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Pensions Conference 2015

24 – 26 June
Hilton Hotel, Glasgow

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Looking Behind the Black Box

Research by: Derek Benstead

Speakers: Hilary Salt and James Smith

03 June 2015

The Black Box Problem

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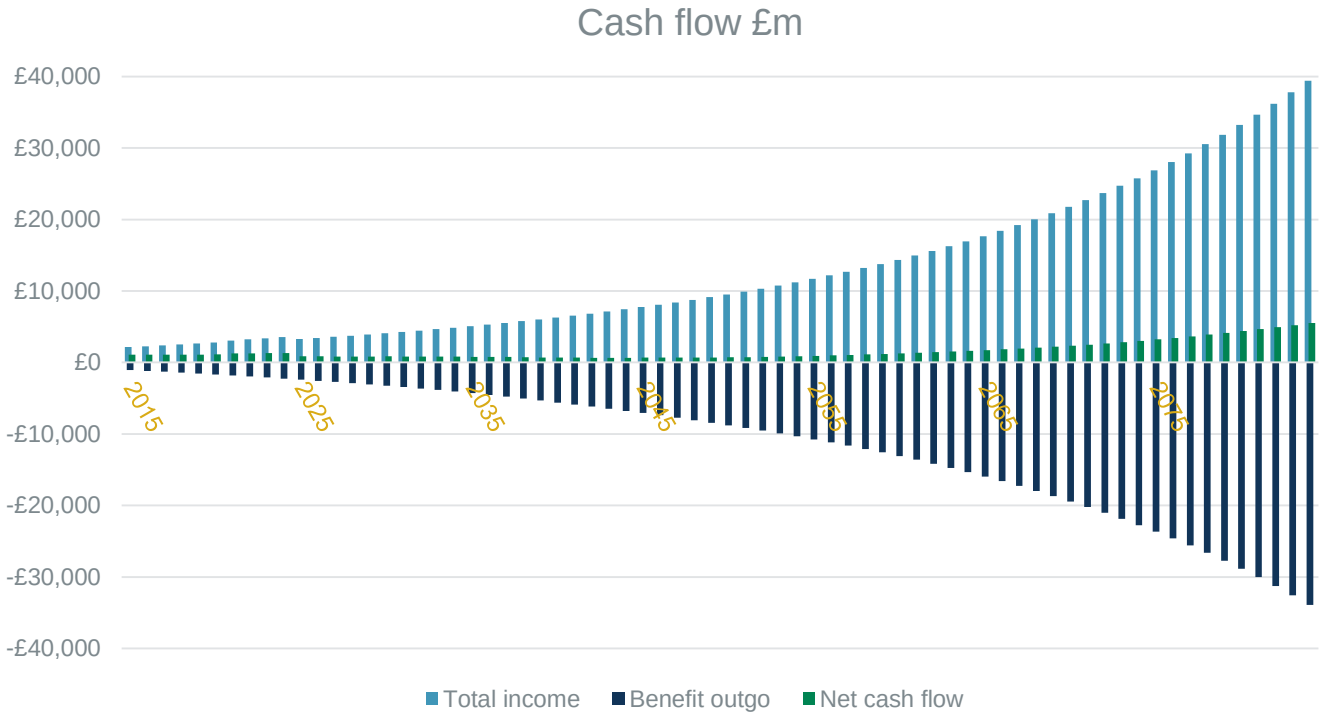
Inside the black box



