



Preparing Members for a Sound Retirement

Botswana Pension Society | December 2018

Rob Rusconi

robr@tresconsulting.co.za | +27 82 3345937

Preparing members for a sound retirement

Roadmap for discussion

Context

Impacts of a delayed or early retirement

Investing for retirement

Closing comments

Preparing members for a sound retirement

Roadmap for discussion

Context

- Fiduciary responsibility
- Key decisions, especially for members of defined contribution arrangements
- Substantial risks involved

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Context

Where does fiduciary duty begin and end?

- Members of the management board of a retirement fund act in a relationship of trust
 - They are often referred to as trustees, acting with extraordinary responsibility
 - They are agents on behalf of principals, the members and beneficiaries
 - They themselves act as principals in their engagement with providers of service
- Yet they cannot decide for all stakeholders
 - Members have unique needs and (sometimes conflicting) desires
 - Many of them are passive participants
 - Those that make decisions often do so imperfectly



Preparing members for a sound retirement

Context

Decisions around retirement are frequently key

- The process of converting saving to income is probably the most critical decision in a lifetime
 - Members tend to think short term
 - They make decisions as if they may be changed again at any time in the future
 - They represent key customers to providers of service, sometimes to their detriment
- Trustee responsibility for the ultimate outcome is not clear
 - Retirees are frequently not part of the fund
 - Trustees do not always measure ultimate outcomes
 - And they have limited power to impact them



Preparing members for a sound retirement

Context

Decisions around retirement are frequently key

- Risks for retiring members of defined contribution funds are enormous
 - Nobody knows how long they need to prepare for
 - The costs of living late in life are entirely unpredictable
 - Individuals systematically overstate the significance of short-term events, planning poorly for long
- Accumulation and decumulation are frequently imperfectly coordinated
 - Trustees tend to regard their responsibility as ending at retirement
 - Members take matters into their own hands when they retire
 - Investment decisions are poorly coordinated
 - Substantial risks frequently result



Preparing Members for a Sound Retirement

Roadmap for discussion

Context

Impacts of a delayed or early retirement

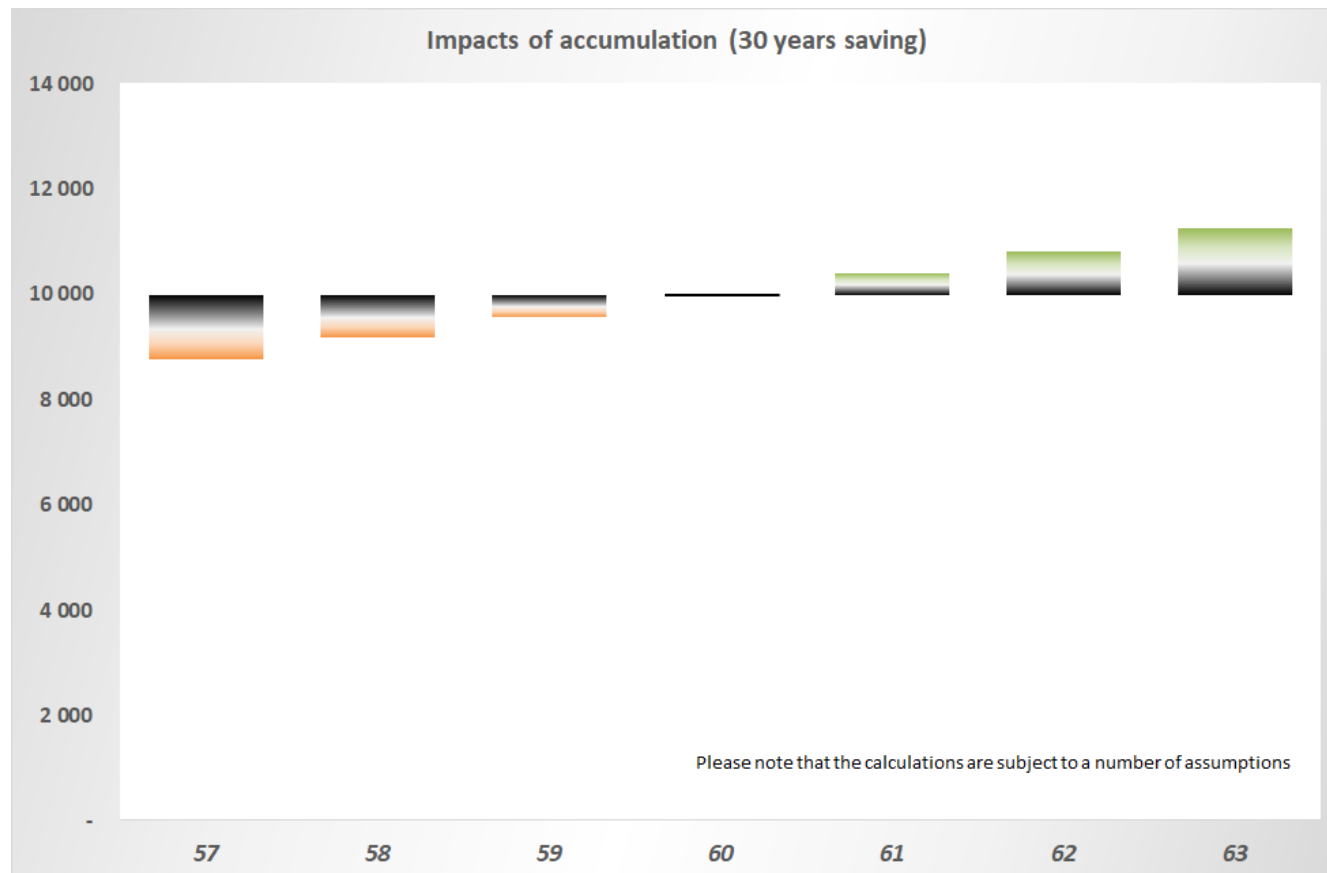
- Illustration
- Reasons not to
- Factors to consider

