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The Old Man and the Sea

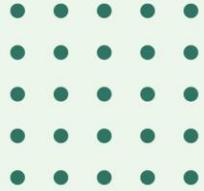
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Balancing Growth, Profitability and Safety in the General Insurance Industry

(USA, JAPAN & KOREA)

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(Banking & Insurance Dept.)**



Contents of the Study

- 01 INTRODUCTION:** Cover the global insurance trends and situations.
- 02 LITERATURE REVIEW:** Review the relationship among profit, growth, and safety.
- 03 EMPIRICAL RESULT:** Analyze financial strength of general insurance industry by using rating methodology and panel analysis.
- 04 CONCLUSION:** Discuss profit, growth, and safety in the insurance industry.



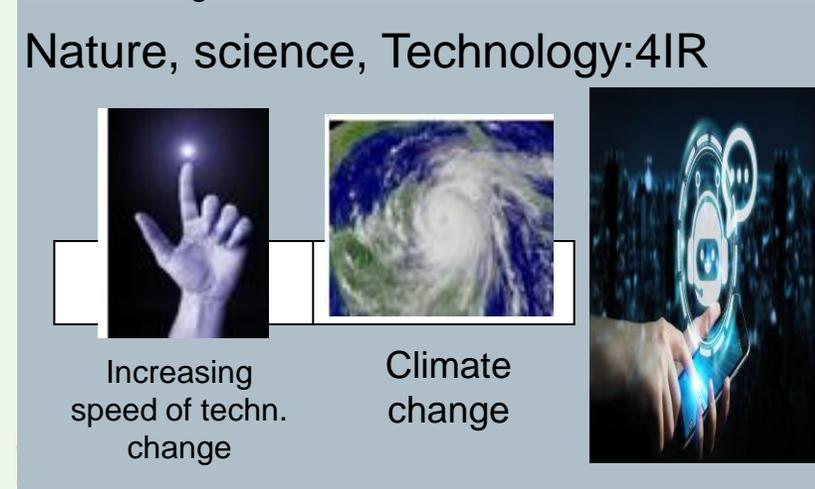
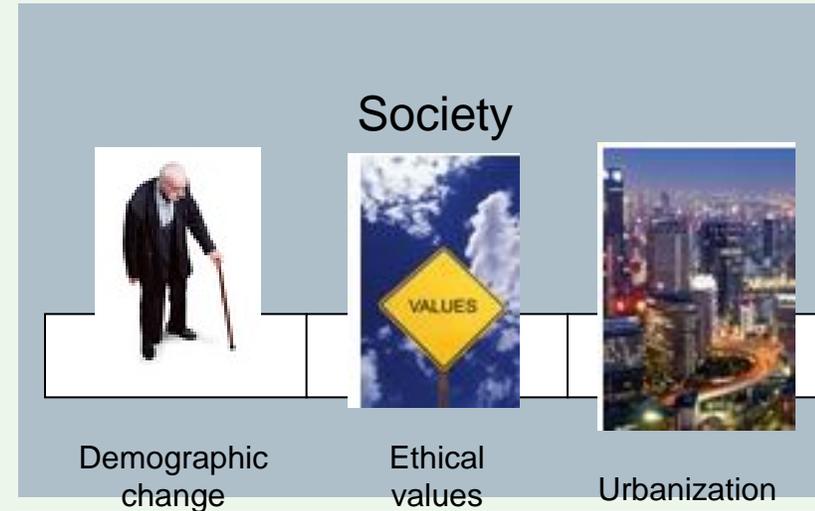
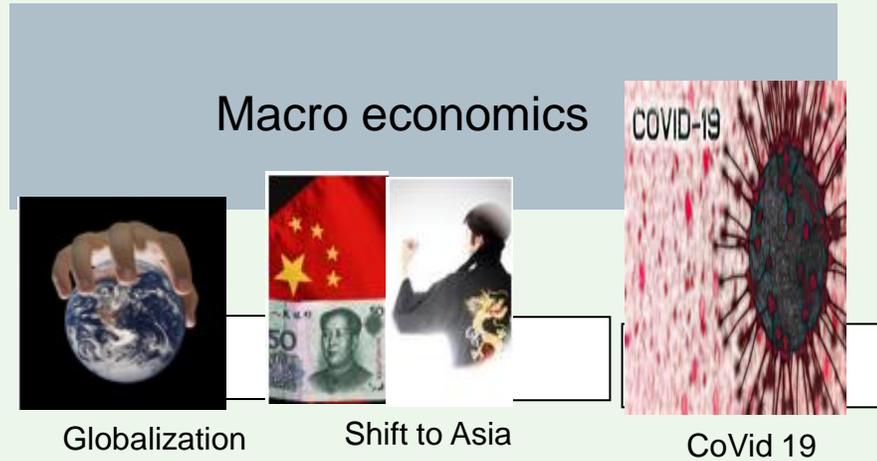
Global Insurance Mega Trends