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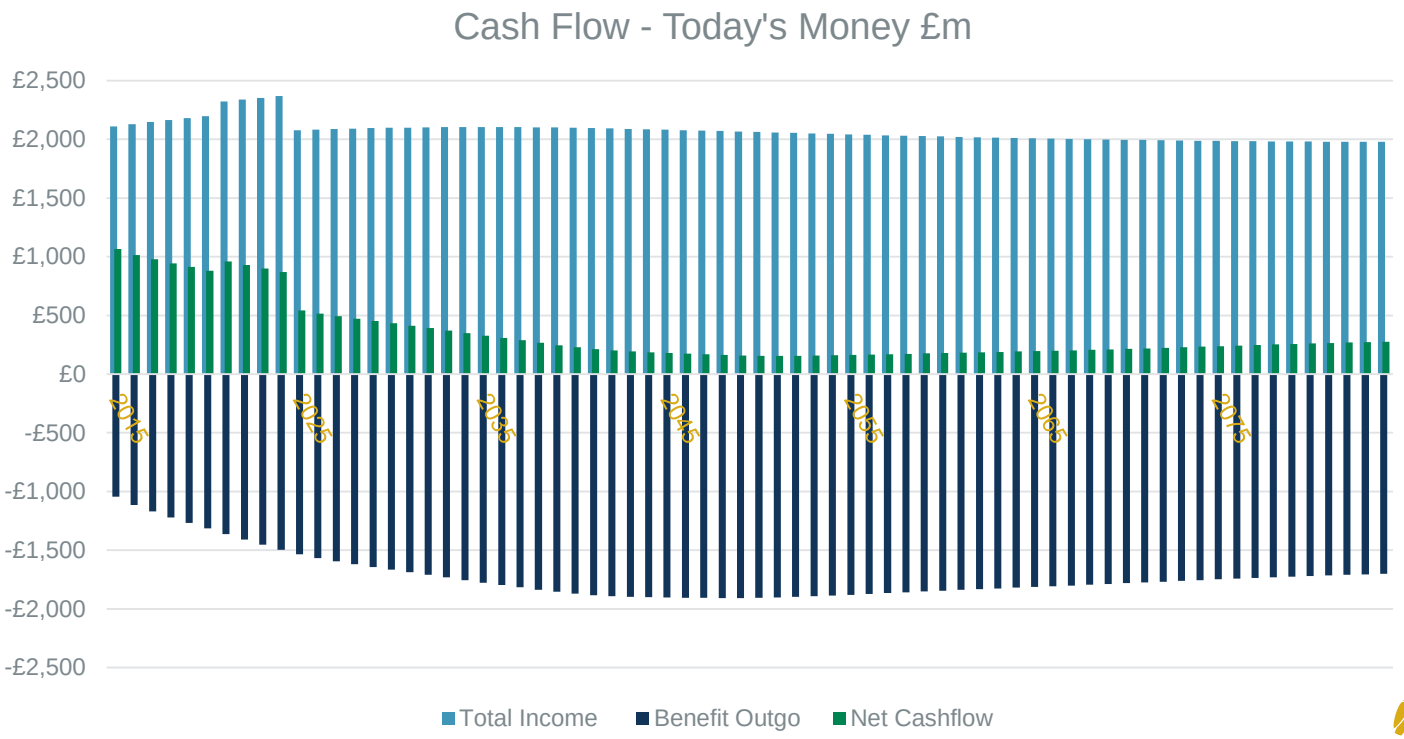
Large open, unchanged scheme



