

Actuary: working outside insurance company

Universitas Islam Indonesia

Yogyakarta, 5 September 2018





Agenda

1. What is an actuary?
2. How to become an actuary?
3. Actuaries in Indonesia
4. Insurance industry vs Consulting
5. What do we do in consulting?



What is an actuary?

An aerial photograph of a city street with a cobblestone road and a light-colored sidewalk. Several people are walking on the sidewalk. Three orange rectangular text boxes are overlaid on the image, each containing a quote about actuaries and their respective organizations.

“Actuaries are experts who can apply mathematical theory, probability and statistics, also economics and finance to solve actual problems in businesses especially those which are related to risk.”

- Persatuan Aktuaris Indonesia (PAI)

“Actuaries are highly regarded professionals; actuaries are problem solvers and strategic thinkers with a deep understanding of financial systems.”

- Institute and Faculty of Actuaries (IFoA)

“Actuaries are highly sought-after professionals who develop and communicate solutions for complex financial issues.”

- Society of Actuaries (SOA)

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How to become an actuary?



Actuarial science, math, statistics, economics, business and finance degrees (anything with calculus courses) are all good for an actuarial career, ***but not essential.***

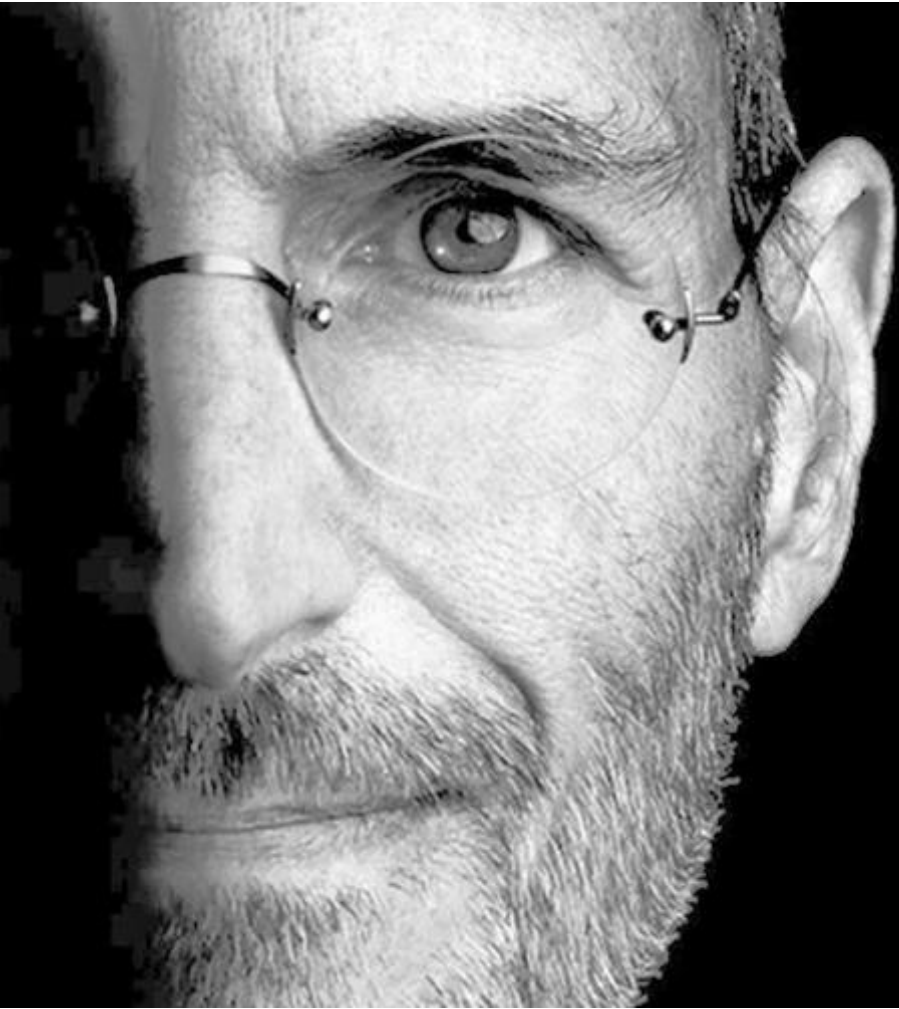


What does professionalism for the actuarial profession means?

Professionalism, for the actuarial profession, means:

- A. the application of specialist **actuarial knowledge** and expertise;
- B. the demonstration of **ethical behaviour**, especially in doing actuarial work;
- C. the actuary's **accountability** to a professional actuarial association or similar professional oversight organisation.

Communication skill, the forgotten skill which makes all the difference.