What trends(factors) will shape the insurance industry in the future?

- Insurance industry have radically changed in the last decades, especially Financial and Covid crisis period.
- Several megatrends are shaping for insurance industry.
- The insurance industry is undergoing **a perfect storm**.
- **VUCA**(Volatility, Uncertainty, Complexity, Ambiguity).
- **Storm Clouds and Silver Linings**.



I. Introduction: Global Insurance Trends



1. Understanding Global Insurance Mega trends

❖ Macro Economic Factors

Globalization: China continues to gain market share in total global premiums.

- The global insurance market continues to consolidate around the US, China and Japan. These were again the world's top three insurance markets by size in 2020, together accounting for almost 58% of the global market, higher than one year ago (2019: 56%).
- China continues to take a growing share, reaching 10.5% of the global insurance market last year.
- The rapidly growing Asia region is growing increasingly dominant, with six markets in top 20 ranking and about a 25% market share in 2020. (China, Japan, Korea, India, Taiwan, Hong kong)
- The market share of the top 20 countries also rose slightly to 90.7% in 2020 from 90.5% in 2019.
- We expect emerging markets to continue to outpace advanced markets and Asia to outperform other regions, with the ongoing shift in economic power from west to east reflected in the source of global premium growth.

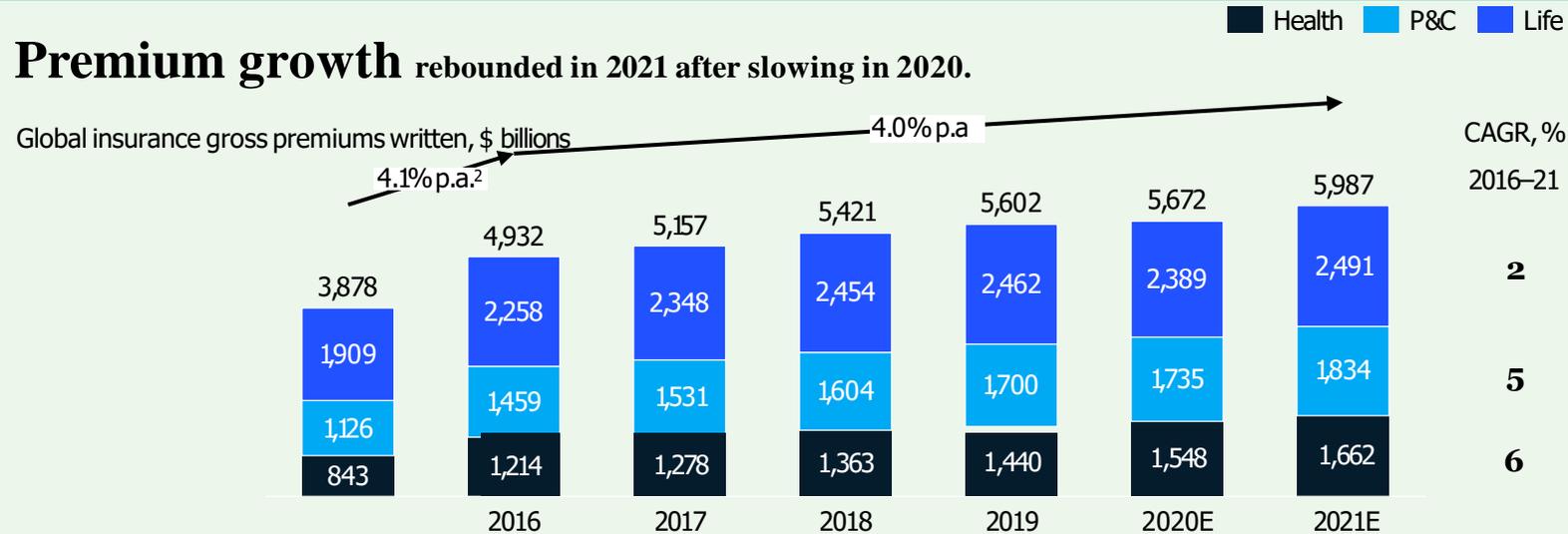
1. Understanding Global Insurance Mega trends

