GMO

MODELLING YOUR ASSETS, OR, ARE FINANCIALS PLANNERS STUCK IN THE 1970S?

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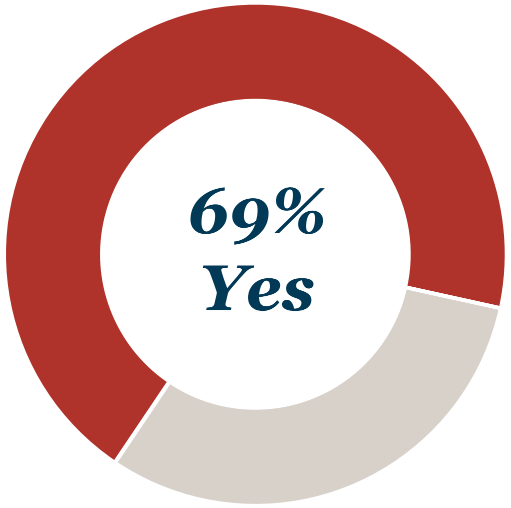
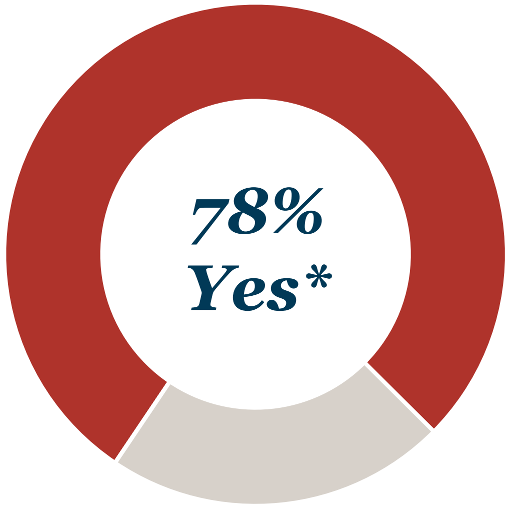
~200 RESPONSES TO INVITATION SURVEY

95% response rate–thank you!

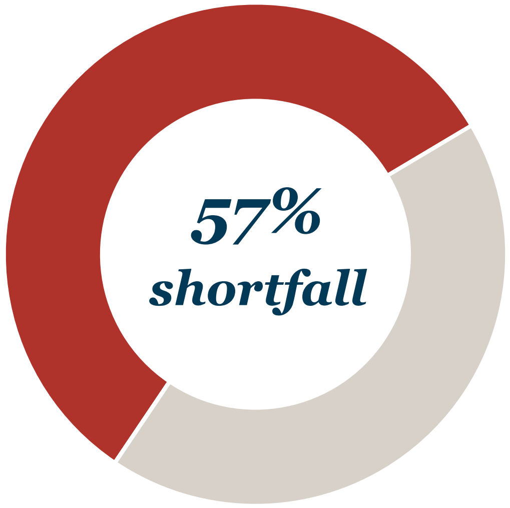
Do you use
Monte Carlo Simulations?



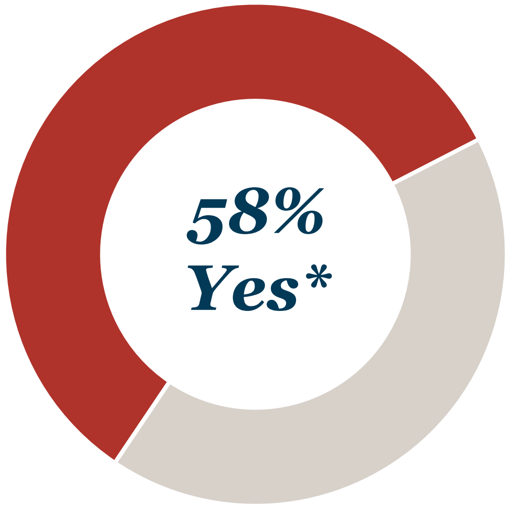
Do you have any concerns
with the results?



What is the single biggest risk
that your clients face?



Do you struggle aligning your
client's financial plans with their
investment portfolio?



