

30th India Fellowship Seminar

December 17 & 18, 2018

Life Insurance - competitiveness of individual term insurance premium rates in India vs comparable countries - discussions on appropriateness and sustainability of mortality assumptions

Guide - Bharat Venkataramani



Presenters:
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Agenda



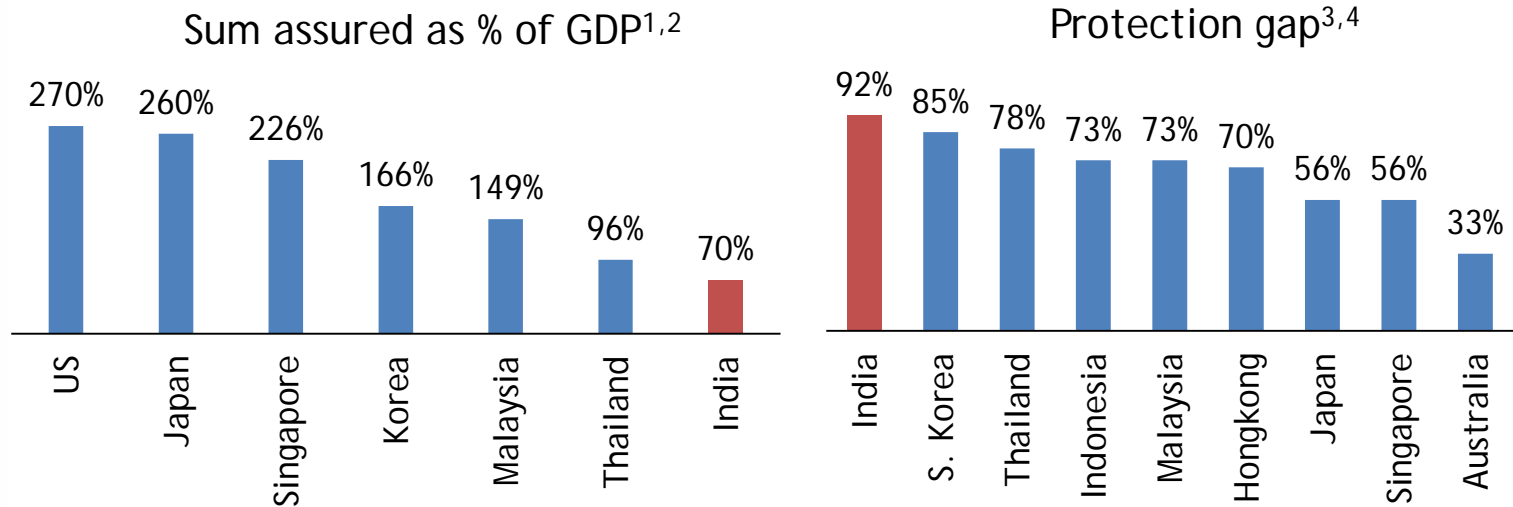
- Protection market
- Premium rates comparison
- Appropriateness of mortality assumptions
- Sustainability of mortality assumptions

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- Protection market
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Protection opportunity



- Sum assured as % of GDP low compared to other countries
- Protection gap for India US \$ 8.6 trillion. Increased 4x in last 15 years

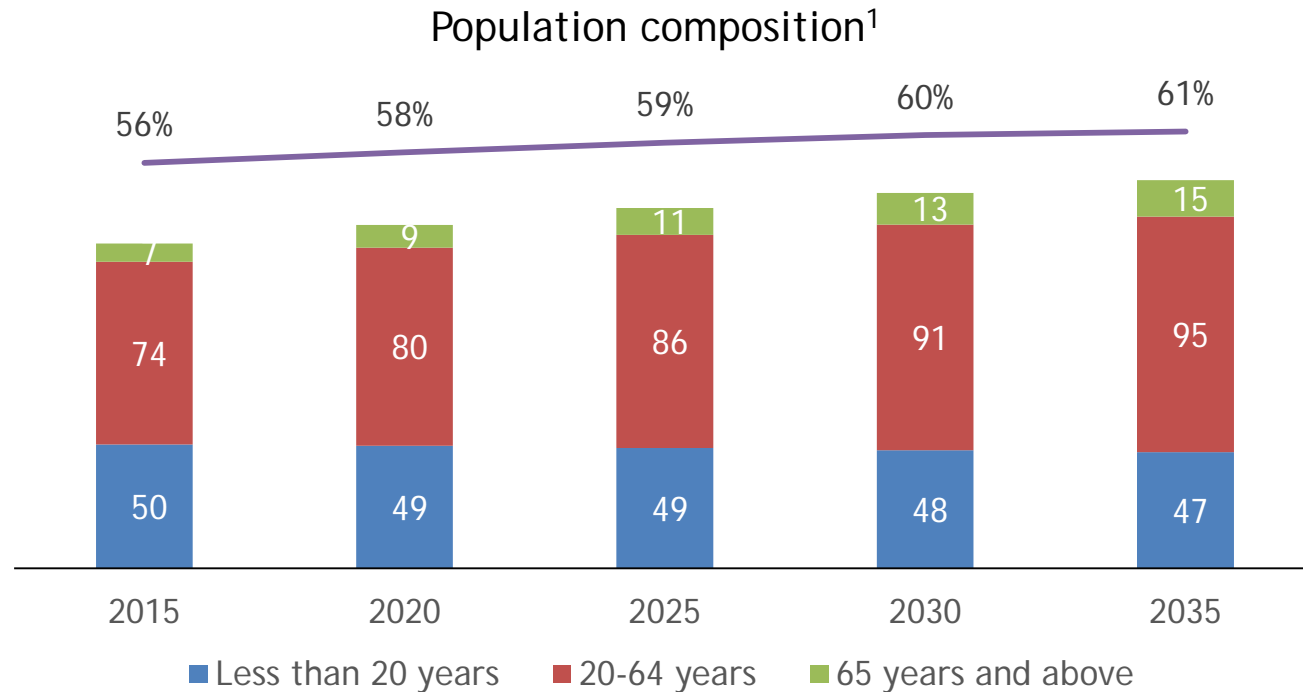
1. As of FY2017 for India and FY2015 for others