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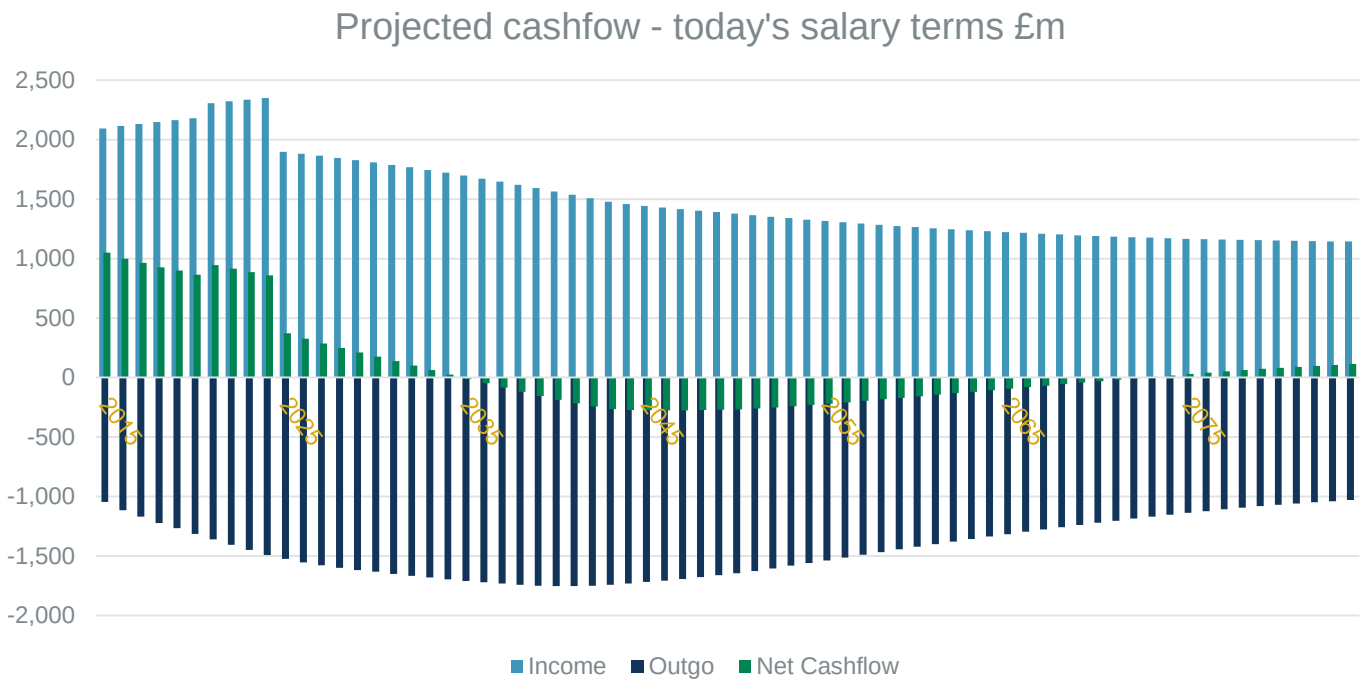
Open scheme, reduction in benefit accrual



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Immature closed scheme, closed to accrual

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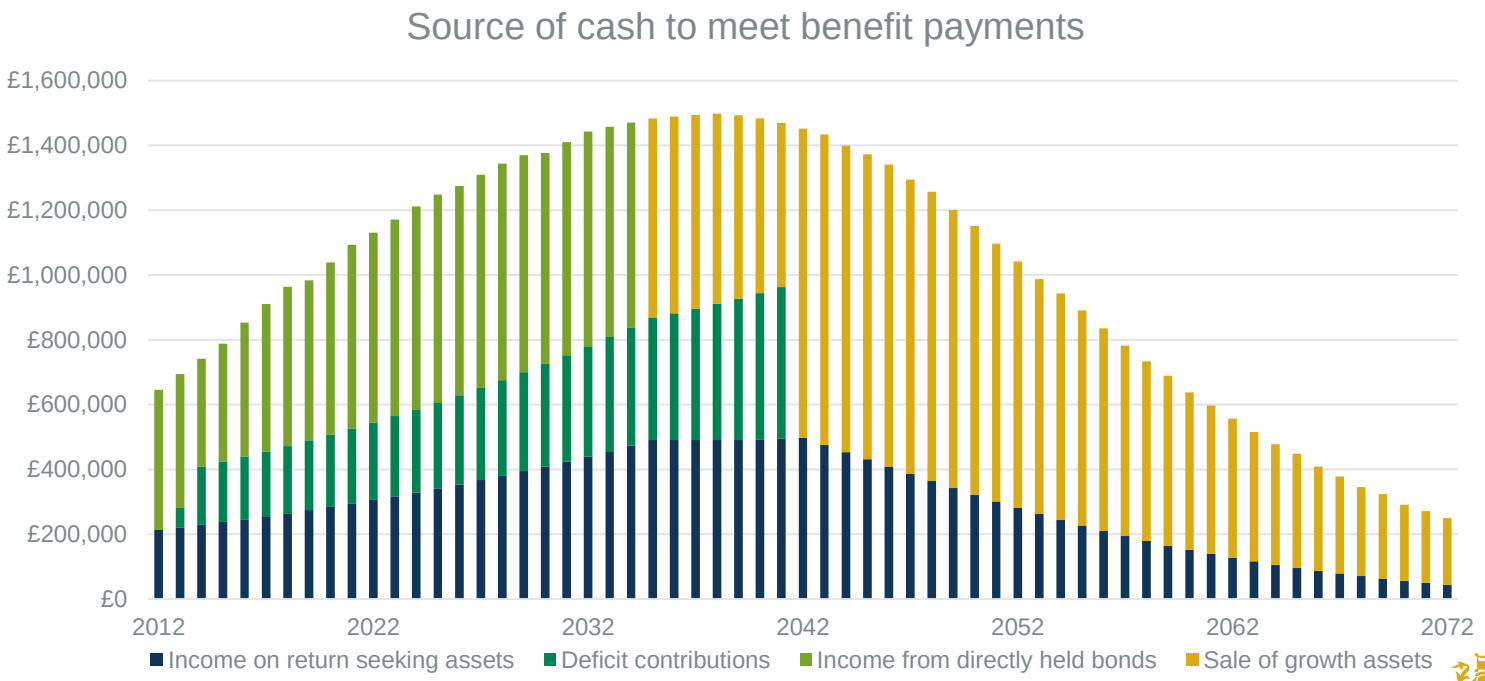
Closed scheme – cash poor employer