*some form of yes

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BEHAVIOURAL BACKDROP – ALARMING LACK OF CRITICAL THINKING

Question your assumptions

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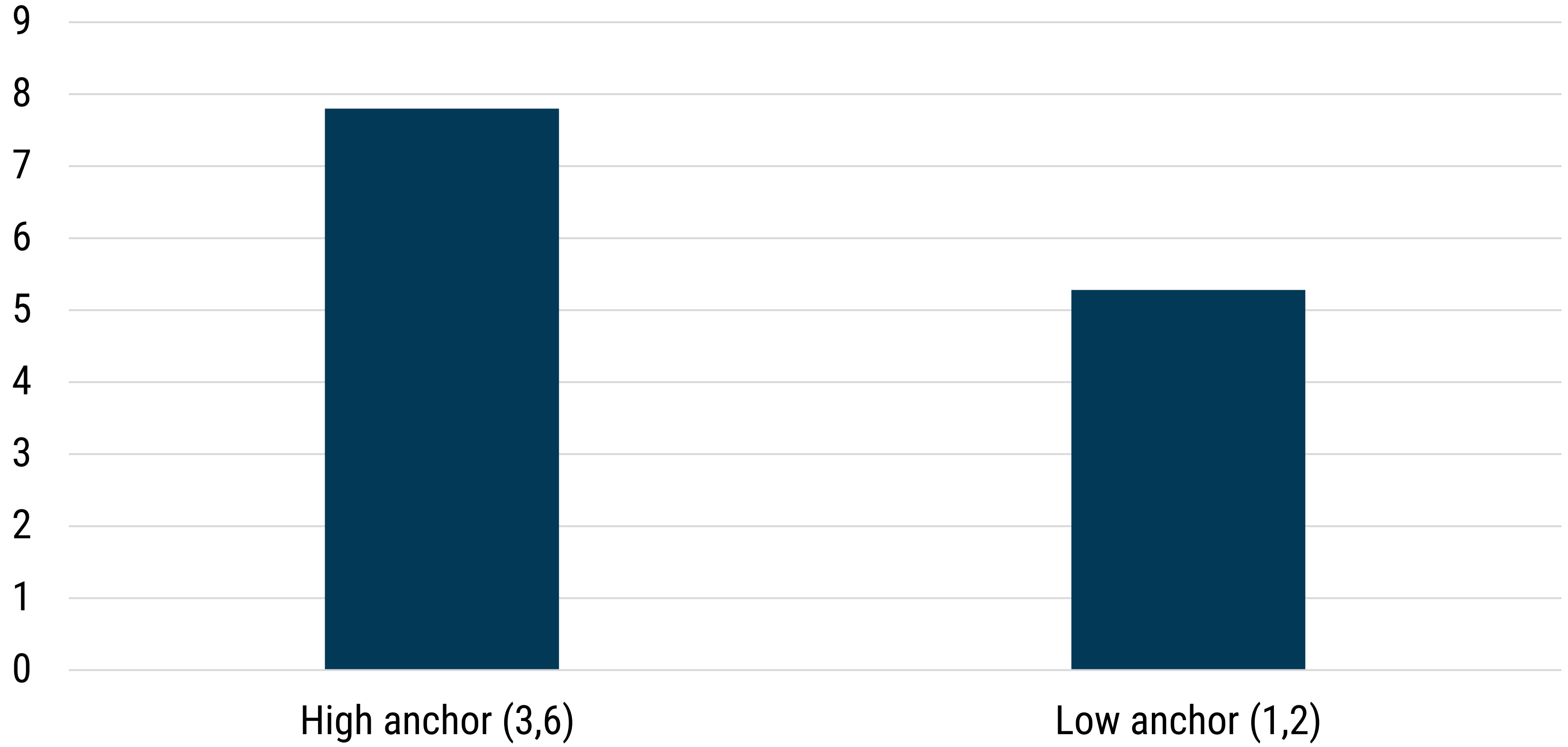
BEHAVIOURAL BACKDROP – ANCHORING

Clinging to irrelevant inputs and assumptions

JAIL SENTENCE BY ANCHOR GROUP



Source: Englich, Mussweiler and Strack (2005)

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FINANCE GUYS ARE NO BETTER

Write down the last digits of your telephone number, estimate the number of doctors in London