Investing for retirement

Closing comments

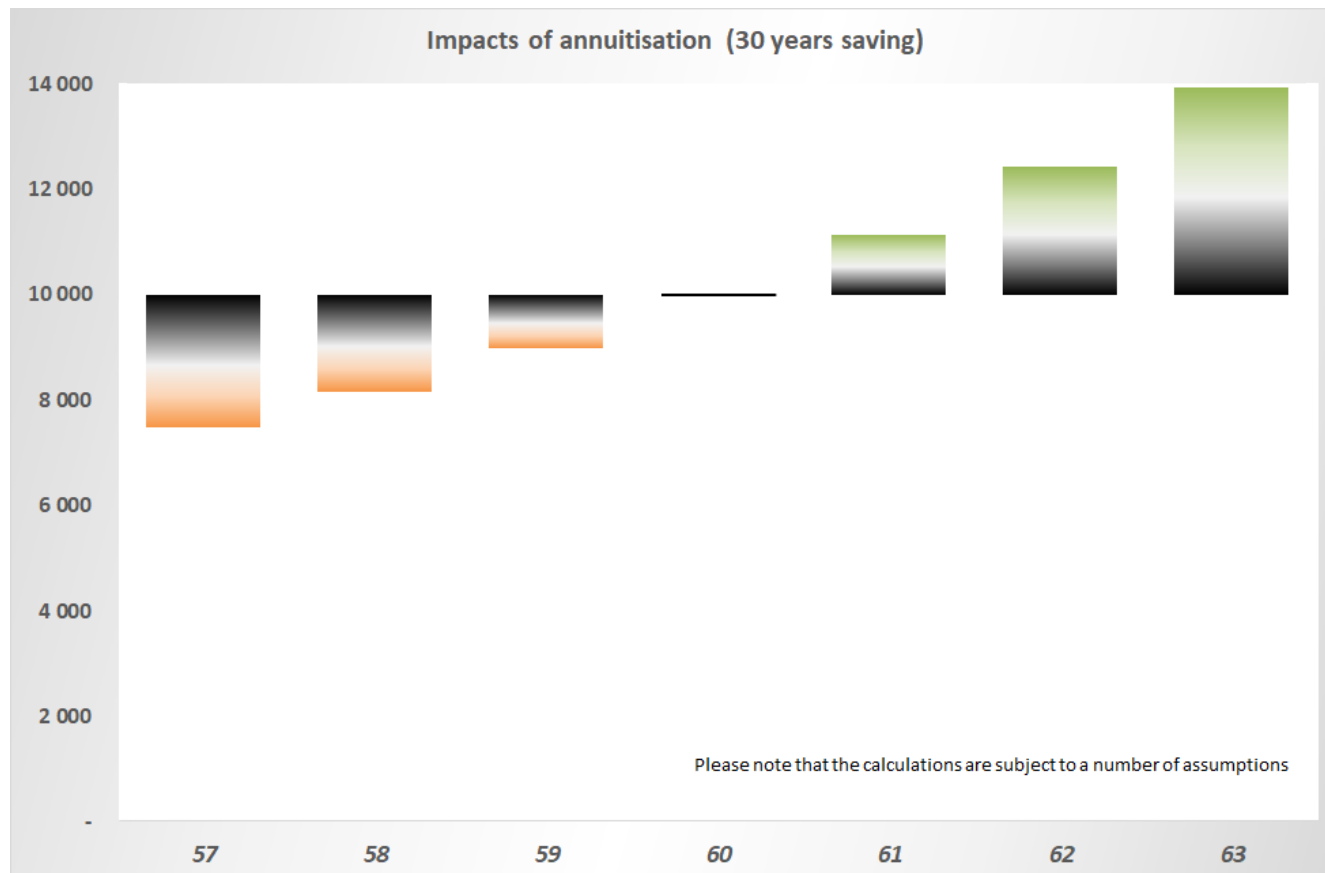
Impacts of a delayed or early retirement

Does it make a difference?



