Discovery Life

Technical Actuarial Considerations

Timeline of additional internal and external communication

Internal discussion document

INTERNAL

Factual findings report and independent opinion obtained from two independent consultants

External independent review of Discovery's accounting policy for setting discretionary margins performed by a respected independent consultancy firm

Changes to Discovery's economic basis

- Economic basis reviewed due to move to SAM
- Consistency in Nominal and Real yield curves

A case study of recent key experience items

- Decision process followed when considering assumption changes
- Explain impact of recent interventions

Resilience of the NRR in Discovery Life

- Margins in IFRS NRR provide a significant buffer
- Recognised NRR fully recoverable on economic basis under severe stresses

Negative Rand Reserve Infographic

- Profitable new business → recognition of negative reserve
- Initially recognised to offset funding strain with margins emerging in future as profit

2015 — 2016 — 2017 — 2018 — 2019

Discovery Life Earnings and Accounting Policy

Life Business Funding Structures

Understanding in-force book cash flow profile

- Impact of the cashless financing structure on early duration cash flows is material
- Financing Reinsurance has a net EV and IFRS cost when written
- Reliance on cash flows beyond year 30 is less material to the VIF than typically understood
- Key items of experience are improving by duration

Internal Response document 1

Internal Response document 2

INTERNAL

External Independent Review

Frequently recurring questions

	Questions raised		Discovery's response
1	• Use of risk-free rates to discount profits		• Our approach is consistent with **actuarial guidance** (as per SAP104) and **market practice** • Margins explicitly allowed for in line with the requirements of SAP104
2	• Are In-force premiums exceeding laspes?	Internal Document Internal document with Additional considerations	• **Premium increases exceeded lapses** by +1.4% in FY2018 • Impact of premium increases has exceeded impact of lapses in last 6 financial years
3	• Inflation assumption	Changes in Discovery's economic basis	• Inflation assumption is **market consistent** and derived by considering market levels of nominal and real yield curves
4	• Policy alterations	Case study of Recent Key Experience Items	• The basis was **strengthened** at June 2018 to allow for net negative policy alteration costs as explained in the document
5	• Impact of Vitality on claims and client behaviour	Understanding in-force book cash flow profile  Results Presentations	• **Impact of Vitality** on selective lapses **extensively discussed** in documents and results presentations
6	• Percentage of costs that are treated as new business costs	Technical Overview of Accounting Policy	• Externally disclosed that **c44% of management expenses** are treated as **renewal** expenses in modelling
7	• Does a negative reserve run down in a straight line similar to a DAC?	Negative Rand Reserve Infographic	• Negative reserve is **similar in quantum** to a DAC at initial recognition only. Thereafter, it **unwinds based on prospective cashflow projections**.

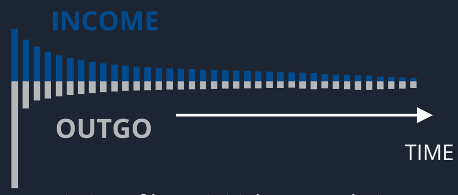
Negative Reserve Principles

This is an illustrative note to provide supplementary information regarding the negative reserve on a principles basis and is not intended to provide any specific reconciliations to the accounts

June 2018

Discovery Life's Individual Risk policies are characterised by large initial acquisition cost outflows followed by a stream of expected **net inflows** (Premiums less Claims, Expenses and PayBacks)

Discounted future income and outgo expected on sample Discovery Life policies



Timing of large initial outgo relative to timing of income leads to a funding strain

RESERVE

Discounted **future** outgo less discounted **future** income

NEGATIVE RESERVE

FUTURE OUTGO < FUTURE INCOME

POSITIVE RESERVE

FUTURE OUTGO > FUTURE INCOME

Overall, Discovery Life sells **profitable** new business policies where discounted future income is expected to exceed discounted future outgo, resulting in a negative reserve.

1 NEGATIVE IFRS RESERVE

→ Portion of expected future net cash flows recognised in IFRS income statement

To offset the initial funding strain, a portion of future net inflows are capitalised at the outset of the new business policy to reflect the fact that a **portion** of future premium is earmarked to repay the initial outgo. This is done in line with Discovery's Accounting policy at a portfolio level.

2 MARGINS

→ Portion of expected future net cash flows not recognised in IFRS income statement

→ Over time, margins will emerge as IFRS profit

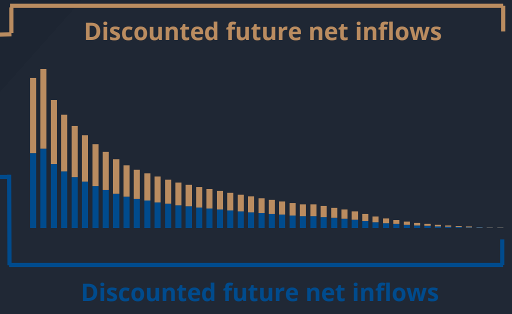
A large portion of the expected future inflows on new business are not recognised, instead being deferred to emerge as profit in the future through the addition of explicit compulsory and discretionary margins.

MARGINS
(Expected Future Profits not capitalised) 2

IFRS NEGATIVE RAND RESERVE ON NEW BUSINESS OFFSETS INITIAL OUTGO

1 NEGATIVE RESERVE

INITIAL OUTGO



-c.R31bn

NEGATIVE RAND RESERVE ON RISK AND INVEST RECOGNISED ON THE IFRS BALANCE SHEET

c.60%

EXPECTED FUTURE NET CASH FLOW RECOGNISED ON THE IFRS BALANCE SHEET

c.40%

UNREALISED PROFITS EXPECTED TO EMERGE ON BEST ESTIMATE ASSUMPTIONS

Theoretical difference between Negative Rand Reserves (NRR) and a Deferred Acquisition costs (DAC)

At Initial Recognition of a policy

- An IFRS NRR is recognised (i.e. a portion of the expected future profits under the policy is capitalised) to offset the initial expenses and commission payable to ensure a zero day 1 IFRS profit. This is done in line with Discovery's accounting policy.
- The amount of IFRS NRR recognised is therefore similar to the amount that would be set up as a DAC asset.
- At initial recognition, the IFRS NRR and a DAC are **conceptually similar** i.e. they represent amounts to offset the initial costs of writing new business. The two concepts differ materially in terms of run-off after initial recognition however

Over lifetime of a policy (in run-off)

- In general, a DAC runs down to 0 linearly over time as costs are amortized.
- The run-off of a NRR is not however linear; the reserve may become more negative for a period or may turn positive at some point over the expected lifetime of the policy. The NRR is calculated prospectively as the present value of future outflows less the present value of future inflows. If a period with particularly large outflows relative to inflows passes, the negative reserve will become more negative due to the prospective nature of the calculation

NRR and DAC: Illustrative example (Term policy with Best estimate NRR)

Illustrative over-simplified example, assuming zero profit loading & margins on reserves

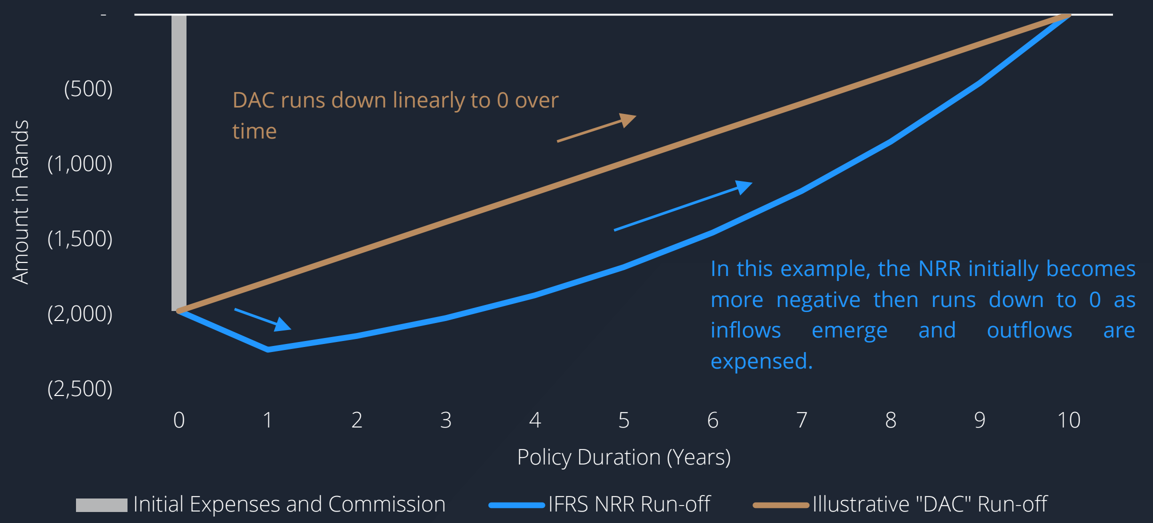
Theoretical cash flows and Best est NRR for an example Term Assurance policy