"You can have the greatest idea in the world,
but if you can't communicate your ideas, it
doesn't matter. "

-Steve Jobs



PERSATUAN AKTUARIS INDONESIA
(THE SOCIETY OF ACTUARIES OF INDONESIA)



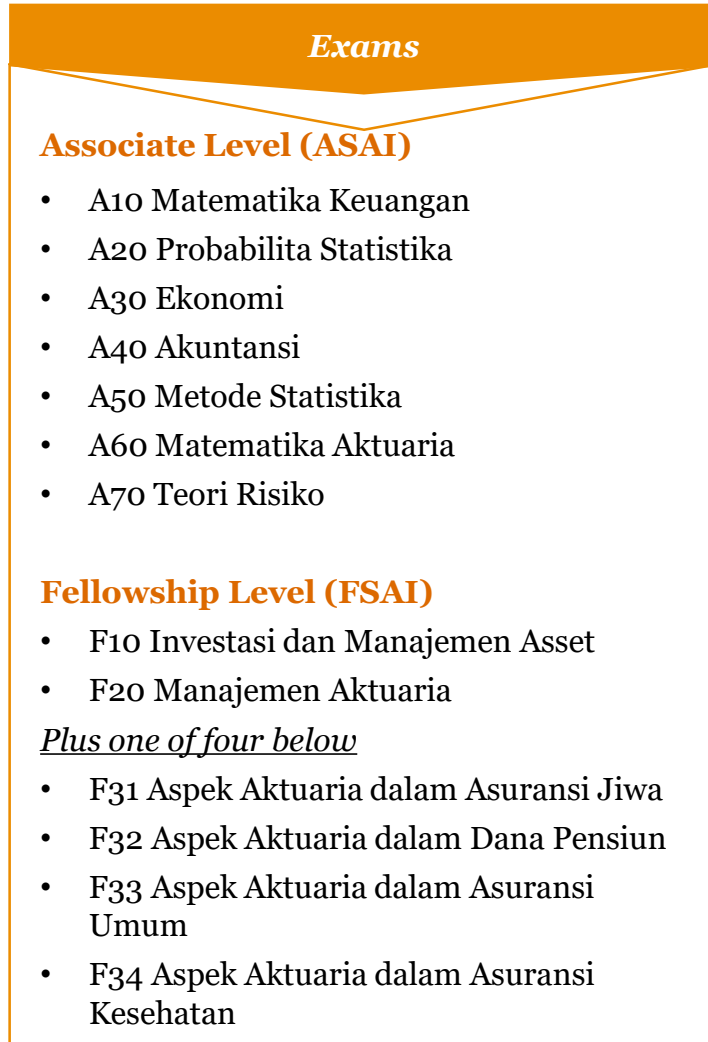
Institute
and Faculty
of Actuaries



**SOCIETY OF
ACTUARIES®**

Passing actuarial exams is a minimum requirement to become an actuary.

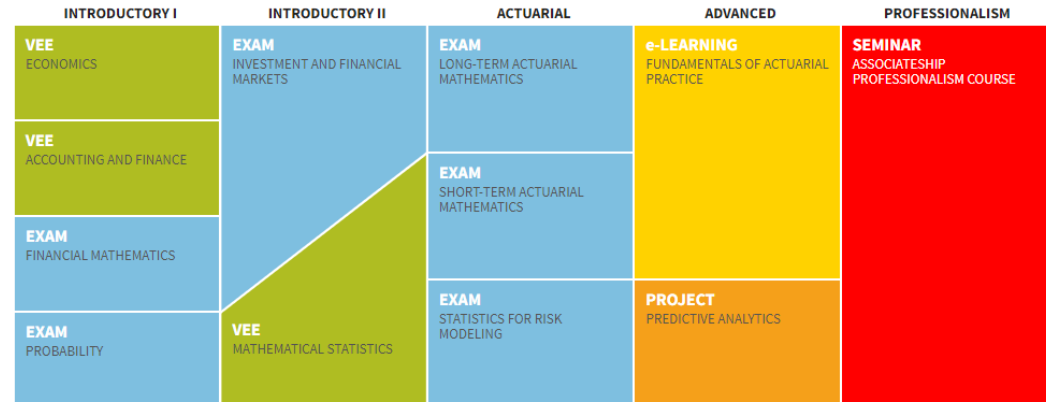
Persatuan Aktuaris Indonesia (PAI)