2. Source: McKinsey analysis 2015, CIRC Annual report 2015, Life Insurance Council, CSO

3. Protection Gap (%): Ratio of protection lacking/protection needed

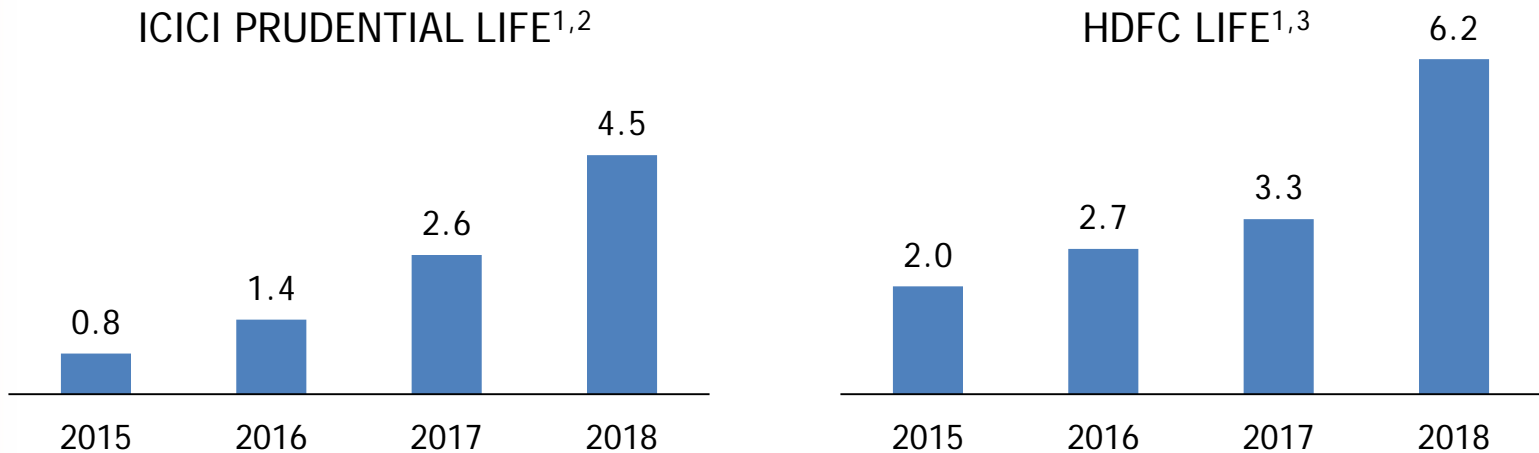
4. Source: Swiss Re, Economic Research and Consulting 2015

Protection opportunity



- India's insurable population to increase in future
- Increase in need for protection products due to increase of nuclear families, sedentary lifestyles and higher liabilities

Protection business growth



- Insurers: ULIP profitability impaired due to cap on changes, protection offered high profitability
- Reinsurers: Insurers enhanced the retentions for savings product post 2013 reinsurance regulations. Protection was an automatic choice for reinsurers
- Customer: Increased awareness, ease of buying and reduction in premium rates