❖ Globalization (Shift to Asia)

Rank	Country	Total premium volumes (USD millions)			Global market share	
		2021	2020	% change	2021	2020
1	US	2 718 699	2 515 358	8.1%	39.6%	40.0%
2	China	696 128	655 865	6.1%	10.1%	10.4%
3	Japan	403 592	414 475	-2.6%	5.9%	6.6%
4	UK	399 142	341 950	16.7%	5.8%	5.4%
5	France	296 380	238 998	24.0%	4.3%	3.8%
6	Germany	275 779	260 322	5.9%	4.0%	4.1%
7	South Korea	193 008	190 085	1.5%	2.8%	3.0%
8	Italy	192 481	172 704	11.5%	2.8%	2.7%
9	Canada	161 289	139 243	15.8%	2.4%	2.2%
10	India	126 974	111 911	13.5%	1.9%	1.8%
11	Taiwan	113 423	113 304	0.1%	1.7%	1.8%
12	Netherlands	92 986	88 004	5.7%	1.4%	1.4%
13	Spain	73 571	67 220	9.4%	1.1%	1.1%
14	Australia	72 576	62 825	15.5%	1.1%	1.0%
15	Hong Kong	72 227	72 940	-1.0%	1.1%	1.2%
16	Ireland	64 696	49 282	31.3%	0.9%	0.8%
17	Brazil	62 082	57 900	7.2%	0.9%	0.9%
18	Switzerland	57 793	57 081	1.2%	0.8%	0.9%
19	South Africa	51 215	41 110	24.6%	0.7%	0.7%
20	Luxembourg	48 287	36 902	30.9%	0.7%	0.6%
Top 20 markets		6 172 328	5 687 478		90.0%	90.4%
World		6 860 598	6 291 834			

