www.ICA2014.org

LEARN
INTERACT
GROW

THE NEW ERA OF GROSS PREMIUM VALUATION FOR INDONESIAN ACTUARIES

April, 2nd 2014 – Washington D.C

Ponno Jonatan - AXA Life Indonesia

Outline

- ❖ About Indonesia
- ❖ Overview of Insurance Industry
- ❖ Regulatory Changes
- ❖ Survey on GPV Implementation/Readiness
- ❖ The Challenges for Actuaries in Indonesia
- ❖ The Challenges for Actuarial Society

Picture of Indonesia

ICA 2014 CIA
WASHINGTON DC

Official Name	Republic of Indonesia (Independent since Aug 17, 1945)
Capital City	Jakarta (business and governmental centre)
Geography	• The world's largest archipelago nation • Location: Between Asia and Australia, between Indian Ocean and Pacific ocean • Area : 1,904,569 sq km (736,600 sq mi). • Land: 1,811,569 sq km; water: 93,000 sq km • Terrain : More than 17,508 islands; 6,000 are inhabited; 1,000 of which are permanently settled • Coastline : 54,716 km
Climate	Tropical, hot, humid, cooler in the highlands
Population	The 4th most populous nation in the world 244 million: >50% under age of 29 (2010-15E annual average growth: 1.0%)
Ethnic Groups	40% Javanese, 16% Sundanese and 44% other ethnic groups with more than 700 tribes/dialects
Religions	Islam 86%, Protestant 6%, Catholic 3%, Hindu 2%, Buddha 1%, Others 2%
Language	Bahasa Indonesia. English is widely spoken by business people in major cities
Currency	Indonesian Rupiah (IDR) (1USD is around IDR 10,000 in 2012 and around IDR 12,000 in 2013)
Natural resources	Oil, tin, natural gas, coal, gold, copper, silver, nickel, bauxite, timber, fertile soils
Agricultural products	Agricultural products Rice, cassava (tapioca), peanuts, palm oil, rubber, cocoa, coffee, copra, poultry, beef, eggs
Investment Rating	Nov 2012: BB- (Fitch), Ba3 (Moody's), B+ (S&P)
Life Expectancy	70.7 (2010-2015F)

ICA 2014 CIA WASHINGTON DC

The rich natural resources and agricultural products, supported by the strategic location have made Indonesia so attractive to foreign traders, rulers and investors.

Source: KPMG-Investing in Indonesia (2013)

Indonesia Economic Indicators

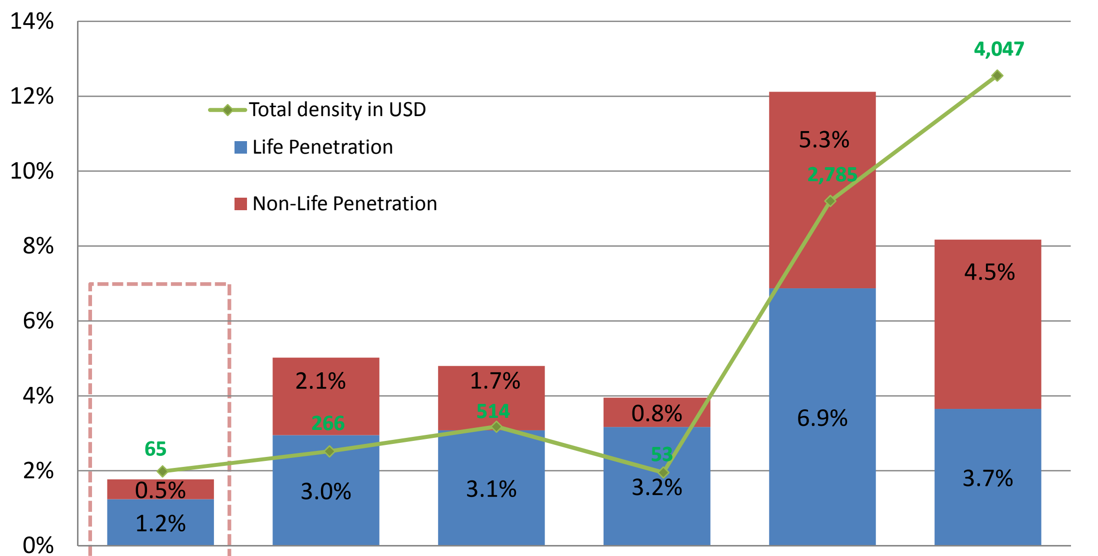
	2010	2011	2012	2013	2014E
GDP (billion USD)	709.5	846.2	878.5	867.5	n/a
GDP Growth	6.1%	6.5%	6.2%	5.8%	5.3%
Economic Growth (%)	6.1	6.5	6.2	5.8	5.8 - 6
Inflation (%)	6.96	3.79	4.30	8.38	± 5.5%
Reserve (million USD)	96.207	110.123	112,781	99,387	n/a
Central Bank Interest Rate (%)	6.50	6.00	5.75	7.50	n/a
Currency Rate (USD/Rp)	8,991	9,068	9,670	12,270	± 12,000
Export (million USD)	157,779	203,497	190,020	182,568	n/a
Import (million USD)	135,663	177,463	191,690	186,631	n/a
Unemployment Rate	7.14%	6.56%	6.14%	6.25%	6.25%