1. Protection (Individual + Group) APE

2. Source: www.iciciprulife.com

3. Source: www.hdfclife.com

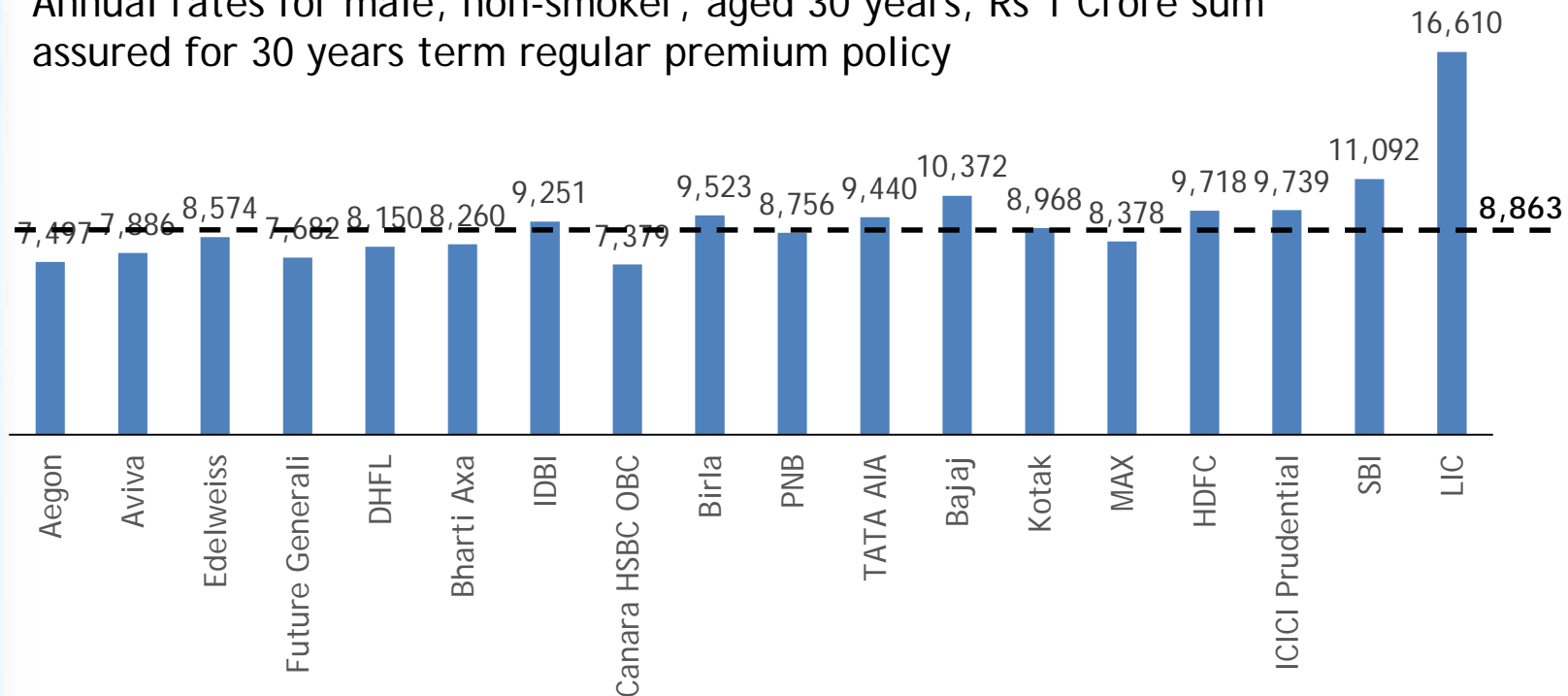
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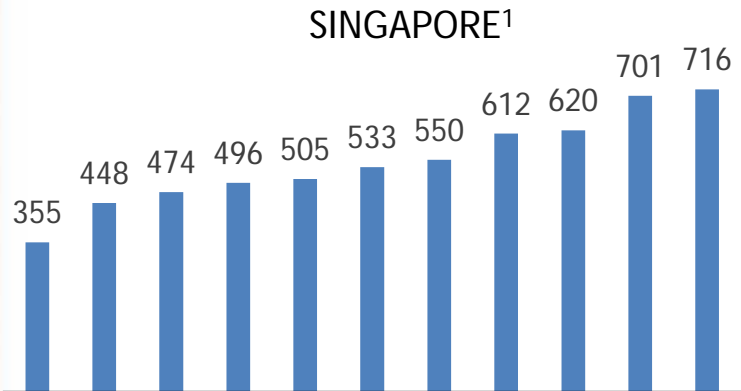
Premium rates comparison

Annual rates for male, non-smoker, aged 30 years, Rs 1 Crore sum assured for 30 years term regular premium policy

