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Defined Contribution Investment decisions – a tool for meeting conflicting Objectives

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Waves of Reforms…Oceans of Opportunities

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Indian Pension Market

- EPF
  - Compulsory (20+ employees)
  - Drawbacks: No equity; no flexibility; lump sum payout
- NPS Corporate
  - Currently must be add on to EPF
  - Some equity allowed, but low
  - Some choice at employer & employee level
  - Basic “auto choice” lifestage model

INDIVIDUAL NEEDS

What do people saving for retirement actually need?

South African Research

- Common fears & concerns

#1 Will it be enough?

Growth objective

#2 Is the investment safe?

Protection objective

- Key common characteristics

1. Uninformed & disempowered

- Don't know what happens to their contributions
- Intimidated – know they don't know enough, but don't want to think about it

Quote: "Even if you do know, what are you going to do?"

2. Risk averse

- 90% of members don't know if their company protects against volatility – **but assume they do**
- Have a very high expectation that what they have put in they will get out

Quote: "General rule of thumb is that what has been put in you will get at least that out."

3. Most like smoothed bonus concept (when explained what it is)

- Most like the predictability, security;
- Vast majority would prefer "smooth, steady growth" to "taking the highs and lows"
- Value "peace of mind"

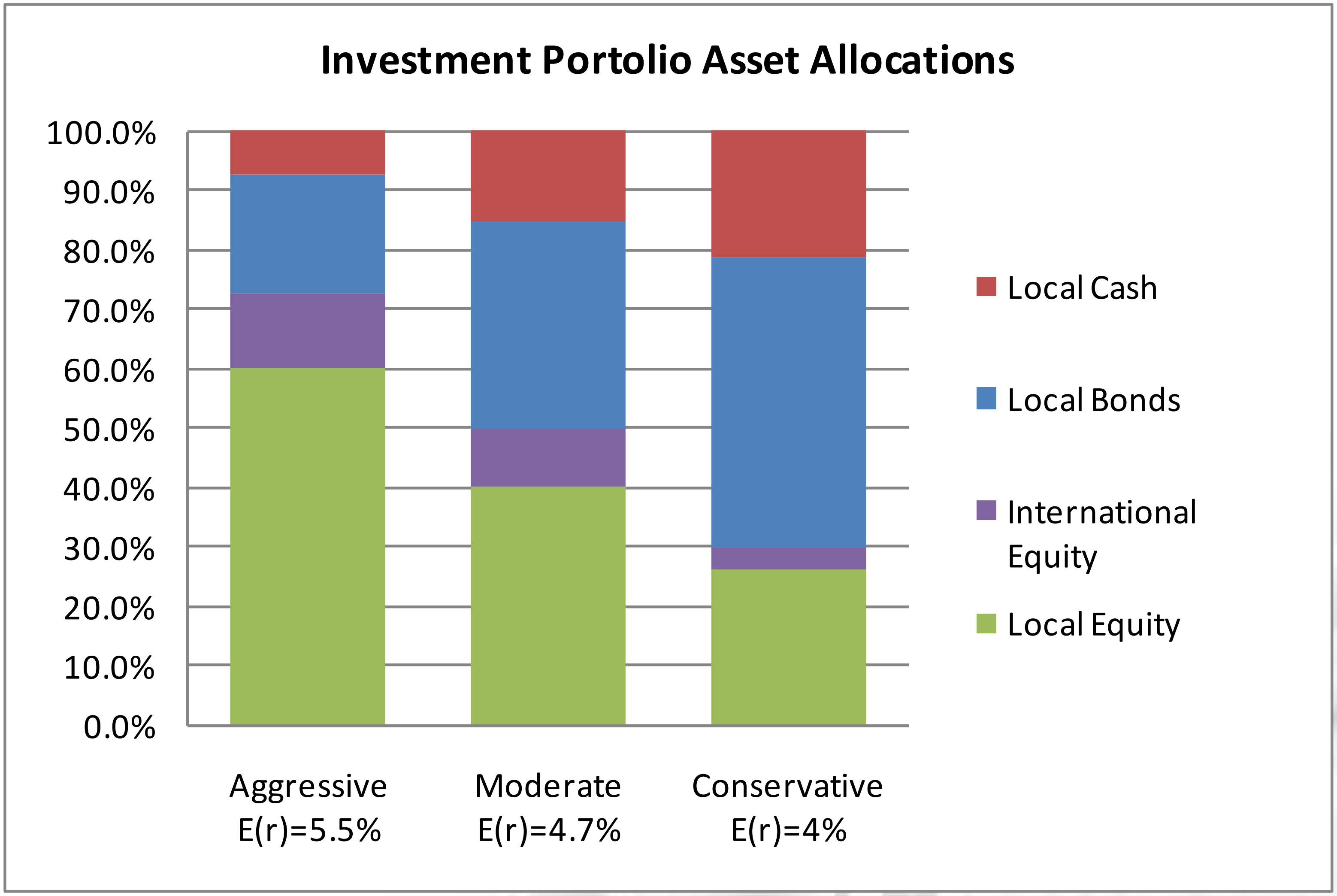
TRUSTEE / EMPLOYER OBJECTIVES

Conflicting Needs, Conflicting Objectives

Default Fund Objectives

- Good long term growth