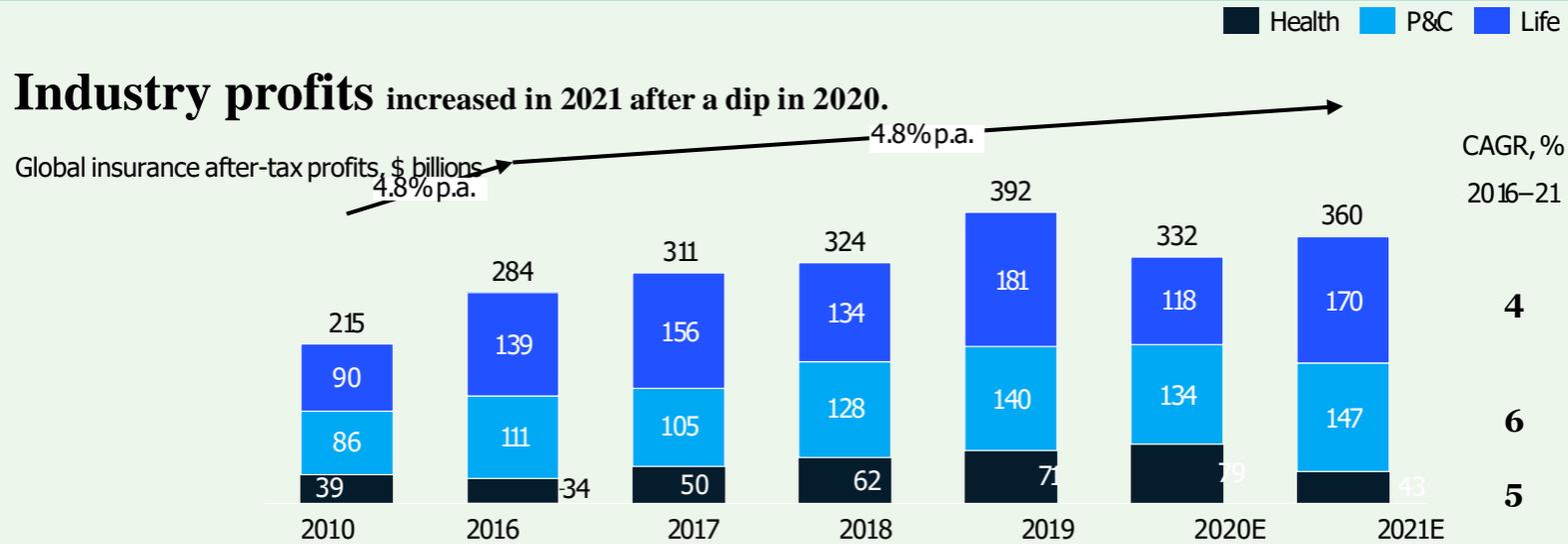
source: Swiss Re, Sigma 4/2022 World Insurance

I. Introduction: Global Insurance Industry



Premium : The impact on the insurance industry was noticeable in 2020, due to the COVID-19 crisis , premium growth slowed to approximately 1.2 percent (compared with more than 4 percent per year between 2010 and 2020). Significantly, life insurance global premiums declined by 4.4% over 2019 to 2.8 trillion USD in 2020. The global non-life insurance premiums rose by 1.5% in 2020.

I. Introduction: Global Insurance Industry



Profit : Profits fell by about 15 percent from 2019. The decline was sharpest in Asia-Pacific (down 36 percent) and was particularly driven by falling profits in life.

source: source: McKinsey & Company, Creating finding focus: Global Insurance Report 2022

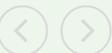
I. Introduction: Global Insurance Industry

Top Countries By Total Insurance Premiums Per Capita And Percent Of Gross Domestic Product (GDP), 2021

Ranking	Country	Total business	Life business	Non-life business
1	Cayman Islands	19,177	1,498	17,680
2	Hong Kong	9,556	8,433	1,123
3	United States	8,193	1,837	6,356
4	Denmark	7,746	5,803	1,944
5	Macao	6,892	6,329	563
6	Singapore	6,742	5,414	1,327
7	Switzerland	6,610	2,866	3,744
8	Ireland	6,063	4,183	1,881
9	Finland	5,600	4,571	1,029
10	Luxembourg	5,585	3,267	2,318
11	Netherlands	5,301	805	4,497
12	United Kingdom	5,273	4,234	1,039
13	Taiwan	4,804	3,772	1,032
14	Sweden	4,597	3,478	1,119
15	Norway	4,406	2,852	1,554
16	Canada	4,217	1,697	2,520
17	France	4,140	2,654	1,486
18	South Korea	3,735	1,971	1,764
19	Germany	3,313	1,321	1,992
20	Italy	3,253	2,467	785
21	Japan	3,202	2,347	855
-	world	874	382	492