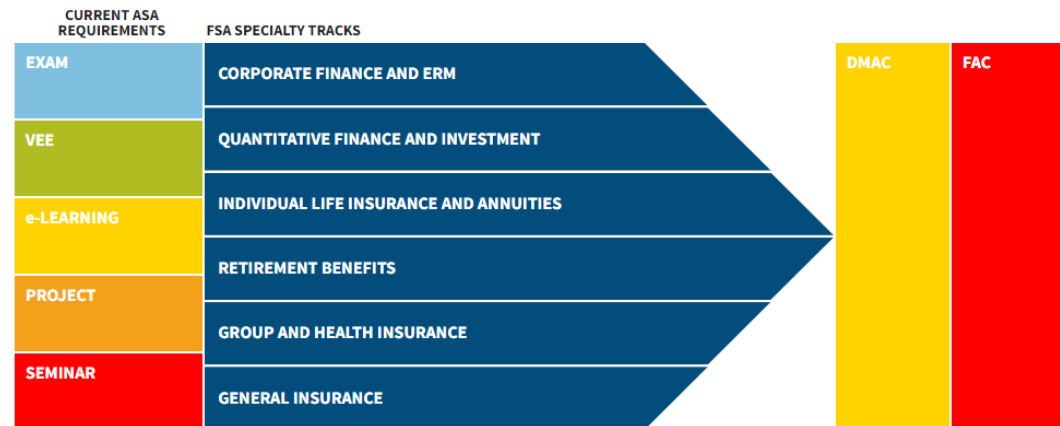
<http://www.aktuaris.or.id/>

Society of Actuaries (SOA) – US Canada

ASA Pathway



FSA Pathway



<http://www.soa.org/>

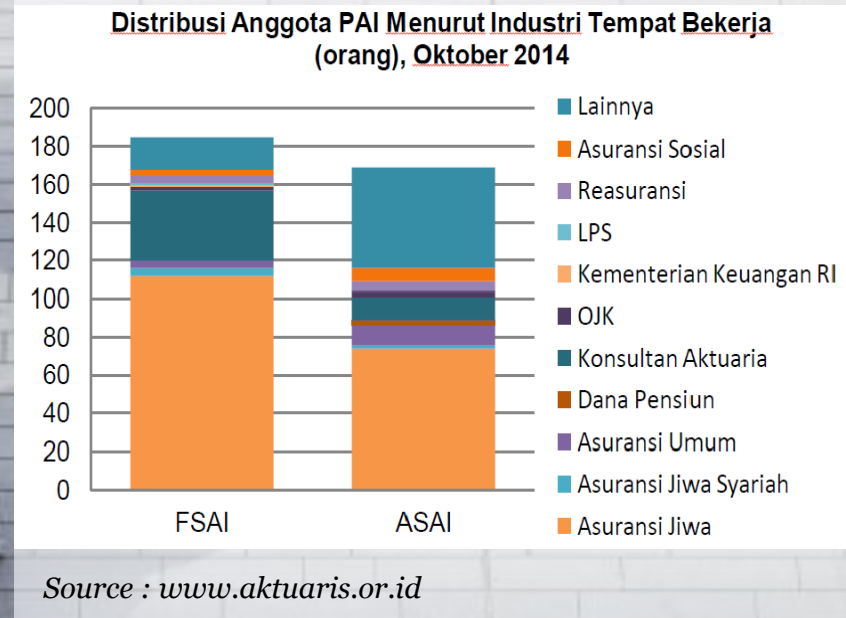


Actuaries in Indonesia

Number of PAI members as of December 2016

ASAI
242

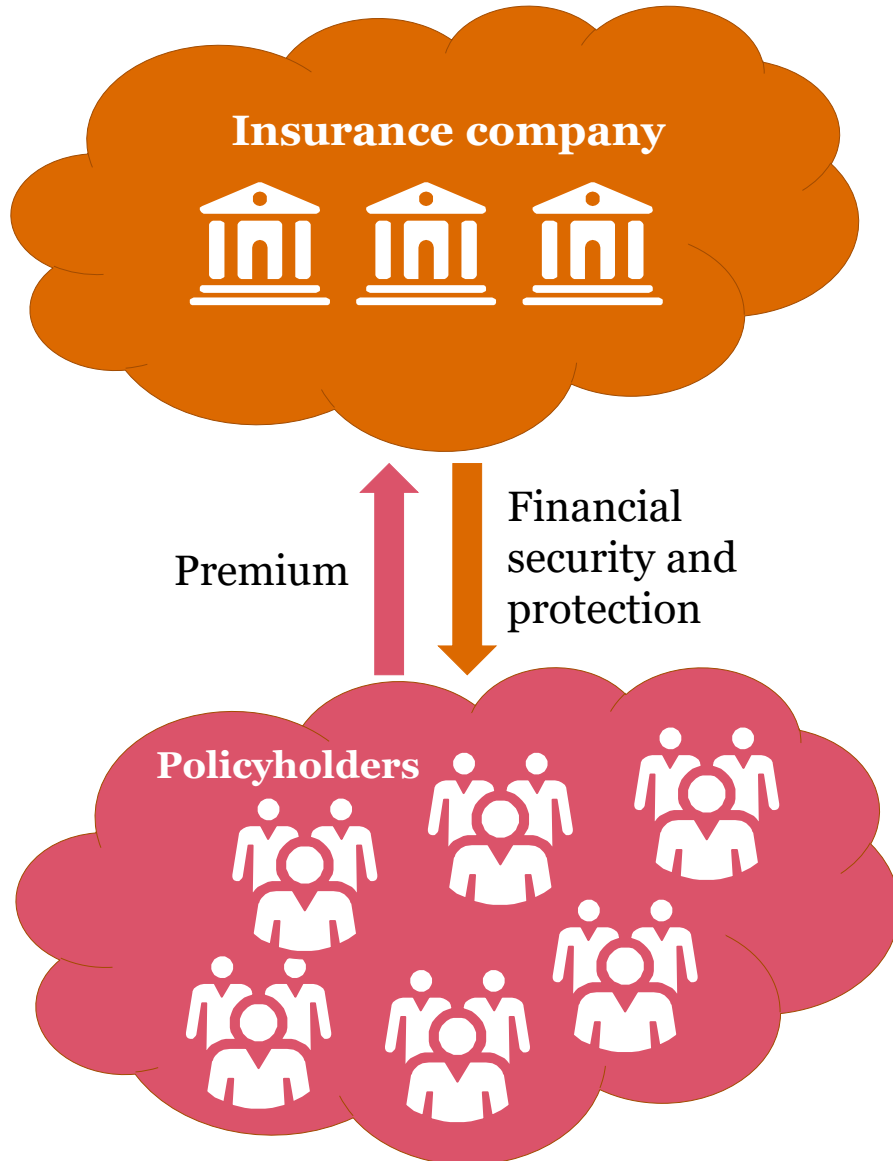
FSAI
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Insurance industry vs Consulting