Impacts of a delayed or early retirement

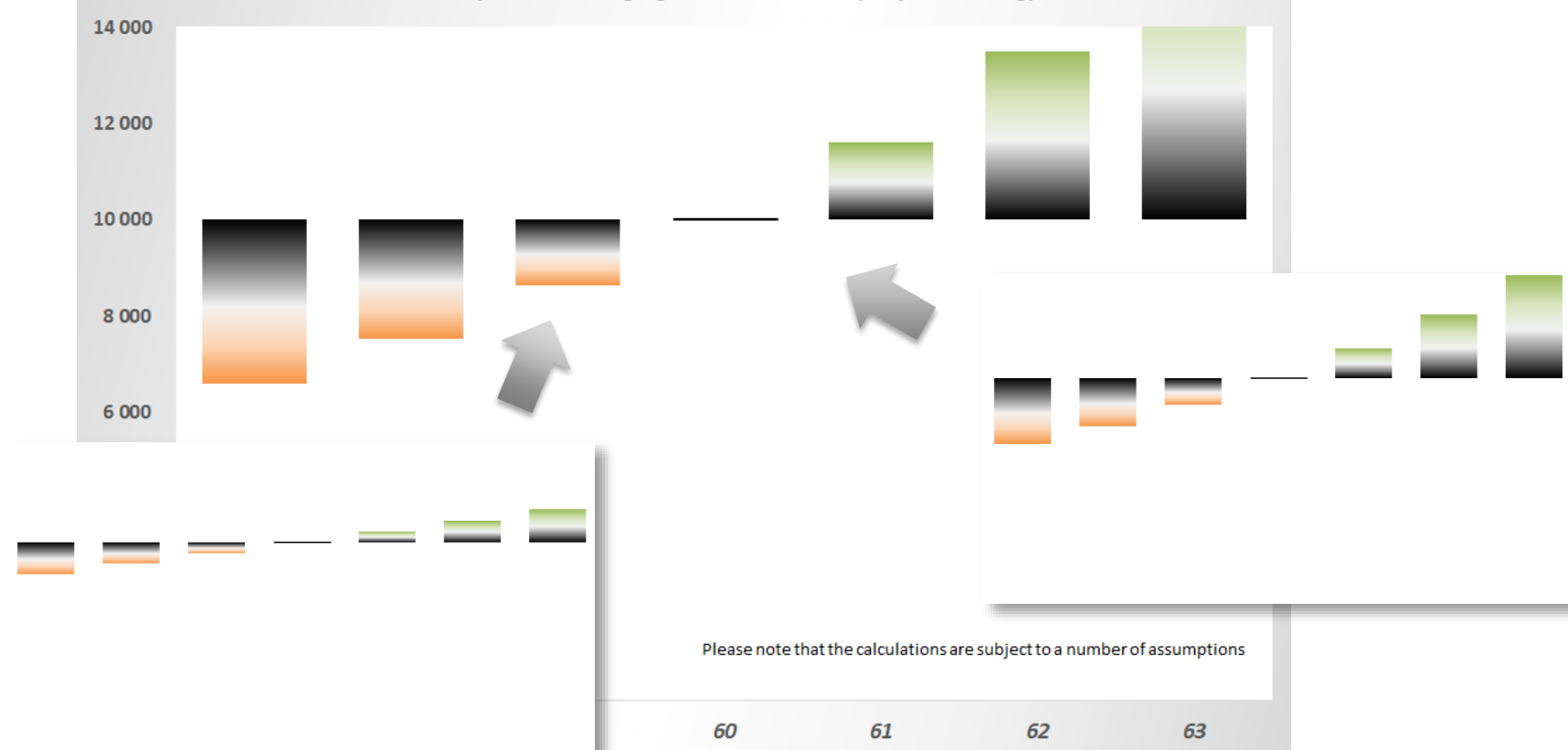
Does it make a difference?



Impacts of a delayed or early retirement

Does it make a difference?

Combined impacts of changing retirement date (30 years saving)



Impacts of a delayed or early retirement

Does it make a difference?

Combined impacts of changing retirement date (20 years saving)



Impacts of a delayed or early retirement

Implications for pension fund design

Clear benefits to a flexible retirement date

- Delayed retirement has significant financial benefit in retirement
 - Both from additional saving and better terms on annuity
 - Quantum strongly dependent on member circumstances
- The flexibility of early retirement provides a form of health or disability insurance

We might ask why flexibility should not be offered

Impacts of a delayed or early retirement

Implications for pension fund design

Reasons not to offer flexibility

- Employer or union resistance
 - Fallacy of fixed demand for labour
 - Appeal on the basis of the benefits of experience
 - Quantum strongly dependent on member circumstances
- Administrative challenges
 - Hard to justify
- Coordination with state benefit
 - Not necessarily a good reason
 - Not always the case

Impacts of a delayed or early retirement

Implications for pension fund design

Factors to consider

- Employer strategy and employment contract
- Member circumstances
- Available retirement options, especially annuities

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Impacts of a delayed or early retirement

