

Our Changing Future Open Forum
Joshua Corrigan

A Holistic Framework for Life Cycle Financial Planning

15 April 2010

Current FSA Illustration Requirements

- FSA illustration requirements set out in Conduct of Business Sourcebook (COBS13)
- Deterministic projections are a **MUST**, stochastic projections are **OPTIONAL**
- Deterministic nominal returns that must be used are:

Class of Business	Low	Medium	High
Tax-exempt pensions, annuities	5%	7%	9%
All other	4%	6%	8%

Not risk sensitive

Inconsistent risk premia

Not market sensitive

Focus on costs

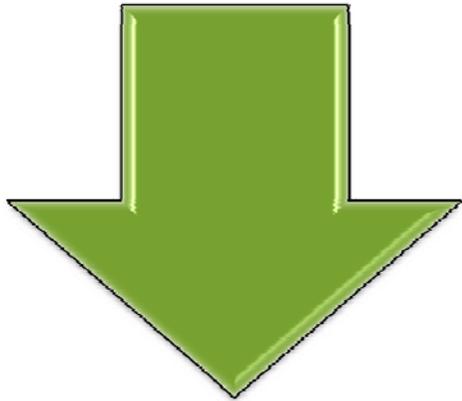
Can't illustrate path dependencies

Current Financial Planning Framework

- Based largely on regulatory minimum illustration standards
- Wealth accumulation mindset
- Limited product illustrations, comparisons and value assessment
 - Consider 5 alternative at-retirement product strategies
 - Which one is best / most optimal / most appropriate / constitutes “value”???

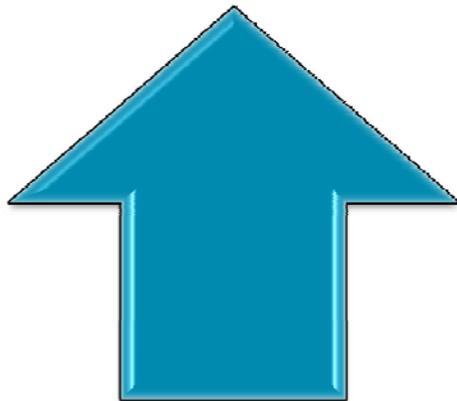
Strategy	A	B	C	D	E
Product	Income Drawdown	GMWB for life	Indexed Annuity	Fixed Annuity	Drawdown + Longevity Annuity
Benefit Level	5.5%	5.5%	5.7%	7.7%	5.2%
Cost	2%	2%+1%	None (explicit)	None (explicit)	2%
Death Benefit	Yes	Yes	No	No	Yes
Flexibility	High	High	Low	Low	High
Income Upside	Yes	Yes (ratchet)	Yes	No	Yes

Catalysts for Change



Supply Drivers (Providers)

- Product solutions are evolving to meet consumer demands
- Move towards fee-for-advice models
- Improvements in stochastic modelling and IT infrastructure



Demand Drivers (Consumers)

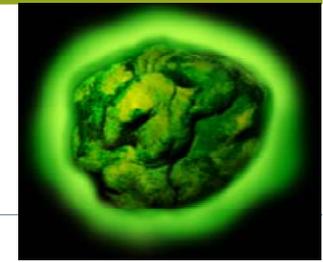
- Responsibility for ensuring income security has been left to retirees
- Retirement savings are inadequate to meet post retirement objectives
- Increased appreciation for retirement related risks

Elements of a New Holistic Framework

1. Total wealth management	Human and all sources of financial capital Human capital profile and it's yield are fundamental inputs Interaction with investment / product strategy
2. Consumption / income based goals	Income should be the primary focus for most people Even for accumulation, wealth is only a means to an end Bequest motive a factor for very HNW
3. Explicit risk assessment and management	Risk identification over various life stages Choice of investment and product strategy to mitigate risks
4. Objective holistic stochastic analysis	Consistent objective outcome illustrations Including guarantees and path-dependent benefits (e.g. Ratchets) Clear presentation / communication of outcomes and risks
5. Consideration of behavioural biases	Asymetric risk preferences Framing of alternative choices is critical Role of advisor / distributor is critical

Human Capital

Value of a Person as an Economic Unit



Wage income represents the yield on HC

$$\sum_{t=1}^n \frac{\text{Current wage} \times (1 - \text{tax rate}) \times (1 + \text{wage growth})^t}{(1 + \text{discount rate})^t}$$

	PERSON A	PERSON B	PERSON C
PERSON	25 YO GRADUATE	40 YO EXECUTIVE	40 YO TEACHER
CURRENT WAGE	50,000	150,000	50,000
WAGE GROWTH	5%	7.5%	5%
TAX RATE	40%	45%	40%
WORKING YEARS (N)	40	25	25
DISCOUNT RATE	9.00%	11.00%	6.00%
HUMAN CAPITAL	634,269	1,441,948	670,929

Why is Human Capital Useful?

