

## The Devil is in the Detail



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Retirement and Social Security Reform Task Team



- “God is in the details - Whatever one does should be done thoroughly; details are important.”

Gustave Flaubert (1821-80)

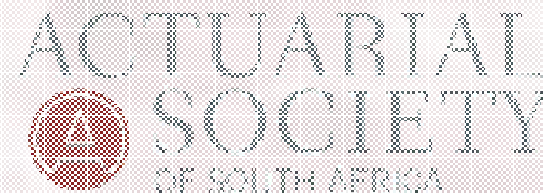


- ‘Devil is in the details’ is a variant of the proverb, referring to a catch hidden in the details [www.phrasefinder.org.uk](http://www.phrasefinder.org.uk)

# Defined Benefit Example

- God in the Detail:
  - GAD to set an accrual rate
- Devil in the Detail:
  - Uniform accrual cross-subsidises from poor to rich

# Defined Contribution Example



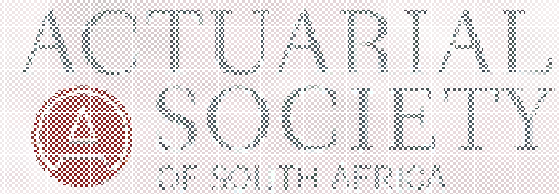
- God in the Detail:
  - GAD Annuity rates are required
- Devil in the Detail:
  - Unisex Annuity Rates cross-subsidise rich by poor

## Key Points

1. The detail **really** matters
2. **Actuarial** modelling is required
3. **You** need to get involved

“Yes, we have to divide up our time like that, between our politics and our equations. But to me our equations are far more important, for politics are only a matter of present concern. A mathematical equation stands forever.” Albert Einstein

# What did we do in this research?



1. Designed 6 National Pension Systems
2. On top of State Old Age Grant
3. Decided on Assumptions Required
4. Took Decisions Required of GAD
5. Stochastic Model Run – 2500 instances
6. Efficient Frontier of Net Replacement Ratios

“I shall never believe that God plays dice with the world.” Einstein

## Interesting Facts & Figures



- SOAG – R200 000 per person
- Liability of SOAG: 2009 R254bn
  - Increasing to R506bn in 2050
  - Increase to R1tr if remove means test
- Participate in standard of living improvement implies 50% increase in cost
- Pension to Female costs 16% more than Male

# Defined Contribution

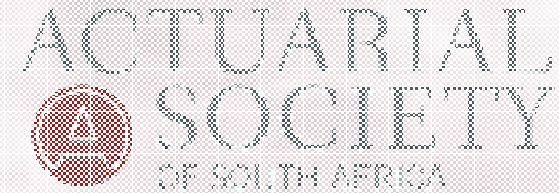
- Investment Portfolio Selection
- Illustrated by
  - Balanced
  - Life staging
  - Smoothed
  - Guarantees

“Anyone who doesn't take truth seriously in small matters cannot be trusted in large ones either.”

