ACTUARIAL SOCIETY OF SOUTH AFRICA

QUANTIFYING RISK, ENABLING OPPORTUNITY

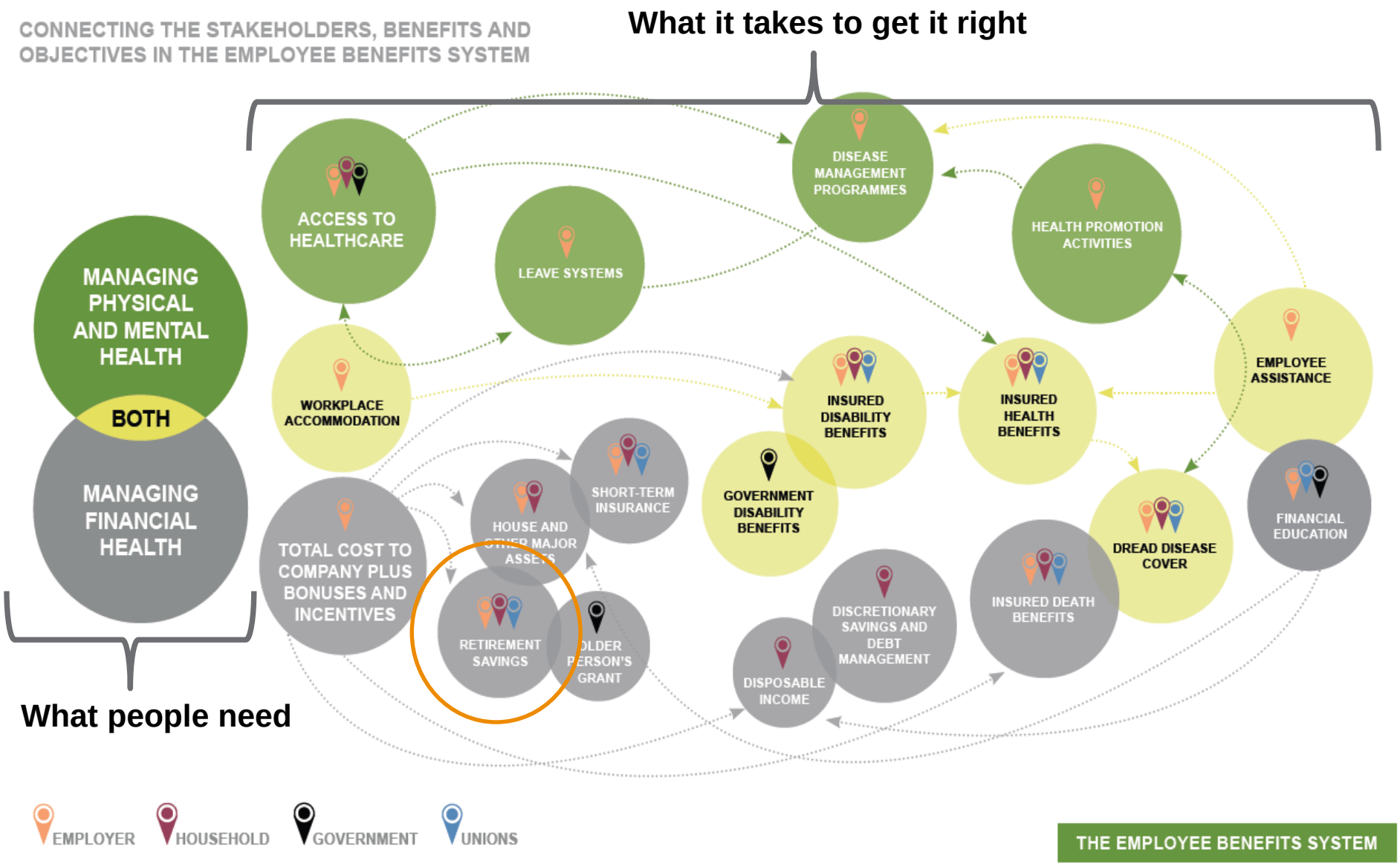
Should it only be about retirement?

Developing a long term savings programme that serves the broader needs of South Africans

Let's look at the facts

- If given a choice, members maximise take home pay
- Less than 10% preserve
- Less than 5% reach a 75% replacement ratio
- About 30% don't expect to see retirement at all
- Reforms halted

Fragmentation is the root of the failure to deliver



These critical insights led us to the following questions?

- Is it us, or them?
- We know that employee benefits provide effective conduit for personal savings & family protections, but do the employers & their members?
- Problem seems to rest with a singular focus on retirement savings as the central theme for long term savings
- Securing financial wellbeing is the goal – but how?

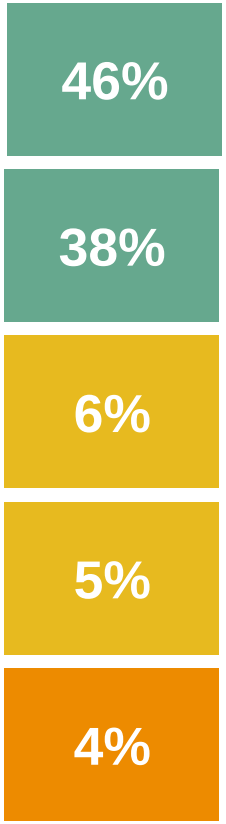
The priorities

Why investment in housing is important

- A savings priority
- Biggest default savings interventions
- Substantial retirement asset
- Contributes to financial wellness

- How can retirement funds be leveraged to improve housing investment by employees as an important part of the retirement package?

How employees earning R7 000 to R25 000 live



own formal houses

rent formal accommodation

have shacks in an informal settlement

have formal or informal dwellings in backyards

have traditional dwellings often on tribal land

Overall there is severe overcrowding

Source: Census 2011

Housing Market segments

Subsidy Market	Gap Market	Affordable Market	Normal Market
Income <R3.5k Price <R180k	Income R3.5k – R12.5k Price R180k – R370k	Income R12.5k – R17.5k Price R370k – R500k	Income >R17.5k Price >R500k

Subsidy housing delivery

Formal housing delivery

Incremental housing delivery

How is housing financed?