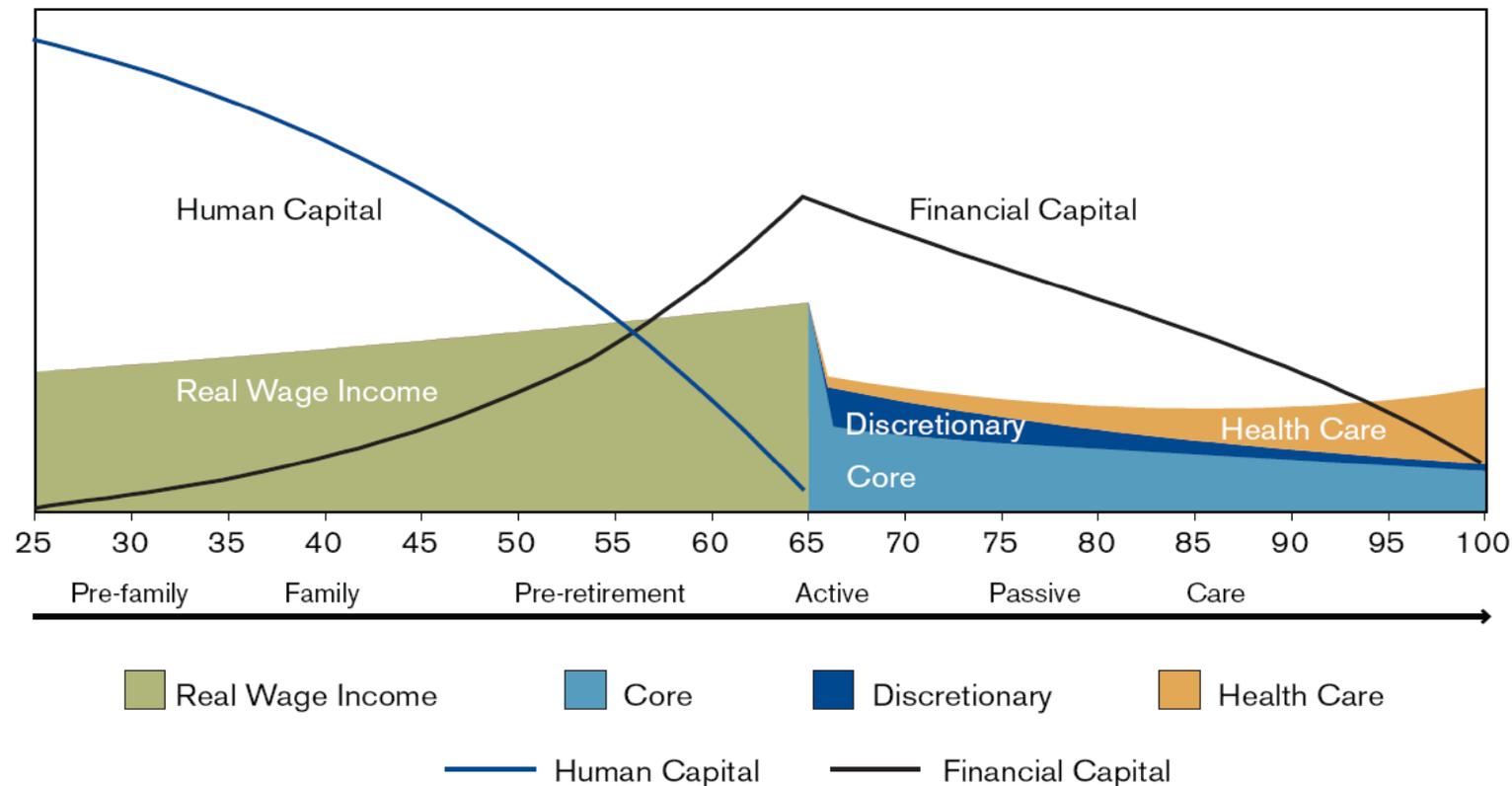
- Framework for making personal decisions e.g. cost benefit analysis of education and employment
- Determines demand for life insurance protection
- Key driver of future lifetime savings, wealth and consumption
- Influences asset allocation strategy through correlation of human and financial capital

		EMPLOYMENT INDUSTRY				
		FINANCIAL SERVICES	IT	HEALTH	TECHNOLOGY	AVIATION
INVESTMENT ALLOCATION	FINANCIAL SERVICES	15%	5%	9%	8%	8%
	IT	10%	21%	9%	13%	12%
	HEALTH	1%	2%	3%	2%	2%
	TECHNOLOGY	11%	11%	8%	17%	10%
	AVIATION	<1%	<1%	<1%	<1%	7%

Source: Gerhard (2009)

Holistic Lifecycle Framework

The central feature is the transition of human capital into financial capital and thus into future income to meet future consumption needs



Financial capital is only a mechanism to transfer income and consumption to later periods