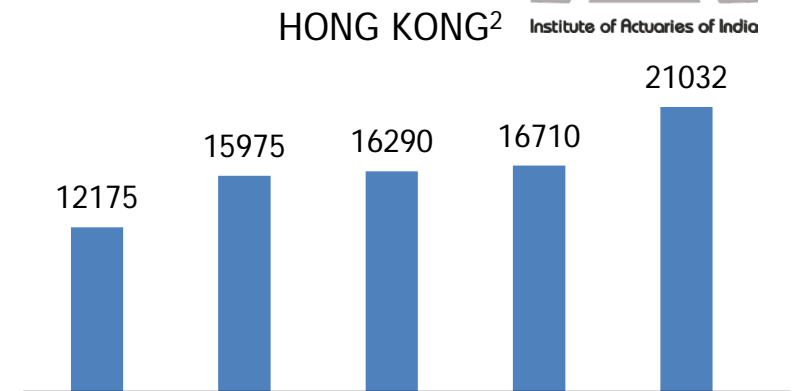


- Significant variation in premium rates, average premium being Rs 8,863 (excluding LIC)
- Smaller insurers have lower premium compared to bigger insurers

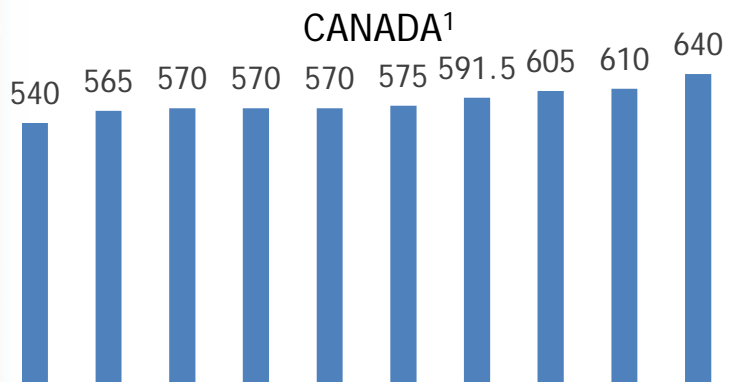
Premium rates comparison



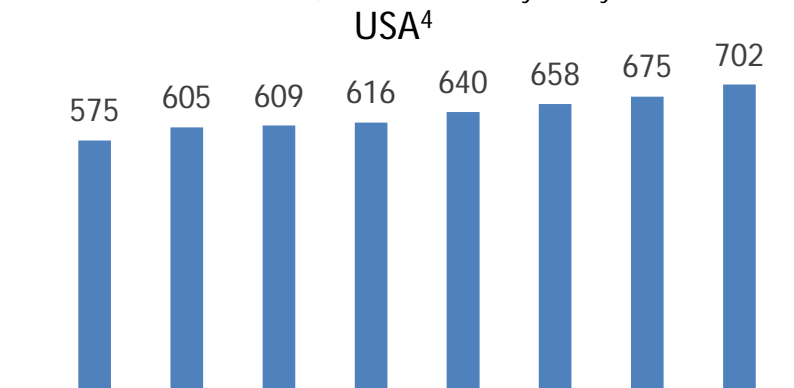
1. Non-smoker, Male, Age-30 yr, Policy term-30 yr, Sum assured- S\$ 5 Lac, Source: www.comparefirst.Sg



2. Standard non-smoker, Male, Age-30 yr, Policy term-30 yr, Sum assured- HK\$ 1 Cr, Source: www.mymoney.com/hk



3. Standard non-smoker, Male, Age-30 yr, Policy term-30 yr, Sum assured- CAN\$ 5 Lac, Source: www.term4sale.ca



4. Standard non-tobacco, Male, Age-30 yr, Policy term-30 yr, Sum assured- US\$ 5 Lac, Source: www.quickquote.com

- Varying premium rates in Singapore and Hong Kong
- Premium rates competitive in Canada and USA

Premium rates comparison



Country	Average premium (per 1 Lac Sum assured)	Life expectancy ¹ (years)
India	89	68.8
Singapore	113	82.9
Hong Kong	164	84.2
Canada	117	82.8
USA	127	78.5

- Premium rates in India lower than more economically developed countries
- India has lower life expectancy than the developed countries

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- Protection market
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- **Appropriateness of mortality assumptions**
- Sustainability of mortality assumptions

Appropriateness of mortality assumptions



- Appropriateness is when assumptions considers past, present and expected future experience
- Relevant for new business as well as existing business
- Enablers to ensure appropriateness of mortality assumptions
 - Regulations prescribed by IRDAI
 - APSs prescribed by IAI
 - Controls to ensure risks written are in sync with assumptions at the point of pricing
 - Guidance provided to insurer by reinsurers

Product regulations 2013



- Schedule II, Section 2(4)
 - All the products once approved shall be reviewed by the Appointed Actuary at least once a year on the financial viability of the product. If the product is found to be financial unviable, the Appointed Actuary shall revise the product under File and Use procedure. After 5 years of File and Use approval, the Appointed Actuary shall re-file the product along with the past five years experience in terms of mortality, lapse, interest rates, inflation, expenses etc. and seek fresh approval with suitable justifications for the assumptions made.