Ranking	Country	Total business	Life business	Non-life business
1	Cayman Islands	21.0	1.6	19.4
2	Hong Kong	14.8	11.6	3.2
3	Taiwan	14.5	1.3	13.1
4	South Africa	12.2	10.0	2.2
5	United States	11.7	2.6	9.1
6	Denmark	11.4	8.5	2.9
7	United Kingdom	11.1	8.9	2.9
8	South Korea	10.9	5.8	5.2
9	Finland	10.3	8.4	1.9
10	France	9.5	6.1	3.4
11	Singapore	9.3	7.5	1.8
12	Italy	9.1	6.9	2.2
13	Netherlands	9.1	1.4	7.7
14	Japan	8.4	6.1	2.2
15	Canada	8.1	3.3	4.8
16	Bahamas	7.9	1.8	6.1
17	Sweden	7.6	5.8	5.8
18	Namibia	7.1	5.1	2.0
19	Switzerland	7.1	3.1	4.0
20	M...	7.0	6.1	0.9

SOURCE:



II. Literature Review

- **Get the Balance: Growth, Profitability & Safety**
- The impact of firm growth on profitability
- D'Arcy & Gorvett (2004), **(High) growth can be harmful to profit and safety**, growth might also deteriorate profitability and safety while loosening the underwriting discipline.
- Greene & Segal (2004), Empirical evidence for the relation between cost (in)efficiency and profitability. They document that larger life insurers have superior cost efficiency, which consequently improves profitability.
- Davidsson et al. (2009), Growth can also help firms establish a stronger market position (e.g., through scale economies), and thus, increases profitability.
- Barth & Eckles (2009), Theory and empirical evidence for the relation between firm growth and loss ratios. **Moderate growth driven by increasing price levels reduces the loss ratio, on average, thereby yielding a positive impact on profitability.**
- Eling et al. (2017), They summarize that the impact of firm growth on profitability is non-linear (inverted U-shape). Both **extremely low (negative) and high firm growth are potentially harmful to profitability.**

II. Literature Review

- **Get the Balance: Growth, Profitability & Safety**
- The impact of firm profitability on safety
- Bowman (1982), Theoretical foundation for the risk-seeking behavior of relatively low profitability firms. In the lower the actual return situation, the impact of profitability on safety is **negative**. **Firm below profit target: mgt is risk-seeking to increase profitability.**
- Fiegenbaum (1990), Review of the implications of prospect theory at the organizational level. When the actual return of a firm is relatively high, the impact of profitability on safety is **positive**. **Firm above profit target: mgt is risk-averse to increase safety(profitability).**
- Cummins and Sommer(1996), Shim(2010), Low capitalized insurers tend to take more risk than high capitalized firms because of regulatory pressure and market discipline.
- The impact of firm safety on growth
- Liselotte and J. Wagner(2019), Regarding the German insurance market, their results suggest **a positive and significant relationship between growth and profitability and a negative significant one between the safety(solvency)level and profitability(ROE).**
- Eling et al (2017), Get the Balance Right. They summarize existing arguments on the **relationships among growth, profitability, and safety**. The review results suggest **reciprocal** and nonlinear relationships as their theoretical framework predicted.

III. Empirical Result : Rating

Insurers Financial Strength

Area (Score)	Variable	Formula	A.M. Best Rating
Growth (20)	Growth(Premium)	$(N \text{ premium}/N-1 \text{ premium}) - 1] * 100$	A++: 6.0, A+: 4.3
	Growth(Capital)	$[(N \text{ Capital}/N-1 \text{ Capital}) - 1] * 100$	A++: 6.0, A+: 4.8
Efficiency (20)	Combined Ratio	Loss Ratio + Expense ratio	A++:101.8, A+:104.1
	Net Investment Ratio	Investment Income/Premium	A++: 15.5, A+: 10.0
Profitability (20)	Return On Premium	Current Profit/Premium	A++: 10.4, A+: 9.3
	Return On Equity	Current profit/Capital	A++: 9.7, A+: 13.8
Safety (20)	Solvency Ratio	premium/Capital	A++: 0.7, A+: 1.0
	Liability/Capital Ratio	Liability/Capital	A++: 1.1, A+: 1.8
Liquidity (20)	Working Assets/Liability	Working Assets/Liability	A++:171.9, A+:139.3
	Total Cash Flow Ratio	Total Income/Total Expense	A++:103.8, A+:100.9