Year	Inflows[2]	Initial Expense	Commission	Renewal Expense[2]	Claim and other outgo	NRR[3]
0		1,000	978			-1,978
1	-1,000		326	50	747	-2,236
2	-1,060			53	792	-2,144
3	-1,124			56	840	-2,024
4	-1,191			60	890	-1,872
5	-1,262			63	944	-1,684
6	-1,338			67	1,000	-1,454
7	-1,419			71	1,060	-1,177
8	-1,504			75	1,124	-847
9	-1,594			80	1,191	-457
10	-1,689			84	1,263	-

1. Calculated at an illustrative 10% discount rate
2. Inflated at an illustrative CPI of 6%
3. Calculated as: *NRRt=NRRt+1+claim and other outgot+11+10%+init expense t+1+commissiont+1+renewal expenset+1 -inflowst+1*

Best estimate for simplification purposes

Comparison of Best est NRR run-off of an example term assurance policy to the run-off of a theoretical DAC



Points of clarification

- An IFRS NRR and a DAC cannot be treated in the same way : *Comparing the Individual Life NRR only to the Individual Life costs ignores the fact that the NRR changes over time to reflect unwind and the emergence of inflows and expensing of claims and other outgo; implicitly the analysis performed incorrectly treats the NRR as a DAC*
- Allowance for the time value of money:: The time value of money is sometimes also not allowed for when calculating the estimated historic total Individual Life costs.

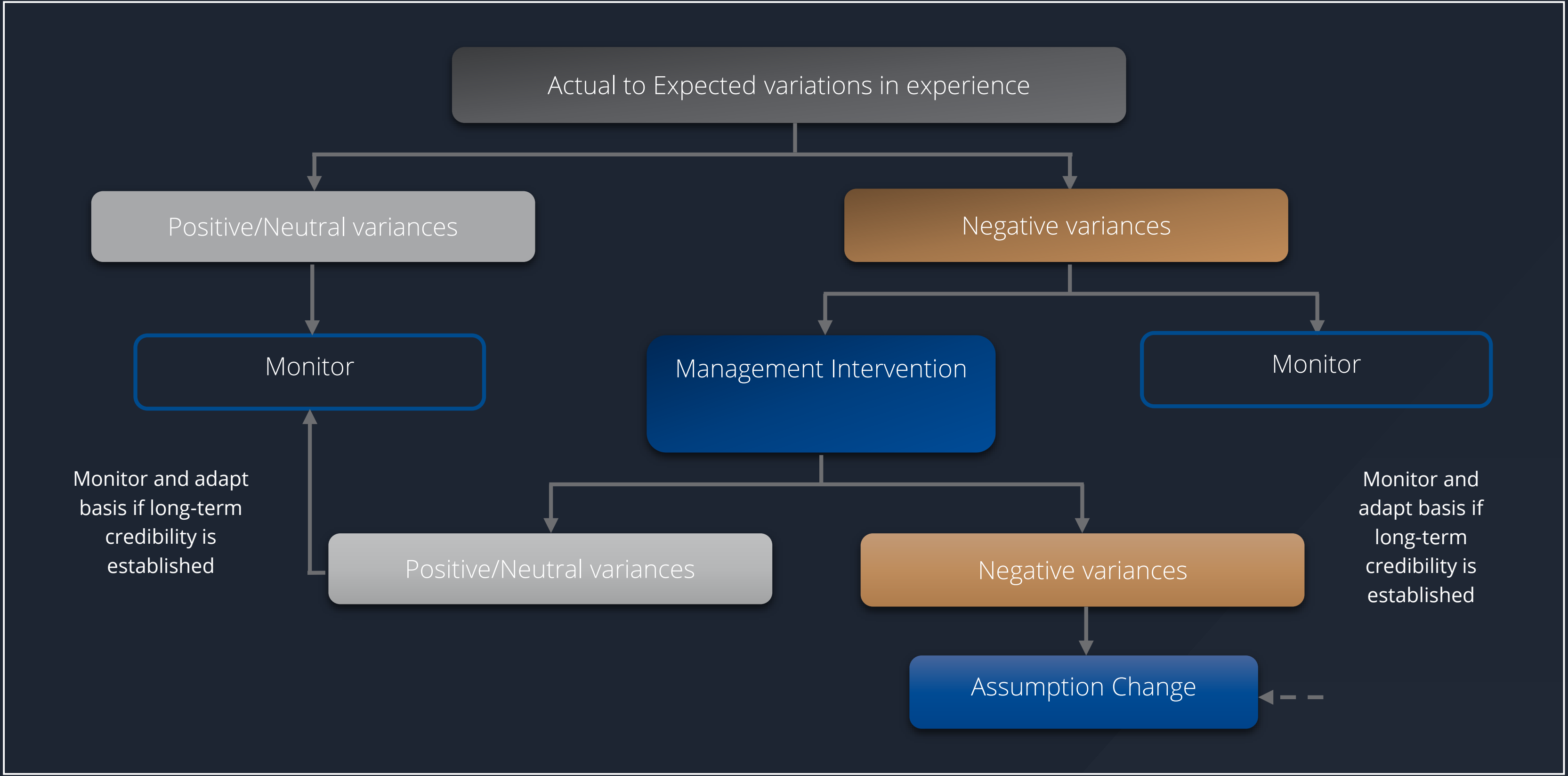
$$Reserve_{t+1} = Reserve_t + inflows_{t,t+1} + \underbrace{\boxed{(Reserve_t + inflows_{t,t+1}).i}}_{}^{\text{Unwind}} - claims_{t,t+1} - expenses_{t,t+1} - other\ outflows_{t,t+1}$$

Discovery Life

Experience Variances

Actual to Expected Experience variances

DISCOVERY LIFE HAS ADOPTED PRUDENT IFRS RESERVING RESULTING IN A **SIGNIFICANT BUFFER**



Discovery Life

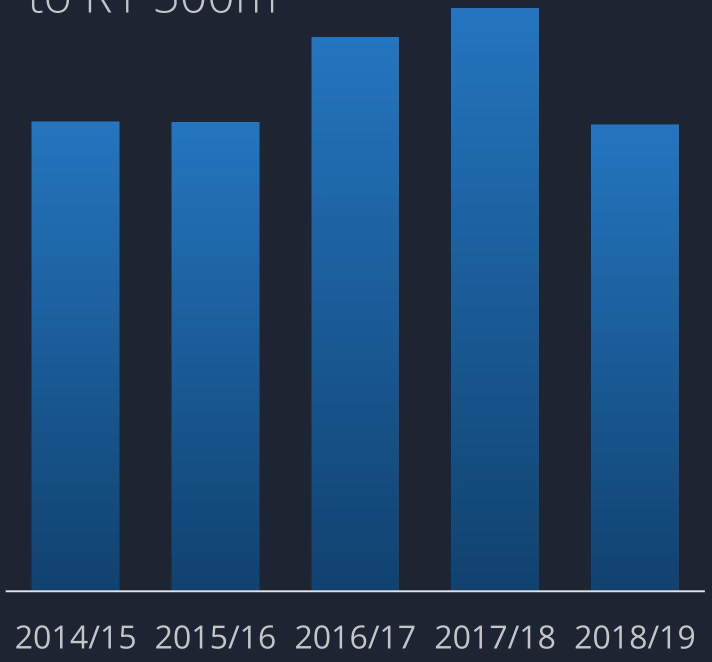
6 month review as at 31 December 2018

Discovery Life

Normalised Operating Profit (Rm)

