other factors that enhance safe withdrawal rates

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Safe Withdrawal Rates

Resolving the Paradox

■ Original scenario:

- Both started with \$1,000,000
- Client A retired @ \$45,000 spending
- Client B waited
- Portfolio declined 20% (market declined ~35%-40%)
- Client A spending \$46,350 in year 2
- Client B spending \$36,000 in year 2

■ Incorporating market valuation

- Market decline would have caused portfolio to move into different valuation zone, increasing withdrawal rate by 0.5%
- Client B should actually get to spend \$40,000
- Not a perfect adjustment, but a helpful factor

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Safe Withdrawal Rates Market Valuation Today

■ Where are we now?



■ Current P/E10 ratio: ~19

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Safe Withdrawal Rates Implications for the Future

■ Safe withdrawal rates are based on “worst case scenarios”

- Should be dynamic based on the probability and potential impact of a “bad” scenario occurring
- Not necessarily effective as a short-term timing indicator, but supported for long-term planning

■ Currently progressing through a phase out of worst valuations, and potentially to the best

■ May have portfolio/investment implications as well

- Adjusting exposure to risk assets during extremes
- Altering portfolio assumptions based on current environment

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Safe Withdrawal Rates Summary

- Safe withdrawal rates vary, but are not random
- SWRs are highly correlated with 15-year market returns, which are inversely correlated with market valuation
- Market valuation is a tool that can anticipate SWRs
- A broad range of market valuations provide little direct input, but valuation extremes are predictive
- Market valuation is not a perfect timing indicator and cannot account for all fluctuations, but it does help!

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Safe Withdrawal Rates

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Questions???

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