III. Empirical Result : Rating

Insurers Financial Strength

Area (Score)	Variable	Country	A.M. Best Rating
Growth (20)	Growth(Premium)	Korea: 6.27, Japan: 2.13, USA: 3.27	A++: 6.0, A+: 4.3
	Growth(Capital)	Korea: 4.72, Japan: 3.57, USA: 4.24	A++: 6.0, A+: 4.8
Efficiency (20)	Combined Ratio	Korea: 102.16, Japan: 99.30, USA: 100.17	A++:101.8, A+:104.1
	Net Investment Ratio	Korea: 7.91, Japan: 7.36, USA: 9.77	A++: 15.5, A+: 10.0
Profitability (20)	Return On Premium	Korea: 3.60, Japan: 4.36, USA: 9.27	A++: 10.4, A+: 9.3
	Return On Equity	Korea: 9.64, Japan: 4.93, USA: 6.81	A++: 9.7, A+: 13.8
Safety (20)	Solvency Ratio	Korea: 2.65, Japan:1.27, USA: 0.76	A++: 0.7, A+: 1.0
	Liability/Capital Ratio	Korea: 6.35, Japan: 3.86, USA: 1.57	A++: 1.1, A+: 1.8
Liquidity (20)	Working Assets/Liability	Korea: 141.82, Japan: 114.65, USA: 145.97	A++:171.9, A+:139.3
	Total Cash Flow Ratio	Korea: 87.77, Japan: 102.2, USA:117.7	A++:103.8, A+:100.9

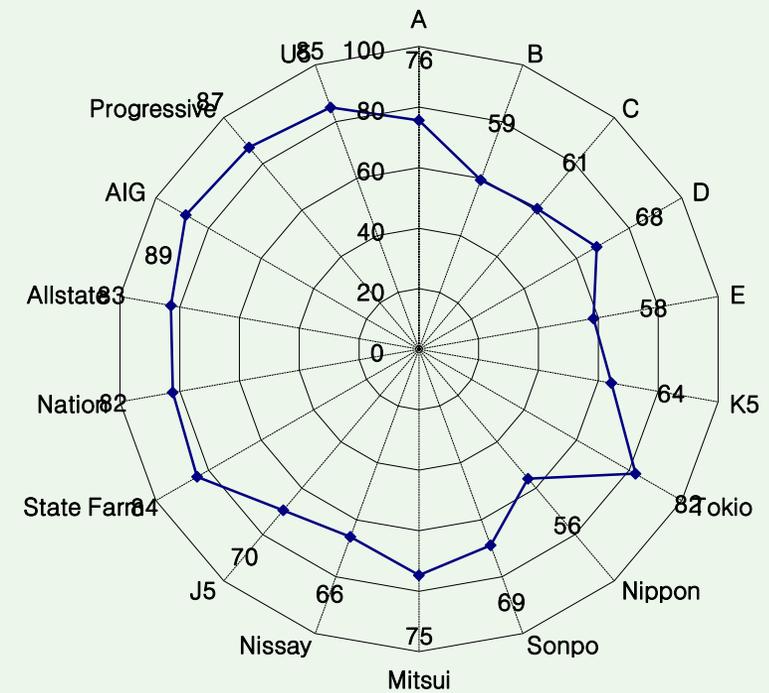
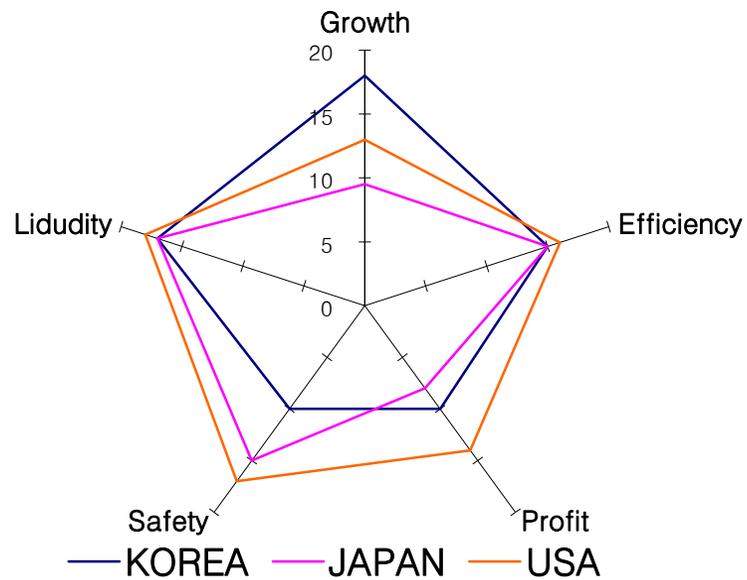
III. Empirical Result: Rating