Indonesia has enjoyed sustained periods of record economic growth and foreign investment, as well as now being the largest economy in South East Asia

Sources: Infobank 2013, www.bi.go.id

ICA 2014 CIA WASHINGTON DC

Insurance Penetration[1] and Density[2)] (GDP in 2012)



	Indonesia	Thailand	Malaysia	India	Korea	US
GDP (billion USD)	879	366	309	1,679	1,149	1,540
Population (million)	238	69	29	1,249	50	22

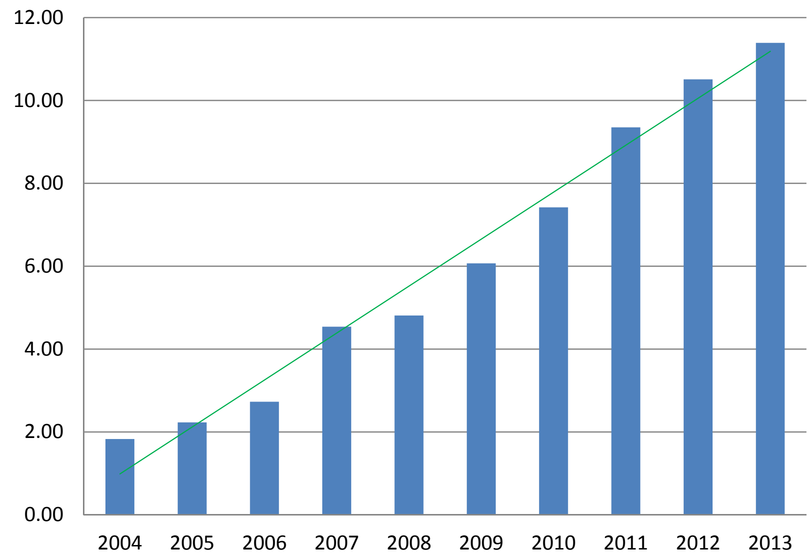
With low Insurance penetration of 1.7% and low insurance density which is around 7% of GDP, represent significant growth opportunity. Indonesia insurance market remains the hot destination for the investors.

(1) Premiums as a % of GDP (2) Premiums per capita in USD in 2012
Source: Swiss Re (2013)

ICA 2014 CIA
WASHINGTON DC

Life Insurance Premium Growth

Year	Total Premium (in million USD)	Annual Growth
2004	1.83	35%
2005	2.23	20%
2006	2.73	23%
2007	4.54	66%
2008	4.81	11%
2009	6.07	23%
2010	7.42	20%
2011	9.35	24%
2012	10.51	11%
2013	11.39	8%