Investing for retirement

- A primer on annuity markets
- Risks and guarantees
- Options for development

Closing comments

Investing for retirement

A primer on annuity markets

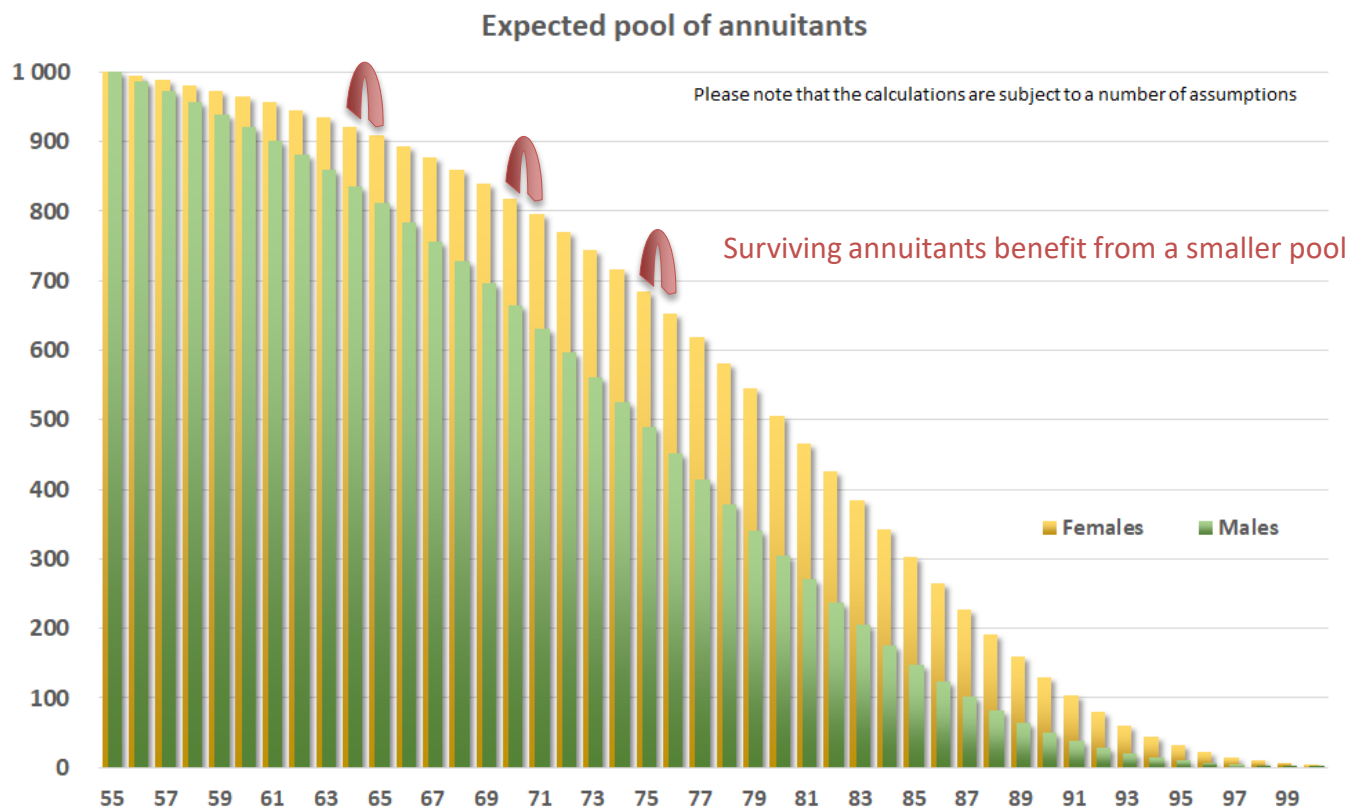
The puzzling low demand for lifetime annuities

- Longevity risk is very difficult to self-insure
- Annuities with lifetime guarantees offer enhanced returns
- But the demand for longevity protection is consistently low
- A number of possible reasons for this:
 - other sources of wealth reduce the need for longevity insurance
 - the lump sum alternative is unduly attractive
 - the bequest motive discourages the purchase of annuities
 - family self-insurance reduces the need for mortality insurance

* Sources: Vidal-Meliá, C & A Lejárraga-García (2004) "The Bequest Motive and Single People's Demand for Life Annuities", Belgian Actuarial Bulletin, Vol. 4, No. 1; and (2005) "Demand for Life Annuities from Married Couples with a Bequest Motive", Fundación de Estudios de Economía Aplicada, Documento de Trabajo 2005-11