APS 1



- Section 5.5
 - The Appointed Actuary must have regard to all aspects likely to affect the financial condition of the company, in particular the following:
 - i) the premium rates on which the company has written existing business and intends writing new business
 - ii) the nature of the contracts in force and currently being sold with particular reference to all options and guarantees
 - vi) the extent of the company's free assets
 - vii) the reinsurance and underwriting arrangements
 - xii) the current and likely future mortality and morbidity experience

APS 1



- Section 6.1
 - The Appointed Actuary must be satisfied that premium rates for new business are appropriate, that is to say sufficient in due course to enable the company to meet its liabilities. If future new business is being written on inadequate terms, it will require support from the free assets in the shareholders fund, the Appointed Actuary should consider the company's ability to continue to write new business in the context of how much capital is required and should inform the Board of Directors accordingly.

APS 1



- Section 6.2
 - “Whether the premium rates are appropriate is a probability statement and hence the Appointed Actuary must exercise judgement. This judgement needs to be based on the use of sound techniques...”

Controls at on-boarding

- Risk evaluation based on objective, verifiable, stable & not too correlated parameters which drive claims experience
 - Income
 - Occupation
 - Education
 - Residential location
 - Distribution channel
 - Marital status
 - Credit bureau information



Other controls

- Lifestyle underwriting
- Medical underwriting
- Claims underwriting
- Underwriting at point of reinstatement
- Experience analysis at periodic intervals
 - Appropriateness of assumptions
 - Granular analysis to identify trends and drivers



Guidance by reinsurers



- Regulated entities in India
- Robust internal processes, tools and controls
- Support provided to insurer for
 - Product design
 - System design
 - Auto acceptance limit
- Dependence on insurer to provide data in timely, accurate & analyzable format

Are rates appropriate?



- Evolving and innovative market
- Ultimate mortality experience yet to be witnessed
- Section 45, The Insurance Act (1938)
- Appropriateness of rating factors used for pricing
- Pricing actuary's judgement for
 - Mortality
 - Future mortality improvement
 - Persistency
 - Effectiveness of controls
 - Business volumes

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- **Sustainability of mortality assumptions**

Sustainability of mortality assumptions

What are the current assumptions?

- Expectation of future mortality
 - Historical experience
 - Improvements
- Underwriting criteria
- Profit goals and risk tolerance

Company	Assumption range* (% of IALM 06-08)
ICICI Life	41% to 109%
SBI Life	59% to 136%
Max Life	21% to 249%
Aegon Life	22% to 95%
PNB Met Life	41% to 527%

Sustainability is the ability to be maintained at a certain rate or level

Mortality improvements



Institute of Actuaries of India

The Indian EXPRESS
Wednesday, December 12th 2018

The following article was published in one of Britain's largest newspapers called *The Telegraph* on November 29, 2015:

November 29, 2015

The Telegraph

World's First Anti-Ageing Drug Could See Humans Live to 120

One in 8 deaths in India due to air pollution, life expectancy down by 1.7 years: Report

The average life expectancy in India would have been 1.7 years higher if the air pollution level were less than the minimal level causing health loss.