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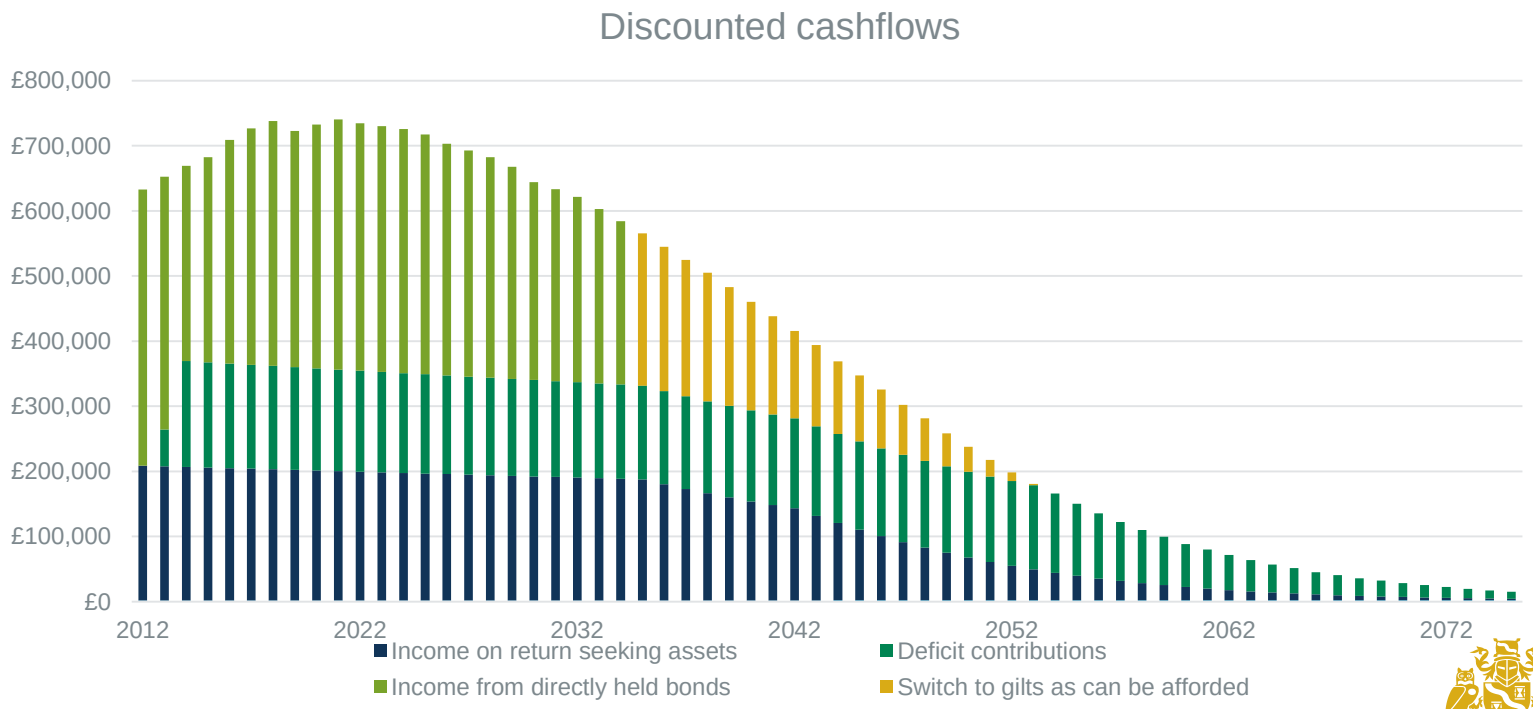
Closed scheme – cash poor employer