-13%

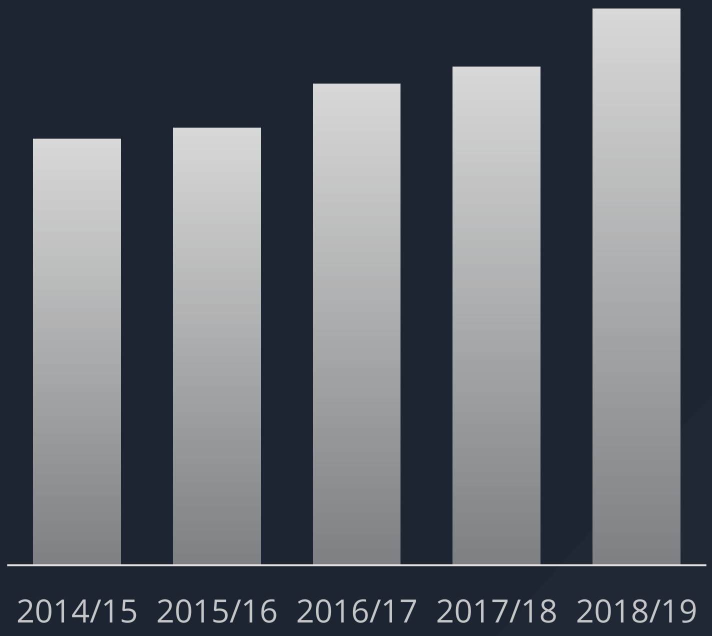
to R1 500m



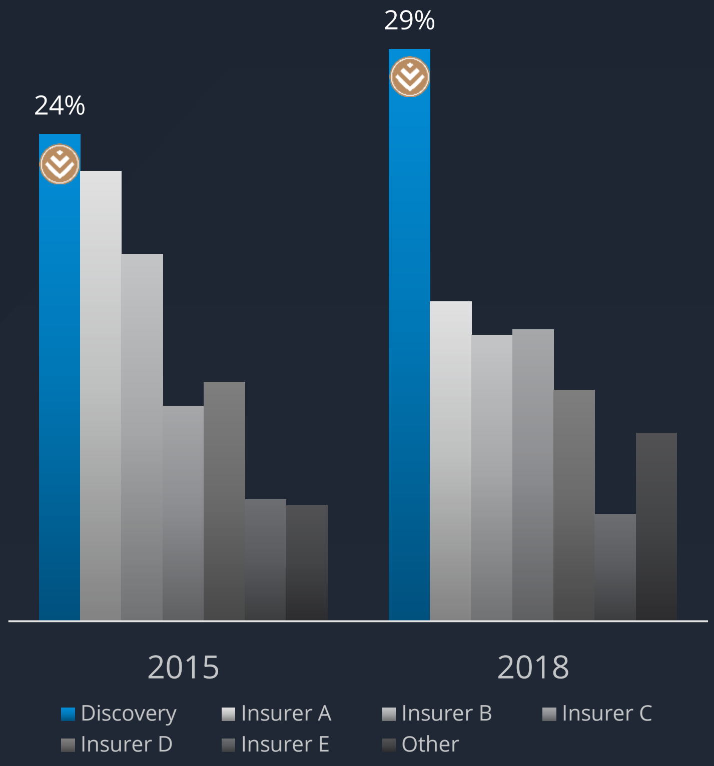
Core New Business API (Rm)

+8%

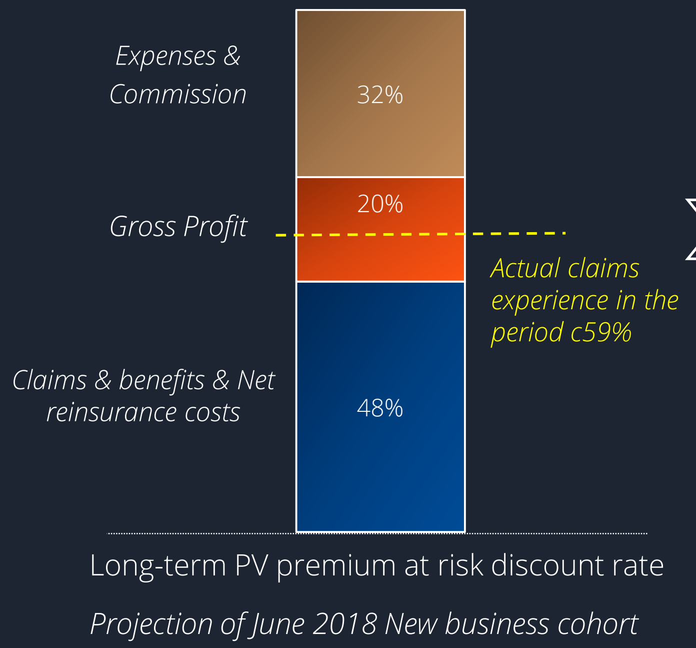
to R1 212m

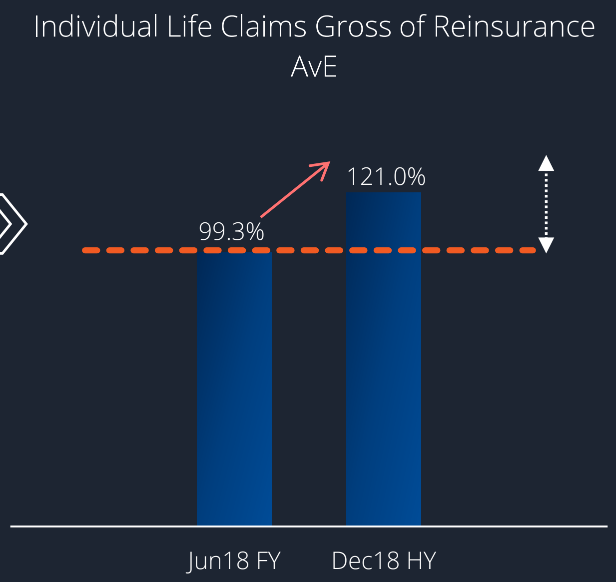


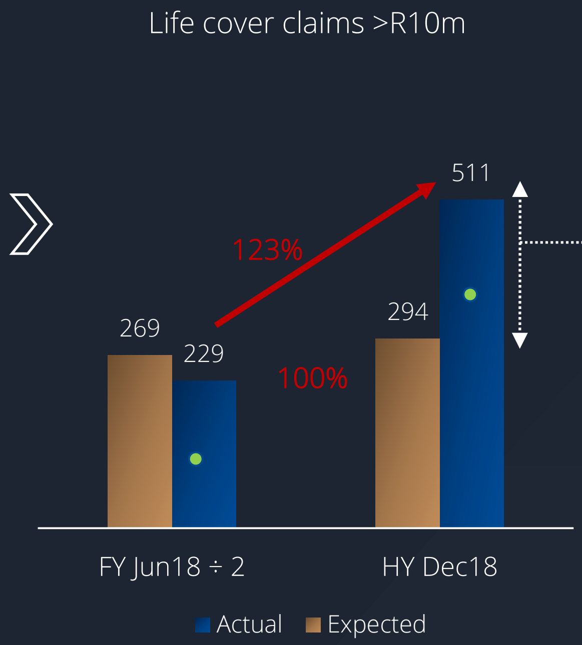
Market Share *Q3, Retail affluent market share*