ESTIMATED NUMBER OF DOCTORS IN LONDON

Source: Montier

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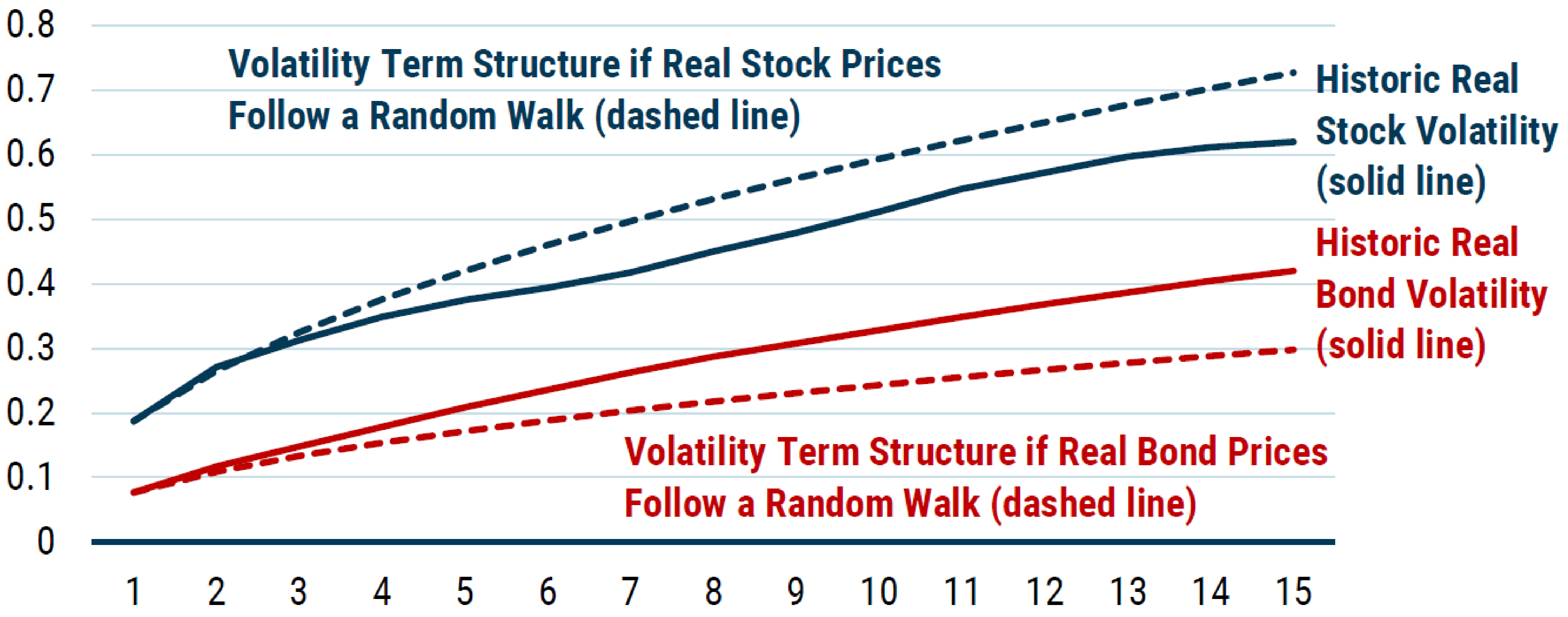
DO YOUR ASSUMPTIONS CAPTURE THE KEY ELEMENTS OF REALITY?