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Asset income in investment modelling

- Income often ignored in modelling:
  - Any income added to capital value of the assets
  - Schemes are neutral about income versus increase in capital values
- But ignoring income makes comparisons far more volatile
- And can overemphasise the decumulation risks

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UK equity market history

- What would it cost to provide a scheme's benefits if:
  - A scheme were wholly invested in UK equities, and
  - History repeated itself
- Figures that follow are based on:
  - The real returns on UK equities
  - With an adjustment for the taxation of dividends
  - Cash flows valued from UK equity market history

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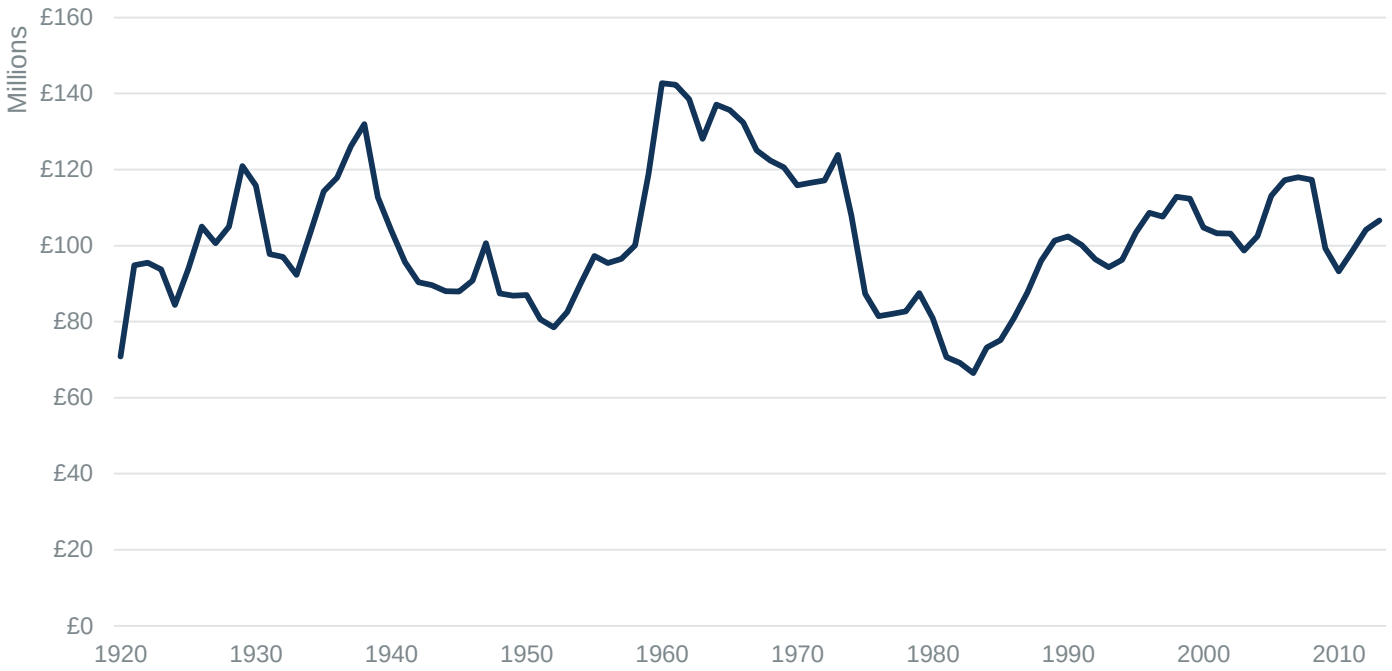
Cost of providing benefits from UK equities