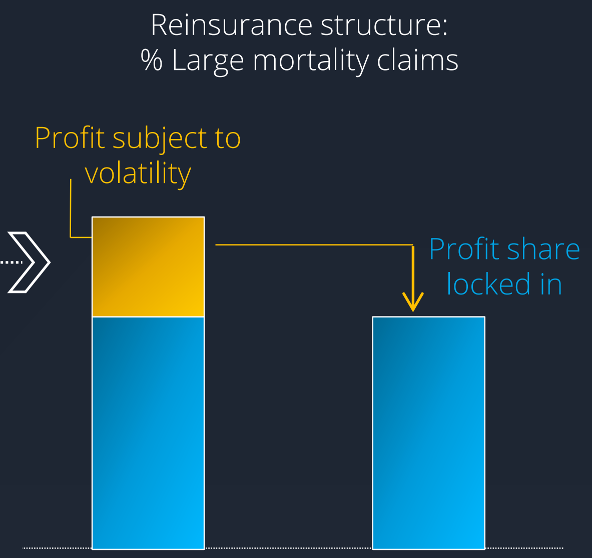


Large claims volatility

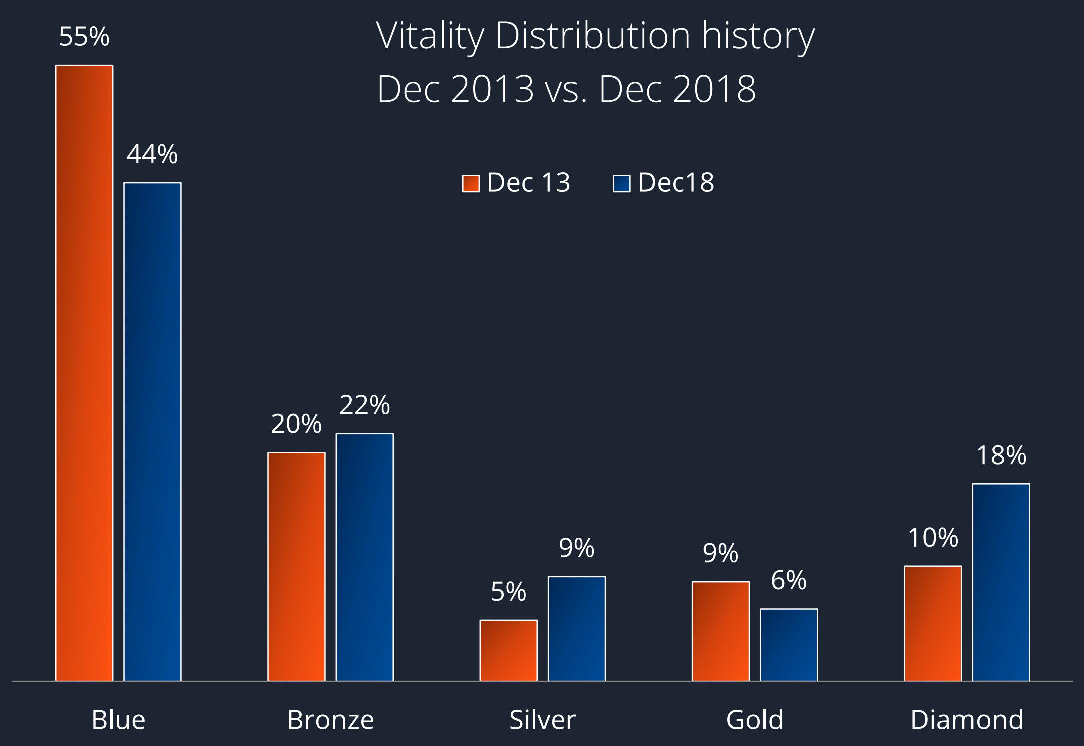


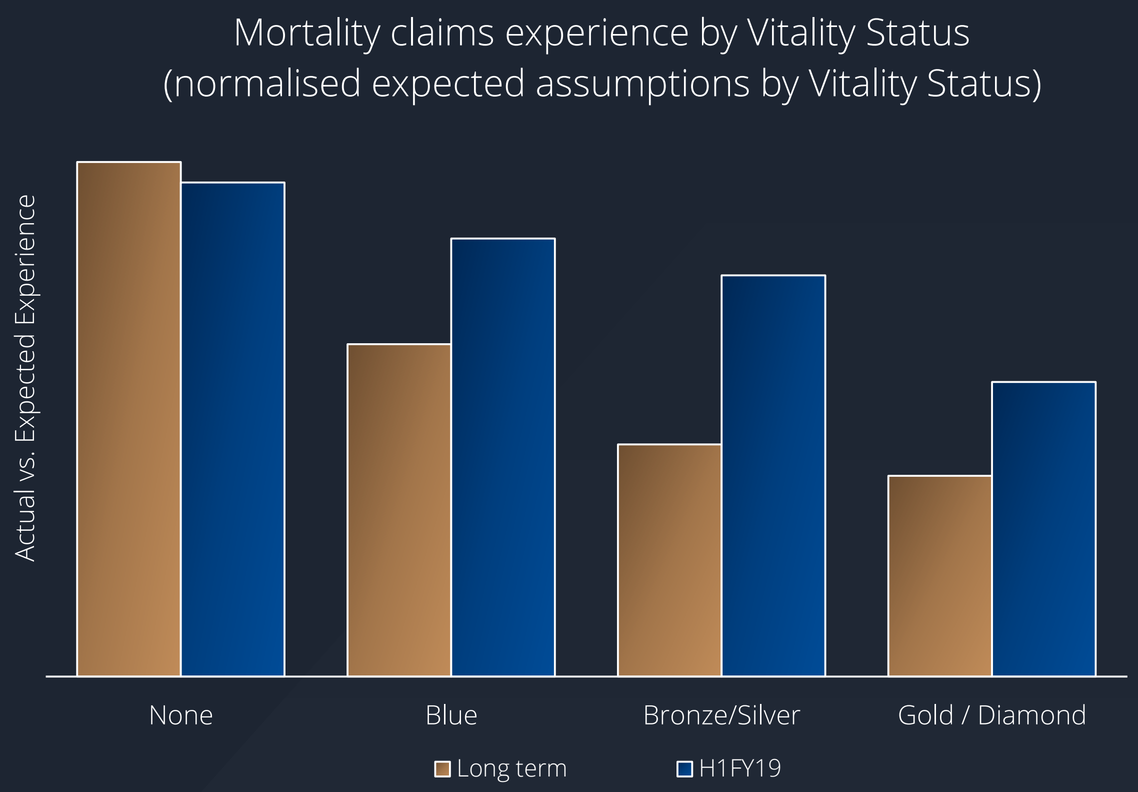






Vitality distribution and claims experience over time



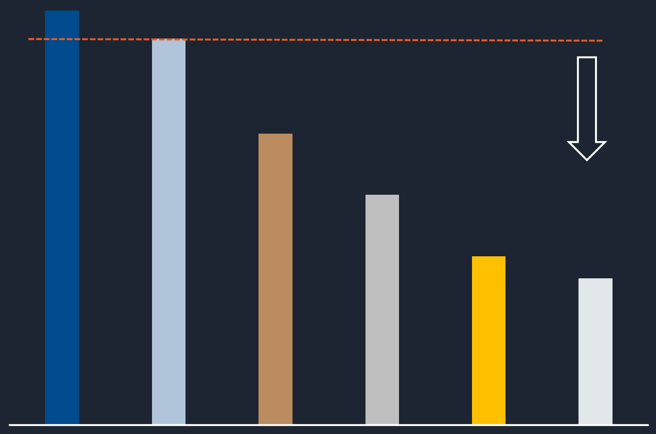


Long Term: July 2010- June 2018

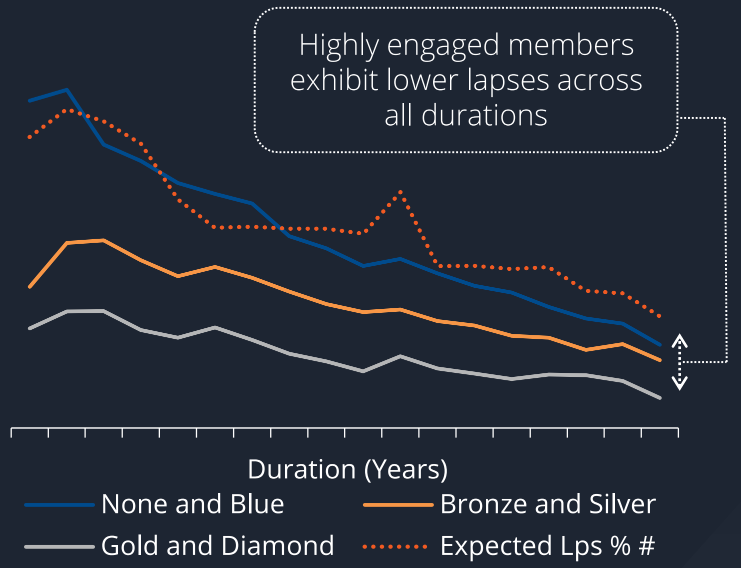
Vitality engagement has been a driver of improving persistency across the book