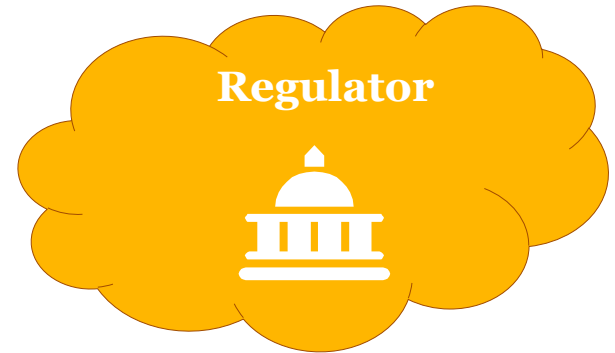
Overview of insurance industry



Where is consulting industry?



Regulation,
standards,
governance



Consumer
protections

Insurance industry

1. Typically more stable working hours (More time spent in office)
2. Exposed more to the inner workings of the company
3. Engage more internally

Consulting

1. Typically more flexible working hours (Longer travel requirement)
2. Exposed more to a wide range of clients
3. Engage more externally



What do you do in insurance industry?

Reporting / Valuation

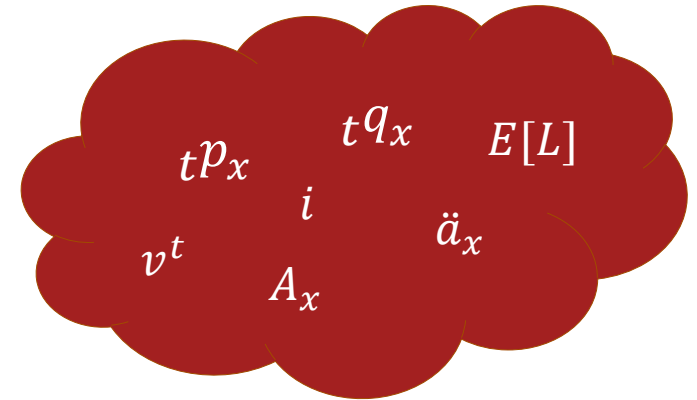
- Reserve reporting (others?)
- Regulatory reporting, actuary report
- Experience study (mortality, morbidity, incidence rate, lapse, economic assumptions)

$${}_tV_x = A_x - P \cdot \ddot{a}_x$$

$$\text{GPV reserves} = \text{EPV Outflow} - \text{EPV Inflow}$$

Pricing / Product Development

- Pricing (setting the premium, sales illustrations, profit testing)
- Insurance agent / bancassurance compensation
- Regulatory reporting, product filing



What do we do in consulting?

Life Insurance clients

- Actuarial audit
- IFRS 17 implementation
- Modelling, calibration, testing and data management
- Tailored trainings for actuaries, accountants and management

General Insurance clients

- Actuarial audit
- Financial reporting
- Set up and optimization of the actuarial function
- Pricing

Pension Funds

- Pension funds liabilities and assets
- De-risking pension fund
- Experience study and mortality investigation
- Seminars on valuation, modelling and accounting