Consumption Based Goals

- Asset purchases



- Children education



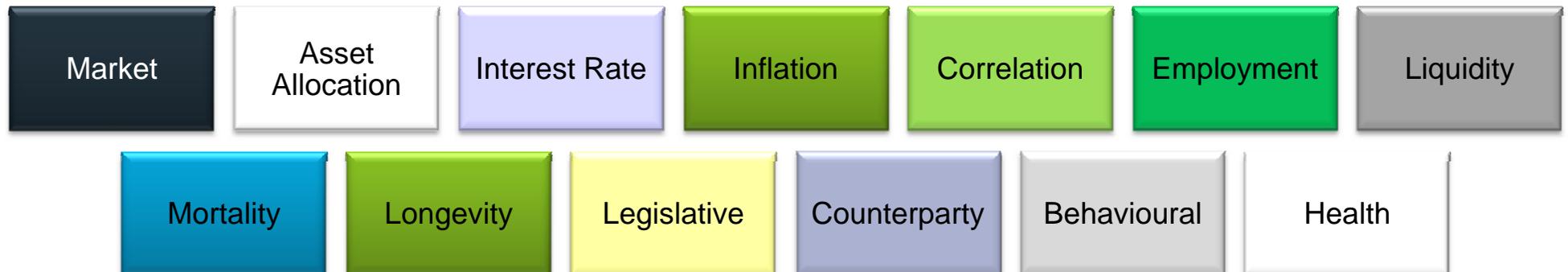
- Retirement income to meet:
 - Core expenses
 - Spending the kids' inheritance
 - Medical needs



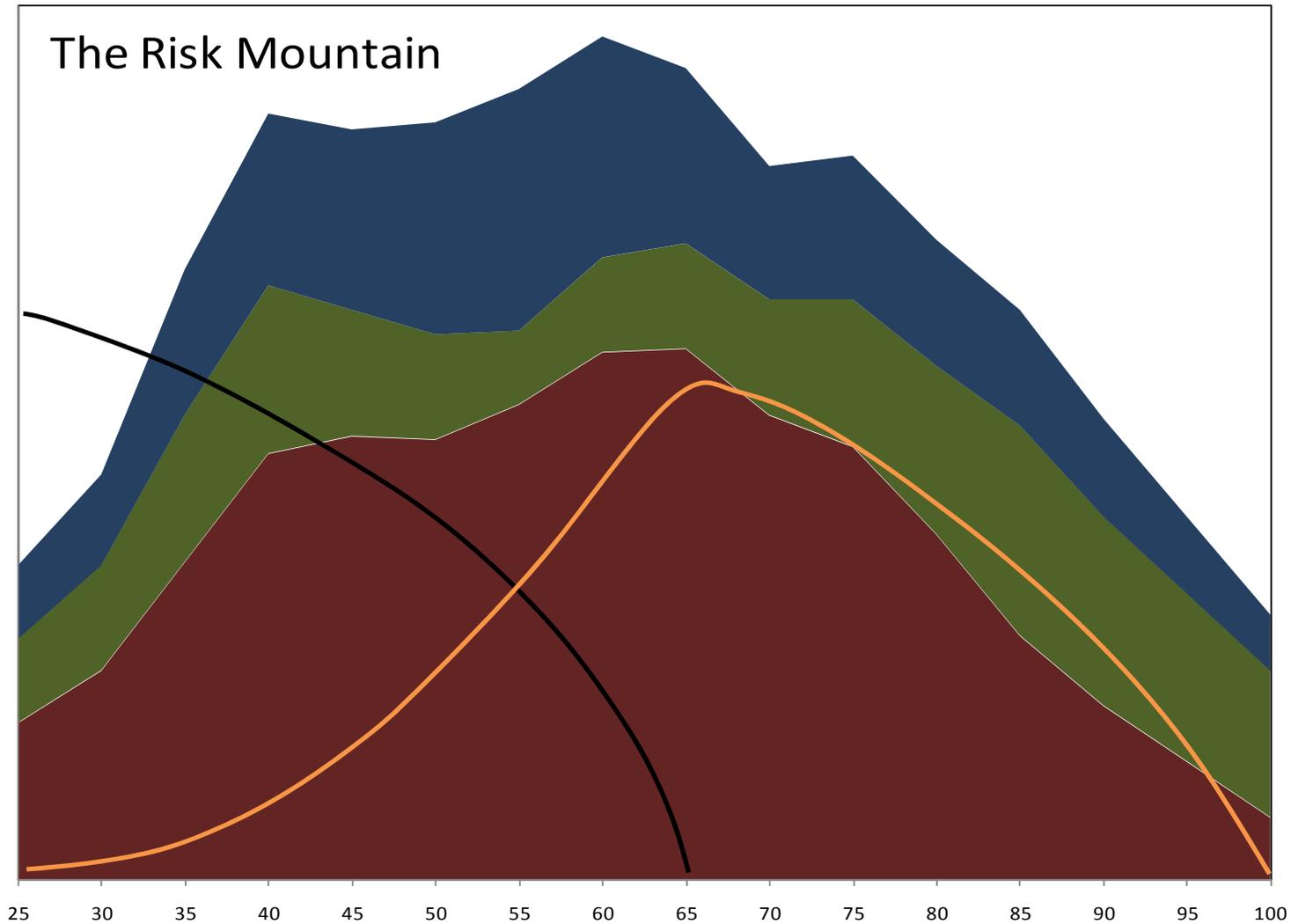
Wealth → Income

Return → Risk

- Primary focus is on income, not financial wealth
 - Wealth is simply a means to an end → to deliver future income
 - Income is used to satisfy needs and wants
- Risks need to be explicitly identified, understood, assessed and managed in order to realise long term goals