  - It is likely to achieve significant growth above inflation at a sustainable level over the long term
    - Long term growth: Pr (annual **real** return over rolling 15 year periods > 5.5%)
- Consistent medium term growth
  - It is likely to achieve growth at or above inflation consistently over the medium term (1-5 yrs)
    a. Consistency >4% over 5 years: Pr (annual **real** return over rolling 5 year periods > 4%)
    b. Consistency >4% over 3 years: Pr (annual **real** return over rolling 3 year periods > 4%)
    c. Consistency >0% over 1 year: Pr (annual **real** return over rolling 1 year periods > 0%)
- Protection against negative returns
  - It is likely to avoid negative returns (over rolling one-month or one-year periods)
    a. Non-negative annual returns: Pr (one year rolling nominal return above 0)
    b. Non-negative monthly returns: Pr (one month rolling nominal return above 0)
    c. Expected size of negative returns: mean negative annual nominal return

Basic Investment Strategies



Historical Analysis

Objective | Investment Strategy	Aggressive	Moderate	Conservative
1: Long term growth	**95.7%**	77.7%	52.5%
2: a) Consistency >4% over 5 years	**80.8%**	77.2%	58.7%
b) Consistency >4% over 3 years	**67.9%**	64.9%	54.8%
c) Consistency >0% over 1 year	67.2%	**67.8%**	68.4%
3: a) Non-negative annual returns	87.8%	90.6%	**96.2%**
b) Non-negative monthly returns	64.2%	69.8%	**72.5%**
c) expected size of negative returns	-9.0%	-4.4%	**-2.3%**

- Analysis period: 40 years to August 2011

Asset Class	Index
Local Equity	FTSE/JSE All Share TRI
International Equity	MSCI World (in Rands)
Local Bonds	ALBI Total Return
Local Cash	STeFI (AF Money Market Index before 2000)
Inflation	CPI