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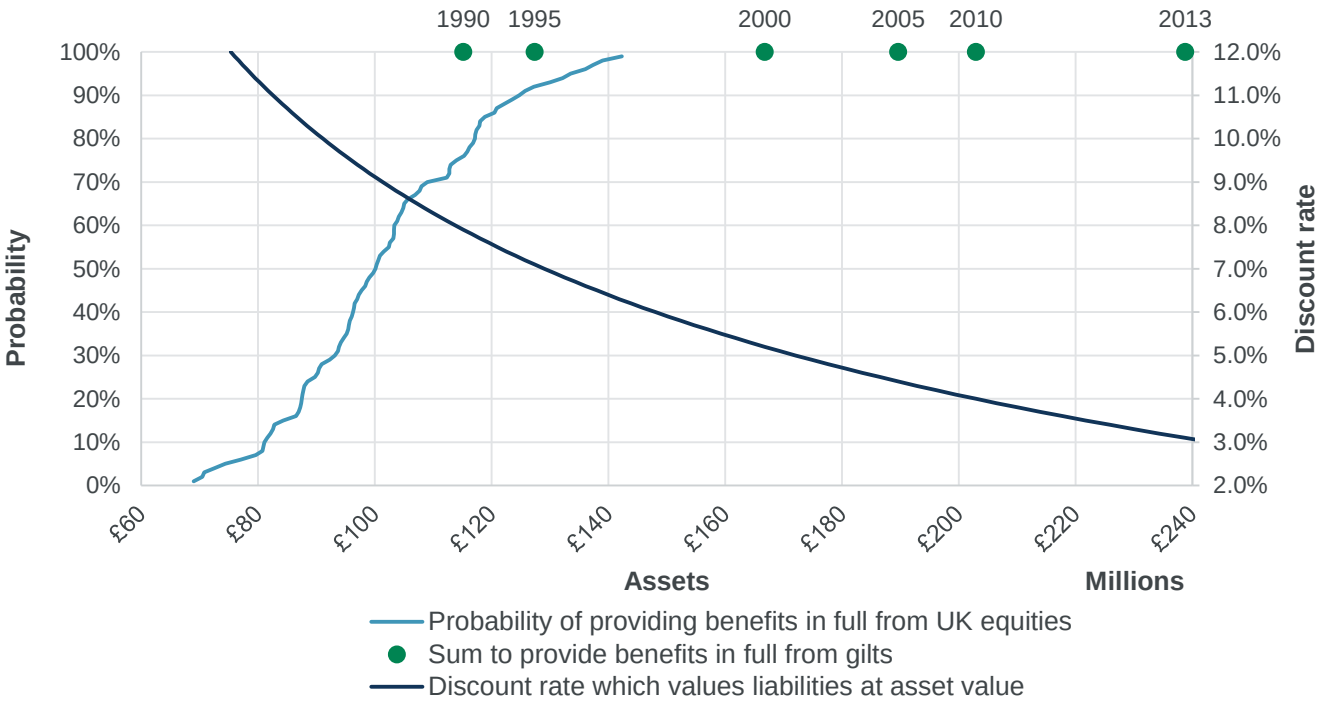
Cost of providing benefits from UK equities



Investing in UK equities at any point since 1920 – Probability of providing benefits in full