Investing for retirement

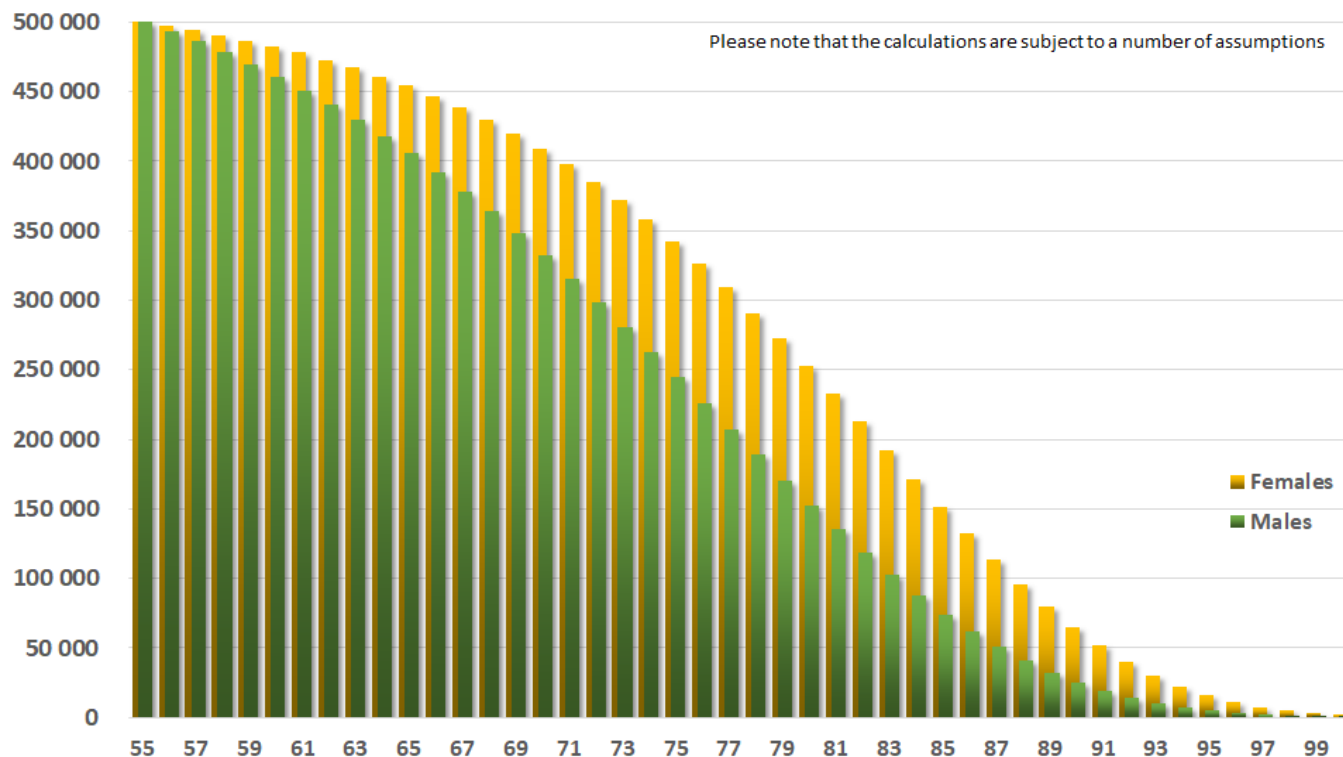
A primer on annuity markets



Investing for retirement

A primer on annuity markets

Expected insurer cashflow, no annuity increases



Investing for retirement

A primer on annuity markets

Expected insurer cashflow, 4% annuity increases



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A primer on annuity markets

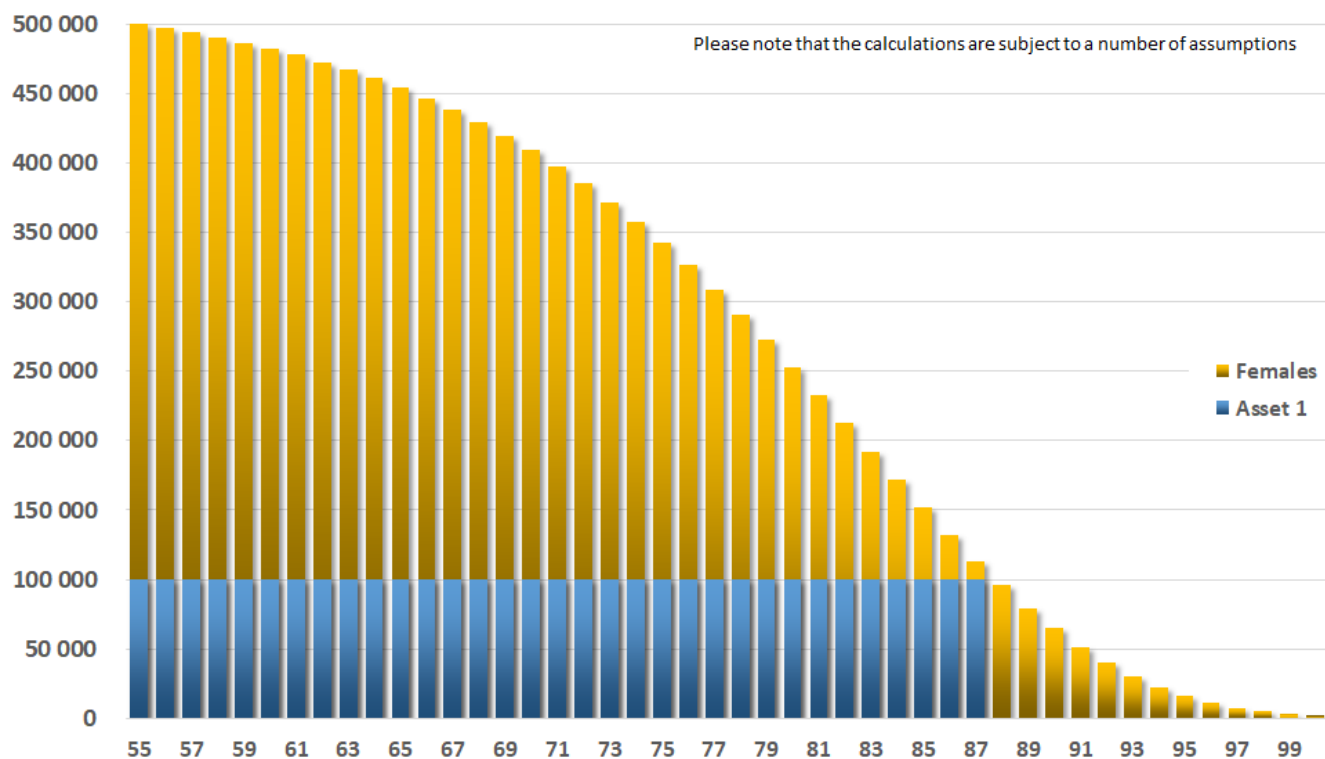
Supplying lifetime annuities is difficult

- Longevity risk is very difficult to protect against
- Increasing lifespans present a unique peril to insurers
- Solvency requirements add to the capital stress faced by insurers
- Investment risks are typically difficult to protect against as well