Lifecycle Risk Assessment

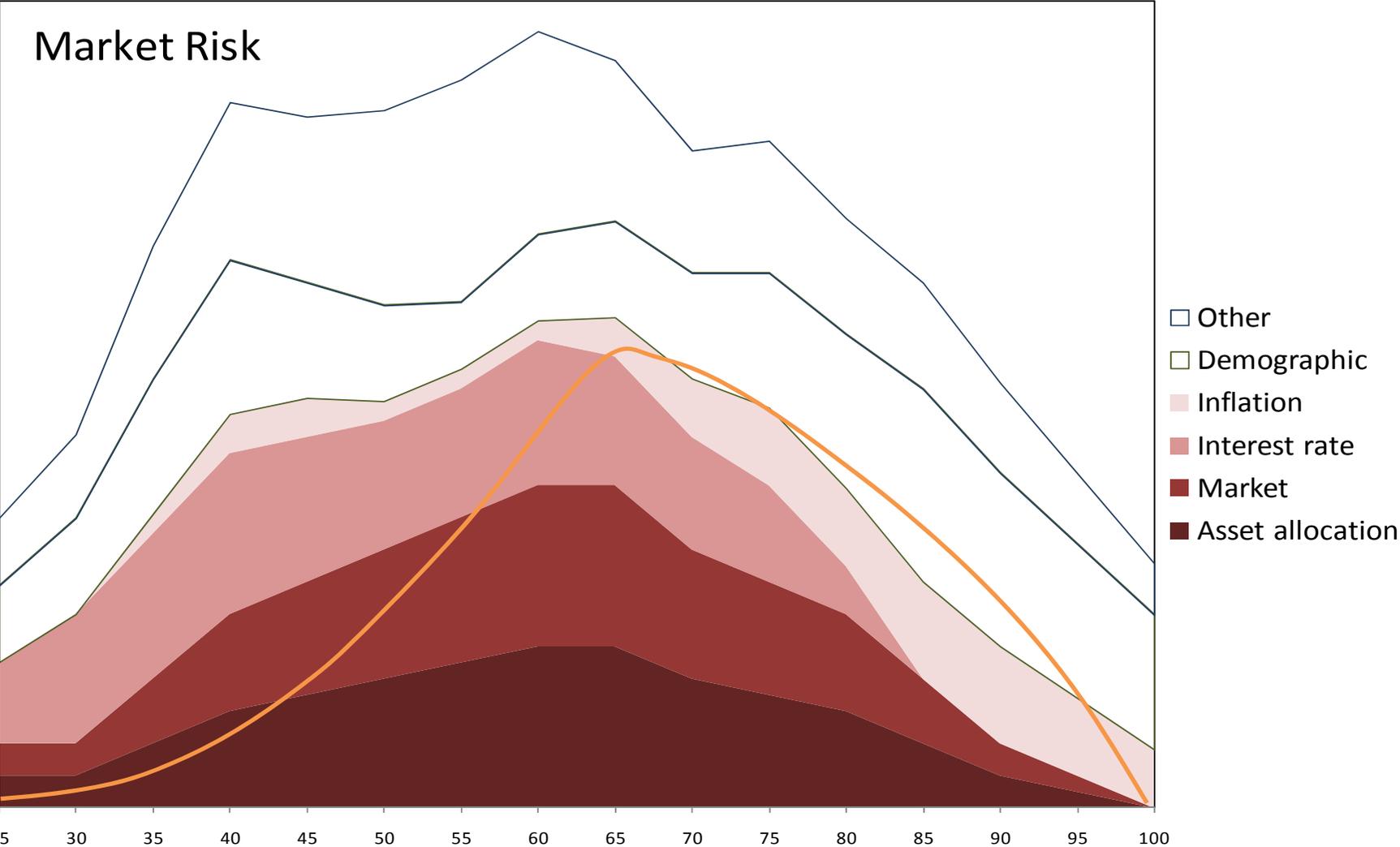


Relative exposures
to risk types

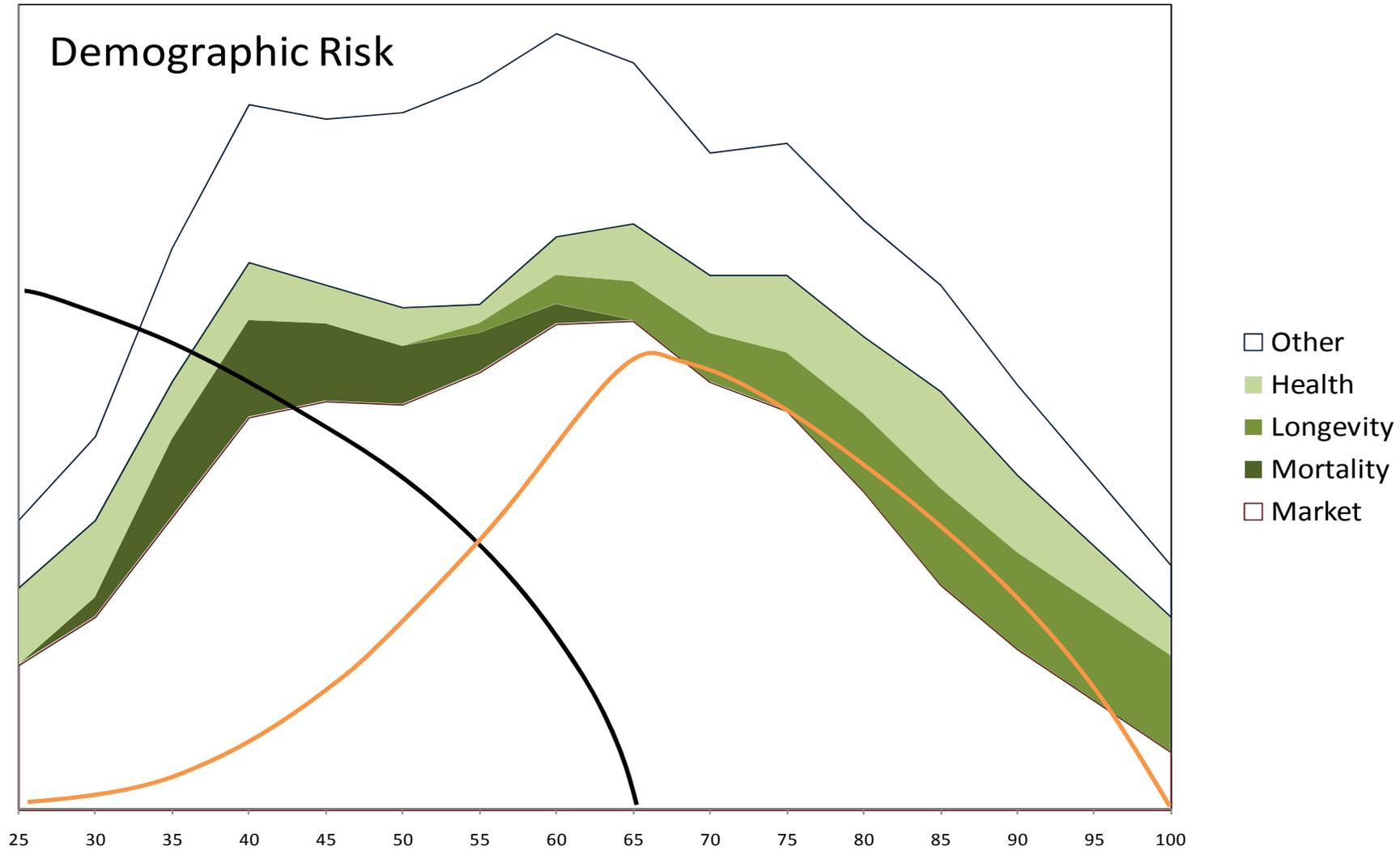
Drivers are
human and
financial capital

- Other
- Demographic
- Market
- Human capital
- Financial capital

Market Risk: Function of Financial Capital



Demographic Risk: Function of FC and HC



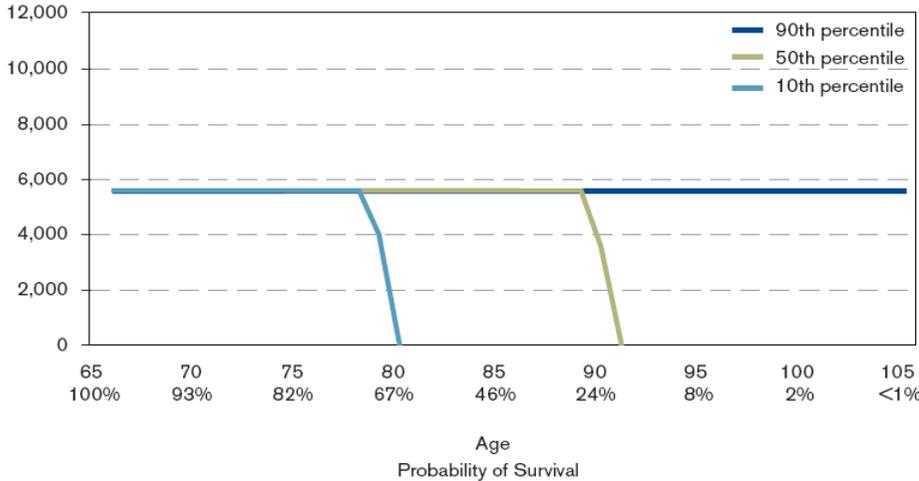
Impact on Residual Risks

Strategy	A	B	C	D	E
Product	Income Drawdown	GMWB for life	Indexed Annuity	Fixed Annuity	Drawdown + Longevity Annuity
Benefit Level	5.5%	5.5%	5.7%	7.7%	5.2%
Benefit Increase	None	3 yr ratchet	3%	0%	N/a
Flexibility	High	High	Low	Low	High
Residual Risk Assessment (post-purchase)					
Income	High	Low	Low	None	Moderate
Market	High	Low	None	None	Moderate
Interest rate	Moderate	Low	None	None	Low
Inflation	Moderate	Moderate	Low	High	Moderate
Liquidity	None	None	High	High	Low
Mortality	None	None	High	High	Low
Longevity	High	None	None	None	Low
Health	Low	Low	High	High	Moderate