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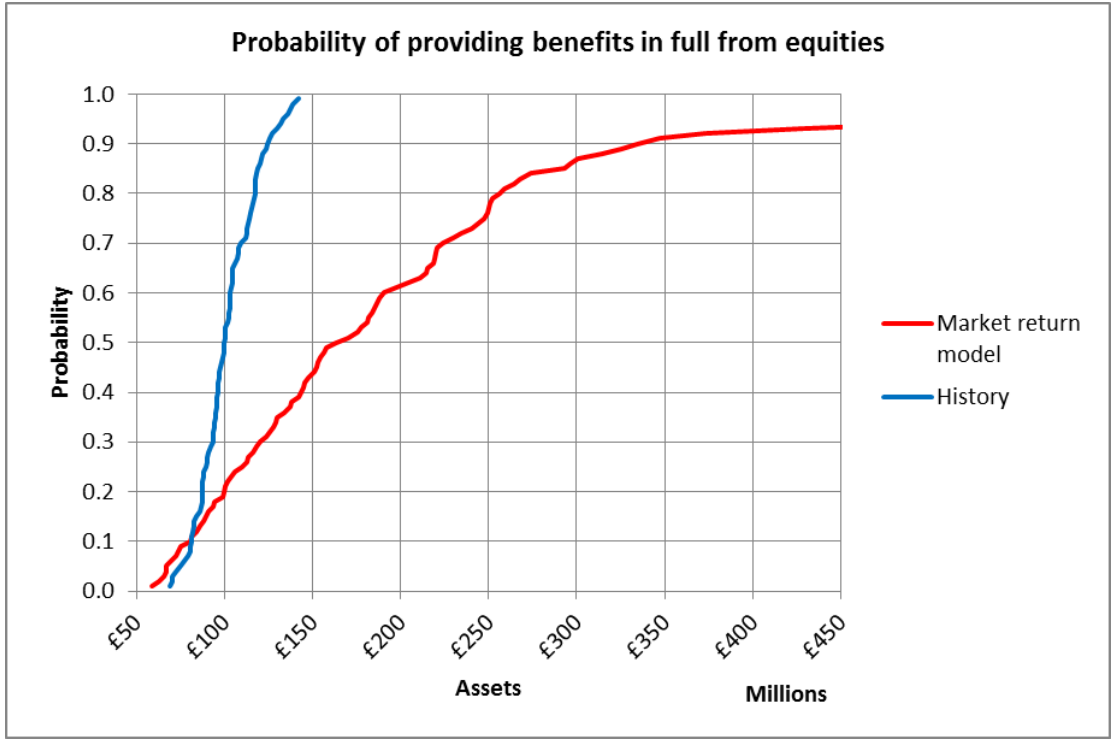
Simple model of market returns



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Simple Model

The modelled investment returns are from a normal distribution using a realistic average return of 8% pa and standard deviation of return of 20% pa

- The distribution of modelled outcomes looks nothing like history
- The median outcome of the model exceeds any outcome observed in post 1920 history
- The high end outcomes exceed the total of the inflated but undiscounted cash flows (£472m) !
- A sum of money which ought to be enough (£160m) can run out in less than 20 years

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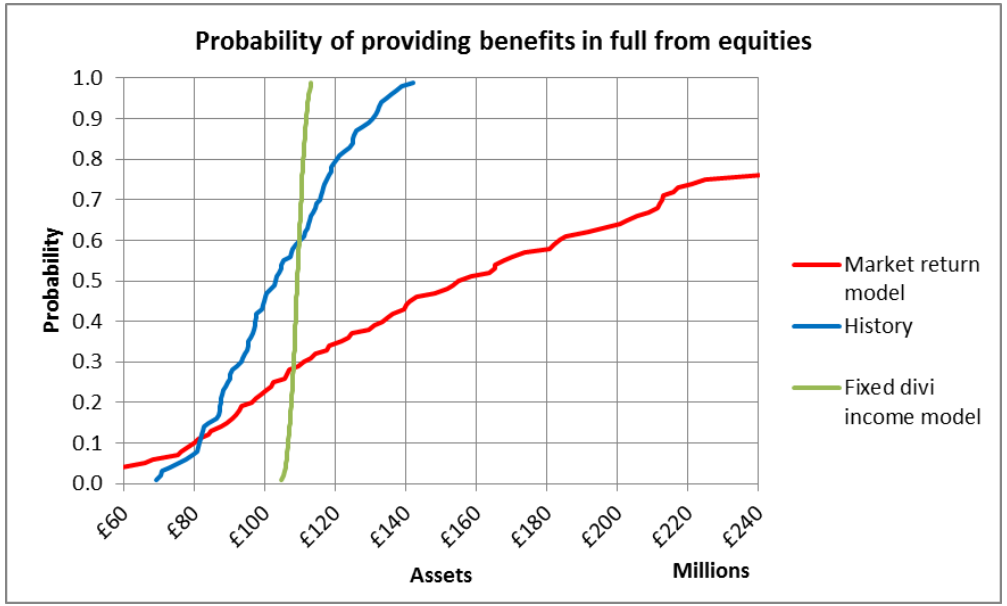
Half model:
fixed income, variable market value