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A primer on annuity markets

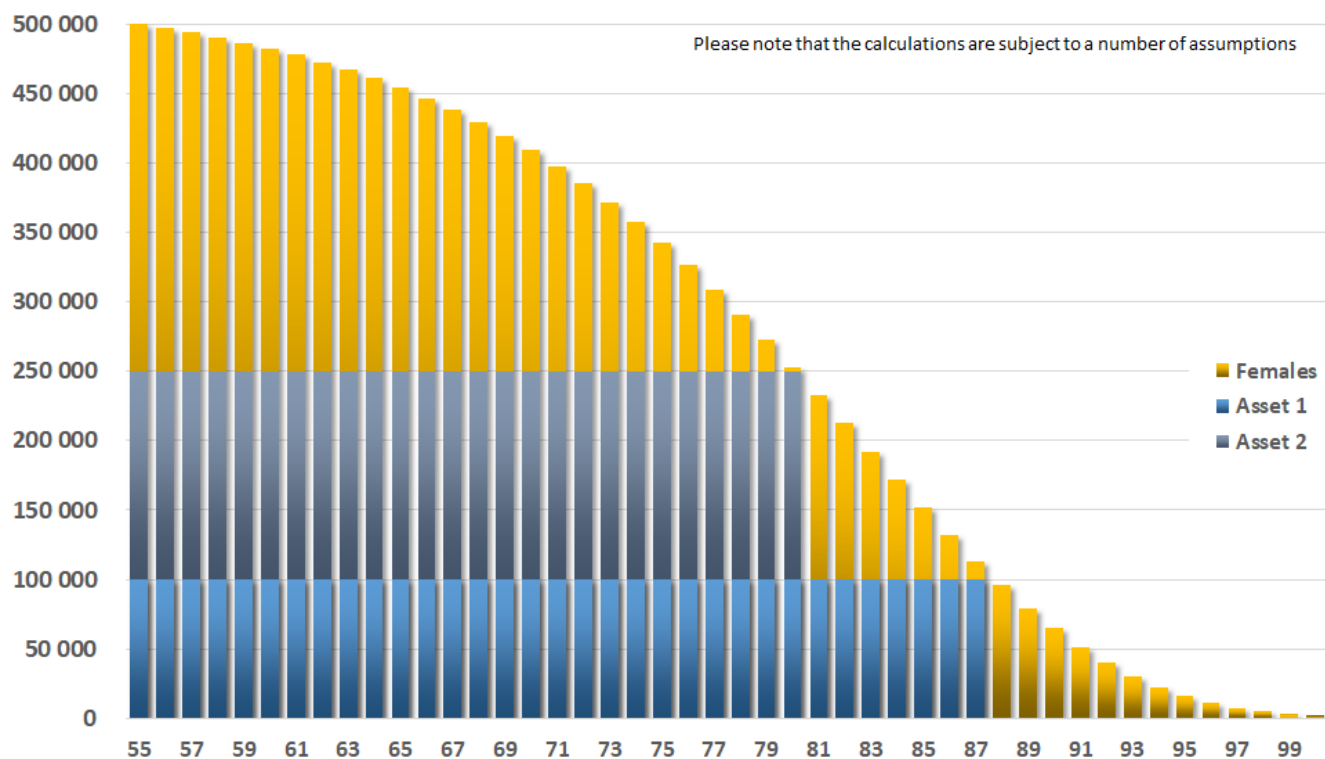
Expected insurer cashflow, no annuity increases, with matching assets



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A primer on annuity markets

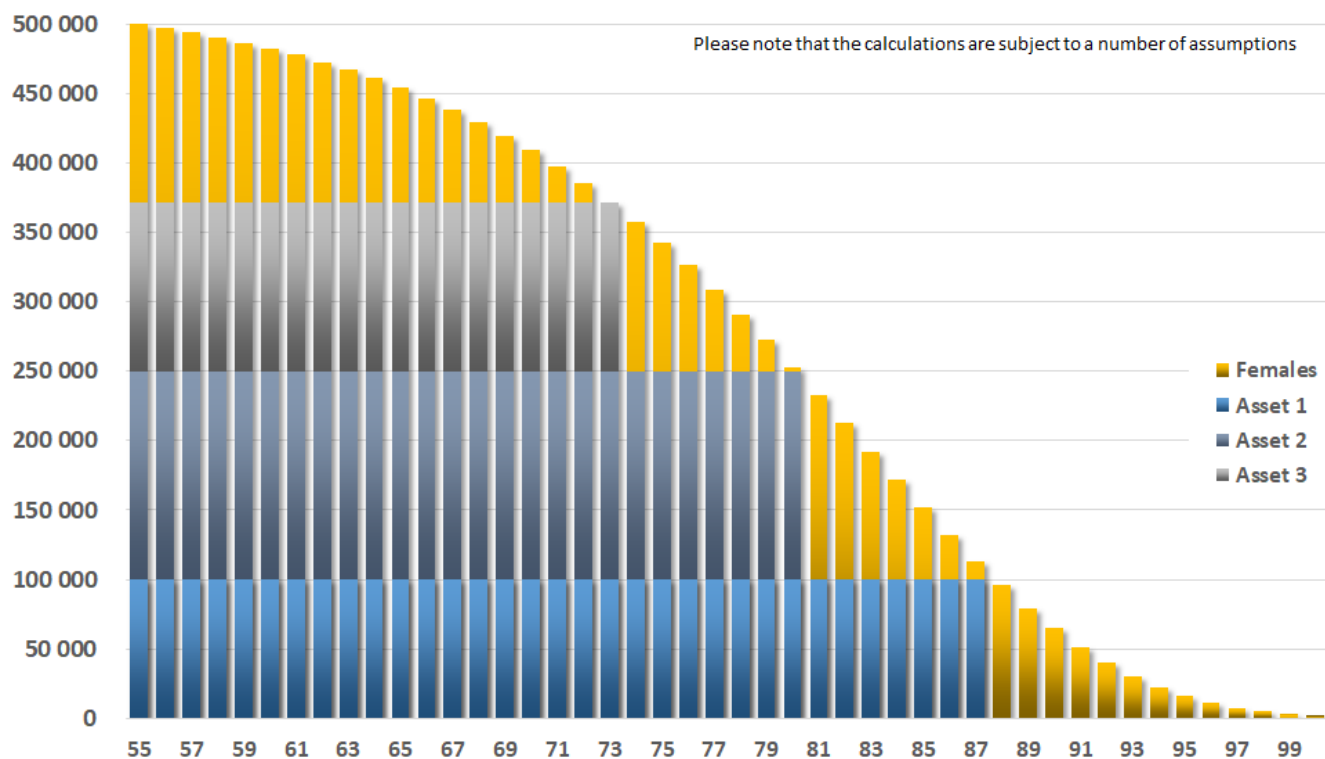
Expected insurer cashflow, no annuity increases, with matching assets