Housing delivery	Housing subsidies	Private housing finance
Subsidy housing delivery	Government housing & basic services subsidy (40m² give away house)	▪ Personal savings ▪ Unsecured micro loans
Incremental housing delivery	No government subsidy	▪ Personal savings ▪ Unsecured loans ▪ Pension backed loans
Formal housing delivery	FLISP sliding scale subsidy for incomes of up to R15k pm linked to mortgage loan	▪ Personal savings ▪ Mortgage backed loans

The priorities

Ability to cope with unforeseen expenditure

Ability to handle unforeseen expenditure (R20 000 to R39 999 monthly household income)

	R1 000	R5 000	R10 000
Pay with a credit card	25%	27%	13%
Take out a personal loan from an institution or a micro- lender	1%	11%	34%
Borrow from a friend or relative	12%	12%	9%
Borrow from my stokvel	5%	8%	5%
Use savings	51%	39%	25%
Would not be able to handle it	0%	2%	11%
Will have to borrow	18%	31%	48%

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QUANTIFYING RISK, ENABLING OPPORTUNITY

Source: Old Mutual Savings and Investment Monitor, July 2015

Ability to cope with unforeseen expenditure

Ability to handle unforeseen expenditure (R6 000 to R19 999 monthly household income)

	R1 000	R5 000	R10 000
Pay with a credit card	7%	6%	3%
Take out a personal loan from an institution or a micro- lender	3%	26%	51%
Borrow from a friend or relative	31%	17%	2%
Borrow from my stokvel	8%	9%	4%
Use savings	50%	34%	8%
Would not be able to handle it	0%	5%	30%
Will have to borrow	42%	52%	57%

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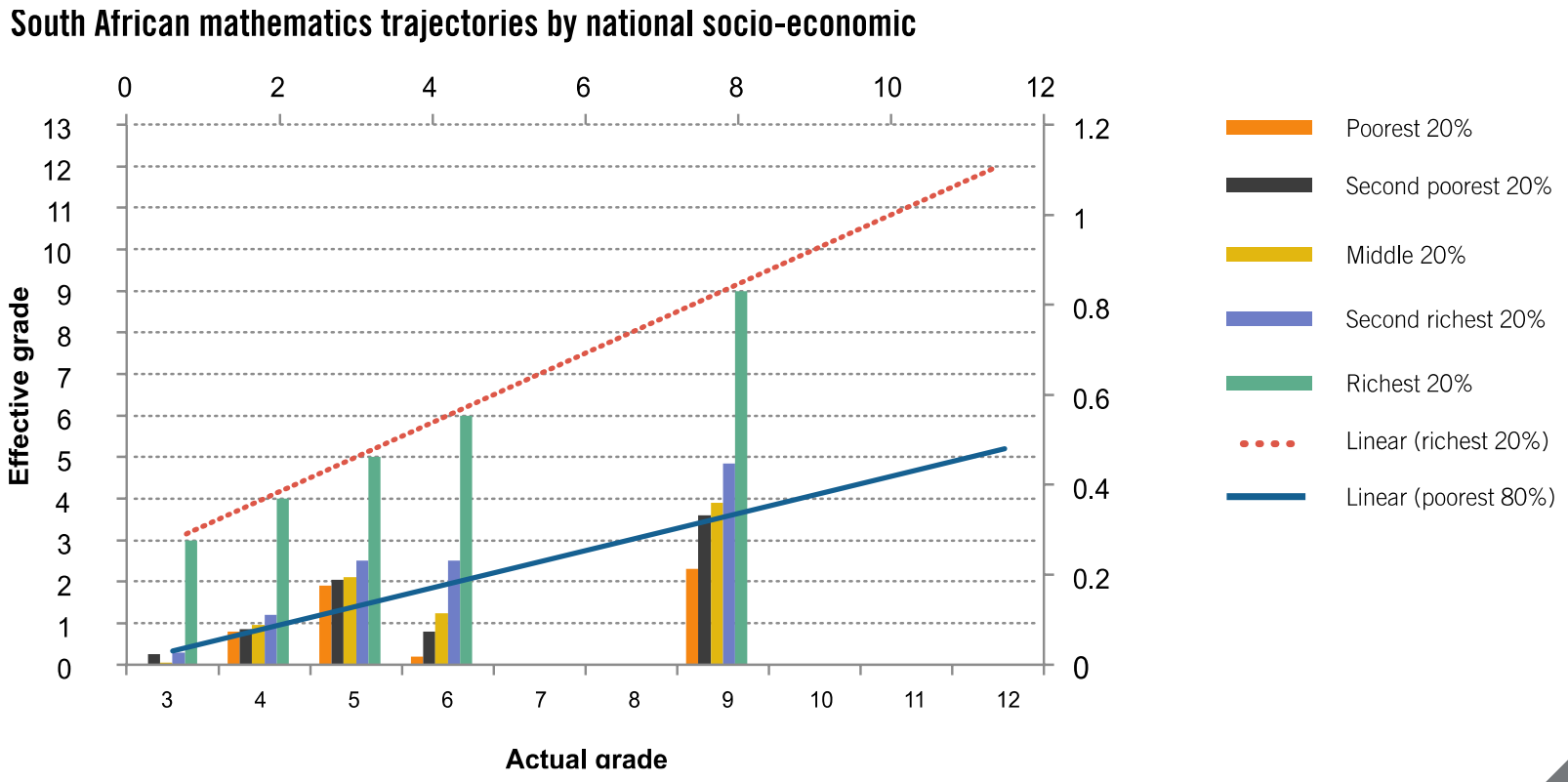
QUANTIFYING RISK, ENABLING OPPORTUNITY