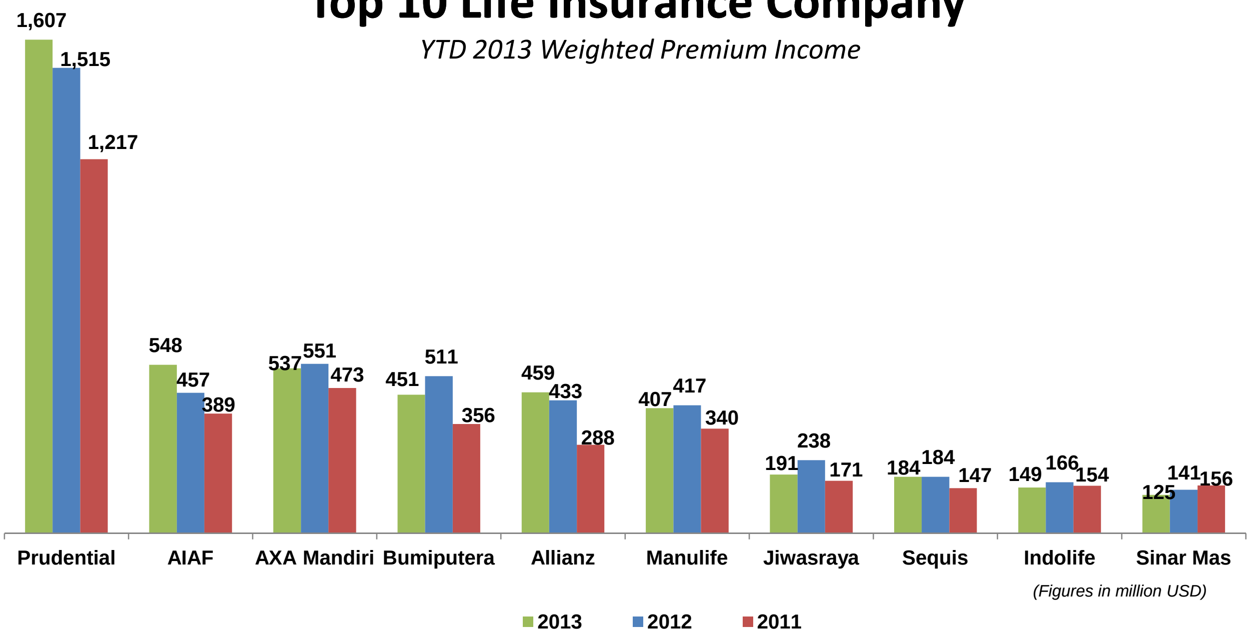
Strong economic fundamentals have fuelled industry growth. The Life Insurance Premiums have been increasing in line with the increase in GDP. With the number of sales force expected to increase to 440,000 in 2014 from 356,731 in 2013, the Total Premium Income is forecasted to grow to 15 – 20% in 2014

Source: Indonesia Life Insurance Association (AAJI)

ICA 2014 CIA WASHINGTON DC

Top 10 Life Insurance Company

YTD 2013 Weighted Premium Income

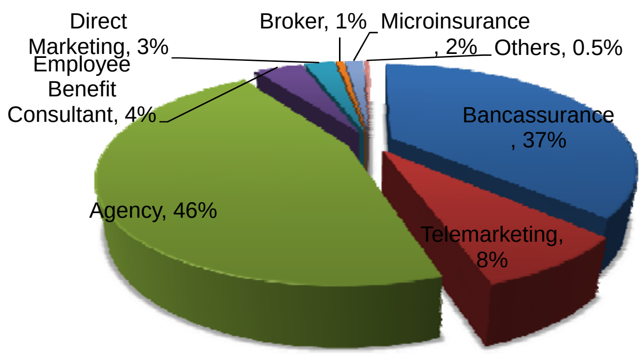


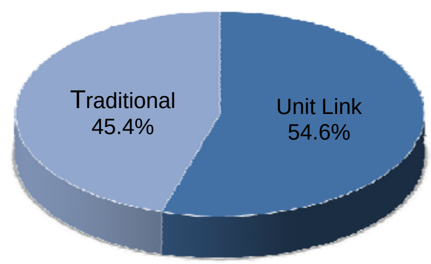
(Figures in million USD)

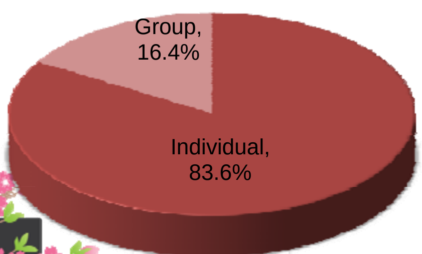
Indonesia Life Insurance Industry is dominated by a handful of multinational companies with New Business Margin are among the highest in Asia. Prudential that has 80% of its product portfolio in Unit-Link has contributed the highest volume as well as Profit margin and Earnings.