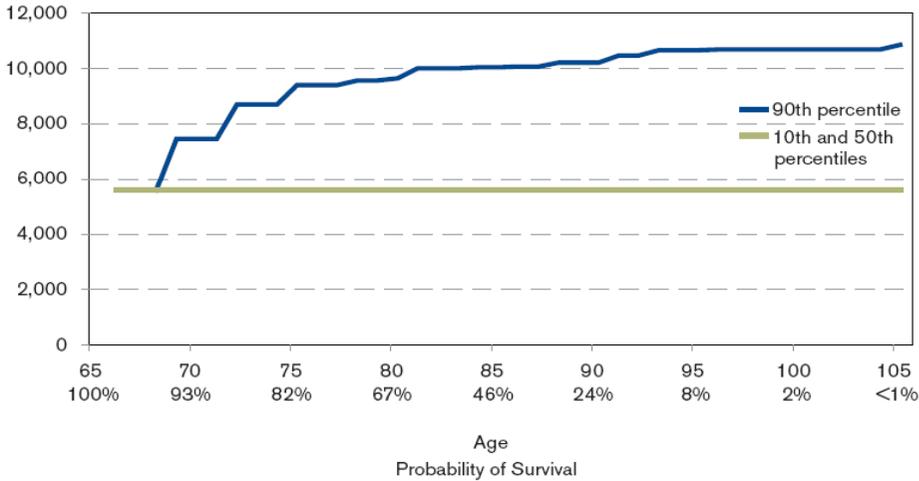
Objective Consistent Outcomes Analysis

Comparison of Income Distributions by Product

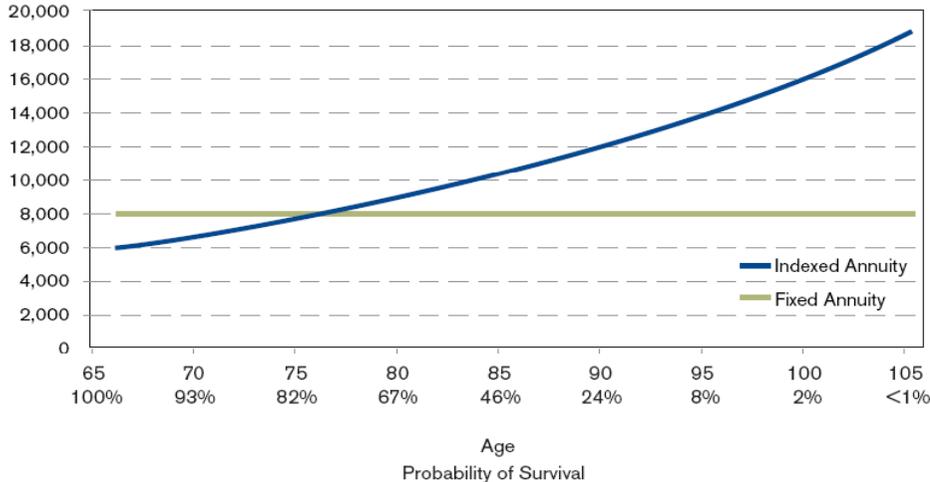
Income Drawdown



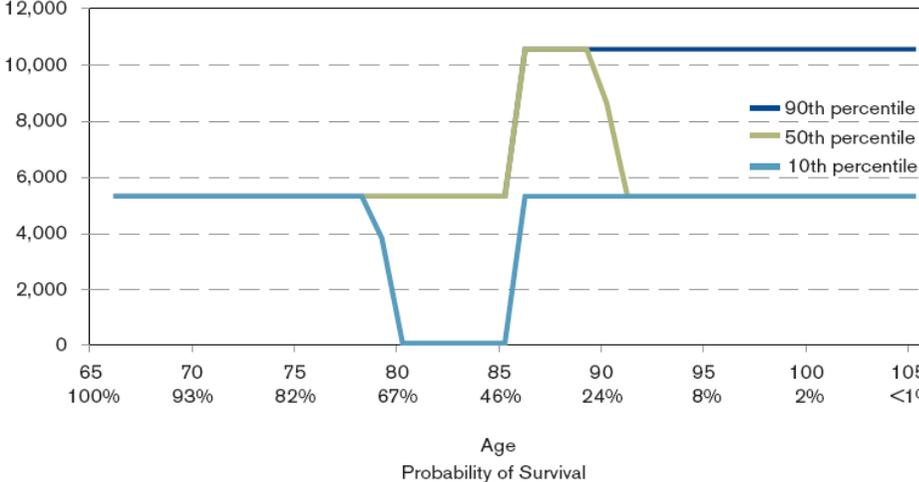
GMWB for Life with 3yr ratchet



Fixed and 3% Indexed Annuities



Income Drawdown + Deferred Annuity



Value Assessment

Risk Aversion and Behavioural Biases

- Whilst outcomes are objectively assessed, value is subjective
- Although most people are risk adverse, behavioural biases play an important role in the utility maximisation decision making process