All models are an abstraction, a map on a scale of 1:1 is no use to anyone



Source: FRED. GMO

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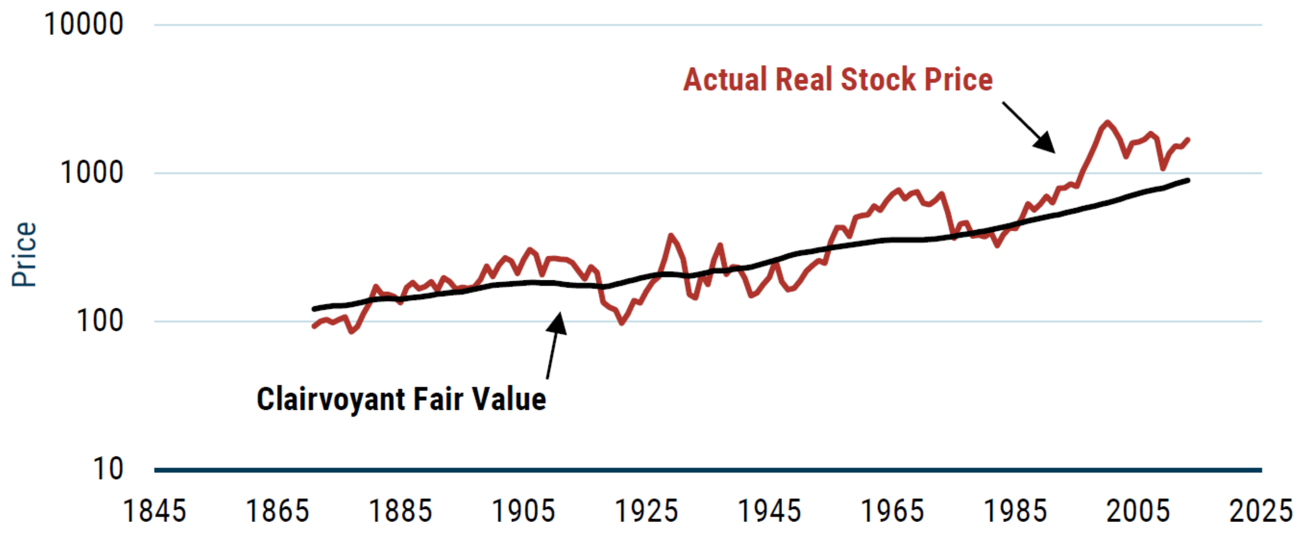
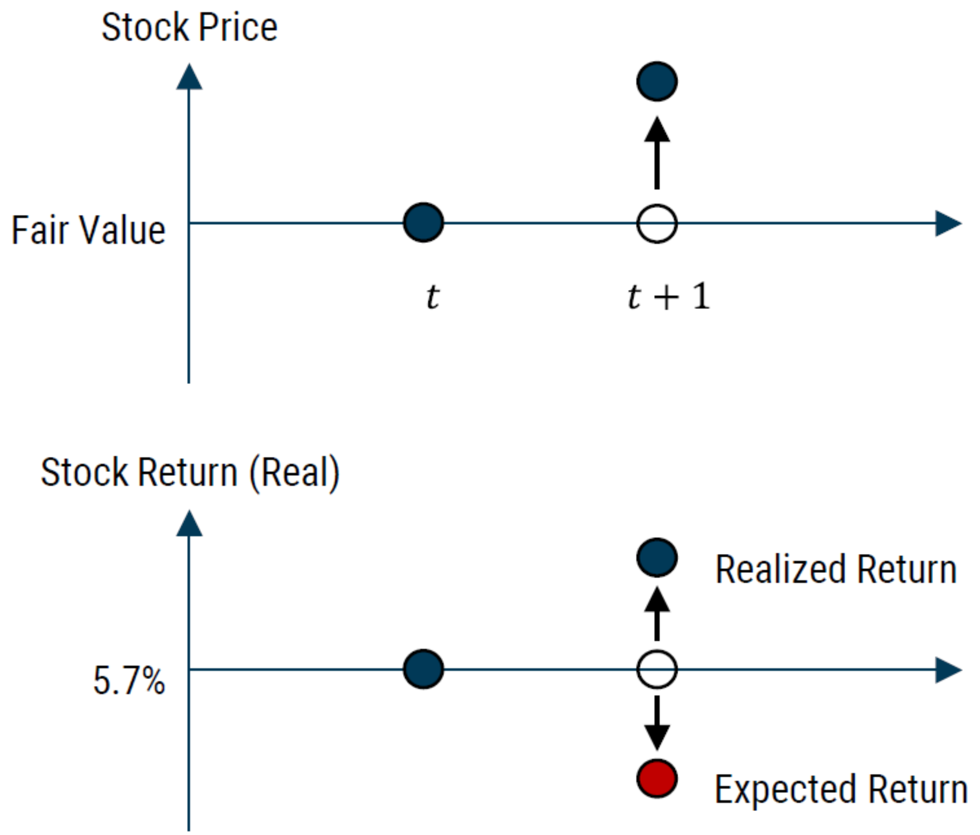
UNDERSTANDING THE MECHANISMS MAKES THIS MORE THAN JUST DATA MINING