LIVESCIENCE

NEWS TECH HEALTH PLANET EARTH

Live Science > Health

Why Life Expectancy in 2040 Could Be Lower Than It Is Today

By Yasemin Saptakoglu, Staff Writer | October 16, 2018 06:30pm ET

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APRIL 21, 2016

World's centenarian population projected to grow eightfold by 2050

BY RENEE STEPLER

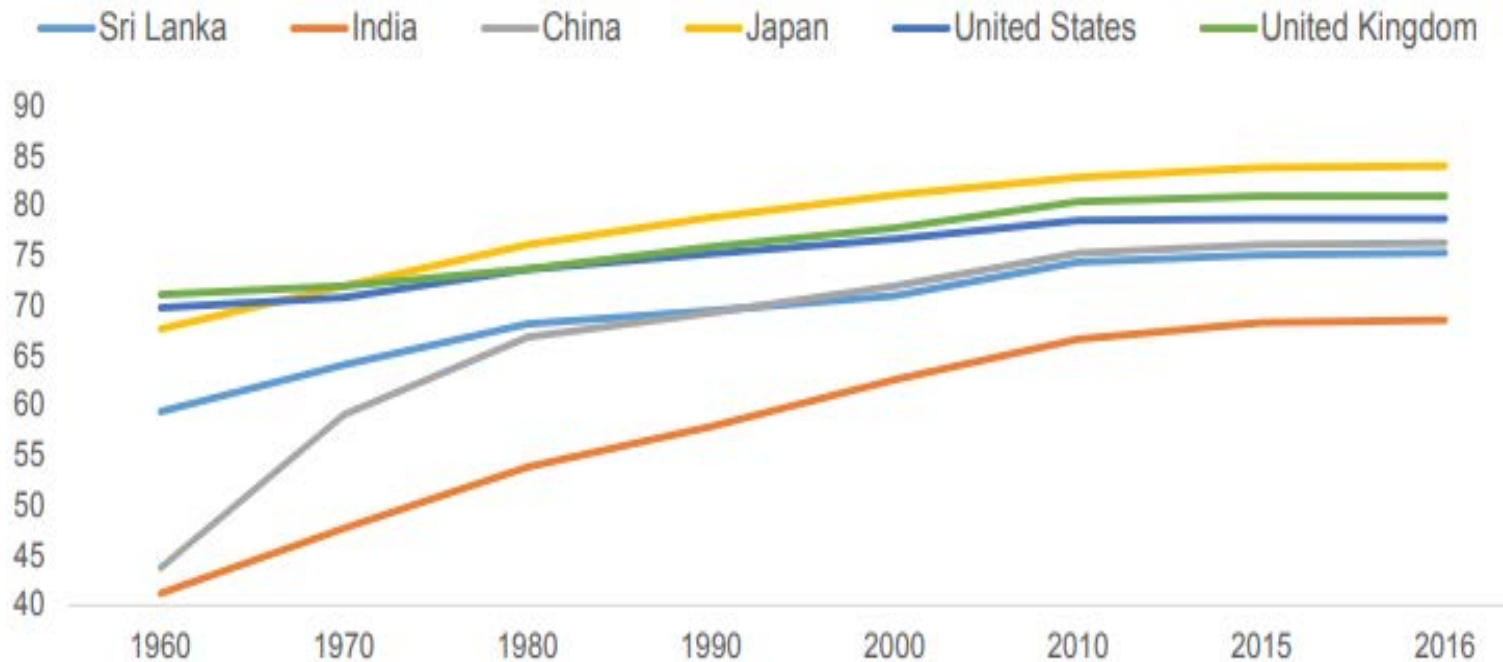
The world was home to nearly half a million centenarians (people ages 100 and older) in 2015, more than four times as many as in 1990, according to **United Nations**