Employee Benefits

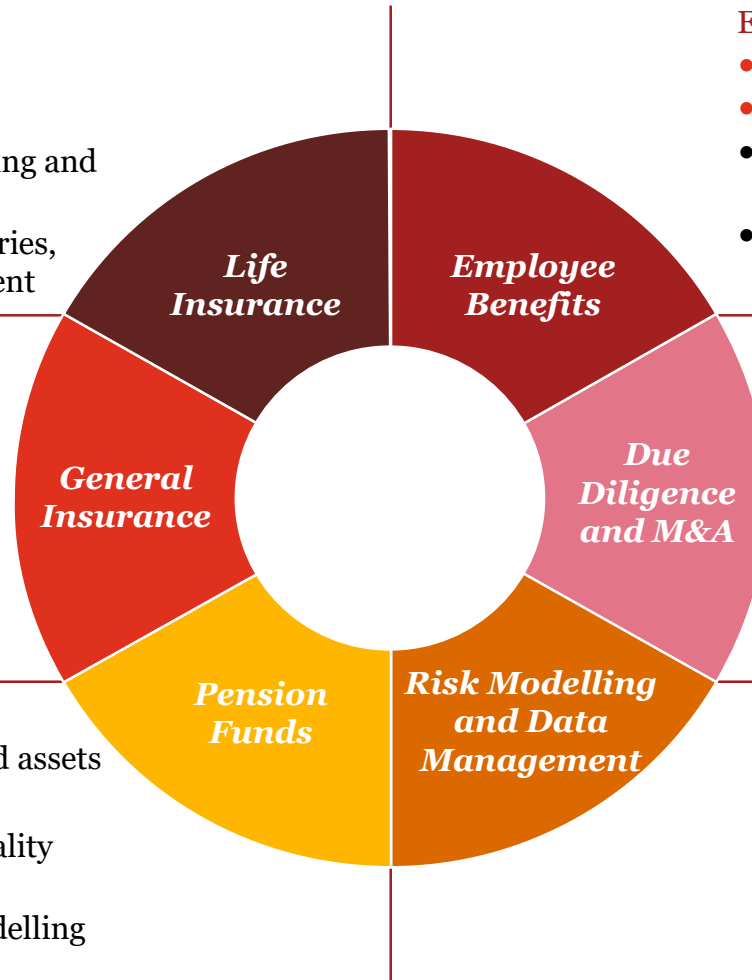
- Actuarial audit
- Employee benefits plan design
- Post employment and other long-term employee benefits
- Share-based payments and other Long Term Incentive Plans

Due Diligence and M&A

- Appraisal and reporting of potential transactions and identification of risks or areas of concern
- Sound, independent planning and advice for all stages of the M&A lifecycle

Risk Modelling and Data Management

- Risk modelling
- Data management





Actuarial Audit

What is an actuarial audit?

An audit is the examination of the financial report of an organisation - as presented in the annual report - by someone independent of that organisation.

Accounts where auditors need actuaries on :

- Reserve
- Employee benefits
- etc

It is not just about stating the numbers, but how to get them as well.

(Review on assumptions, methodology, control, reasonableness, etc)



Financial statements

Actuary's scope

LAPORAN KEUANGAN PERUSAHAAN (termasuk Unit Usaha Syariah) Per 31 Desember 2017 dan 2016 (dalam jutaan Rupiah)

PT  Life Assurance

LAPORAN POSISI KEUANGAN (NERACA) PER 31 DESEMBER 2017 DAN 2016¹⁾

ASET	2017	2016 ¹⁾	LIABILITAS DAN EKUITAS	2017	2016 ¹⁾
1 Kas dan Setara Kas	4.100.687	5.877.704	I LIABILITAS KEPADA PEMEGANG POLIS		
2 INVESTASI			1 Utang Klaim	200.863	228.670
3 Deposito Wajib dan Berjangka	5.262.630	6.241.208	2 Cadangan Klaim	2.099.924	1.727.960
4 Saham	48.135.214	40.864.275	3 Cadangan Atas Premi Yang Belum Merupakan Pendapatan	429.425	391.999
5 Reksa Dana	13.185.001	305.918	4 Cadangan Premi	60.187.281	49.316.864
6 Surat Hutang	6.613.512	12.027.858	5 Jumlah Liabilitas Kepada Pemegang Polis (1 s.d. 4)	62.917.493	51.665.493
7 Investasi Lain	180.811	313.554	II LIABILITAS KEPADA PIHAK LAINNYA		
8 Jumlah Investasi (3 s.d. 7)	73.377.168	59.752.813	6 Premi Diterima di Muka	151.145	209.661
9 Tagihan Premi Penutupan Langsung	1.618.604	2.101.074	7 Utang Komisi	444.989	507.553
10 Piutang Lain	870.021	459.813	8 Utang Pajak	204.951	273.328
11 Aset Tetap	294.291	177.676	9 Utang Reasuransi	293.707	240.968
12 Aset Pajak Tangguhan	546.098	461.915	10 Beban Klaim dan Manfaat	12.260.517	9.893.407
13 Pajak Dibayar di Muka	190.965	192.995	a. Klaim dan Manfaat Dibayar	(541.944)	(428.432)
14 Aset Reasuransi	115.130	95.798	b. Klaim Reasuransi	11.196.740	7.314.088
15 Aset Tidak Benwujud	250.697	286.542	c. Cadangan Klaim	(19.332)	6.761
16 Aset Lain	289.245	134.296	d. (Kenaikan) Penurunan Aset Reasuransi	22.896.051	16.785.824
			7 Jumlah Beban Klaim dan Manfaat	3.937.478	4.407.966
			8 Beban Komisi	1.142.262	969.926
			9 Beban Pemasaran	1.672.013	1.446.866
			10 Beban Umum dan Administrasi	-	38.221
			11 Beban Lainnya	29.647.804	23.648.803
			12 Jumlah Beban	7.740.682	7.392.479
			13 LABA SEBELUM PAJAK	(1.521.718)	(1.607.380)
			14 Pajak Penghasilan	6.218.964	5.785.099
			15 LABA SETELAH PAJAK	(18.043)	(18.297)
			16 Pendapatan Komprehensif Lainnya	6.200.921	5.766.802
			17 JUMLAH LABA KOMPREHENSIF		
17 Jumlah Aset (1 dan 8 s.d. 16)	81.652.906	69.540.626	21 Jumlah Ekuitas (18 s.d. 20)	8.797.858	9.097.637
			22 Jumlah Liabilitas dan Ekuitas (14,17 dan 21)	81.652.906	69.540.626