Source: Old Mutual Savings and Investment Monitor, July 2015

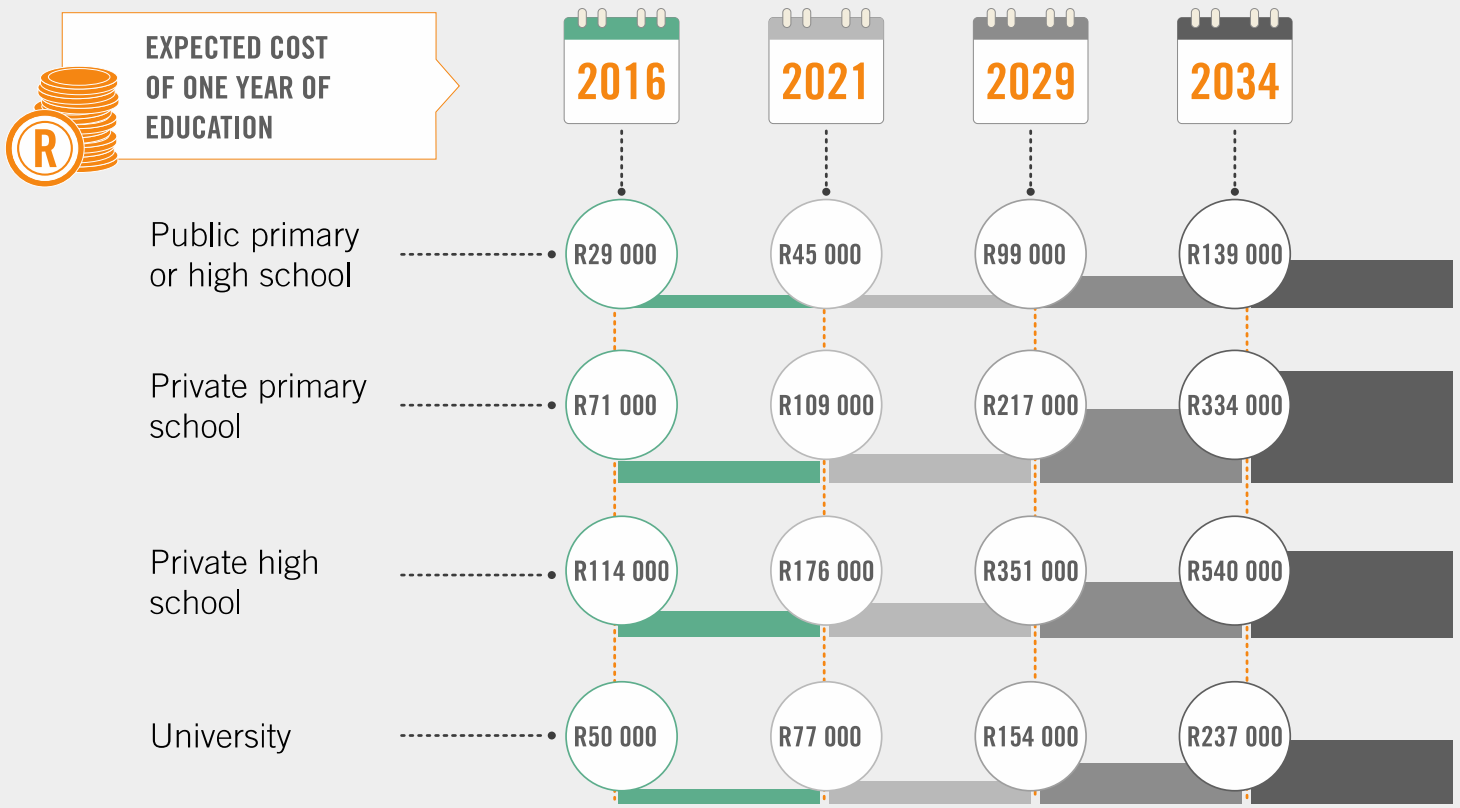
The priorities

Your biggest bang for buck



- Start investing in the early years of education as this would provide the greatest payoff
- Educational inequalities start as early as primary school
- 2/3rds of children cited lack of fund as the main reason for not attending school