Availability Heuristic

Incorrect assignment of outcome probabilities based upon what individual perceives

Mental Accounting

incorrect framing of the decision, usually too narrow

Cumulative Prospect Theory

Subjective weights assigned to outcomes relative to a reference point

Ambiguity Aversion

More adverse to uncertain gambles than to risky gambles (known probs)

Conjunction Fallacy

An event (e.g. death) can be easily perceived to happen in multiple ways → over-weighted



Myopia

Lack of foresight or interest

Inertia

To maintain current positions and choose default options

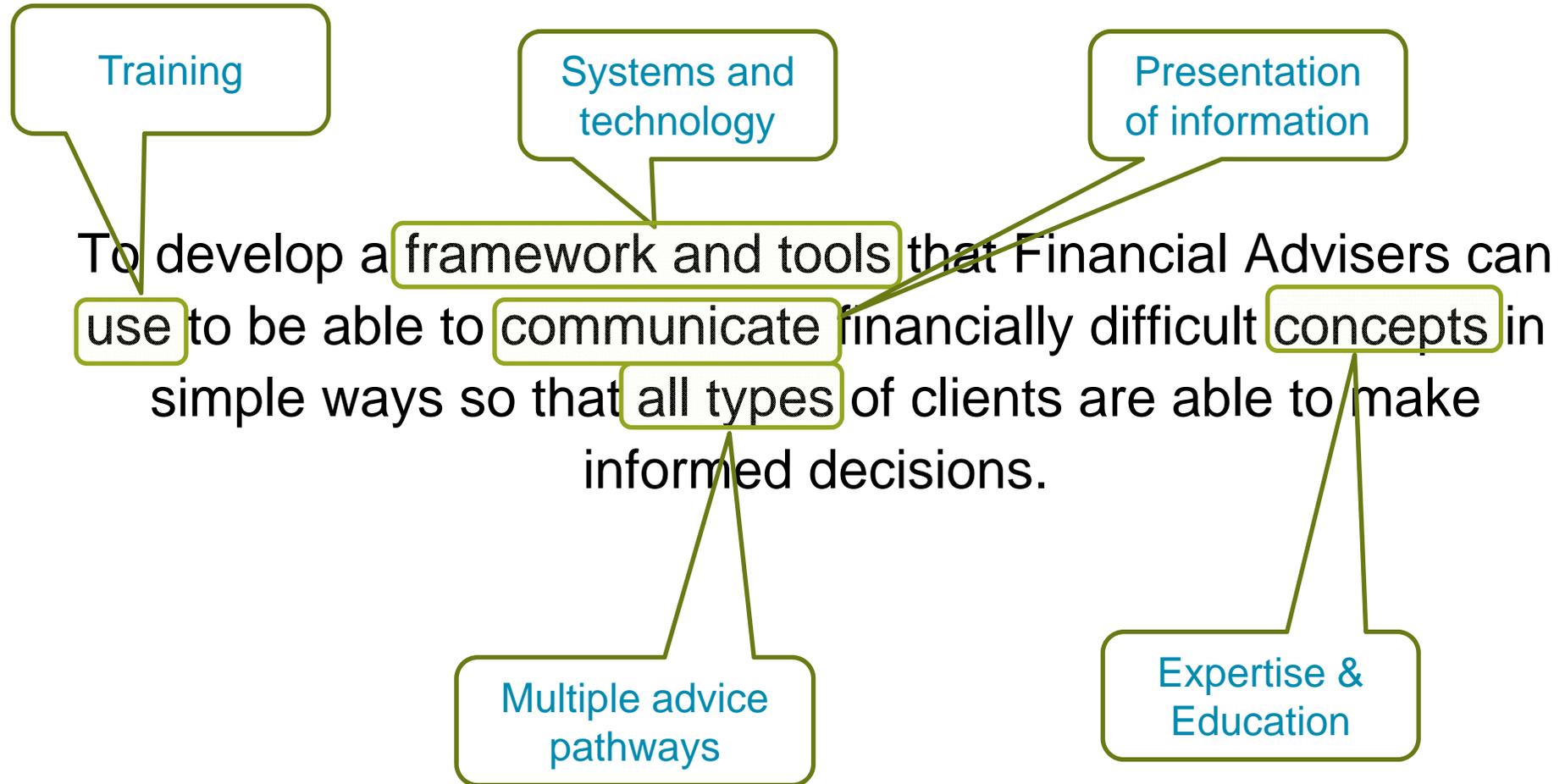
Hyperbolic Discounting

High discount rate for future income

Pride and Prejudice

Not wanting to admit failure e.g. sell bad assets as to avoid crystallising a loss

The Challenge



Solution Requirements

- Professional and industry level efforts are also needed
- Stakeholder engagement:
 - Product providers
 - Financial planners
 - Regulators
 - Pension schemes



Communication is a MAJOR Hurdle

- Illustrating complex concepts in an easily understandable way
- Use of visual aids and natural language
- How do other professions communicate risk?
 - Medical / doctors
 - Weather forecasters
 - Gambling