LAPORAN LABA RUGI KOMPREHENSIF UNTUK TAHUN YANG BERAKHIR PADA TANGGAL 31 DESEMBER 2017 DAN 2016

No.	U R A I A N	2017	2016
PENDAPATAN			
1 Pendapatan Premi			
a. Premi Bruto	26.842.919	26.536.073	
b. Premi Reasuransi	(847.740)	(681.231)	
c. Penurunan CAPYBMP ²⁾	(35.591)	(14.867)	
2 Jumlah Pendapatan Premi	25.959.647	25.839.975	
3 Hasil Investasi	11.021.318	5.201.307	
4 Pendapatan lainnya	407.512	-	
5 Jumlah Pendapatan	37.388.475	31.041.282	
6 Beban Klaim dan Manfaat			
a. Klaim dan Manfaat Dibayar	12.260.517	9.893.407	
b. Klaim Reasuransi	(541.944)	(428.432)	
c. Cadangan Klaim	11.196.740	7.314.088	
d. (Kenaikan) Penurunan Aset Reasuransi	(19.332)	6.761	
7 Jumlah Beban Klaim dan Manfaat	22.896.051	16.785.824	
8 Beban Komisi	3.937.478	4.407.966	
9 Beban Pemasaran	1.142.262	969.926	
10 Beban Umum dan Administrasi	1.672.013	1.446.866	
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17 JUMLAH LABA KOMPREHENSIF	6.200.921	5.766.802	

RASIO KESEHATAN KEUANGAN³⁾ PER 31 DESEMBER 2017 DAN 2016

KETERANGAN	2017	2016
Pencapaian Tingkat Solvabilitas		
A. Tingkat Solvabilitas		
a. Aset yang Diperkenankan	7.885.650	8.429.251
b. Kewajiban	5.230.656	4.896.231
Jumlah Tingkat Solvabilitas	2.654.994	3.531.019
B. Modal Minimum Berbasis Risiko (MMBR)⁴⁾		
a. Risiko Kredit	93.069	
b. Risiko Likuiditas	61.630	
c. Risiko Pasar	20.407	
d. Risiko Asuransi	142.294	
e. Risiko Operasional	74.660	
Jumlah MMBR	392.060	332.691
C. Kelebihan (Kekurangan) Batas Tingkat Solvabilitas	2.262.934	3.198.328
D. Rasio Pencapaian Solvabilitas (%)	677%	1.061%
Informasi lain		
a. Jumlah Dana Jaminan	1.104.094	995.929
b. Rasio Likuiditas (%)	185%	228%
c. Rasio Kecukupan Investasi (%)	239%	273%
d. Rasio Perimbangan Hasil Investasi dengan Pendapatan Premi Neto (%)	5%	4%
e. Rasio Beban (Klaim, Usaha, dan Komisi) terhadap Pendapatan Premi Neto (%)	60%	59%

Actuarial audit

Assumptions to be reviewed

Assumptions		Life insurance	General insurance	Employee benefit
Demographic	Mortality	✓	✗	✓
	Morbidity	✓	✗	✓
	Lapse	✓	✓	✗
	Incidence rate	✗	✓	✗
	Early retirement	✗	✗	✓
	Resignation	✗	✗	✓
	Turnover	✗	✗	✓
Non – demographic	Interest rate	✓	✓	✓
	Inflation	✓	✓	✓
	Expenses	✓	✓	✗
	Salary increment	✗	✗	✓



IFRS17 implementation

What does “IFRS” stand for?



Examples:

IFRS 4 Insurance Contracts — current standard for insurance

IFRS 7 Financial Instruments: Disclosures

IFRS 9 Financial Instruments

IFRS 16 Leases

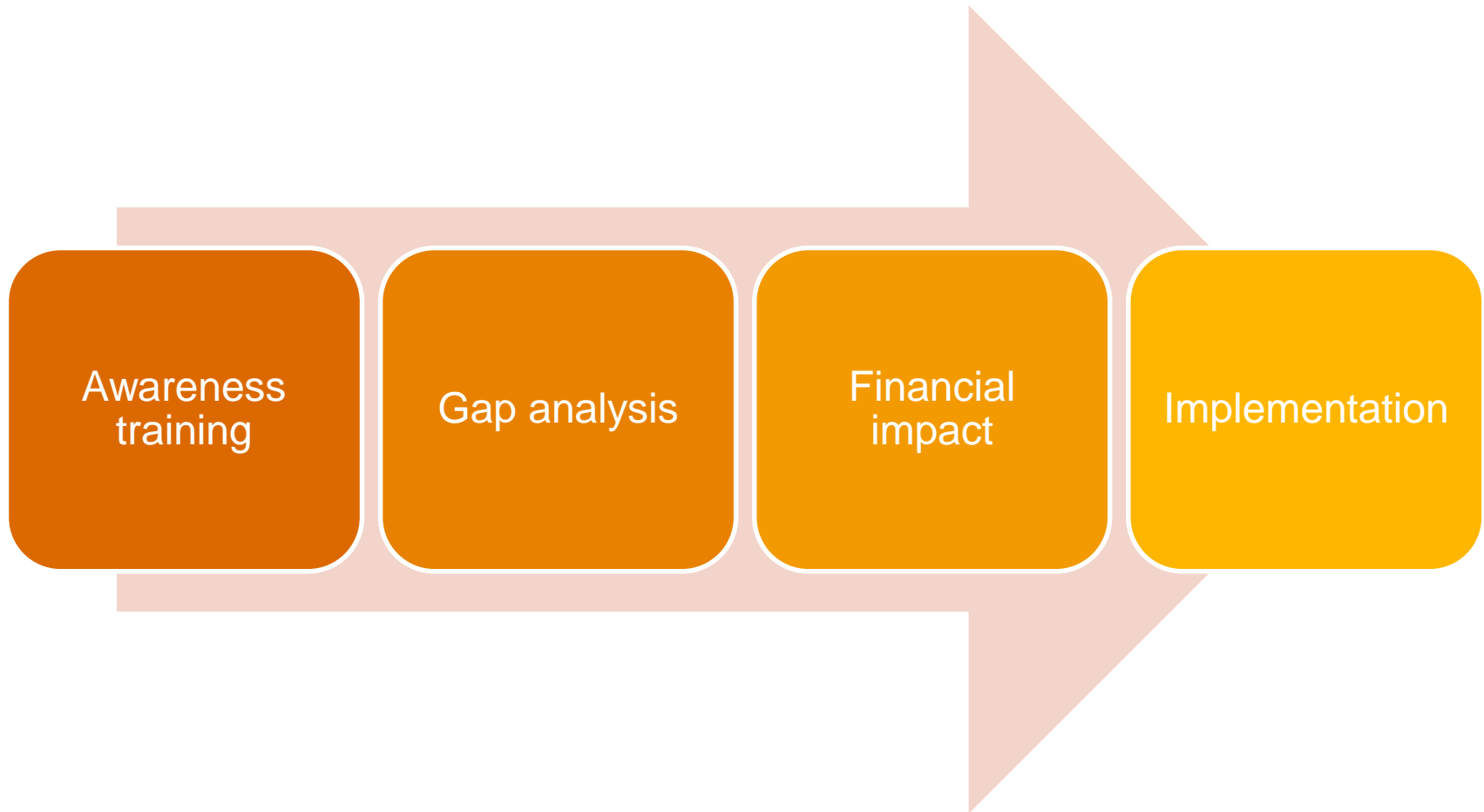
IFRS 17 Insurance Contracts — starting to be enforced 2022 (Indonesia)

The IFRS® Foundation is a not-for-profit international organisation responsible for developing a single set of high-quality global accounting standards, known as IFRS Standards.

IFRS Standards are now required in more than **140 jurisdictions**, with many others permitting their use.

IFRS 4*	IFRS 17
Premiums	Insurance revenue
Investment income	Incurred claims and expenses
Incurred claims and expenses	Insurance service result
Change in insurance contract liabilities	Investment income
Profit or loss	Insurance finance expense
(*) Common presentation in the statement of comprehensive income in applying IFRS 4. Note: Grey shading denotes line items on the balance sheet	Net financial result
	Profit or loss
	Discount rate changes on insurance liability (optional)
	Total comprehensive income

Key activities for IFRS17 implementation



So, what?



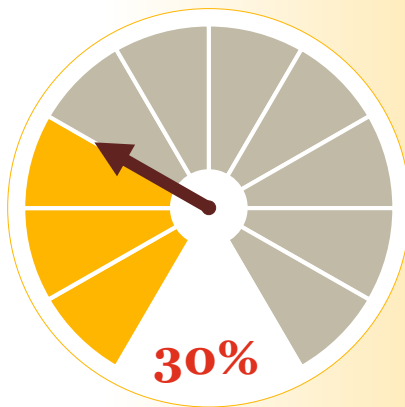


Actuarial Due Diligence – M&A

What is a due diligence?