Source: Indonesia Life Insurance Association (AAJI)

Life Insurance Market Mix (2013)







- The market remains dominated by Individual Unit-Link product which is sold through Agency
- Group health/Life contribute low-margin
- Increasing demand for decreasing term-life/SP endowment from Bank
- Entering Micro-insurance market will be mandatory for all insurance player

Source: Indonesia Life Insurance Association (AAJI)

ICA 2014 CIA WASHINGTON DC

9

Risk Based Supervision

RBC	Life Insurance	
	2008	2013
> 325%	**24**	**19**
120% - 325%	**15**	**21**
< 120%	**4**	**1**
Total	**43**	**41**

RBC	Non-Life Insurance	
	2008	2013
> 290%	**37**	**38**
120% - 290%	**49**	**42**
< 120%	**2**	**1**
Total	**88**	**81**

- Minimum paid-up capital of IDR 70 billion by 2012, IDR100billion by 2014, additional capital of IDR 25 billion for Sharia business
- Minimum Net Admitted Asset is 120% of Risk Based Required Capital

Risk Assessment Rating of 45 life Insurance companies

impact	Low	Moderate Low	Moderate High	High	Very High
Very High	4				1
High	6			1	
Moderate	8		1	1	
Low	12	3	4	3	1

0 1 1.5 2 3 4

Overall Risk

- Normal
- Intensive Supervision
- Financial Improvement
- Financial Restructuring

-Draft Regulation on Risk Based Supervision for Non-Bank Financial Institution will be finalized soon.

-FSA Supervision will be based on Risk assessment rating which would emphasize the companies to have internal Risk Management.

Sources: InfoBank 2013, OJK

New Independent Supervisory Role

- The **Financial Services Authority** (**FSA**) known as "**Otoritas Jasa Keuangan**" (**OJK**) take over the authority and obligation to supervise activities in the financial sector (including insurance) which was previously regulated by the Capital Market and Financial Institution Supervisory Agency (BAPEPAM-LK), the Ministry of Finance, and Indonesia Deposit Insurance (LPS) [Effective Jan, 1st 2013 under Law No. 21 Year 2011]
  - OJK annual fee will be charged to all Financial Institutions (0.045% of Total Asset and minimum at IDR 10 million) [Effective Feb, 12th 2014]
  - Non-Bank Financial Service Institution is obliged to submit Financial Statement, Cash Flows and analysis of Assets and Liabilities on monthly basis (previously was quarterly and annually basis) [Effective July, 1st 2013]
  - Appointed Actuary, other Insurance Experts, and foreign workers are now required to have Fit and Proper Test [Effective an, 1st 2014]
  - Draft for discussion: Risk Based Supervision and Direct Audit by OJK
  - Other Focus:
    - Setting up a statistical body and tariff-setting for non-life insurance companies
    - Reinsurance optimization: retain or reinsure locally as much as possible
    - 1000 Actuaries: addressing the increased need for actuaries in both life and non-life

ICA 2014 CIA WASHINGTON DC

Source: Kim Yeoh (CA of Prudential) presentation on 20 Nov 2013, OJK letter/regulation

Regulatory Changes: Valuation & Solvency

- **Financial Soundness of Insurance and Reinsurance Companies** [Effective Jan, 1st 2013 – PMK 53/2012]
  - New rules on required capital, fund structure, admitted assets and valuation
    - Gross Premium Valuation (GPV) required for certain contracts to replace the current Net Premium Valuation (NPV)
      - ➢ Changes to systems and give impact to capital position, balance sheet and P&L
  - Technical reserve to be calculated by the Appointed Actuary (both for Life and General Insurance company)
- **Minimum Risk Based Capital requirements** [Effective Jan, 1st 2013 – PER 08/2012]
  - Change in methodology of capital required for asset-liability mismatch, claims risk, interest rate risk and additional capital charges for operational risk
    - ➢ Impact to RBC Ratio
- **Technical Reserves for Insurance and Reinsurance** [Effective Jan, 1st 2013 – PER 09/2012]
  - Change to valuation methodology: NPV to GPV using average valuation interest rate for long term contracts
    - ➢ Impact to capital position, create asset-liability mismatch in reporting and volatility of Balance Sheet since assets at market value
    - ➢ Daily amortization UPR for short-term products: No more minimum UPR of 40% of Premium which may be beneficial for companies with majority product in short-term horizon