The stock volatility profile is driven by mean reversion of valuation





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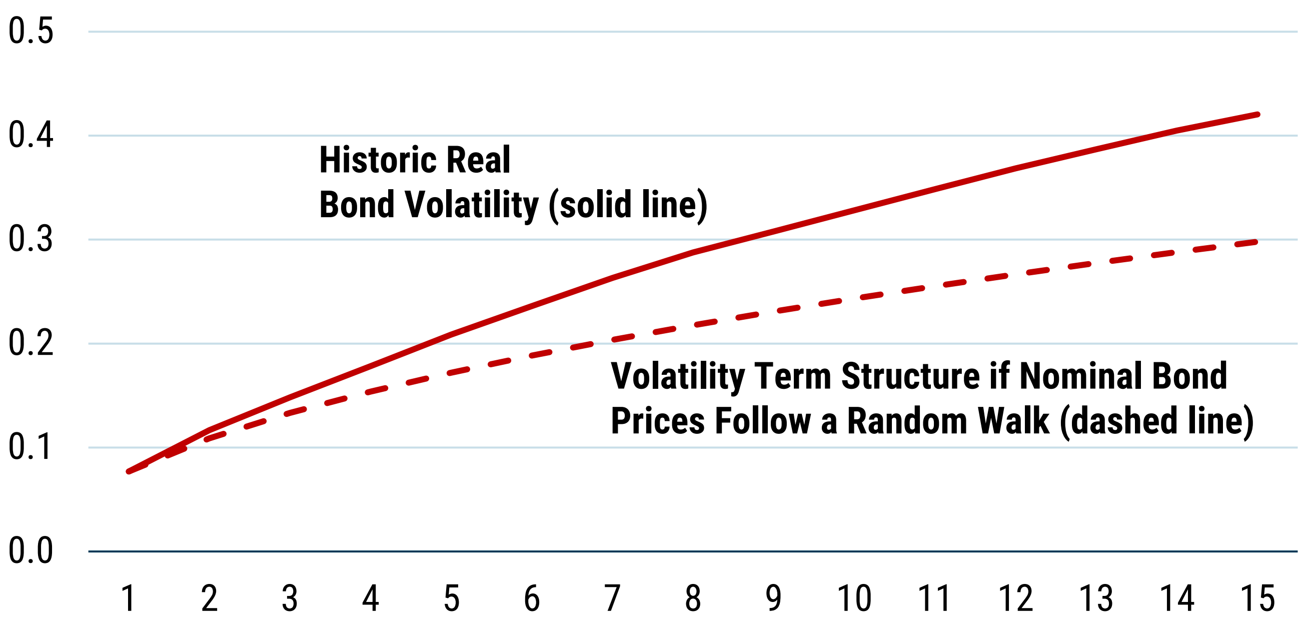
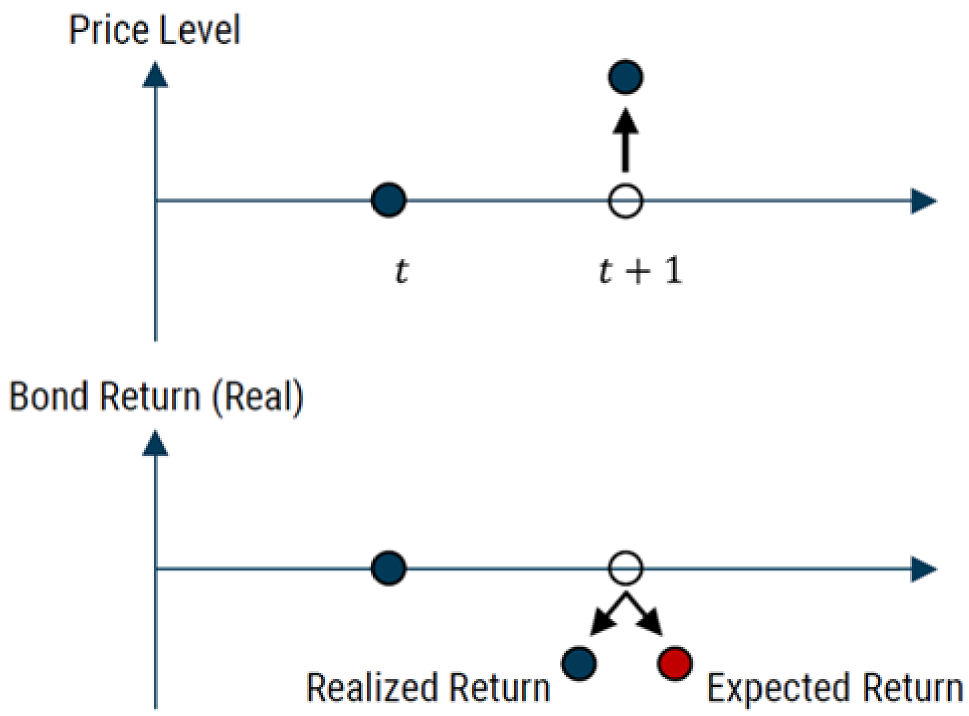
UNDERSTANDING THE MECHANISMS MAKES THIS MORE THAN JUST DATA MINING