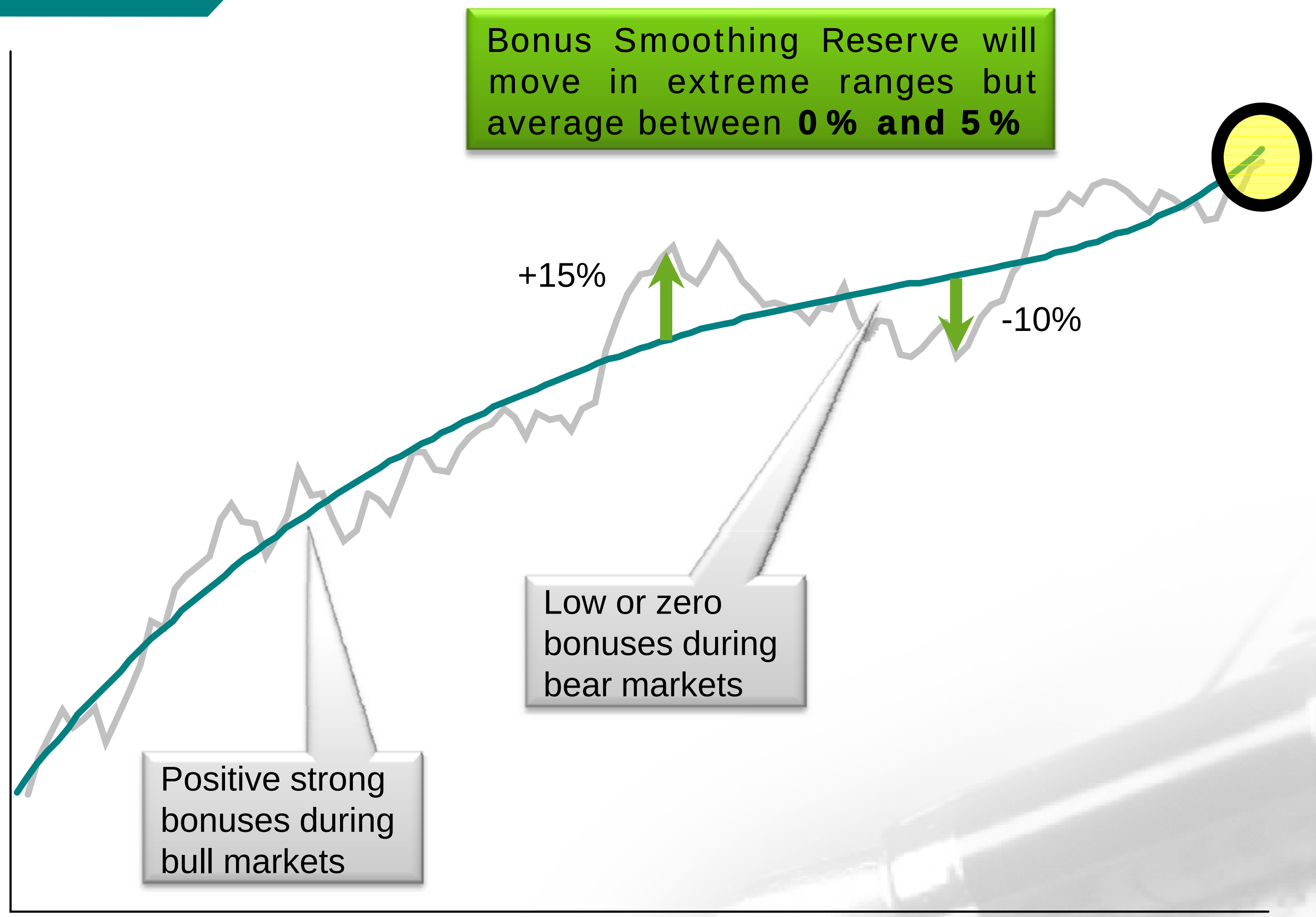
Projection Analysis

Objective | Investment Strategy	Aggressive	Moderate	Conservative
1: Long term growth	**56.9%**	50.6%	40.2%
2: a) Consistency >4% over 5 years	**61.8%**	60.4%	55.7%
b) Consistency >4% over 3 years	**59.3%**	58.2%	54.6%
c) Consistency >0% over 1 year	64.9%	67.3%	**68.1%**
3: a) Non-negative annual returns	77.4%	82.3%	**85.6%**
b) Non-negative monthly returns	58.5%	60.6%	**62.1%**
c) expected size of negative returns	-7.9%	-5.6%	**-4.3%**

- 5000 scenarios, monthly time-steps, 30 year projections
- Barrie & Hibbert (B&H) stochastic-volatility, jump-diffusion (SVDJ) model calibrated to South African market data as at 30 June 2011
- Results are averages across all scenarios

SMOOTHED SOLUTIONS

Smoothed Bonus



Used existing formula for **an Old Mutual Product**

Same net **long-term** return as the **aggressive fund** *less 0.2% policy fee*

Members cross subsidize one another – only works with limited benefit events & timing

Historical Analysis

Objective | Investment Strategy	Aggressive	Moderate	Conservative	Smoothed
1: Long term growth	95.7%	77.7%	52.5%	100.00%
2: a) Consistency >4% over 5 years	80.8%	77.2%	58.7%	86.7%
b) Consistency >4% over 3 years	67.9%	64.9%	54.8%	79.8%
c) Consistency >0% over 1 year	67.2%	67.8%	68.4%	79.7%
3: a) Non-negative annual returns	87.8%	90.6%	96.2%	99.2%
b) Non-negative monthly returns	64.2%	69.8%	72.5%	99.6%
c) expected size of negative returns	-9.0%	-4.4%	-2.3%	-0.7%

Projection Analysis

Objective |Investment Strategy	Aggressive	Moderate	Conservative	Smoothed
1: Long term growth	**56.9%**	50.6%	40.2%	55.00%
2: a) Consistency >4% over 5 years	61.8%	60.4%	55.7%	**61.98%**
b) Consistency >4% over 3 years	59.3%	58.2%	54.6%	**60.38%**
c) Consistency >0% over 1 year	64.9%	67.3%	68.1%	**73.76%**
3: a) Non-negative annual returns	77.4%	82.3%	85.6%	**91.31%**
b) Non-negative monthly returns	58.5%	60.6%	62.1%	**96.50%**
c) expected size of negative returns	-7.9%	-5.6%	-4.3%	**-3.55%**

CONCLUSIONS

Conclusions

1. People have conflicting objectives
   - Growth & stability/protection

2. Most solutions sacrifice growth for stability
   - E.g. EPF and NPS in India; many retirement funds in South Africa

3. Smoothing enables both objectives to be met
   - Higher allocation to growth by dampening volatility through at-benefit mutual insurance

QUESTIONS?

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Presentation based on a paper presented at the 2012 annual Actuarial Society of South Africa Convention
http://www.actuarialsocietyconvention.org.za/assets/pdf/papers/Guy%20Chennells%20-%20DEFINED%20CONTRIBUTION%20INVESTMENT%20DECISIONS.pdf