Source: Kim Yeoh (CA of Prudential) presentation on 20 Nov 2013, OJK regulation

Regulatory Changes: Valuation & Solvency (2)

- **Appointed Actuary's Report** [Effective on June, 1st 2013 – PER 10/2012]
  - Enhancements to the current report: additional disclosures and analysis on profitability, risk management, etc
- **Reinsurance** [Effective on Jan, 1st 2013 – PER 11/2012]
  - Specifies minimum own retention (e.g. IDR 100 million or 50% gross premium for Term-Life, Accidental and Health products)
  - Minimum cession to local reinsurers (e.q. 10% for automatic proportional treaty)
  - Annual reinsurance reporting to OJK
    - ➢ may impact the reinsurance strategy and risk strategy of the company
- **IFRS Adoption and Alignment** [Effective in 2012 – PSAK 36 and 62]
  - Financial Statements prepared under PSAK (the Local GAAP) for the year beginning 1 Jan 2013 are expected to be substantially similar to IFRS financial statements (IFRS Phase 1)
    - ➢ Companies may prepare two different reporting due to some differences between IFRS and PSAK (e.q. valuation interest used)
  - Requires Liability Adequacy Testing or GPV
  - Premium Income are separated into Pure protections premiums and investment-linked premium
    - ➢ Affect the companies that rely more on sales of UL products

ICA 2014 CIA WASHINGTON DC

Source: Kim Yeoh (CA of Prudential) presentation on 20 Nov 2013, OJK regulation, Fitch Rating: Indonesia Outlook (Oct 2012)

Change in Reserving Method

	Old Regulation	New Regulation
Long-term, (Non-YRT)	Net Level Premium/ Zillmer: Premium Reserve = PV of Future Benefit – PV Future Premium + amortization of 1st year expenses of minimum 30‰ Sum Assured **Discount rate at max 9% for products in IDR and 5% for USD**	Gross Premium Valuation: Premium Reserve = (PV of Cash-out – PV of Cash-in) + 75% PAD Subject to: (a) No Negative Reserves, (b) Reserve > Surrender Value **(c) Discount factor max : average 3 years Yield of Government bond (benchmark series) + 0.5%**
Short-term (YRT)	• Reserve = UPR + IBNR + RNYA • **UPR should be higher or equal to 40% of Net Premium**	• Reserve = UPR + IBNR + RNYA • **UPR = Max { UPR daily amortization, URR}** • UPR daily amortization should be higher or equal to pro-rate of Net of Commission Gross Premium (daily basis). Max Commission = 20% * Gross Premium • URR = Unexpired Loss + Unexpired Expense + 75% PAD Subject to: (a) No Negative Reserves, (b) Reserve > Premium Refund

Reserve Methodology across Asia

China **NPV**

Thailand **GPV**

India **GPV**

South Korea **NPV**

Taiwan **NPV**

Hong-Kong **NPV**

Vietnam **NPV**

Malaysia **GPV**

Singapore **GPV**

Indonesia **NPV to GPV**

ICA 2014 CIA WASHINGTON DC

Source: E&Y (2012)