Lapse Experience by Vitality Status and across various durations

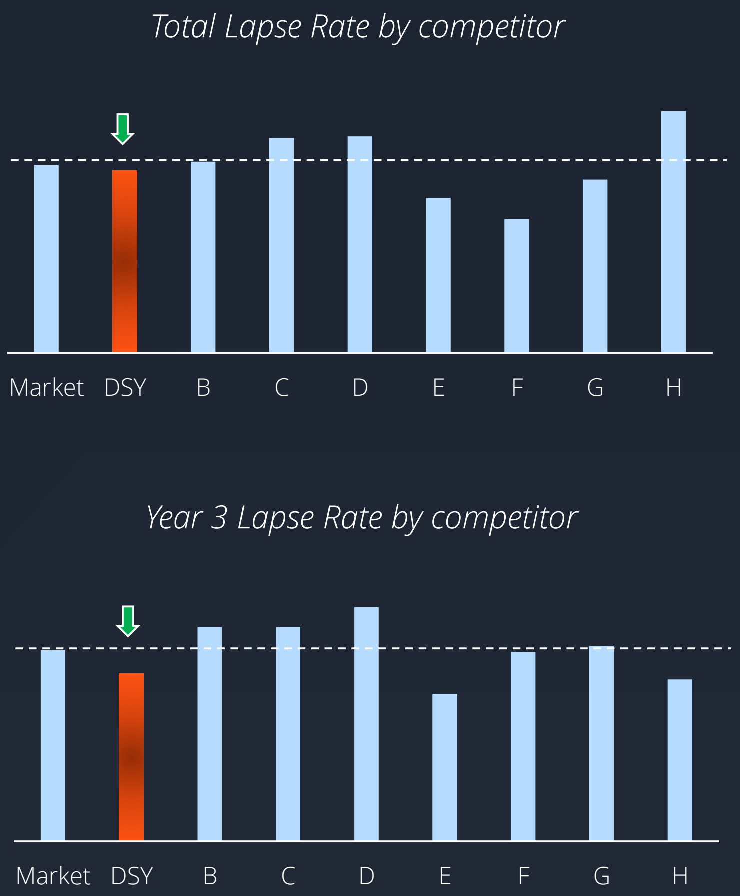
Lapse Rate,%



Lapse Rate,%



Actual Lapse rate better than the market average



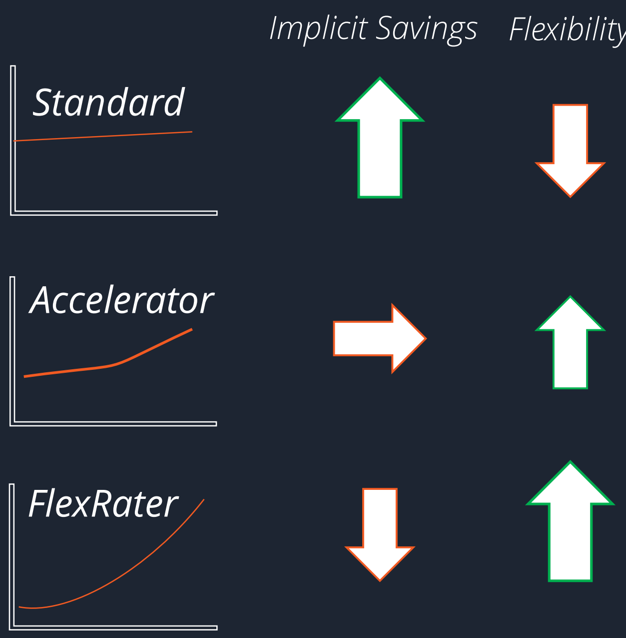
December 2018 figures

FY 2018 and December 2018 figures

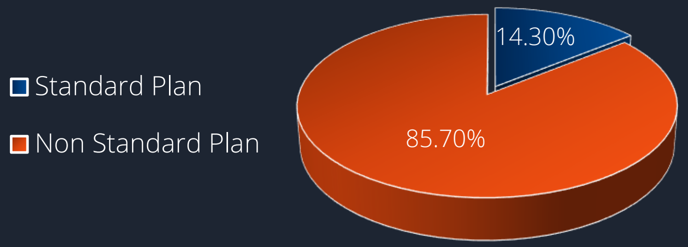
Figures based on NMG market share stats 2018

Range of plan types available to meet customer needs

Accommodates for various levels of savings and flexibility



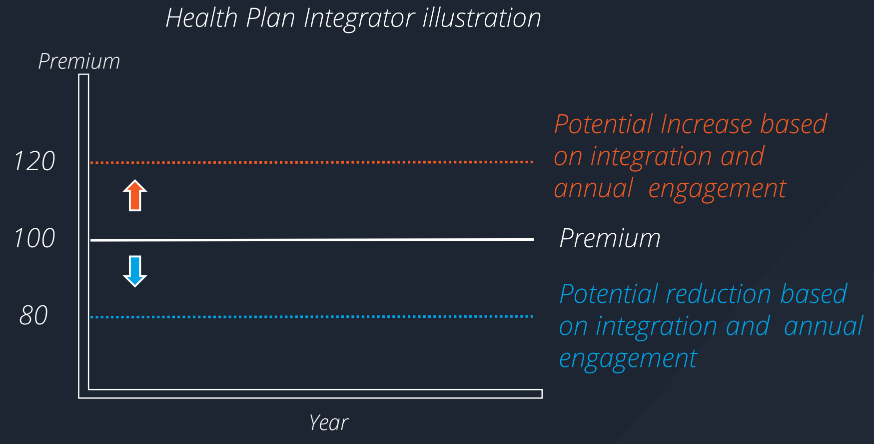
Take-up across plan type June 2018



Dynamic Underwriting aligned to our shared-value model

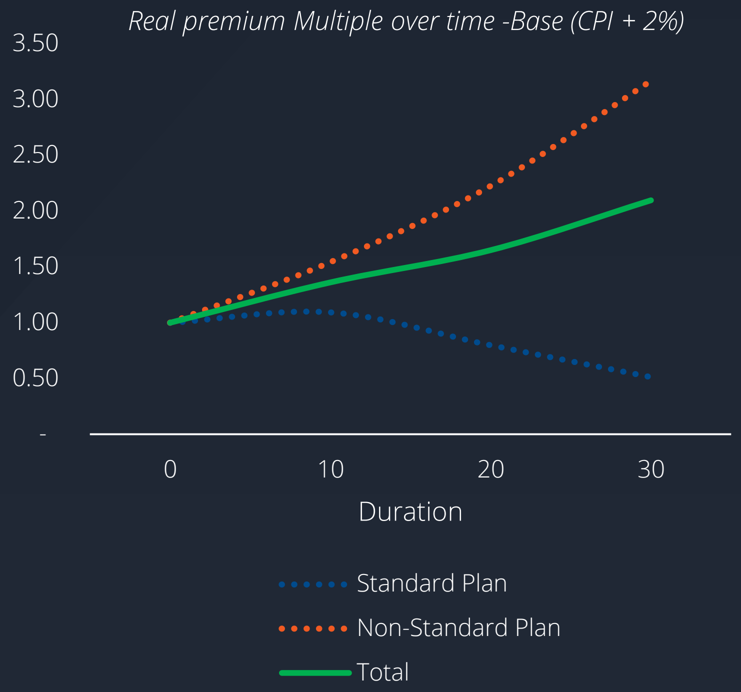
Dynamic Underwriting ensures that premiums flex with both Engagement and Integration across other Discovery products over time

Both Increases and Decreases to premiums are *capped*



Funding plan and real premium build-up over time

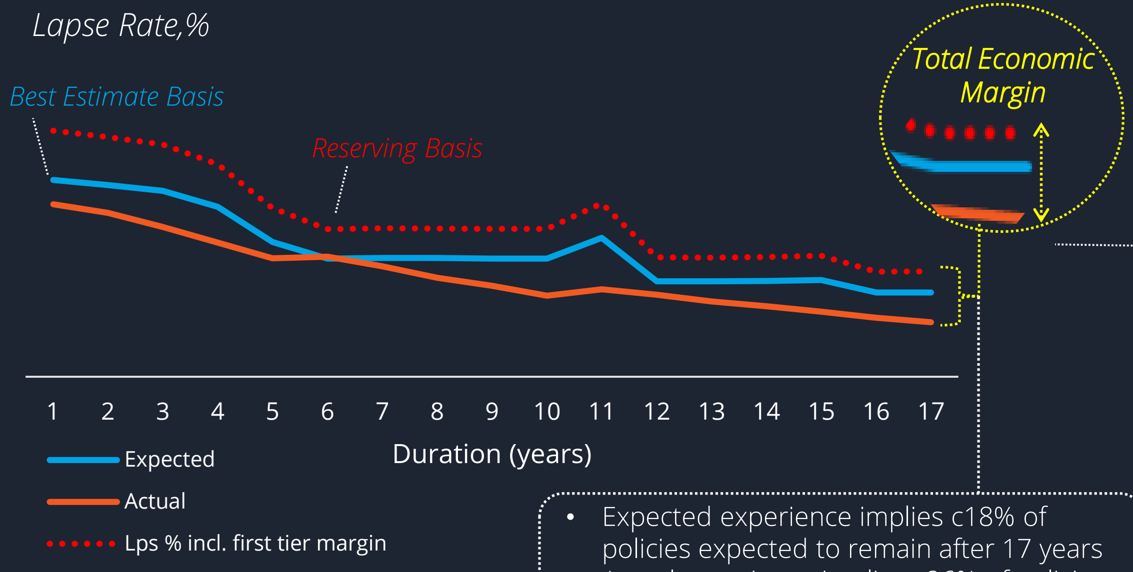
Projected real premium on average increase to 1.4 at year 10, 1.5 at year 20 and 2 at year 30.