HOW MUCH EDUCATION WILL COST IN 20 YEARS, USING A 9% INCREASE



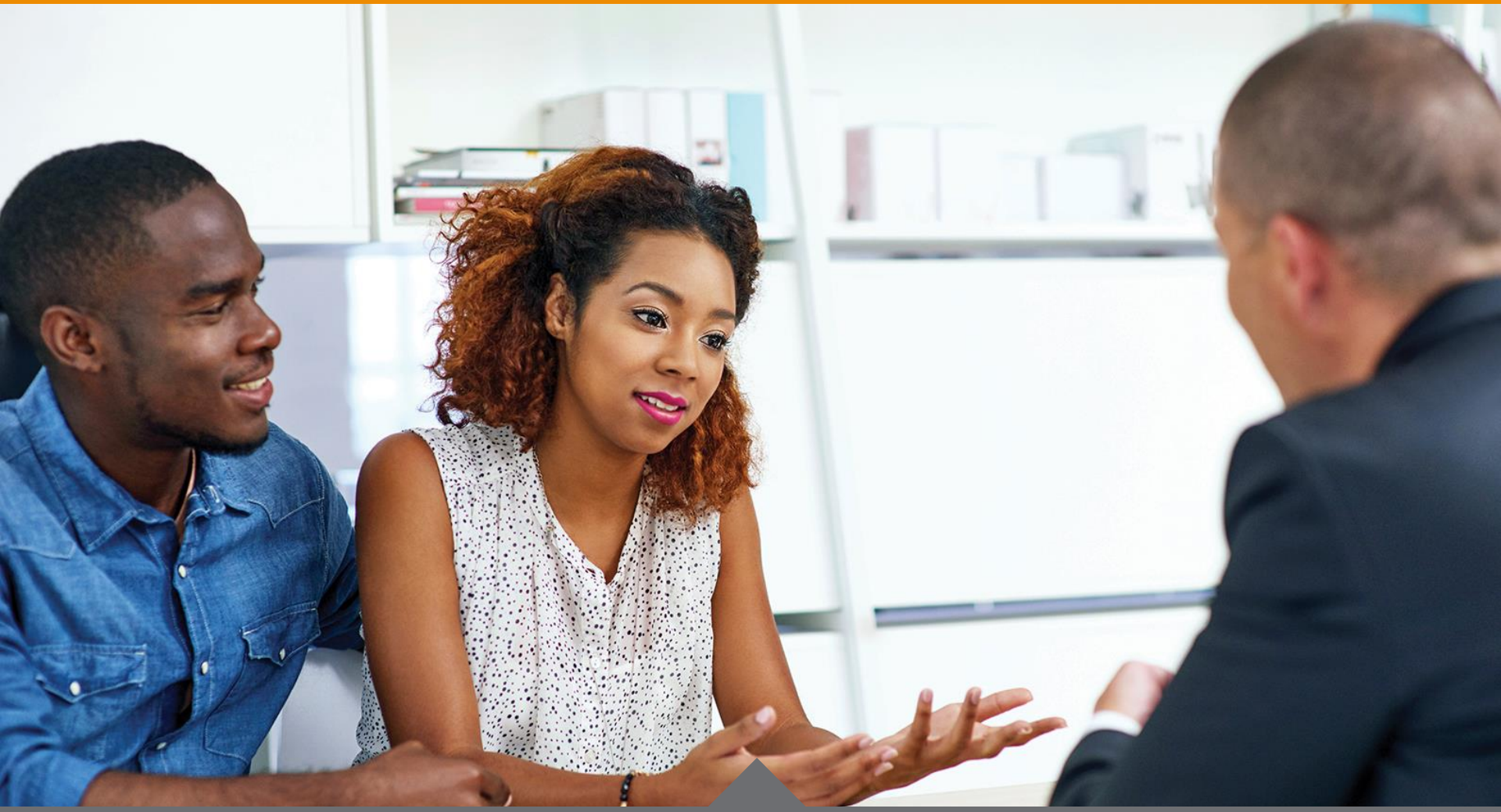
Source: Old Mutual, 2015

These figures give us pause for thought, given that the current average cost for one year's education in **2016** at a public school (primary or high school) is about **R29 000**, while private high school fees vary around the **R114 000** mark.

As the table highlights, projections rise to **R45 000** for public and **R176 000** for private high schools by **2021**.

This suggests that a savings plan for educational costs might be a high priority for many families.

Source: Old Mutual. 2016



So what did the modelling reveal?

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ALEXANDERFORBES
Securing your financial well-being

The priorities

Retirement funding

23-year-old male

Salary
R72 000 per year

12.5% contribution to retirement at **63**

50%

replacement ratio

Projected replacement ratio for different contribution rates

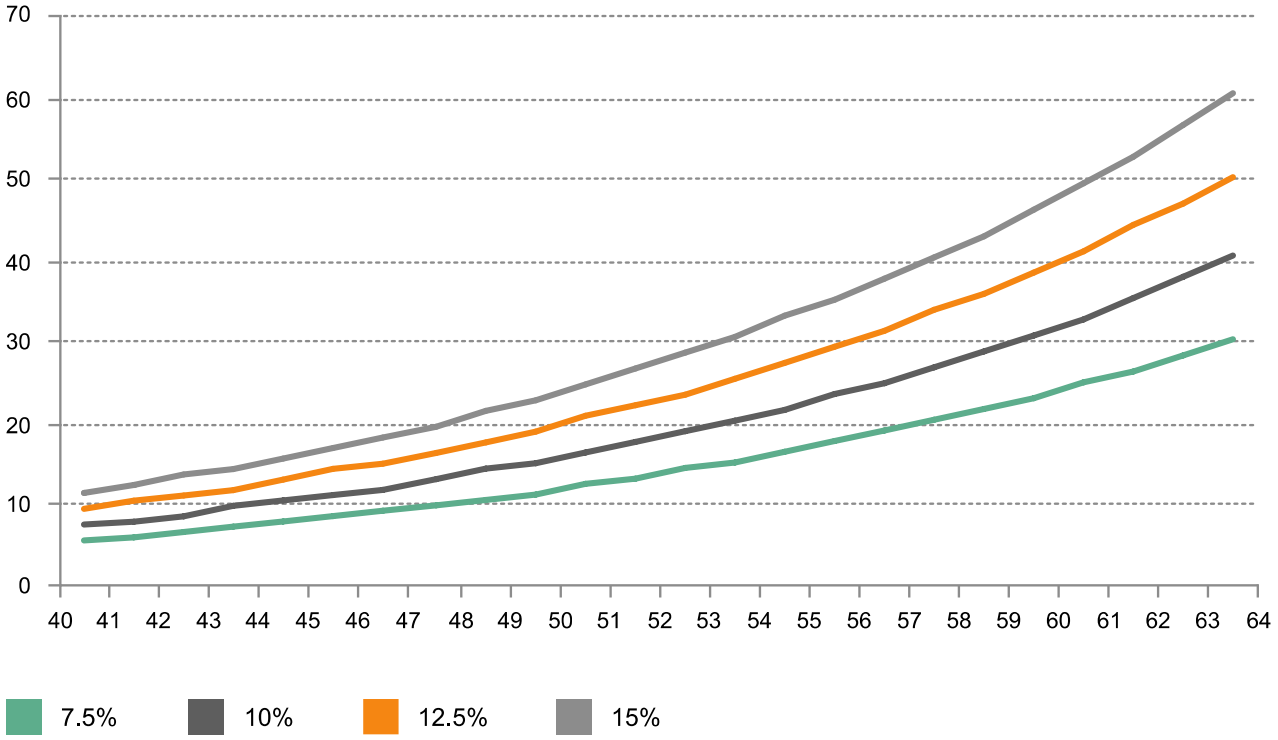
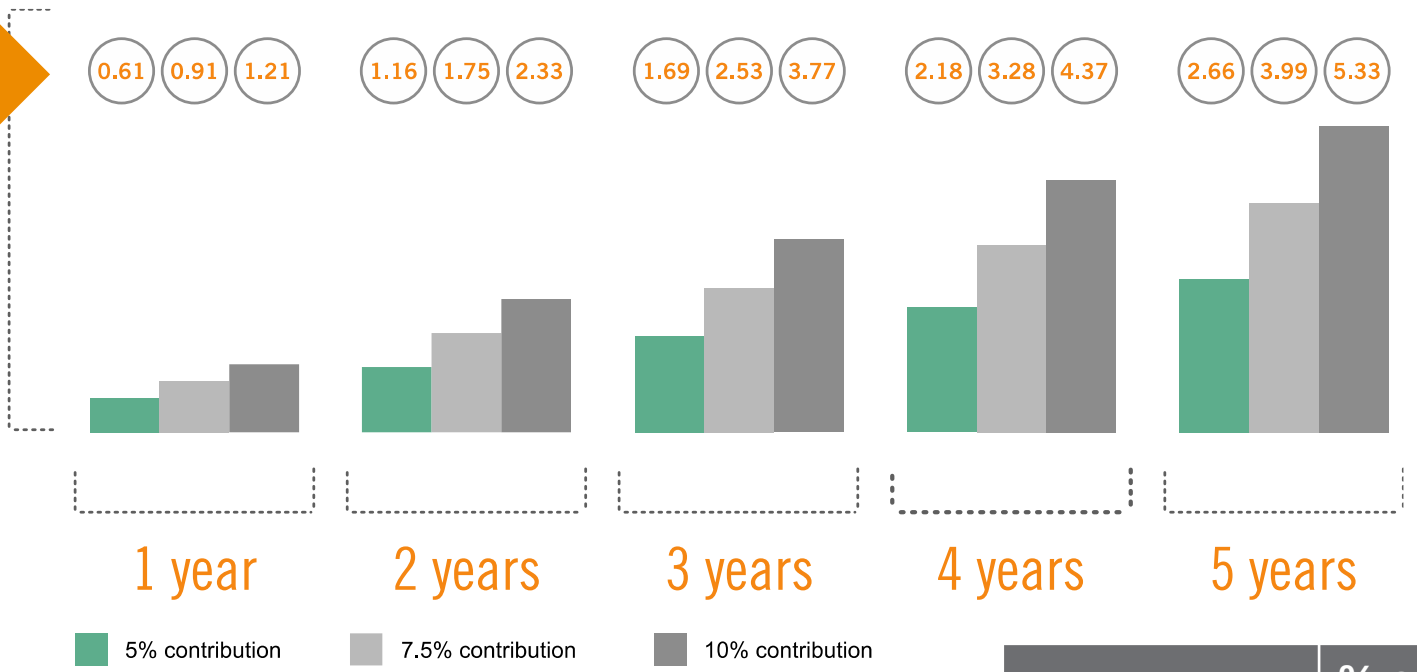