The world's centenarian population projected to grow rapidly

Number of persons ages 100 and older

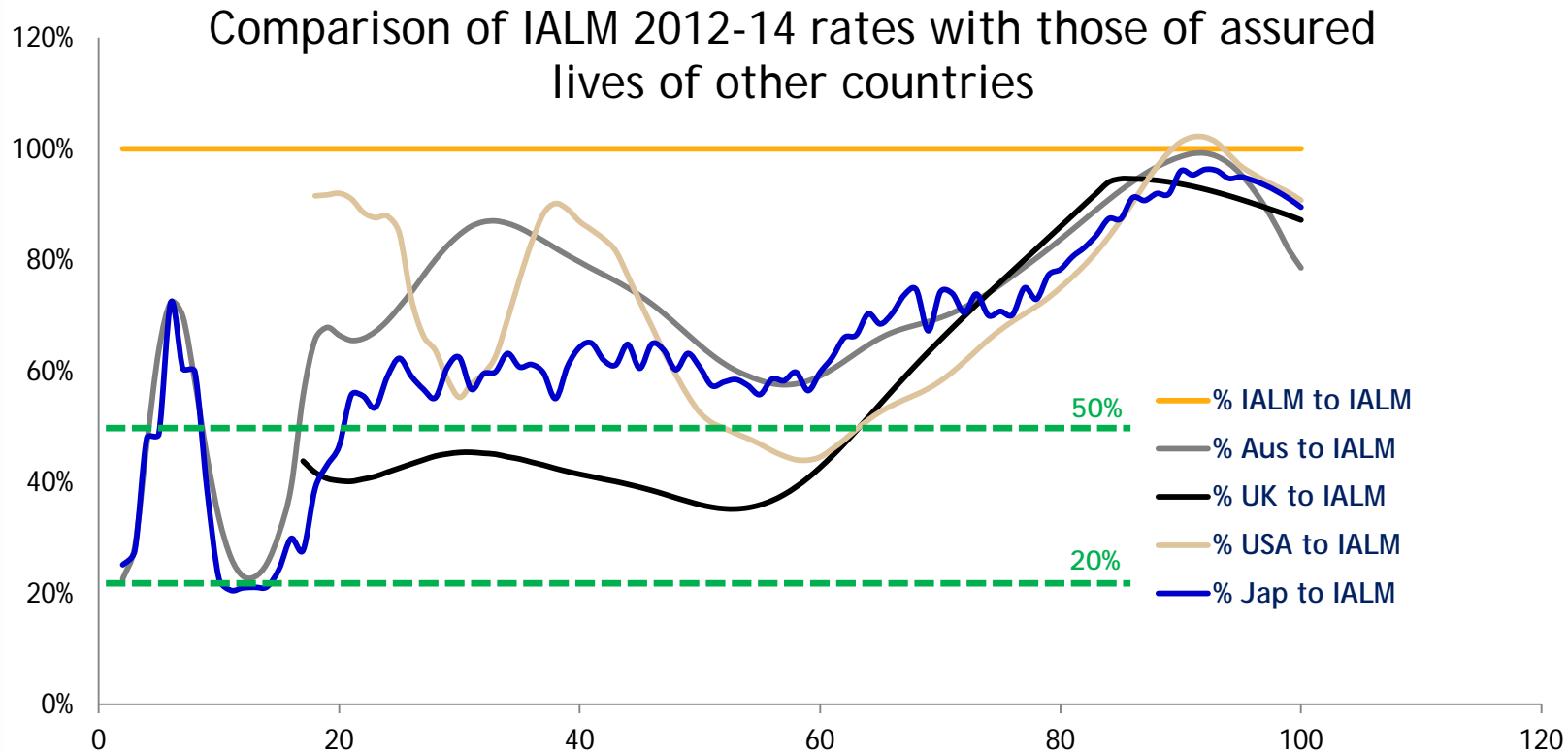
Mortality improvements

Population life expectancy at birth in different countries



- Life expectancy in India lower than other countries although, rate of increase seems high
- More room for improvement?
- Study for the population

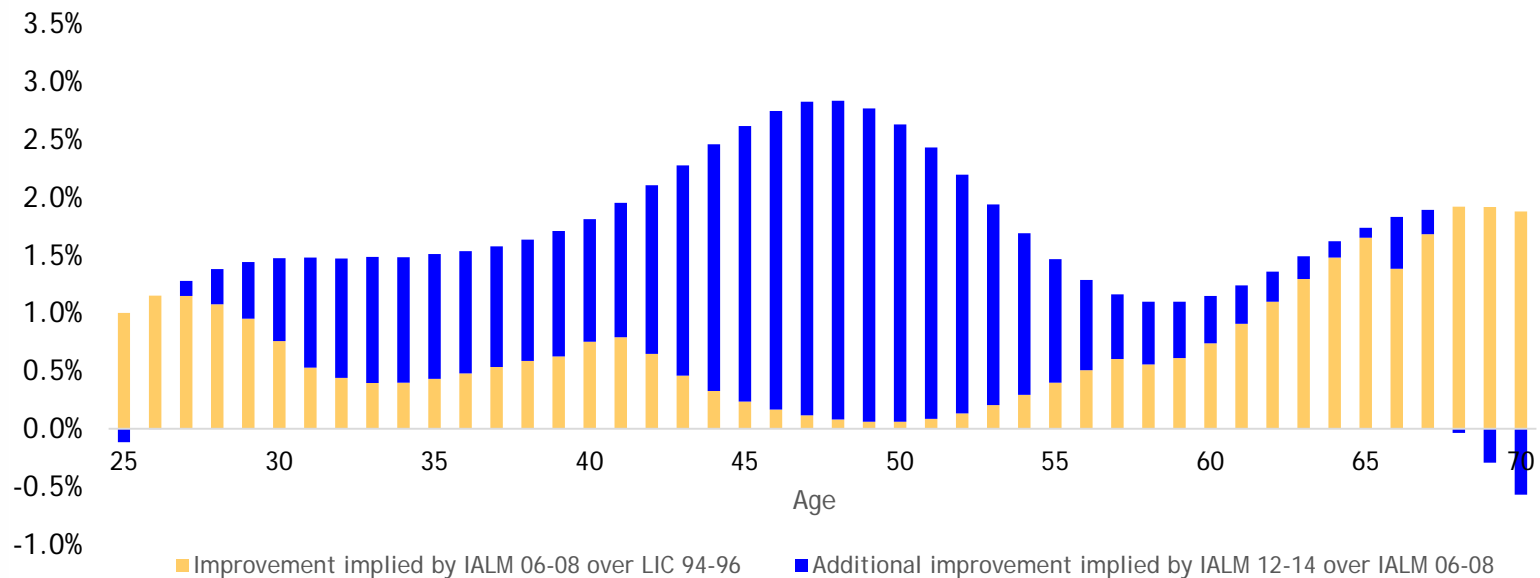
Mortality improvements



- When you consider all assured lives, further room for improvement?
- How does this apply to term portfolio?