Illustration Examples

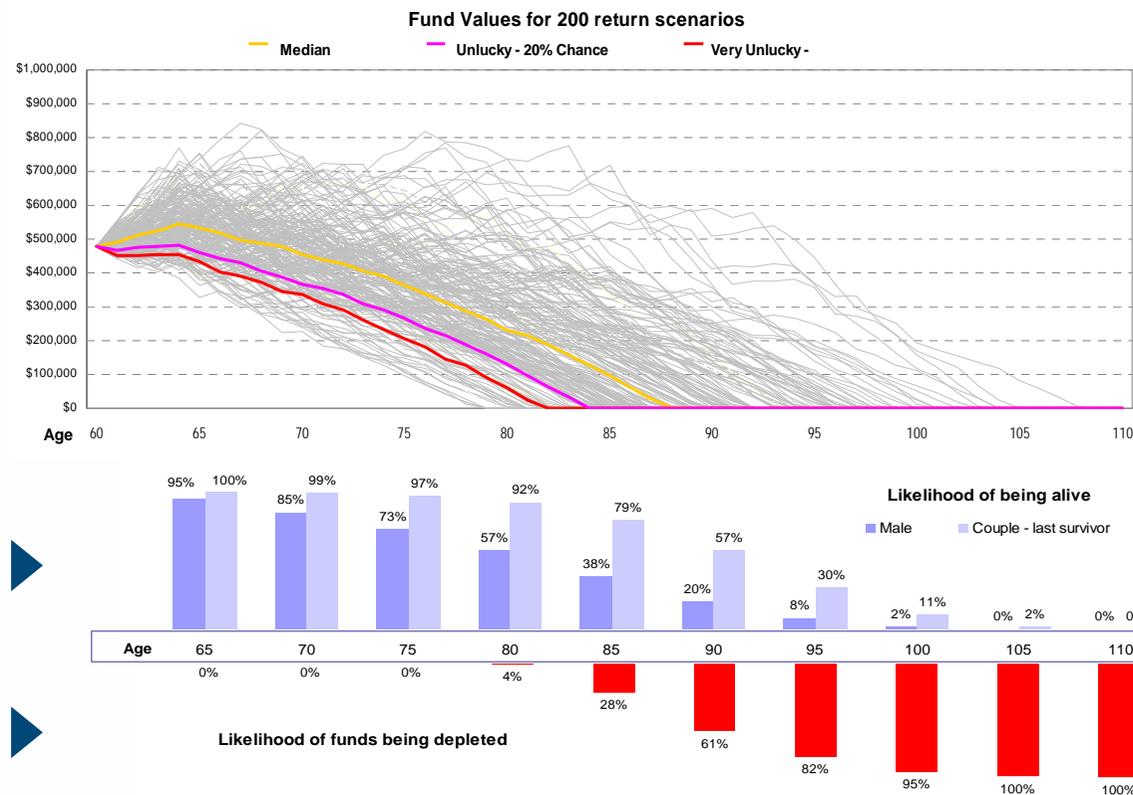
Illustrative Only

This example mixes stochastic projections with life expectancies

This chart shows projected values of your fund.

This chart shows the likelihood of being alive for males and for couples – last survivor.

This chart shows the likelihood of your funds being depleted.



Example Sensitivity Heat Map

Illustrative Only

- Heat maps enable advisers to provide clear visual examples of the effects of various assumption changes
- Colour schemes can be customised by the adviser to suit the investors risk tolerance
- Communicate risk with colours rather than / in addition to probabilities



Idealised Illustration Requirements

Basis

- “Market referenceable”
 - Returns based upon risk free rate term structure
 - Risk neutral or real world?
 - If real world, then use standardised risk premia assumptions
- Volatility
 - Market consistent or real world
 - Stronger case for real world?
- Correlations? Standardised?

Presentation

- Base case is minimum risk strategy
- Graphical / tabular output, summarised into natural language
- Risks communicated qualitative and quantitatively via impact scenarios
 - How is each being mitigated
 - Expected risk premia associated with bearing residual risks

What Can Go Well?

Standard Life Experience with Client Planner

- Winner of Best Online IFA tool 2008 at Online Finance awards
- Better advice for consumers

"I can now consider phased income drawdown again, which I knew was better for the client but was previously too hard to explain"

Adviser A

- Better consumer understanding of their options
- Publicity for Standard Life

*"The new At Retirement tool launched a few months ago has had a **significant impact on their overall proposition** and shows the way ahead for such services in future."*

Money Marketing, E-commerce ratings

- Challenges:
 - Advisor training
 - Scope: complexity vs simplicity tradeoff
 - Assumption setting
 - Ahead of its time?

Mission Statement

To ensure that the financial services industry provides consumers with useful, clear and unbiased financial information and advice, to enable them to effectively manage their wealth in order to achieve their lifetime financial goals

Research	Modelling bases Behavioural finance Communication of concepts Build a body of knowledge
Engagement	Public and consumer groups Regulators Financial planners – professionalisation of advice Product providers Investment and pension community
Activities	Contribute to advisor education CPD Submissions to policy makers

MIG?

**WORKING
PARTY?**

Discussion

Joshua Corrigan, FRM Senior Consultant, Milliman
joshua.corrigan@milliman.com