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A primer on annuity markets

Expected insurer cashflow, no annuity increases, with matching assets



Investing for retirement

Risks and guarantees

Supplying lifetime annuities is difficult

- Longevity risk is very difficult to protect against
- Increasing lifespans present a unique peril to insurers
- Solvency requirements add to the capital stress faced by insurers
- Investment risks are typically difficult to protect against as well
 - Depends on reliable supply of appropriate assets
 - With low default risk
 - Sufficiently tradeable
 - At appropriately low cost
 - And a sufficiently large portfolio of customers

The supply of annuities is in decline around the world

Investing for retirement

Local market challenges

Botswana's bond market is not deep

OUTSTANDING GOVERNMENT BONDS AND SECONDARY MARKET YIELDS

BOND NAME	BW005	BW007	BW008	BW011	BW012	BW013	BW014	BW015	6 Months T-BILL*	6 Months T-BILL*
MATURITY DATE	12-Sep-2018	10-Mar-2025	8-Sep-2020	10-Sep-2031	13-Jun-2040	7-Jun-2023	5-Sep-2029	2-Sep-2043	5-Dec-2018	6-Mar-2018
BALANCES	2 008.00	1 974.00	2 147.00	2 103.00	1 528.00	705.00	129.00	301.00	450.00	320.00
5-Sep-2018	1.27	4.35	3.62	4.93	5.17	3.82	4.95	5.20	1.20	1.49
6-Sep-2018	1.13	4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.46
7-Sep-2018	1.13	4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.46
10-Sep-2018	1.13	4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.48
11-Sep-2018	1.13	4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.48
12-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.48
13-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.95	5.12	1.13	1.48
14-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.18	1.13	1.50
17-Sep-2018		4.35	3.62	4.93	5.17	3.81	4.88	5.22	1.20	1.52
18-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.51
19-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.51
20-Sep-2018		4.35	3.62	4.94	5.17	3.81	4.88	5.22	1.12	1.52
21-Sep-2018		4.35	3.62	4.94	5.17	3.81	4.88	5.22	1.12	1.52
24-Sep-2018		4.35	3.62	4.94	5.17	3.81	4.88	5.22	1.12	1.52
25-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.54
26-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.54
27-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.54
28-Sep-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.54
3-Oct-2018		4.35	3.63	4.94	5.18	3.81	4.89	5.20	1.13	1.54

Source: Bank of Botswana, <http://www.bankofbotswana.bw/content/2009103014034-government-bonds>, accessed 28 November 2018

Investing for retirement

Local market challenges

Botswana's bond market is not deep

- Government-issued bonds are limited in volume and variation
- Bond holdings are already largely dominated by local pension funds
- The market for corporate bonds is thin
- South African bonds expose purchasers to currency risk

Developing depth in assets is ideally a combination of supply and demand

Source: Bank of Botswana, <http://www.bankofbotswana.bw/content/2009103014034-government-bonds> and Bank of Botswana Market Report, <http://www.bankofbotswana.bw/index.php/content/2016040807008-botswana-financial-statistics>, both accessed 28 November 2018

Investing for retirement

Options for developing countries

Chile's bond market



Source: Rocha, R & C Thorburn (2007), "Developing Annuity Markets: The Experience of Chile", World Bank

Investing for retirement

Options for development

Chile's bond market developed with its pension market

Table 2.5. Breakdown of the Stock of Pensioners, by Type of Retirement, 1990–2004

Year	Total	Normal Old Age		Early Retirement		Disability + Survivors	
		Number	% of Total	Number	% of Total	Number	% of Total
1985	7,609	2,647	34.8%	-	0.0%	4,962	65.2%
1990	57,119	23,876	41.8%	5,790	10.1%	27,453	48.1%
1995	190,400	55,591	29.2%	69,537	36.5%	65,272	34.3%
2000	343,965	93,152	27.1%	132,221	38.4%	118,592	34.5%
2004	520,793	133,343	25.6%	220,929	42.4%	166,521	32.0%

Sources: SAFP.