Einstein

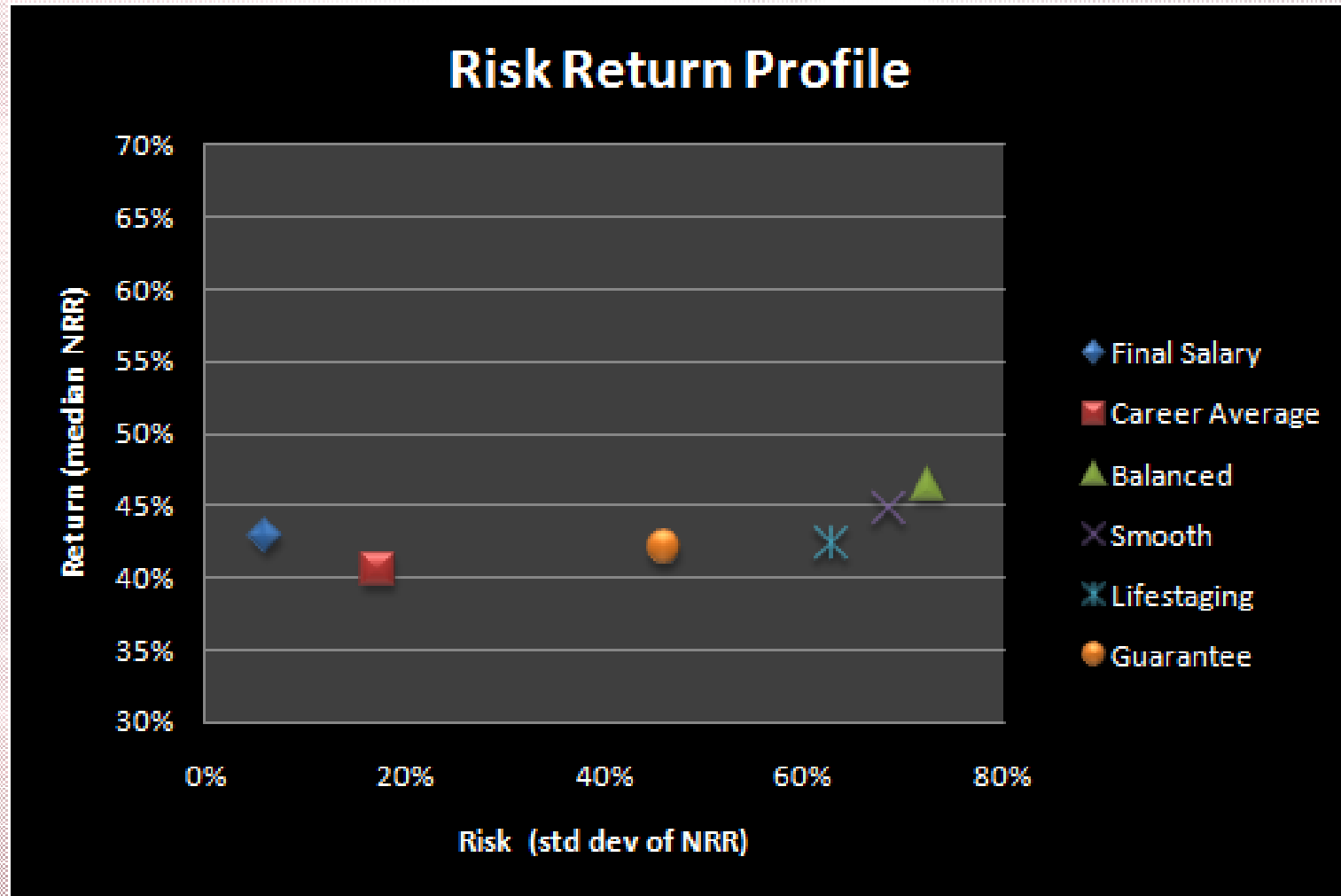


# Defined Benefit



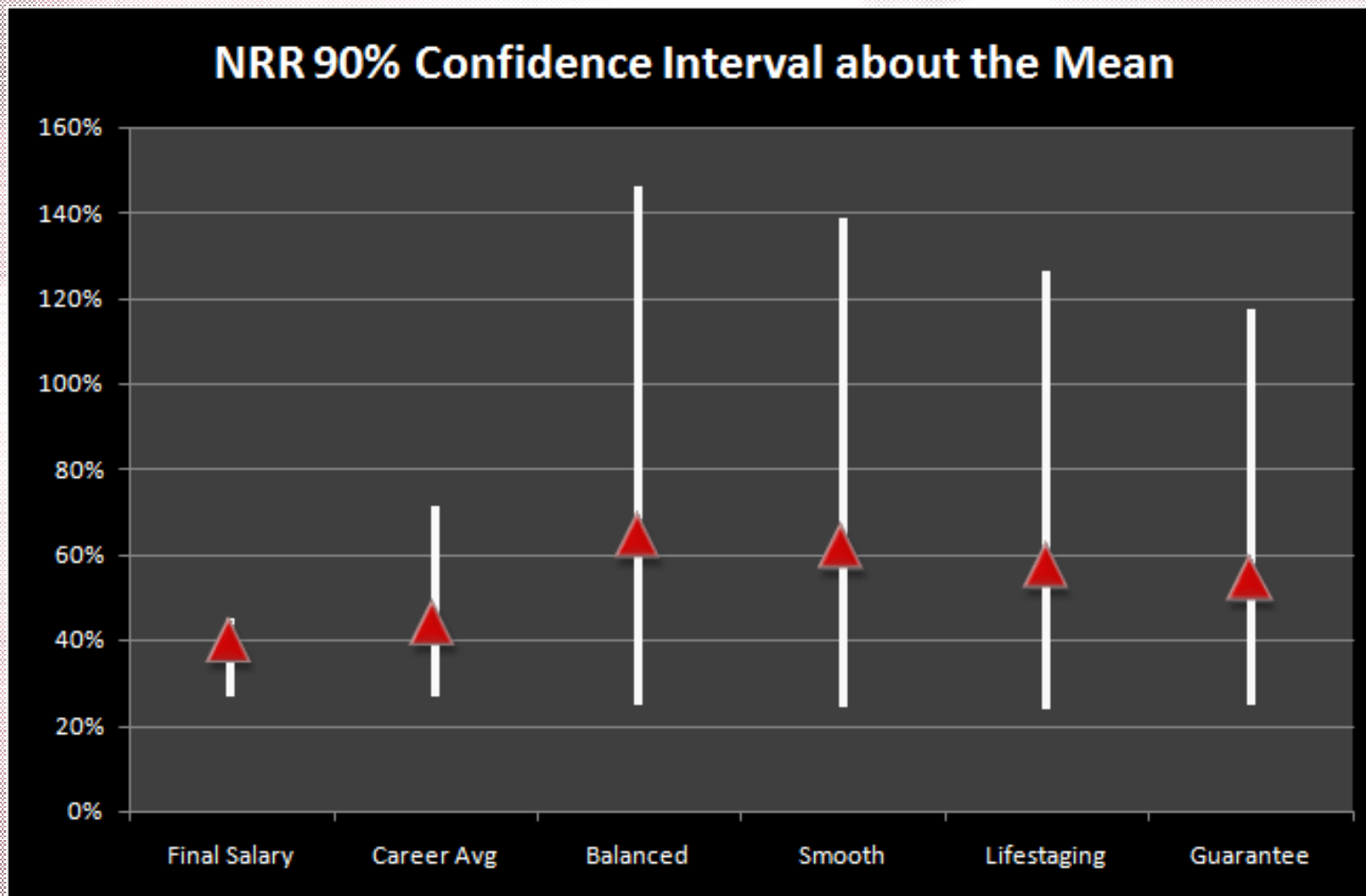
- Calculate Accrual – Flexible with Solvency
- Define Salary, Average Salary, Service, Retirement Date, Death benefit
- Funding Methods: unfunded, partially, fully
- Cross-subsidies:
  - Poor to Rich
  - Short Service to Long Service
  - Female to Male
  - Dying to Living

# NRR Efficient Frontier



R75 000pa Starting Salary

# Real World Volatility



R75 000pa Starting Salary

# Conclusions

- Have not moved to Conclusions
- Many Unanalysed Scenarios:
  - Relative Fairness to Partial Employment
  - Gender Equity
  - Other Solvency Mechanisms
  - Extreme Return Scenarios
  - Transition Impacts

## Other Research

- National Mortality & Population Projection
- Unemployment Scenarios for Modelling
- Balance of Benefits between Death, Unemployment and Retirement
- Annuitisation
- Impact of AIDS

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“I have no special talent.  
I am only passionately curious.” Einstein

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**2009 Convention Lite and the  
Pensions, Health and Life Seminars**

**19-20 May 2009**

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Johannesburg, South Africa**