Figure 2: Projected replacement ratios for different contribution rates

Dealing with emergencies

Target number of salaries = 6 months



	% of pay
Retirement	12.5%
Emergencies	10.0%

Housing

23-year-old male

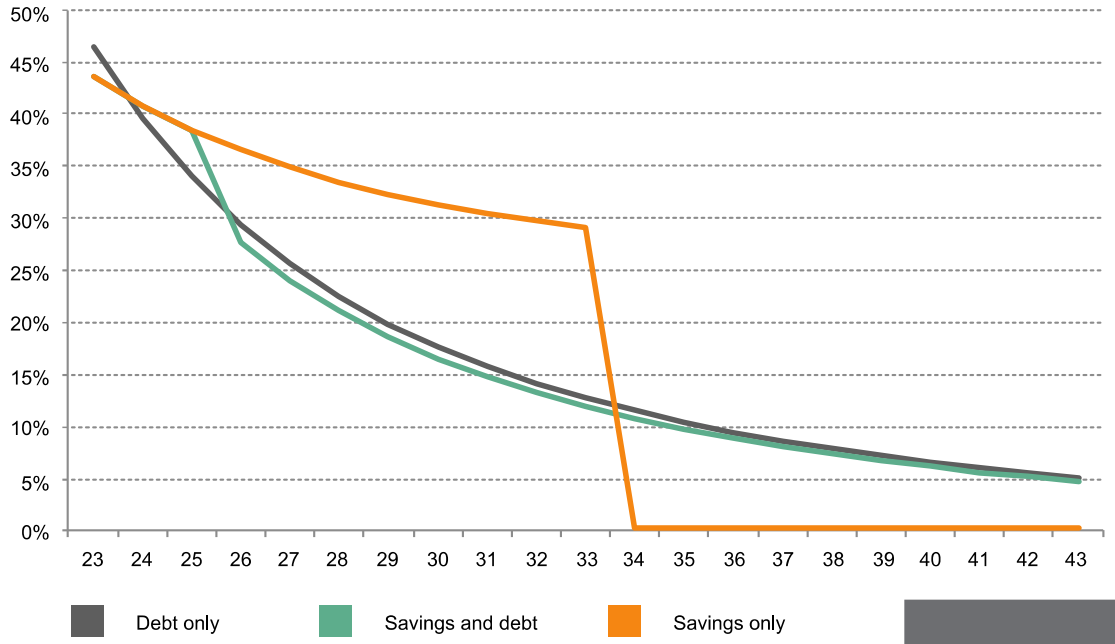
Initial rent is 70% of a standard

20-year bond repayment

15%

contribution rate

Proportion of income used R72 000 (per year)



	% of pay
Retirement	12.5%
Emergencies	10.0%
House	45.0%

Education

Starting annual salary	Expected contribution every year	
	1 child	2 children
R72 000	20.6%	38.0%
R90 000	16.5%	30.4%
R108 000	13.8%	25.4%
R126 000	11.8%	21.8%
R144 000	10.3%	19.0%
R162 000	9.2%	16.9%
R180 000	8.3%	15.2%

	% of pay
Retirement	**12.5%**
Emergencies	**10.0%**
House	**45.0%**
Education	**20.0%**

Medical health during retirement

23-year-old male

Salary
R72 000 per year

merit-based salary scale

40-year period

3.1%

savings rate required to pay for medium-cover plan in retirement

Level of cover	Monthly contributions			Lump-sum present value of savings	Expected 40-year savings rate
	Medical scheme contributions	Out-of-pocket expenditure	Total savings		
High	R3 631	R37	R3 668	R889 000	5.3%
Medium	R1 983	R115	R2 098	R509 000	3.1%
Low	R1 476	R1 165	R2 641	R639 000	3.8%