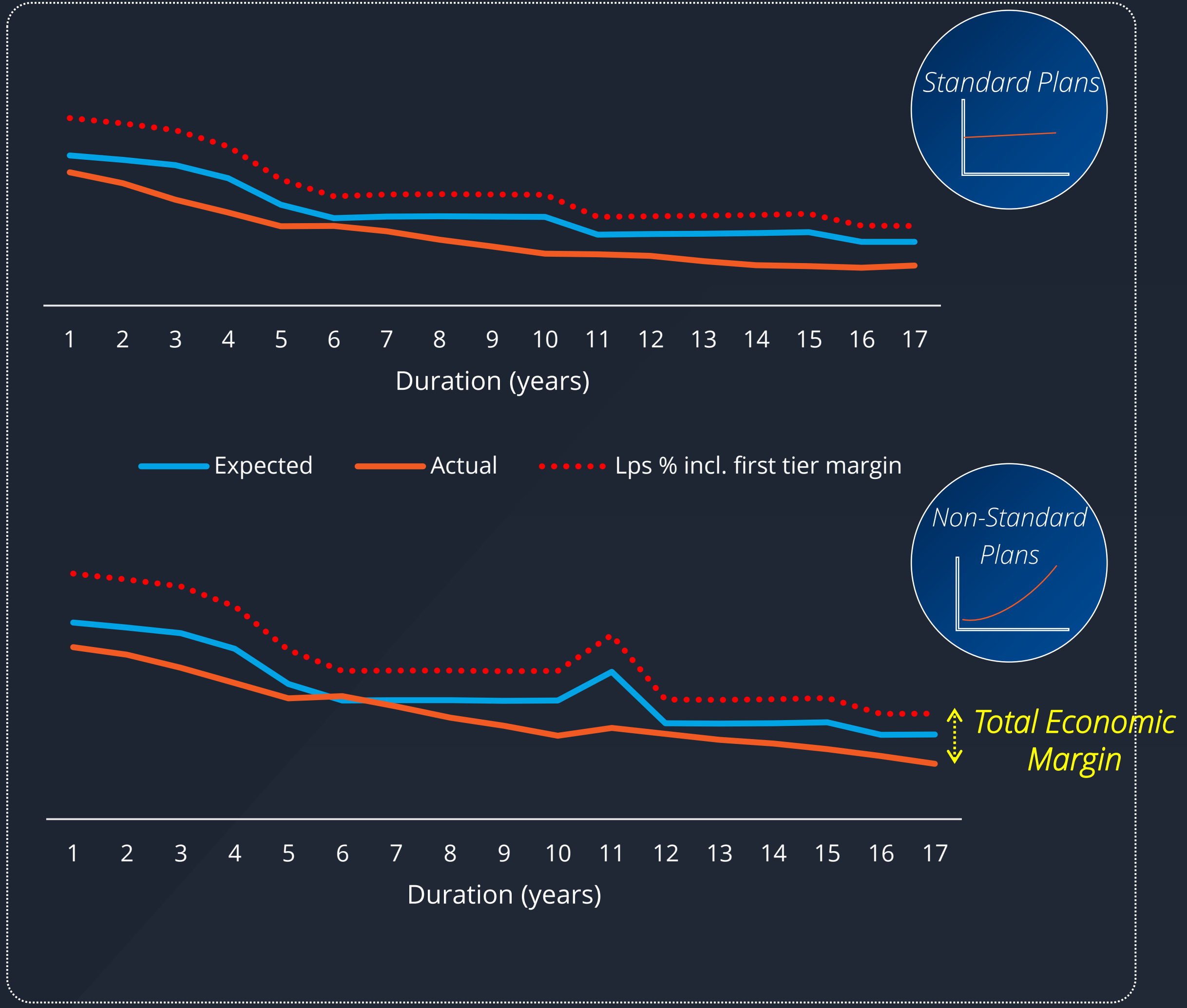
Individual life book as at 30 June 2018

Number of lapses well below expected and reducing by age and duration

Overall Lapse experience better than expected (policy count basis)



- Expected experience implies c18% of policies expected to remain after 17 years
- Actual experience implies c26% of policies would remain after 17 years



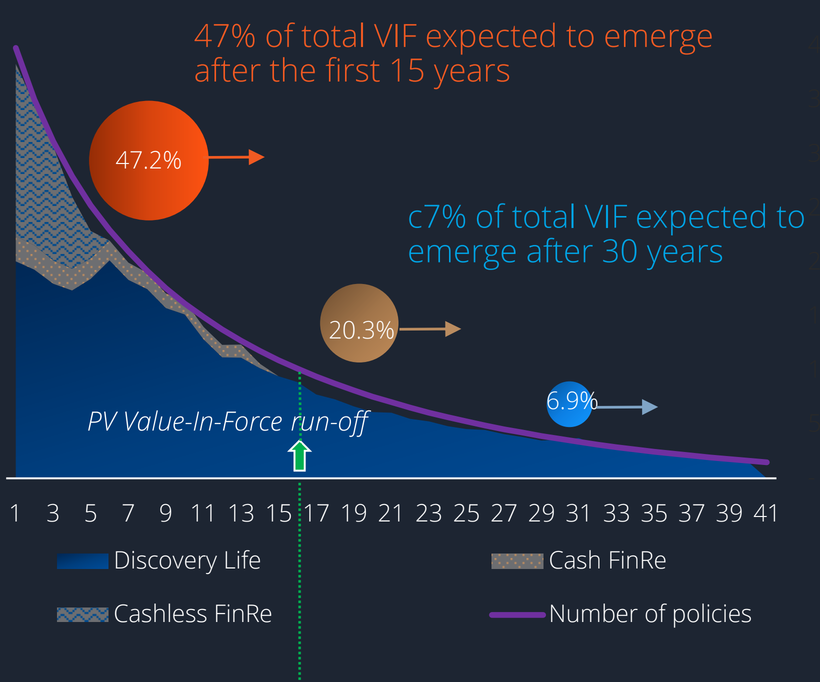
Non-Standard Plans, Age, A/E %

DURATION	0 to 25	26 to 35	36 to 45	46 to 55	56 to 65	> 65
1	104%	90%	87%	80%	62%	48%
2	100%	85%	83%	80%	63%	60%
3	98%	78%	76%	77%	67%	57%
4	101%	78%	76%	73%	69%	53%
5	101%	90%	84%	84%	72%	57%
6 - 10	81%	89%	85%	85%	79%	63%
> 11 yrs	77%	81%	74%	69%	69%	59%

FY2016-FY2018 figures
Illustrative projection on new cohort of entrants

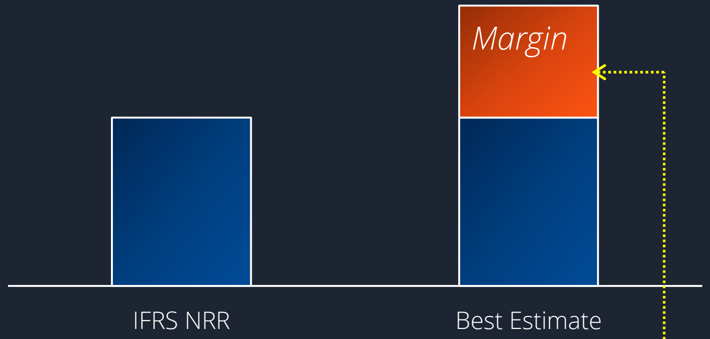
Emergence of projected VIF and margins to protect against volatility