Change in Solvency Requirement

Schedule	Old RBC	New RBC
A. Asset Default risk	Factor x Asset Book Value (varies by asset class and rating)	Factor x Asset Book Value (varies by asset class and rating cluster)
B. Cash-flow mismatch risk	4% x Premium Reserves	∑4% |Asset Book Value(*i*) – Liability(*i*)| *i* = maturity class
C. Currency mismatch risk	• If Asset<Liability : 30% x absolute difference, • if Asset>1.2x Liability: 10% x (Asset – 1.2xLiability)	• If Asset<Liability : 30% x absolute difference, • if Asset>1.2x Liability: 10% x (Asset – 1.2xLiability)
D. Risk of claim experience worse than expected	▪ **Life Par: 0.1% x SaR** ▪ **Life Non-Par: 0.2 x SaR** ▪ **Accidental: 0.015% x SA** ▪ **Health (no claim): 10% Premium** ▪ **Health (with claim): 10% UPR**	▪ **Long-term, Non-YRT: Max(GPV Reserve @95% - GPV Reserve @75%; 0)** ▪ **YRT Products: 25% UPR + 20% IBNR**
E. Insufficient Investment Income risk	▪ RP Par Non-YRT : 0.5% x Reserve ▪ RP Non-Par: 0.1% x Reserve	Max(GPV @risk-free - GPV Reserve @75%; 0)
F. Reinsurance risk	Factor x (1 – (Deposit/ Reinsurance Reserves)) * Reinsurance Reserves (varies by reinsurance rating)	Factor x (Deposit – Reinsurance Reserves)) * Reinsurance Reserves (varies by reinsurance rating cluster)
G. Operational risk	n/a	0.1% x (Total General & Administration Expenses - Expenses spent for Employee Training) + 1‰ x UL Accumulated Fund

ICA 2014 CIA
WASHINGTON DC

Capital models

- Simple Factor Based (e.g., Solvency I)
  - China, Hongkong
- Risk Factor Based (e.g., RBC)
  - Indonesia (1999/2013)
  - Singapore (2004)
  - Malaysia (2004/2009)
  - Taiwan (2008)
  - Thailand (2008/2011)
- Principle based (e.g., Economic Capital, Solvency II)
  - UK, Switzerland, Europe

ICA 2014 CIA WASHINGTON DC

Source: Tower Watson Indonesia

The Challenges

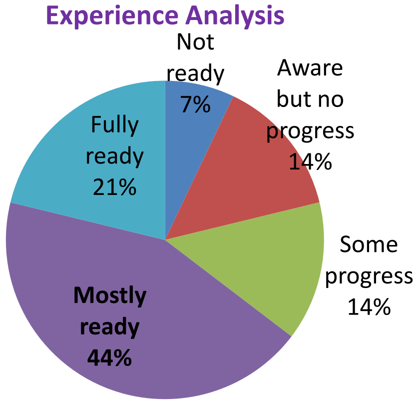
- Do companies have adequate operating experience?
- Do companies have the necessary actuarial systems in place to run the numbers?
- What will be the impact on the volatility of financial results/solvency?
- Does the solvency framework need to be reviewed more in line with GPV?
- The possible need to re-price products and to reassess capital adequacy?
- How to set the PAD?
- How to avoid mismatch created by the regulation?

ICA 2014 CIA WASHINGTON DC

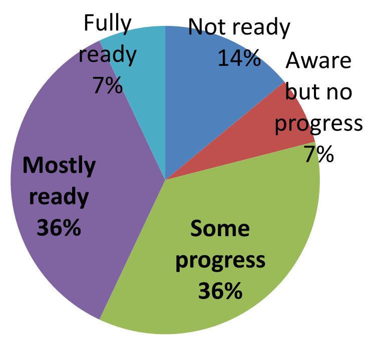
E&Y GPV Readiness Survey

14 Life Insurance Companies (Dec 2012)

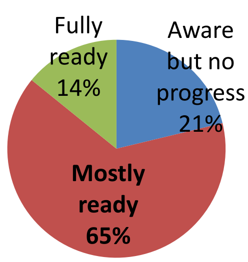
Experience Analysis



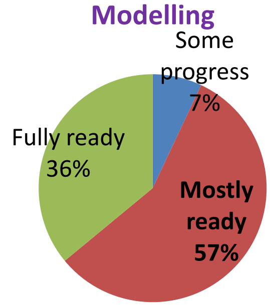
Movement Analysis



Overall GPV data requirements



Modelling



E&Y GPV Readiness Survey

14 Life Insurance Companies (Dec 2012)

PAD Assumptions

Assumptions	Indonesia	Thailand	Malaysia	Singapore
Mortality	10%	+/- 17%	+/-10% to +25%	25% to 40%
Morbidity	10%	+/- 17%	+/-10% to +25%	25% to 40%
Expenses	0% to 15%	5%	+5%	5%
Lapse	-10% to +20%	+/- 12%	+/- 25%	+/-12.5%
Overall Sufficiency	60% to 75%	75%	Around 75%	Around 75%