Result of Score

Country	Growth	Efficiency	Profit	Safety	Liquidity	Total
KOREA	17.87	14.10	13.40	10.44	16.71	72.52
Korea: Growth - Strongest Liquidity > Efficiency - Very Strong Profit > Safety - Favorable						
JAPAN	9.50	14.76	9.27	14.68	16.52	64.73
Japan: Liquidity - Strongest Safety > Efficiency - Very Strong Growth > Profit - Marginal						
USA: Liquidity > Safety > Efficiency > Profit - Strongest Growth - Favorable						
USA	12.52	16.30	15.93	17.48	18.49	80.20

III. Empirical Result: Rating

Comparing Insurers score



III. Empirical Result: Panel Model

❖ Panel Analysis and Variables

Hausman Test

Null hypothesis	No correlation between subject effect and explanatory variable
P-value < 0.05	select Fixed-effect model
P-value > 0.05	select Random-effect model

Variable	
Area(USA, JAPAN, KOREA)	Cross-section data
Year(2010~2019)	Time-series
Profit(Net Profit), Growth(Premium), Safety(Solvency)	Dependent variable
Growth1(Premium), Growth2(Capital), profit2(Investment Profit) Liabilities, Size(Asset), Safety1(Liabilities/Cap), safety2(Solvency)	Independent variable

III. Empirical Result: Panel

1) Profit(Dependent Variable: Net Profit)

variables	One-Way Model		Two-Way Model	
	Fixed	Random	Fixed	Random
intercept	27.38	5764.49	-6537.77	12851.92
Growth1	0.04	0.06	-0.04	0.05
Growth2	0.24	0.24	0.25	0.24
Profit2	2.22*	1.63*	1.95	1.44*
Liabilities	-0.34	-0.31	-0.16	-0.26
Size	0.07	0.05	-0.002	0.03
Safety1	12365.08*	11512.16*	7892.54	10337.27*
Safety2	-14397	-17445.2*	-2815.06	-18320*
Hausman Test		1.48 (p=0.98)		2.02 (p=0.96)
R-square	0.94	0.73	0.95	0.93
Root MSE	7090.2	7009.3	8755.1	7109.0
Safety1=Liabilities/Capital		* : Significant Leve: 5%		

III. Empirical Result: Panel

2) Growth(Dependent Variable: Premium) One-Way Fixed Model

Variable	DF	Estimate	Standard	t Value	Pr > t
Area(USA)	1	-121638	58143.5	-2.09	0.0494
Area(KOREA)	1	41628.99	20849.7	2	0.0597
Area(JAPAN)		0			
Intercept	1	-17413.5	19425.3	-0.9	0.3807
Growth2(Capital)	1	0.242657	0.2657	0.91	0.372
Profit1	1	0.108609	0.3505	0.31	0.7599
Profit2	1	0.501524	1.4049	0.36	0.7248
Liabilities	1	0.531865	0.3107	1.71	0.1024
Size	1	-0.05635	0.2407	-0.23	0.8173
Safety1	1	-16643	9168.1	-1.82	0.0845
Safety2(Solvency)	1	25336.57*	12354.4	2.05	0.0536
Hausman Test m=10.43 (p=0.005)					
R-square = 0.9628 Root MSE = 11923.6, R-square = 0.9976 Root MSE =12283.9, *: Significant Leve: 5%					