Nominal bonds in real terms





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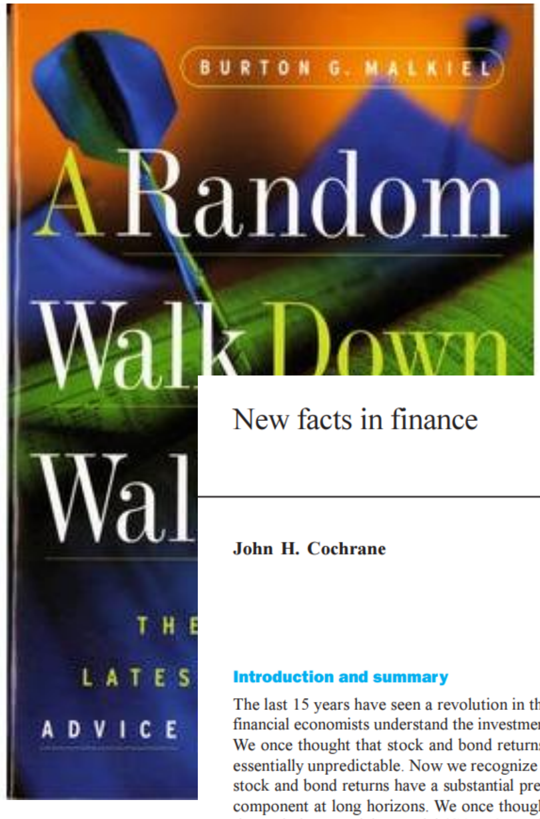
A RANDOM WALK IS NOT A GOOD DESCRIPTION OF EITHER REAL STOCK OR REAL BOND RETURNS

Stuck in the 1970s

Consensus of academics used to think:



Now they think:

New facts in finance

John H. Cochrane

Introduction and summary

The last 15 years have seen a revolution in the way financial economists understand the investment world. We once thought that stock and bond returns were essentially unpredictable. Now we recognize that stock and bond returns have a substantial predictable component at long horizons. We once thought that the capital asset pricing model (CAPM) provided a good description of why average returns on some stocks, portfolios, funds, or strategies were higher than others. Now we recognize that the average returns of many investment opportunities cannot be explained by the CAPM, and "multifactor models" are used in its place. We once thought that long-term interest rates reflected expectations of future short-term rates and that interest rate differentials across countries reflected expectations of exchange rate depreciation. Now, we see time-varying risk premiums in bond and

economists' view of the investment world was based on three bedrocks:

1. The CAPM is a good measure of risk and thus a good explanation of the fact that some assets (stocks, portfolios, strategies, or mutual funds) earn higher average returns than others. The CAPM states that assets can only earn a high average return if they have a high "beta," which measures the tendency of the individual asset to move up or down with the market as a whole. Beta drives average returns because beta measures how much adding a *bit* of the asset to a diversified portfolio increases the volatility of the *portfolio*. Investors care about portfolio returns, not about the behavior of specific assets.

2. Returns are unpredictable, like a coin flip. This is the *random walk* theory of stock prices. Though there are bull and bear markets; long sequences of good and bad *past* returns; the expected *future* return