Source: Rocha, R & C Thorburn (2007), "Developing Annuity Markets: The Experience of Chile", World Bank

Investing for retirement

Options for development

Chile's bond market developed with its pension market

Table 4.1. Financial Assets (% of GDP) and Participation by AFPs and Life Insurance Companies,^a 1995–2003

Year	Public Sector Bonds (% of GDP)	Share of AFPs+ LICOs (%)	Mortgage and Bank Bonds (% of GDP)	Share of AFPs+ LICOs (%)	Corporate Bonds ^b (% of GDP)	Share of AFPs+ LICOs (%)	Endorsable Mortgages (% of GDP)	Share of AFPs+ LICOs ^c (%)	Bank Time Deposits/ CDs (% of GDP)	Share of AFPs+ LICOs (%)	Stock Market Capitalization (% of GDP)	Share of AFPs+ LICOs (%)
1995	27.3	64.0	10.3	79.3	3.4	85.0	0.6	100.0	23.2	9.1	101.3	11.7
1996	28.7	65.3	12.1	82.9	3.1	84.9	0.8	100.0	26.7	6.9	89.6	11.8
1997	30.3	61.9	13.4	79.5	2.4	84.9	1.0	100.0	29.8	14.5	91.0	10.8
1998	27.6	72.5	13.5	82.2	2.9	82.3	1.2	100.0	33.2	17.2	67.2	9.6
1999	29.1	70.1	14.3	94.4	3.7	80.1	1.5	100.0	36.6	22.4	97.3	6.9
2000	27.5	76.4	14.1	98.7	5.1	74.9	1.7	100.0	35.7	27.4	85.4	7.6
2001	28.1	71.5	14.6	93.8	9.3	76.1	1.8	100.0	34.7	27.9	85.7	7.3
2002	26.8	63.2	12.9	97.0	11.4	74.2	2.0	100.0	34.3	35.1	72.8	8.2
2003	20.5	71.0	12.5	84.4	13.4	71.4	1.7	100.0	30.6	29.7	84.0	10.9

Sources: Central Bank of Chile, SAFF, SVS.

a. The share of financial assets held by LICOs is probably underestimated, as these instruments are valued by a combination of market and book values on their balance sheets.

b. Includes infrastructure bonds.

c. Assumes that LICOs hold all the outstanding stock.

Source: Rocha, R & C Thorburn (2007), "Developing Annuity Markets: The Experience of Chile", World Bank

Investing for retirement

Options for development

Botswana's bond market is not deep

- Government-issued bonds are limited in volume and variation
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Developing depth in assets is ideally a combination of supply and demand

But guaranteed annuities are not the only option for retirees

Source: Bank of Botswana, <http://www.bankofbotswana.bw/content/2009103014034-government-bonds> and Bank of Botswana Market Report, <http://www.bankofbotswana.bw/index.php/content/2016040807008-botswana-financial-statistics>, both accessed 28 November 2018

Investing for Retirement

Options for Retirement



Source: Rocha, R, D Vitas & HP Rudolph (2011), "Annuities and Other Retirement Products: Designing the Payout Phase", World Bank

Investing for retirement

Options for development

Table 2.1 Risk Characteristics of Retirement Products for Pensioners

Retirement product	Protections offered			Benefits provided	
	Longevity risk	Investment risk	Inflation risk	Bequest	Liquidity
Fixed real life annuities	Yes	Yes	Yes	Limited	No
Fixed nominal life annuities	Yes	Yes	No	Limited	No
Escalating real life annuities	Yes	Yes	Yes plus	Limited	No
Escalating nominal life annuities	Yes	Yes	Partial	Limited	No
Variable life annuities, guaranteed benefits	Yes	Yes	Possible	Limited	No
Variable life annuities, bonus payments	Shared	Shared	Shared	Limited	No
Variable life annuities, unit linked	Shared	No	No	Limited	No
Lifetime phased withdrawals	No	No	Possible	Yes	No
Term annuities	No	Possible	Possible	Yes	No
Lump sums	No	Possible	Possible	Yes	Yes
Self-annuitization	No	Possible	Possible	Yes	Yes

Source: Authors' compilation.

Note: Annuitization risk is present in all fixed and escalating annuities but does not affect variable annuities. Bankruptcy risk affects all types of retirement products but is particularly important in life annuities.

Source: Rocha, R, D Vitta & HP Rudolph (2011), "Annuities and Other Retirement Products: Designing the Payout Phase", World Bank

Investing for retirement

Options for development

Table 2.2 Risk Characteristics of Retirement Products for Providers

<i>Retirement product</i>	<i>Exposures</i>		
	<i>Longevity risk</i>	<i>Investment risk</i>	<i>Inflation risk</i>
Fixed real life annuities	Yes	Yes	Yes
Fixed nominal life annuities	Yes	Yes	No
Escalating real life annuities	Yes	Yes	Yes plus
Escalating nominal life annuities	Yes	Yes	Partial
Variable life annuities, guaranteed benefits	Yes	Yes	Possible
Variable life annuities, bonus payments	No	No	No
Variable life annuities, unit linked	No	No	No
Lifetime phased withdrawals	No	No	Possible
Term annuities	No	Possible	Possible
Lump sums	No	Possible	Possible
Self-annuitization	No	Possible	Possible

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Closing comments

Work together

- The success of a retirement system is marked by the effectiveness of its outcomes
 - Do not forget your retirees
 - Work to coordinate accumulation and decumulation more effectively
 - Allow appropriate flexibility of retirement
- Work with policymakers towards more effective outcomes
 - Establish policy objectives
 - Motivate for an appropriate range of debt issues
 - Explore the possibility of alternative forms of retirement income





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