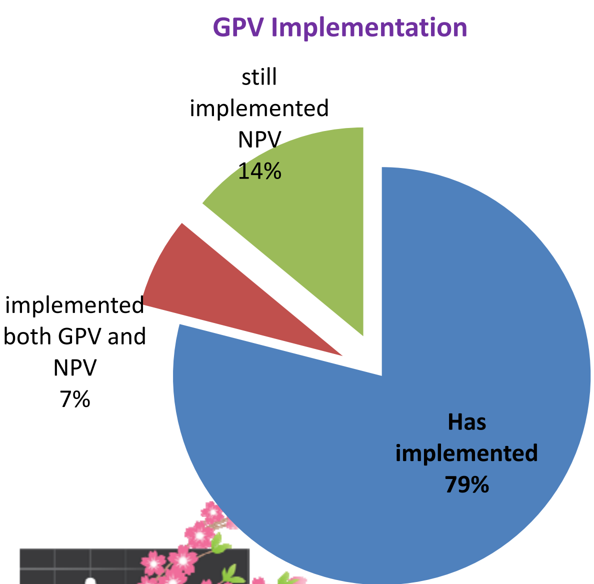
ICA 2014 CIA WASHINGTON DC

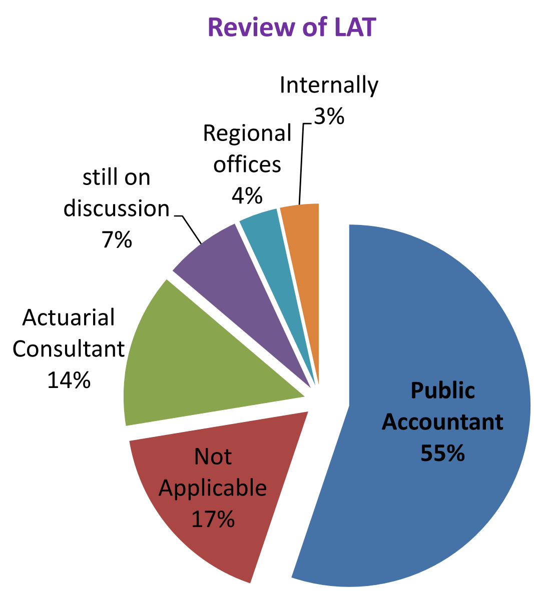
E&Y Observations

- Overall the market players call for more clarity or detailed interpretation on the new regulation from the regulator
- Local companies could have issues in actuarial software development, experience study and confidence level setting, analyses on results (e.g. reserve movement analysis), etc.
  - JVs (esp. the European and American ones) are generally better equipped to adopt the new regulation
- Some approximation methods have been used in valuation due to the technical challenges or knowledge gap. However, it does not necessarily lead to additional hiring or investment in the actuarial function, as the high-level nature of the new regulation also leaves room to justify certain simplified methods

ICA 2014 CIA WASHINGTON DC

GPV Implementation Survey by
The Indonesia Actuarial Society (PAI)
29 Life Insurance Companies (April 2013)





PAI Observations

- No uniform intrepretation on th new MoF regulation and the new local accounting standard
- Time and resource constraints to execute within timeline
- Limited skills in experience analysis, assumption setting and modelling
- Most of the companies do not have the proper actuarial software that can support the GPV valuation
- Impact to total liabilities and the profitability of the company and solvency might be significant but is varied by the assumptions used in NPV era and assumptions + PAD used in GPV Era and also horizon of the portfolio (e.q. will be decreased for New Company since negative reserves are capped at portfolio level)