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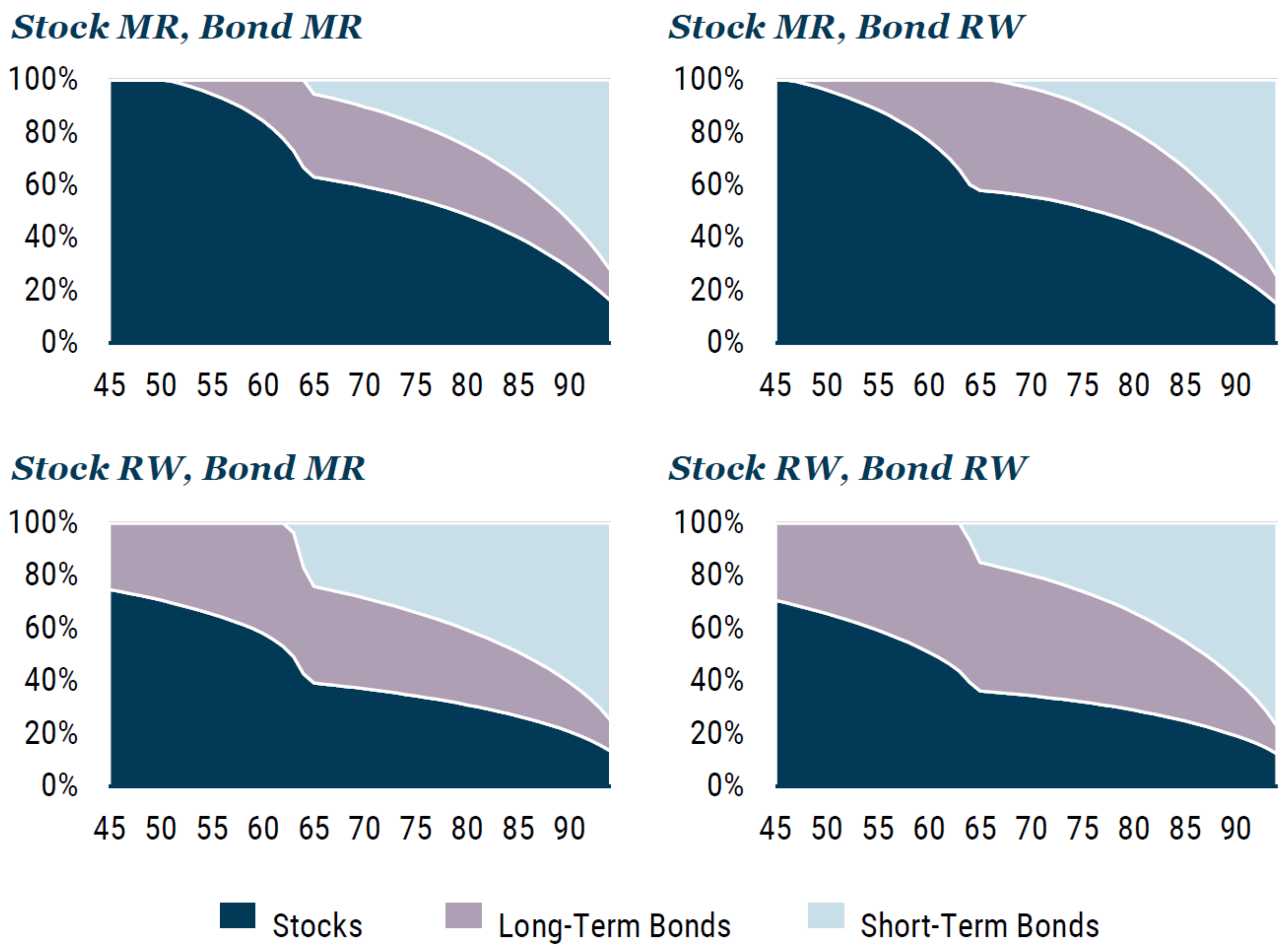
BUT SO WHAT?

Assuming asset prices follow a random walk leads to bond-heavy portfolios



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Firm Advisors | Firm Constraints | Firm Models | Firm Views | Clients | My Portfolio | My Needs | My Glidepath | My Strategies | Education | Disclosures

My Glidepath (GP1) - ESF | My Glidepath (GP1) - Fix Wgt | GP Rets (Equilib) | Sim Rets (Equilib)

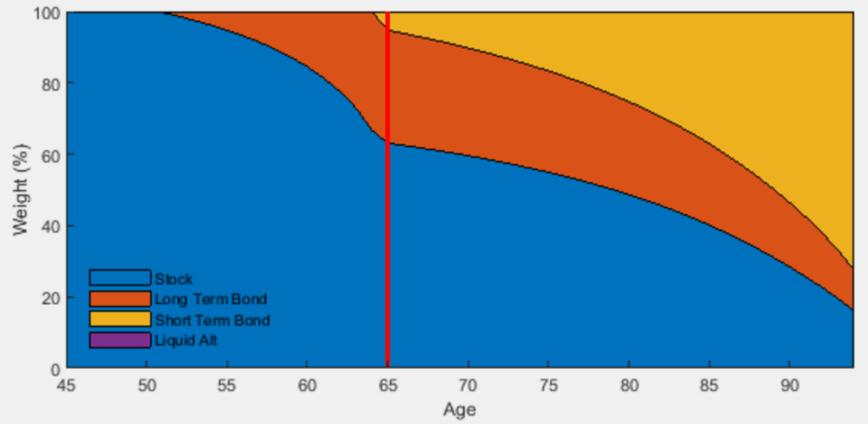
Optimal ESF Parameters		Constraints	
Pre-retirement Real TCR	5.0%	Max stock	100%
Post-retirement Real TCR	3.0%	Max liquid alts	0%
Save Changes		Rebuild Glidepath	