Projected VIF recognition and reserve recovery over time



On Best Estimate assumptions It takes c16 years to recover the IFRS reserves as at June 2018

Prudence in IFRS assumptions result in a significant economic margin



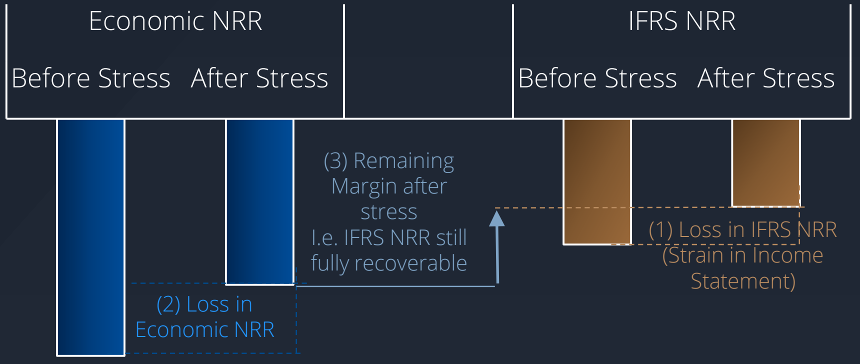
Margins are large and cover:

- SAM Mass Lapse Stress – 40%
- SAM Level Lapse Up -50% permanent increase
- All non-standard plans over age 70 lapse
- All non-standard plans lapse on later of reaching age 70 or 20 years in-force

Resilience of negative rand reserve in stressed scenarios

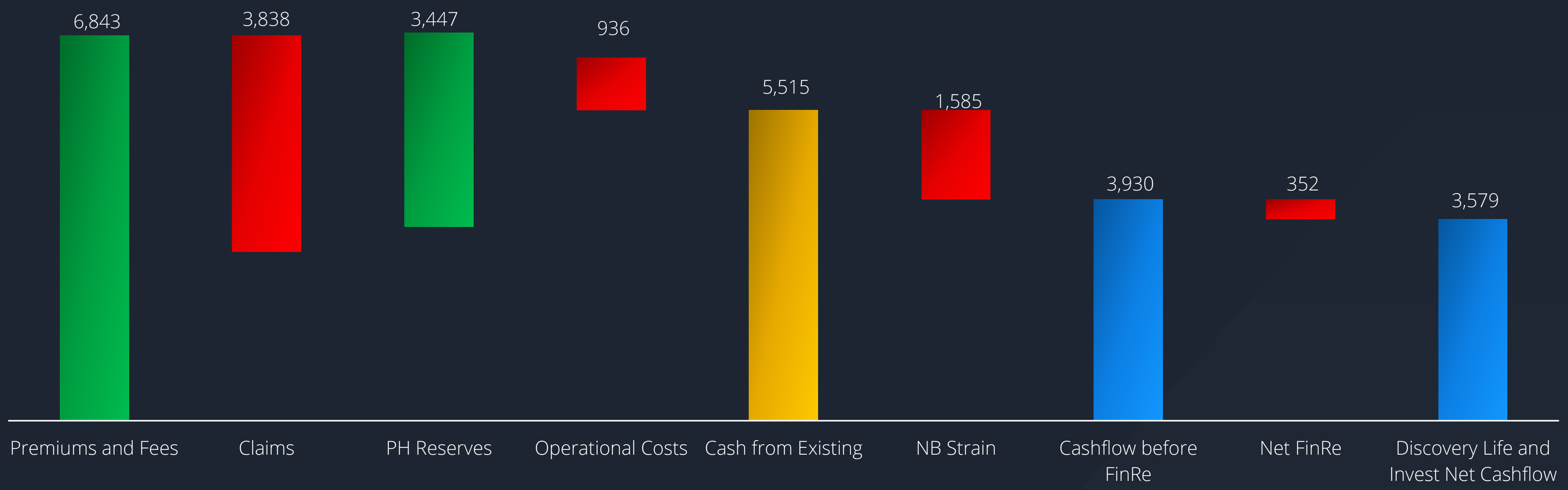
Scenarios may still result in a strain on the Income Statement in the year the stress occurs in spite of the fact that the NRR remains economically fully recoverable over time

Comparison of economic loss & reserving strain



Cashflow Profile

Discovery Life and Invest Cashflow for the 6 month period ending 31 December 2018



Excludes funding of new initiatives during the period

Discovery Life

RESILIENCE OF THE PUBLISHED IFRS NEGATIVE RAND RESERVE

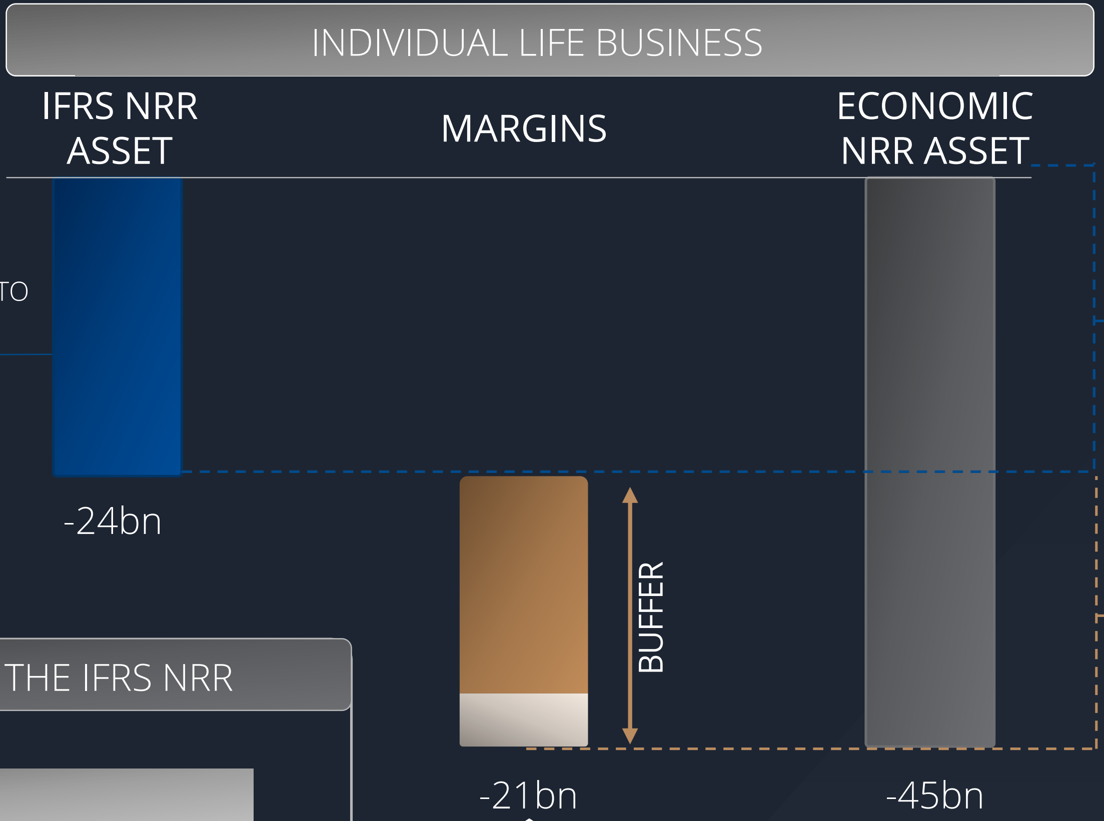
Comparison of IFRS and Economic Negative Rand reserve – June 17