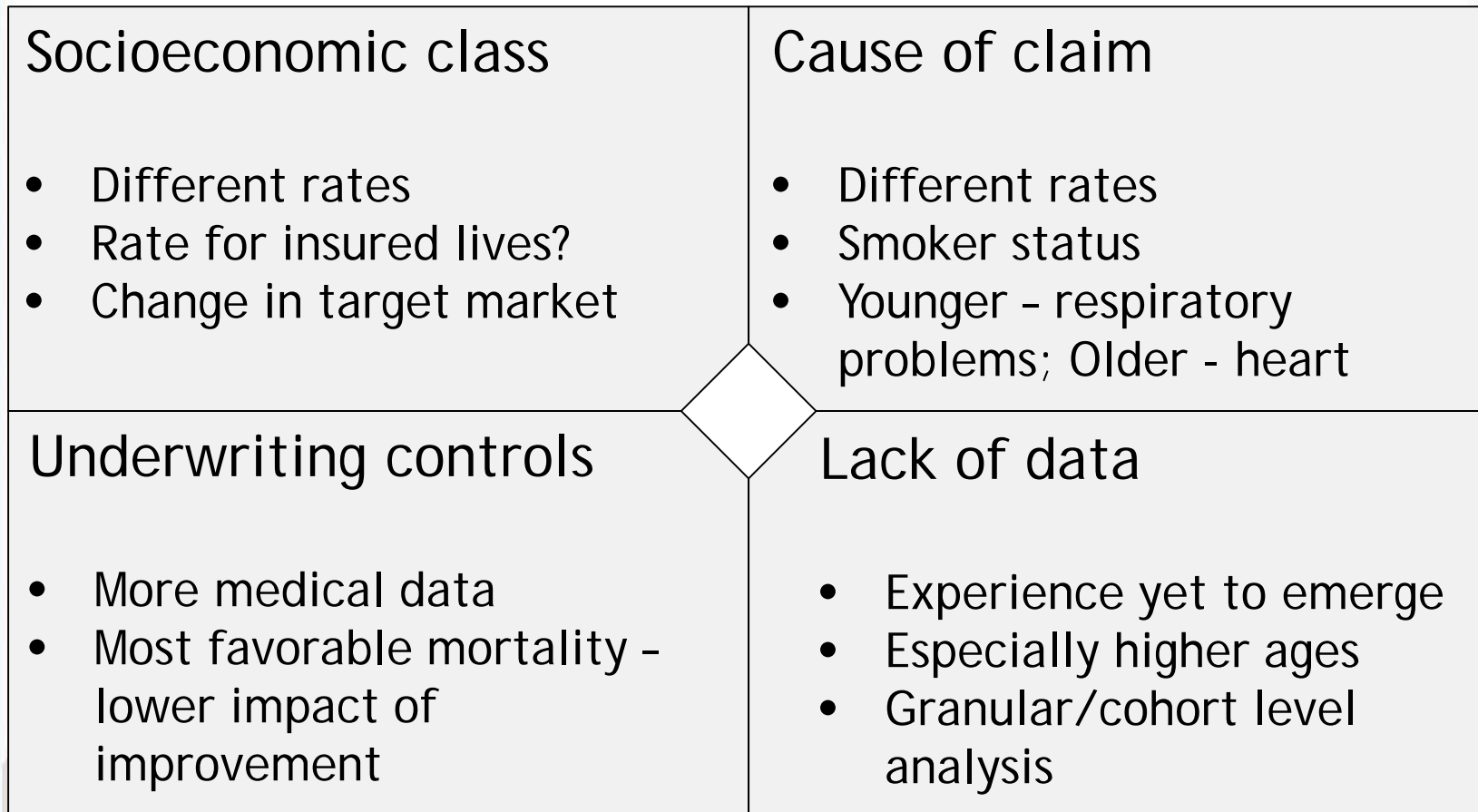
Mortality improvements

Average annual mortality improvement implied by IALM
12-14 over IALM 06-08



- Is it fair to say there will be future improvements?
- What is the expectation for long term improvements?
- Have these future mortality improvements been allowed for?

Mortality improvements



Worldwide assumption of improvement lower than that assumed previously

Mortality improvements

- What is the answer?
 - Unknown and uncertain (and will remain so)
 - Differing views (direction and speed of development)
- What is the potential impact on premium rates to a long-term rate of improvement of 1.0% pa (compared with 0.5% pa or 1.5% pa)?

Male
Non- smoker
Age 45
Policy term 30

$\pm 7\%$

With an increase in impact with increase in term

Profit goals and risk tolerance

- Margins in pricing for profit
 - Reinsurance
 - Finally impact depends on risk retained
 - Especially given lack of data at the moment
 - Significant influence on term rates but no information on reinsurer rates in public domain.
- Potential influence demonstrated by scenarios

	Scenario 1	Scenario 2	Scenario 3
Future mortality improvements	5% pa for first 5 years; 2.5% for next 14 years; 0 thereafter	3% pa for first 5 years; 1.5% for next 14 years; 0 thereafter	1.5% pa for first 5 years; 1% for next 14 years; 0 thereafter
Reinsurance rates	x	1.09x	1.20x

Thank you