One Year G/L Range: Max Stock 100%

0.5% 2.5% % 2.5% 0.5%

-45% -34% 46% 57%

Mean reversion



Glidepath 2 - ESF | Glidepath 2 - Fix Wgt | GP Rets (Equilib) | Sim Rets (Equilib)

Optimal ESF Parameters		Constraints	
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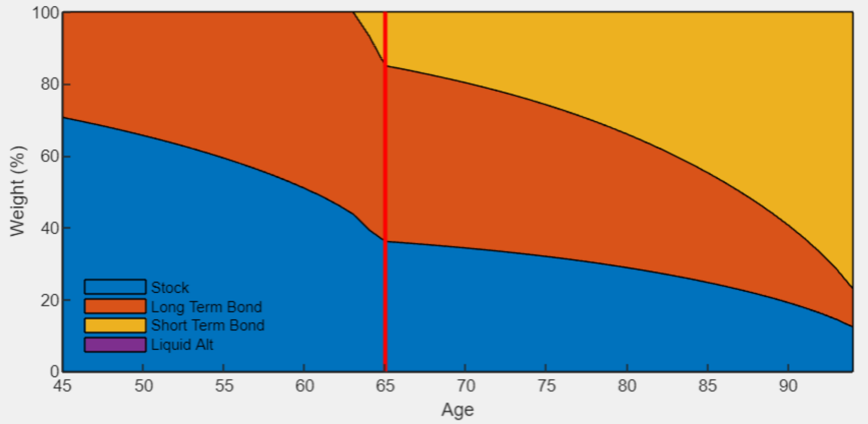
One Year G/L Range: Max Stock 100%

0.5% 2.5% % 2.5% 0.5%

-45% -34% 46% 57%

Mean reversion



Simulated Outcomes

Target Wealth

Wealth Units: Real (Current Dollars) | Pre-retirement Real TCR: 5.0% | Post-retirement Real TCR: 3.0%

Simple Cash Flows

Initial Wealth 500,000 | Annual savings 25,000 growing (nominally) at 4.2% | Inflation 4.2%

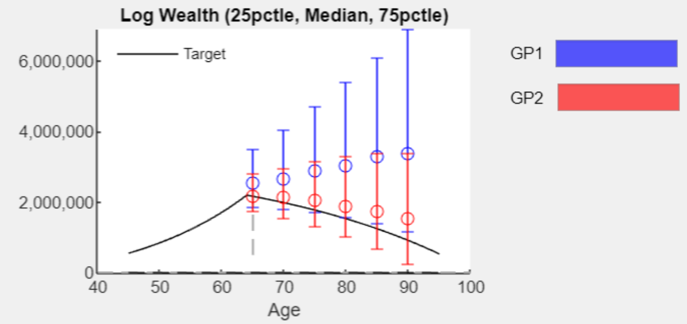
Retirement withdrawal $X (current dollars) X 100,000 growing (nominally) at 4.2% | Mean reversion

Sims 3000 | Frequency Annual | RUN

Summary | Details | Returns

Long Term	My Glidepath (GP1)	GP2
Prob of success (Wealth > 0) at age 95	85%	73%
Median Wealth at age 95 (current dollars)	3,366,015	1,291,472
95th percentile at age 95 (current dollars)	18,642,247	8,371,632
5th percentile at age 95 (current dollars)	-1,349,692	-1,506,138
Avg. Median Wealth in Retirement (current dollars)	2,336,424	1,597,278
Avg. Annual Withdrawal in Retirement (current dollars)	100,000	100,000
Avg. Age to First Reach $2,160,000	61	63

Short Term	My Glidepath (GP1)	GP2
1 Year Drawdown ($, 1st percentile)	-143,436	-105,231
1 Year Drawdown (%, 1st percentile)	-29%	-21%



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QUESTIONS & ANSWERS

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