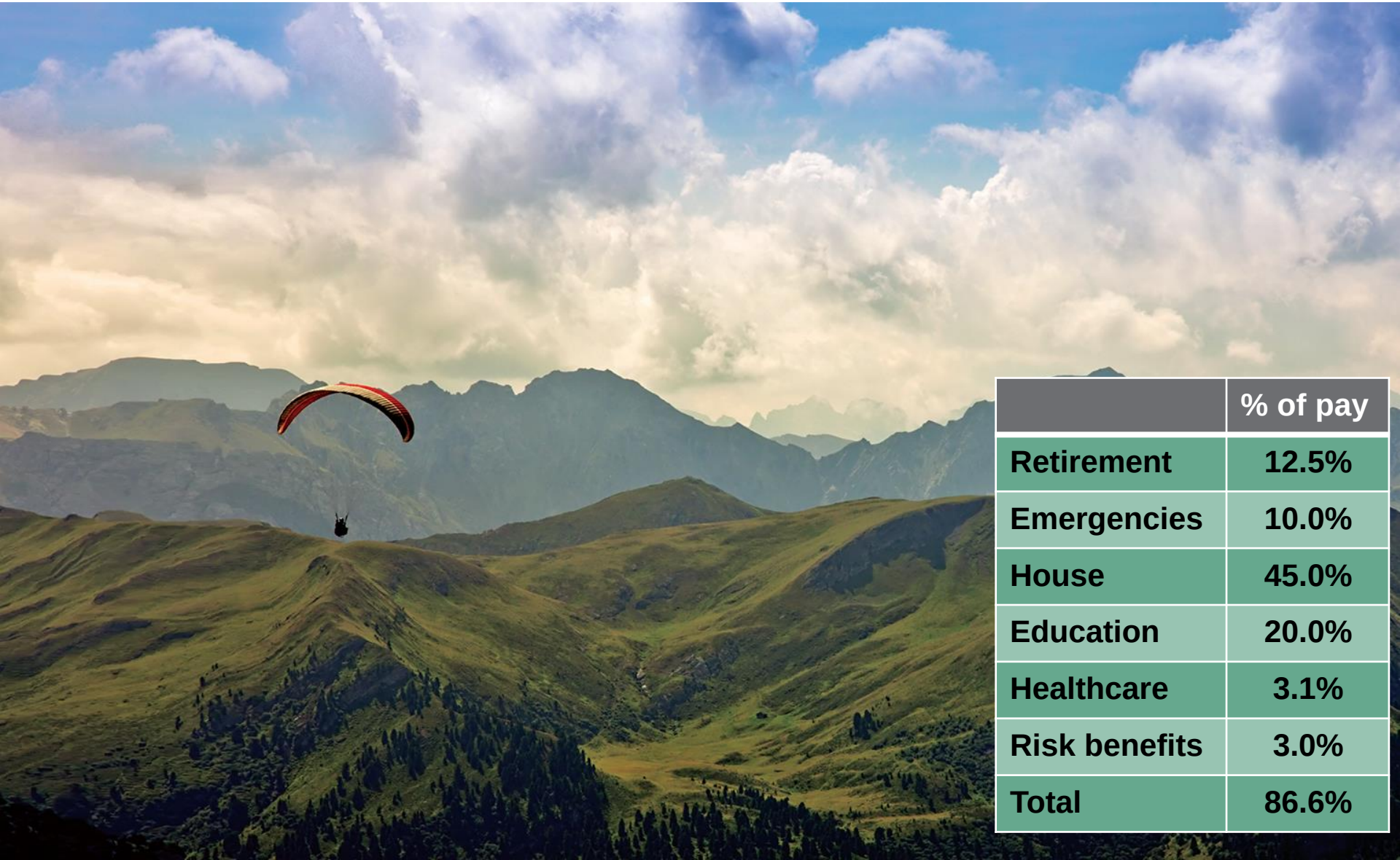
	% of pay
Retirement	**12.5%**
Emergencies	**10.0%**
House	**45.0%**
Education	**20.0%**
Healthcare	**3.1%**

Risk benefits

- Benefit dependent
- Assumed 3%: basic death, disability & funeral cover

	% of pay
Retirement	12.5%
Emergencies	10.0%
House	45.0%
Education	20.0%
Healthcare	3.1%
Risk benefits	3.0%

Total picture is scary



	% of pay
Retirement	12.5%
Emergencies	10.0%
House	45.0%
Education	20.0%
Healthcare	3.1%
Risk benefits	3.0%
Total	86.6%

Clearly there is a problem

- Funding all priorities in full, at one time, is not typically possible for most
- Lifecycle theory provides some hope – sequencing helps manage the cost
- But it requires individuals to stay the course
- Which is difficult if the system does not meet immediate needs as well as long term needs – so individuals cash out!
- So who will help individuals stay on track?

Can we have it all?

We've built a simplified model using the following assumptions:

1. A man enters the workforce at age 23 and retires at age 63. We use Alexander Forbes annuity rates for males.
2. His real salary will increase according to the Alexander Forbes actuarial salary scale tables (not published).
3. He earns a starting salary of R72 000 a year.
4. He starts the savings programme for all goals from the first day of working.

23-year-old male

5 His overall intentions are:

Get to at least a 50% replacement ratio on retirement.

Build and maintain an emergency fund of three months' salary.

Provide a full education (from age six up to tertiary) for his two children born when he is 25 and 27.

Fund and pay off a starter house with a real value of R250 000 within 20 years (using the savings and debt model illustrated in **Part 2: Chapter 8**).

6 **A real return of 4%** (after costs) is assumed for the investment strategy that linearly reduces to 2% over the last five years to retirement, representing less risky investment strategies during a period where an individual's general risk aversion increases.

7 **A post-retirement interest** 'rate' of 3.25%, five years full pension guaranteed, with 50% pension reverting to the spouse on death.

8 **The emergency fund** is topped up every five years. It assumes 0% real growth and that 50% of its value is drawn down through each five-year cycle.

9 **Primary and secondary school costs** are R29 000 a year. Tertiary education costs are at R50 000 a year funded for four years. Education costs grow at at 3% above CPI inflution.

10 **The real value of the house** purchased in 20 years is at least R250 000.

11 **Tax effects are not considered**.