- Project dividend income deterministically @ 1.4% pa real growth
- Project dividend yield stochastically – average 3.1%, standard deviation 0.5%
- Overall return c 8% with 25% deviation

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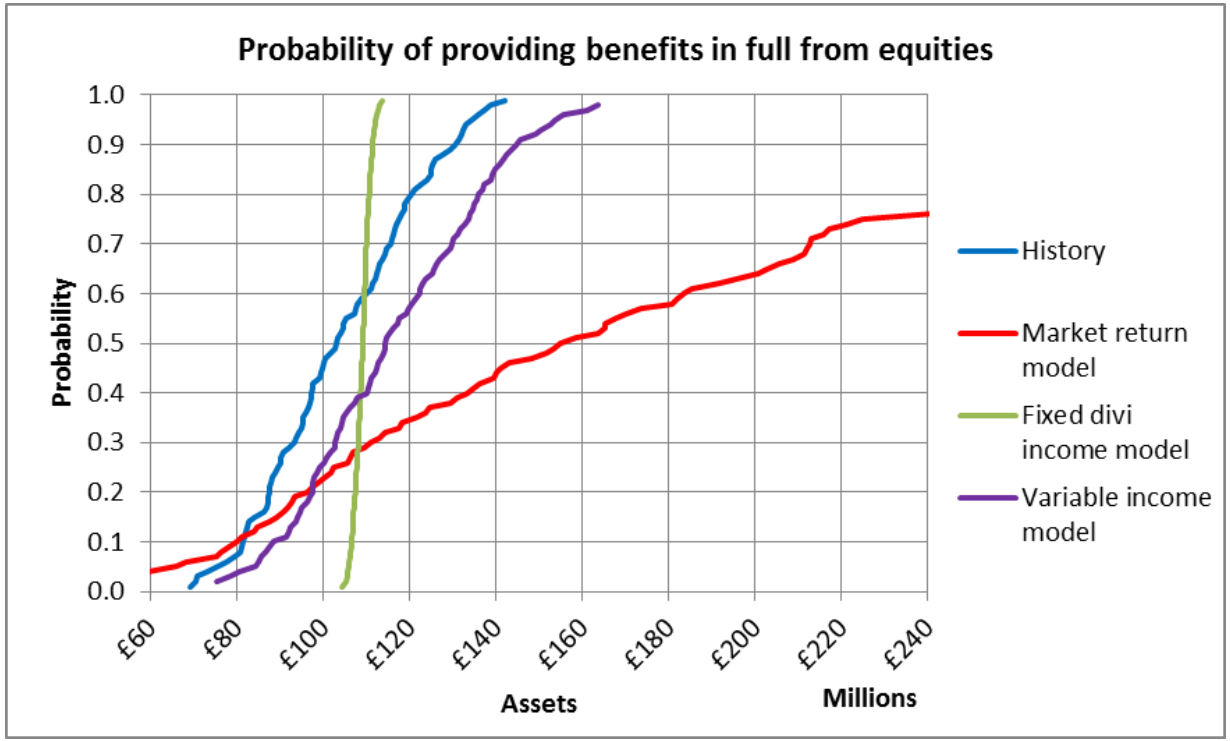
Full model: separate stochastic variation of income and market value



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What does all this tell us about….

- The way we approach valuations?
- The advice we give on investment strategies?
- The way we analyse risk in schemes?
- The advice we give clients?

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