ICA 2014 CIA WASHINGTON DC

The Challenges for the Indonesian Actuaries

- To understand the regulatory changes and to comply
- To understand the gap analysis, planning and integration into daily operation
- To be able to perform studies and benchmarking properly
- To be able to set the proper PAD
- To be able to develop models and to have documentation and actuarial review
- To understand the result Impacts, profit emergence and sensitivity analyses
- To have a solid actuarial team: training, documentation, robust processes and controls
- To get prepared for the tighter competition in 2015 Asean Free Trading
  - To have English as second language
  - To understand the Actuarial common practices and international financial standards

ICA 2014 CIA WASHINGTON DC

The Indonesian Actuarial Society (PAI)

- Persatuan Aktuaris Indonesia (PAI)
- Established in 1964
- IAA Full Member (2007)
- 181 Fellow (FSAI), 166 Associate (ASAI) [As of Jan 2014]

Distribution of Fellow/ Associate Actuary

	Life	Non-Life	Consultant	Others*	Total
FSAI	107	4	36	34	**181**
ASAI	77	7	14	68	**166**
Total	**184**	**11**	**50**	**102**	**347**

**Reinsurance, Health Insurance, housewife, OJK, no-information, others*

PAI Actuarial Exam

- 7 Exams to be an associate and another 3 exams + 1 seminar to be the qualified actuary

<table>
<tr><th>ASAI</th><th>FSAI</th></tr>
<tr><td>1. A-10 : Financial Mathematics</td><td>8. F-10 : Investment and Asset Management</td></tr>
<tr><td>2. A-20 : Probability and Statistics</td><td>9. F-20 : Actuarial Management</td></tr>
<tr><td>3. A-30 : Economy</td><td rowspan="5">10. Actuarial Aspect (optional)
• F-31 : Life Insurance
• F-32 : Pension Fund
• F-33 : General Insurance
• F-34 : Health Insurance</td></tr>
<tr><td>4. A-40 : Accounting</td></tr>
<tr><td>5. A-50 : Statistical Method</td></tr>
<tr><td>6. A-60 : Actuarial Mathematic</td></tr>
<tr><td>7. A-70 : Risk Theory and Modelling</td></tr>
<tr><td></td><td>+ Professional Seminar</td></tr>
</table>

- The Exam is held 3 times in a year (March, June, November)

Statistics of Exams Result

	2009	2010	2011	2012	2013	Average
Total Candidate*	219	271	345	380	424	**327**
Total Exam taken	736	967	890	1,435	1,472	**1,100**
Successful Exam	164	227	192	322	347	**250**
Passing rate	22.3%	23.5%	21.6%	22.4%	23.6%	**22.7%**
Average Score	56.7	57.6	52.9	53.4	51.2	**54.4**

**average no. in a year*

Data as of January 2014 – Total of Fellow/Associate Candidates by No. of Successful Exam

9 Exams	8 Exams	7 Exams	6 Exams	5 Exams	4 Exams	3 Exams	2 Exams	1 Exams	Total
22	22	19	52	46	86	189	306	611	**1,353**

ICA 2014 CIA
WASHINGTON DC

More Actuaries will be born in the near coming years if the candidates have better preparation for the Exams…..

The Challenges for the Society

- To develop a guidance note with a view to gaining consistent interpretation across the industry (e.q how to determine the PAD assumptions, how to treat the negative reserves, how to calculate the reinsurance asset, etc.)
- Continue to educate the profession especially on GPV
- To solve demand-supply issue on Actuaries
  - The Actuaries are not well distributed
  - There are 361 Non-Bank Financial Institution where Actuaries may be needed. Assuming every company requires 5 actuaries (2 FSAI and 3 ASAI), we should have had 1.805 actuaries (722 FSAI and 1,083 ASAI).
  - Exemption Program with Universities
  - Accelerating Program "Program 1000 Aktuaris"
    - Short Course Program with Exemption on 10 Actuarial Exams started in January 2014
    - Short Course Program for Non-Life actuaries started in January 2014

Thank You!

For further questions please contact me at:

Ponno Jonatan

PT AXA Life Indonesia

AXA Tower lt.20, Jl. Prof.Dr.Satrio Kav.18 Kuningan City, Jakarta 12940, Indonesia (+62 21) 3005 8888| (+62 21) 3005 8888 | Ponno.Jonatan@axa-life.co.id, pjonatan@gmail.com

ICA 2014 CIA
WASHINGTON DC