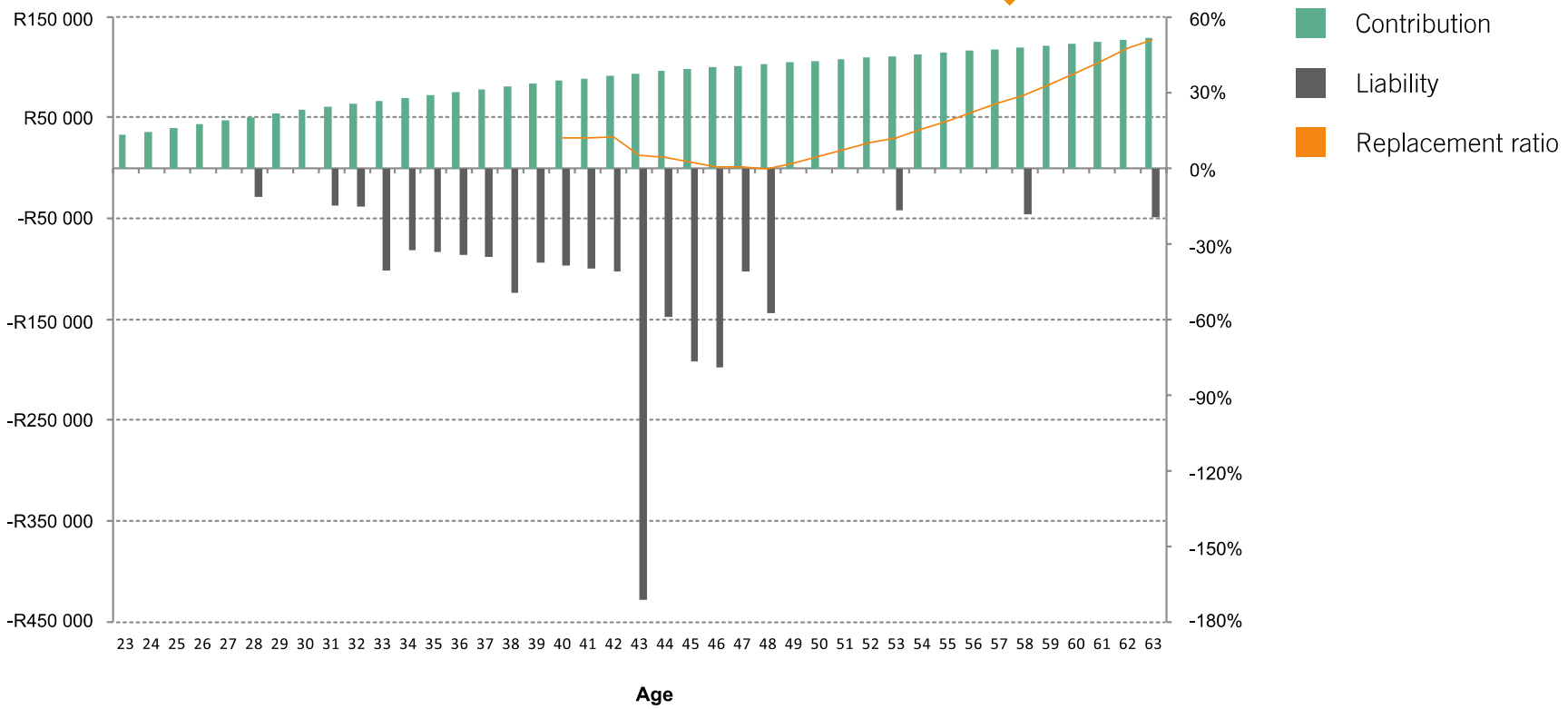
12 **Risk benefit costs** are ignored for this simplified model, but these would be based on a lifecycle model of expenditure of its own. We discuss this lifecycle risk benefit concept in **Part 2: Chapter 7**.

What did we learn

Modelling outcomes and insights

46.2% lifetime contribution to approximately meet all objectives

Estimated cashflow profile (from age 23 to age 63)



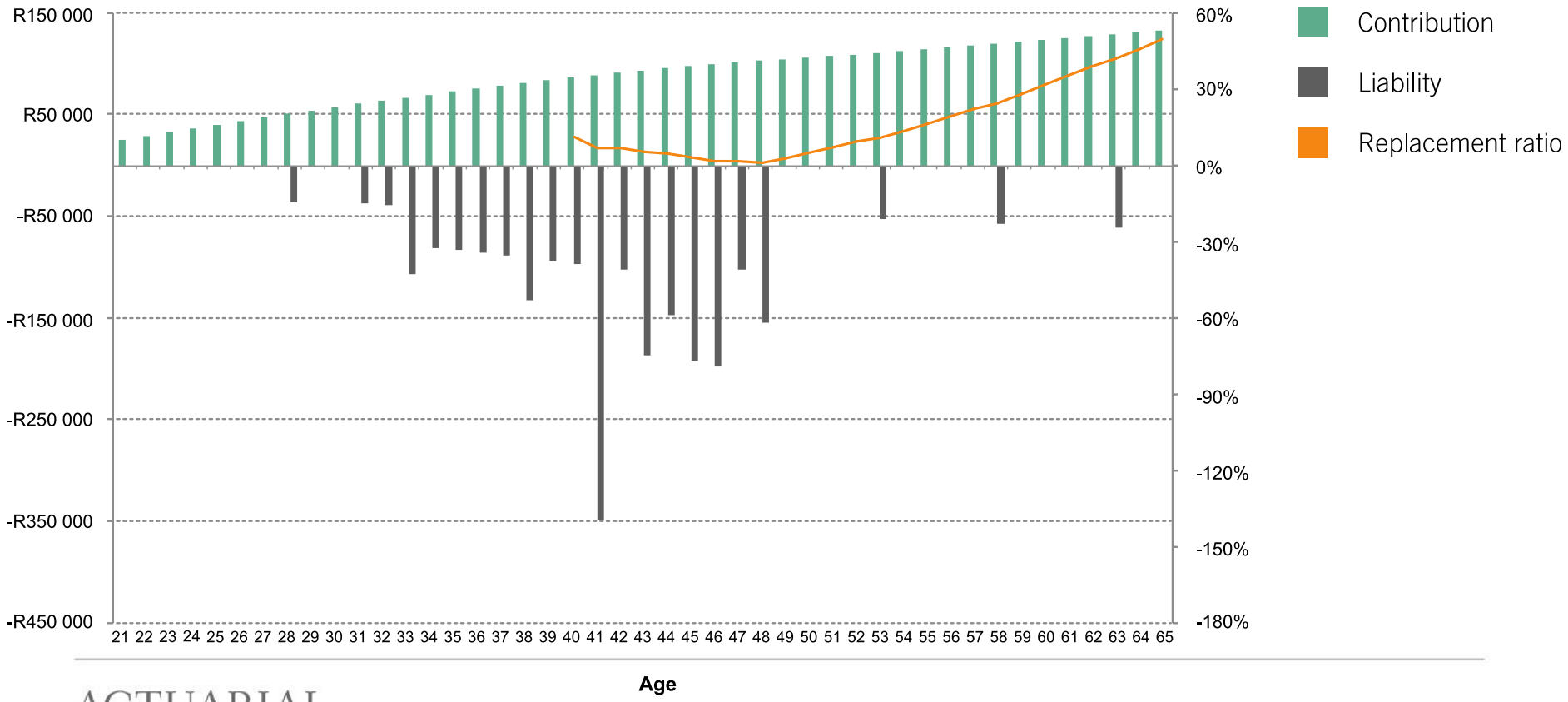
Levers to lower the overall contribution