DISCOVERY LIFE HAS ADOPTED PRUDENT IFRS RESERVING RESULTING IN A **SIGNIFICANT BUFFER**

PROFITS RECOGNISED IN LINE WITH GROUP ACCOUNTING POLICY

- Relative Age
- Compound growth of profitable Whole-of Life business

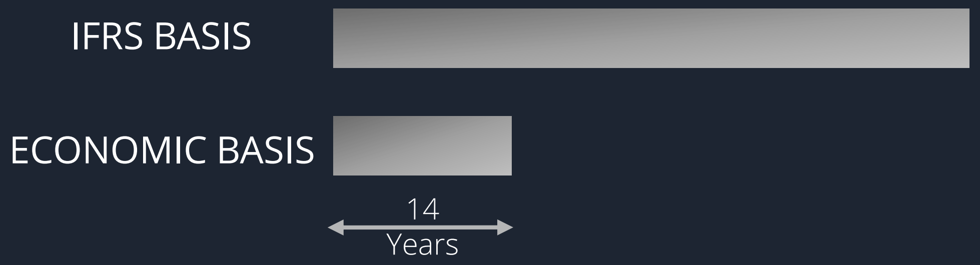
LEADS TO



53%
EXPECTED FUTURE PROFITS RECOGNISED ON THE IFRS BALANCE SHEET

47%
UNREALISED PROFITS EXPECTED TO EMERGE ON BEST ESTIMATE ASSUMPTIONS

EXPECTED TIME TAKEN TO RECOVER THE IFRS NRR

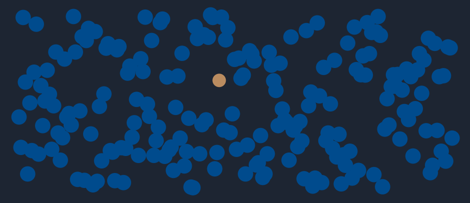


- Prescribed compulsory margins and discretionary margins to delay profit emergence
- Move to market consistent economic assumptions

Resilience of the future cashflow projection - June 2017

THE RISK OF EMERGING CASH FLOWS BEING LOWER THAN THE RECOGNISED IFRS NRR IS **EXTREMELY REMOTE**

RESILIENCE TESTING



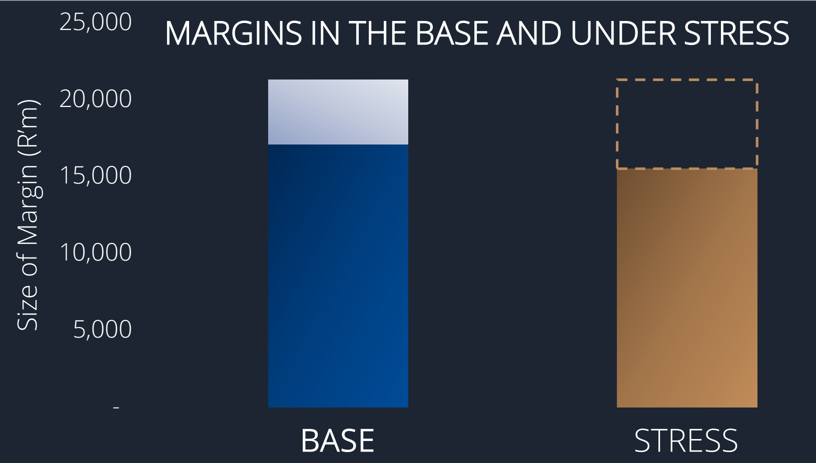
1-in-200

INDIVIDUAL SAM STRESSES APPLIED

- Economic Value under each stress > Recognised IFRS NRR at 30 June 2017
- Economic Value highly resilient
- Recoverable with >99.5% probability

MORTALITY STRESS

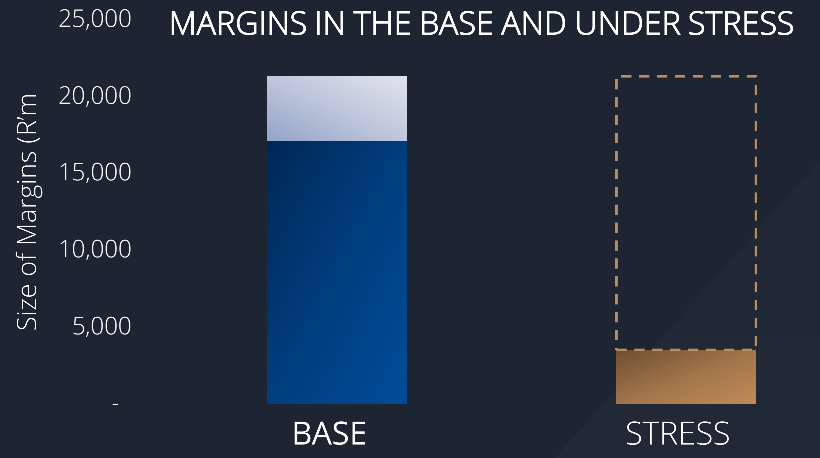
MARGINS IN THE BASE AND UNDER STRESS



STRESS TO EXPECTED RATE	ACTUAL RELATIVE TO EXPECTED RATE
15%	-3.4%
PERMANENT ↑ IN EXPECTED MORTALITY RATES	ON ALL CLAIMS GROSS OF REINSURANCE FY2010 – FY2017

LAPSE UP STRESS

MARGINS IN THE BASE AND UNDER STRESS

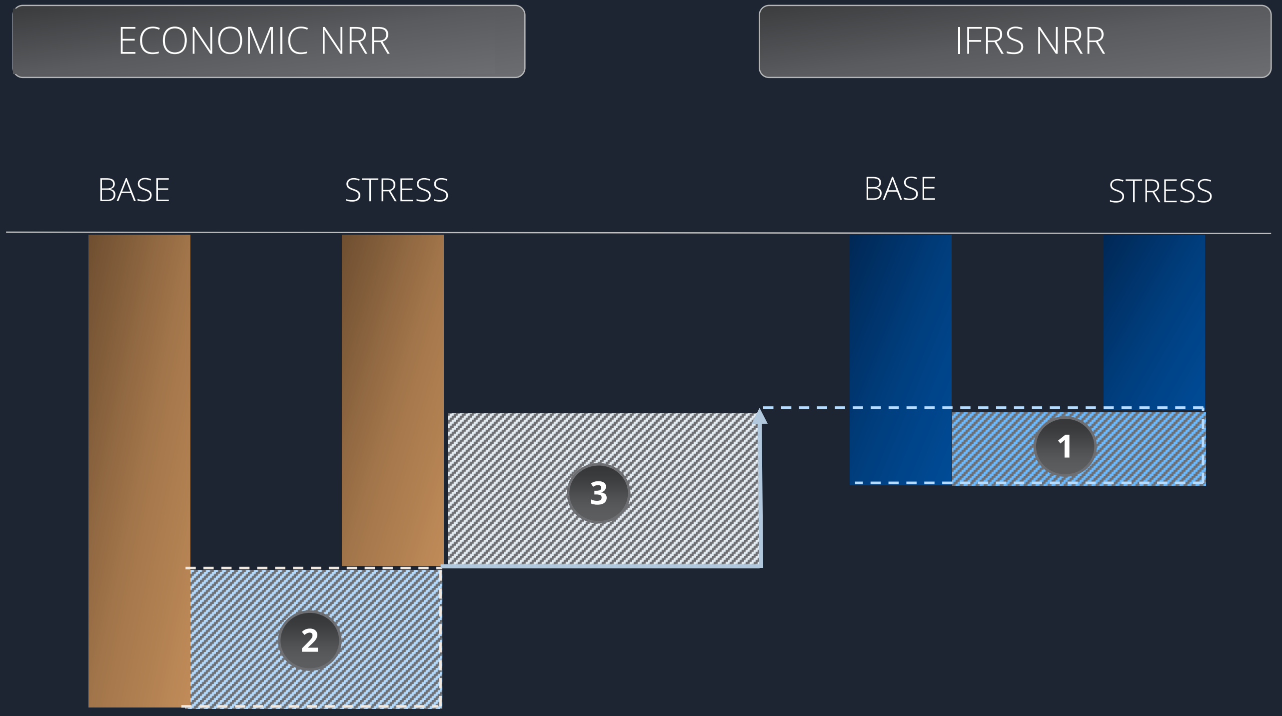


STRESS TO EXPECTED RATE	ACTUAL RELATIVE TO EXPECTED RATE
50%	-8.9%
PERMANENT ↑ IN EXPECTED LAPSE RATES*	ACTUAL LAPSE RATE RELATIVE TO EXPECTED FY2012 – FY2017

* In line with SAM calculations

Comparison of Economic Loss and Reserving Strain – June 2017

A STRESS MAY STILL RESULT IN A STRAIN ON THE INCOME STATEMENT EVEN IF THE IFRS NRR IS FULLY RECOVERABLE



1 **Loss in IFRS NRR**
Potential Strain in the Income Statement

2 Loss in **Economic NRR**

3 Remaining margin balance after stress i.e. the IFRS NRR remains **fully recoverable** but over a different time scale

Discovery Life has produced a detailed Investor relations document to outline the resilience and risks in the value of the NRR

Discovery

Life