III. Empirical Result: Panel

3) Growth(Dependent Variable: Premium) Two-Way: Random Model

Variable	DF	Estimate	Standard	t Value	Pr > t
Intercept	1	-32077.1	14383	-2.23	0.0363
growth2	1	0.059017	0.2811	0.21	0.8357
profit1	1	0.153443	0.3669	0.42	0.6799
profit2	1	-0.50481	0.9611	-0.53	0.6047
debt	1	0.096948	0.2597	0.37	0.7125
size	1	0.236417	0.2262	1.05	0.3074
Safety1	1	-4668.01	7800.4	-0.6	0.5557
Safety2	1	25540.44*	13364.7	1.91	0.0691
Hausman Test m=2.78 (p=0.904)					
R-square = 0.9976 Root MSE =12283.9, *: Significant Leve: 5%					

III. Empirical Result: Panel

4) Safety(Dependent Variable: Solvency)

variables	One-Way Model		Two-Way Model	
	Fixed	Random	Fixed	Random
intercept		0.648578		0.552055
Growth1		5.50E-06		4.81E-06
Growth2(Cap)		8.80E-06*		8.24E-06*
Profit1		0.00001*		-8.79E-06
Profit2		0.000044*		0.000045*
Liabilities		-7.32E-06		-8.93E-06
Size		-1.96E-06		-5.94E-07
Safety1		0.47481*		0.494357*
Hausman Test		1.36 (p=0.987)		10.85 (p=0.054)
R-square		0.724		0.97
Root MSE		0.181		0.161

* : Significant Leve: 5%

IV. Conclusion- Implications

❖ Impact of Growth on Profit

- No direct relationship between growth and profit.
- Relationship between Profit and Investment returns: We find a positive and significant relationship between net profit and investment returns. **Net profit mainly comes from investment gains not underwriting income.**
- Relationship between profit and safety exist: We find a negative and significant relationship between profit and solvency while increasing capital level reducing solvency ratio.
- We can infer that (high) growth can be harmful to profit and safety, growth might also deteriorate profitability and safety while loosening the underwriting discipline (D'Arcy & Gorvett, 2004; Barth & Eckles, 2009).

IV. Conclusion- Implications

❖ Impact of Growth on Safety

- Relationship between safety and growth: We find a positive and significant relationship between solvency(S2) and premium growth(G1). Premium growth **might deteriorate safety while increasing solvency ratio.**
- Relationship between safety and profit: We find a positive and significant relationship between Solvency(S2) and Investment income(P2). Profit(investment income) **might improve safety level while increasing capital gain and reducing solvency ratio.**



IV. Conclusion- Implications

- ❖ **Implications: Balancing growth, profit and safety.**
 - We provide prior studies and empirical framework to analyze the tradeoffs between three fundamental goals of business: growth, profitability, and safety.
 - Analyzing 3 main insurance industries over ten years with panel analysis models, we show that growth and profit increase safety; however, no direct relationship exists between growth and profitability.
 - We can infer that (high) growth can be harmful to profit and safety, growth might also deteriorate profitability and safety while loosening the underwriting discipline
 - The prioritization of business goals also depends on the state of the market and insurers' objectives. In line with insurance industry considerations, **many organizations in emerging markets focus on growth, while profitability is often more important in mature markets.**
 - **During economic crises, safety might have a higher priority, while profitability and growth become more dominant in booming times.**

Thanks for your attention!

Busan is Good!!

Insurance is Good!!!