- Power of time
- Subsidisation

46% reduces to 36% starting 2 years earlier

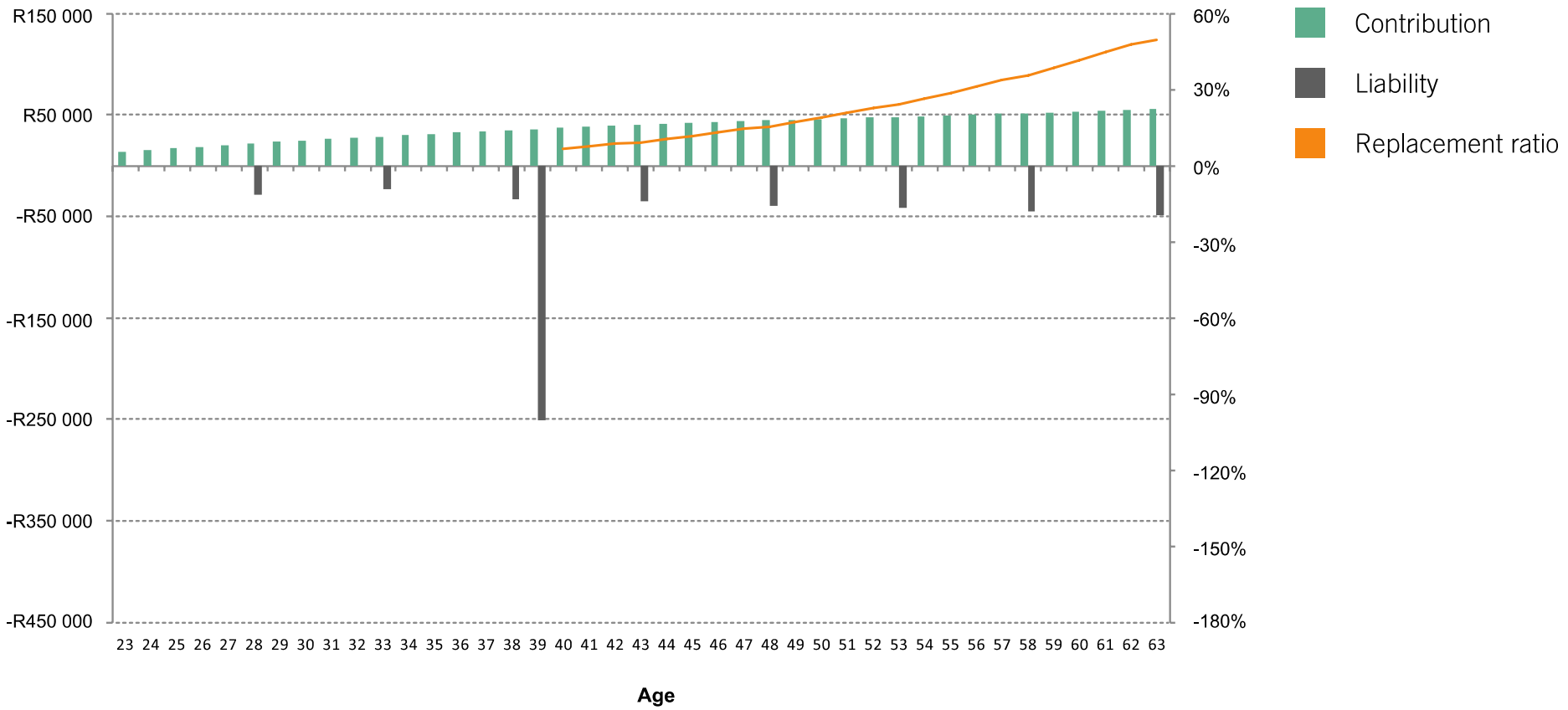
Using the power of time

Estimated cashflow profile (from age 21 to age 65)



Subsidisation

Estimated cashflow profile (from age 23 to age 63)



Removing education (subsidised at lower levels), the required contribution drops to 20%

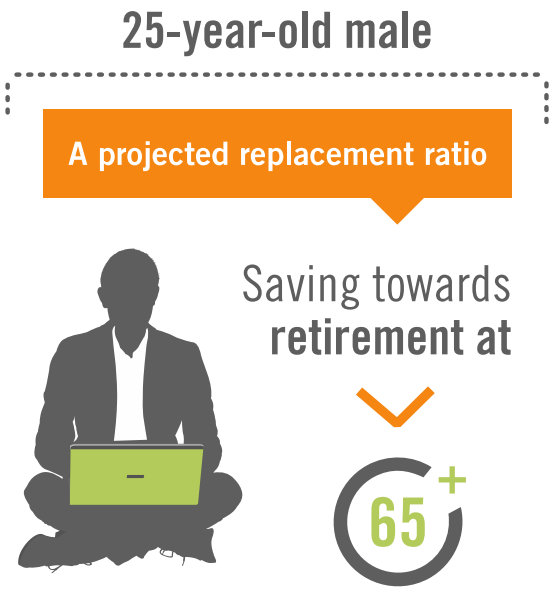
The effect

Expected outcomes on a 30% contribution

	Annual starting salary						
	R72 000	R84 000	R96 000	R108 000	R120 000	R132 000	R144 000
Final projected replacement ratio	-12.2%	4.4%	16.8%	26.5%	34.2%	40.6%	45.8%
Maximum shortfall through lifetime	-R1 055 500	-R768 700	-R482 000	-R195 200	-	-	-
Subsidisation on education to meet all goals	60%	52%	43%	34%	26%	17%	9%

Assuming a 30% total contribution is acceptable, subsidisation of education ranges from 60% to 9% & lower as salaries rise

A word about modelling



Salary scale	Base	+1%	-1%
Replacement ratio	61%	50%	77%

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