Knowledge on Company B



*The seller knows everything about its own business and the buyer knows far less. **Due diligence** is the process by which the buyer solicits information that reduces this asymmetry – wallstreetprep.com*

Scope of actuarial due diligence

1. Embedded Value (EV)

Present value of future profits plus net assets

2. Reasonableness of insurance reserves and its assumptions

3. Review on risk based capital

Challenges:

- Limited data
- Limited time
- Highly demanding work
- Messy processes are expected



Embedded Value

Embedded Value (EV) =

+ Adjusted Net Worth (ANW)

+ Value In Force (VIF)

– Cost of Capital

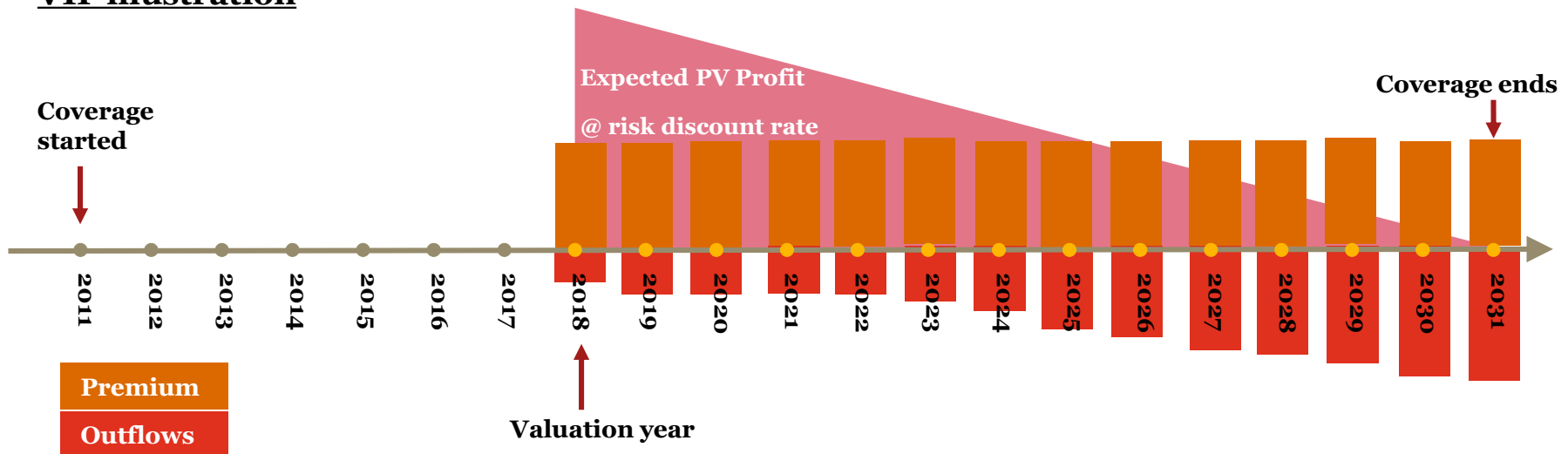
EV is an economic value of the shareholder capital and profits expected to emerge from in-force contracts

ANW is the excess of the market value of assets over the value of the statutory liabilities

VIF is the present value of profits that expected to emerge from the insurer's portfolio

Cost of Capital is the cost of holding the required capital

VIF illustration



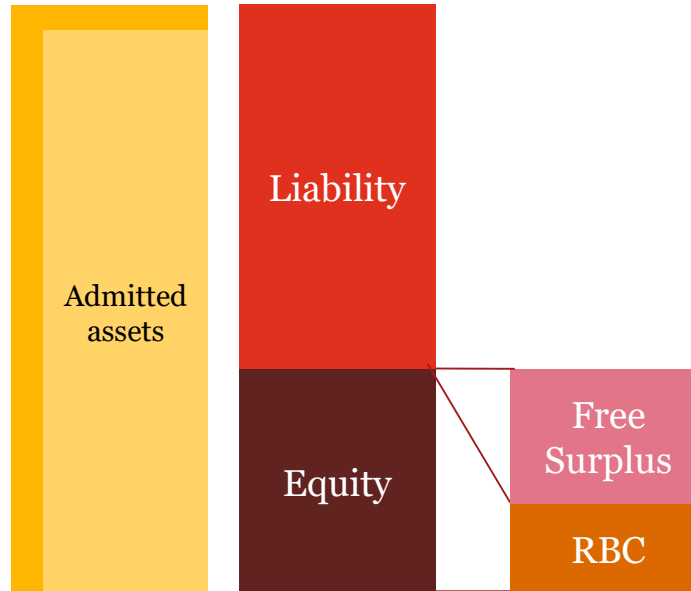
Risk based capital

Risk-Based Capital (RBC) is a method of measuring the minimum amount of **capital** appropriate for a reporting entity to support its overall business operations in consideration of its size and **risk** profile – National Association of Insurance Commissioners

Required capital for:

- Credit risk
- Liquidity risk
- Market risk
- Insurance risk
- Operational risk

Otoritas Jasa Keuangan requires insurers to hold the solvency ratio $\geq 120\%$



$$\text{RBC ratio} = \frac{\text{Admitted assets} - \text{Liability}}{\text{RBC}}$$

Thank you !

Questions?