



18TH EAST ASIAN
ACTUARIAL CONFERENCE

12-15 October 2014

Taipei International Convention Center in Taipei Taiwan

The Orient Supervision of SOLUNAR

BING-HONG CHEN

2014.10.13



Outline

- Introduction
- Current Practice Challenges
- Concept and Construction of SOLUNAR
- Value Consideration in the Orient Markets
- Supervisory Elements
- Pro & Counter Cyclical Wisdom
- Conclusion

Introduction

Reference to the Main theme of the 18th EAAC
(**Risk, Challenges** and Opportunities)

Challenge, Challenge → Change

Change (what's main purpose)

→ Survival → Success → $S + \bigcirc \rightarrow$ 



Solar & Lunar

→ The Orient Supervision of **SOLUNAR** (日、月→易, Yi-Ching)
a composite of Solar and Lunar.



Let's explore the digital management of ancient Chinese philosophy, the over 3,000 year's foundation.

Current Practice Challenges in Taiwan Life Industry

Asset concerning

Asset growth rate is lower than the liability

Liability concerning

Comparison pricing is still there.

(Competitive Habits)

Beyond the interest rate risk, insurance risk

(Moral hazard arise)

Owner's equity need to be protected

(Look forward to being enhanced)



- **Microcosm of Orient Multicultural in Taiwan**
- **Distribution of life insurance companies likewise**

Concept and Construction

The Structure of SOLUNAR Supervision

Characteristics	Supervision Value Consideration for the Orient Markets (☰ Be Realistic ← Inverse → ☷ Great Taming Industry)		
Supervisory Pillars framework	Measurements Quantitative ☰ Exhaustion, Oppression ☵ The Well, Replenishing	Managements Qualitative ☰ Decrease ☷ Increase	Market Discipline Mechanism ☰ Darkening ☷ Disclosure
Supervisory Foundation	Company Solvency Management (☰ Deterioration ← Inverse → ☷ Recovery, The Turning Point) systemic risk Pro-cyclical & counter-cyclical supervisory wisdom		

What the SOLUNAR (YI_CHING) create

**What change make possible,
what SOLUNAR make possible.**

**Like a safety net for Insurance Industry
protect them from uncertainty.**

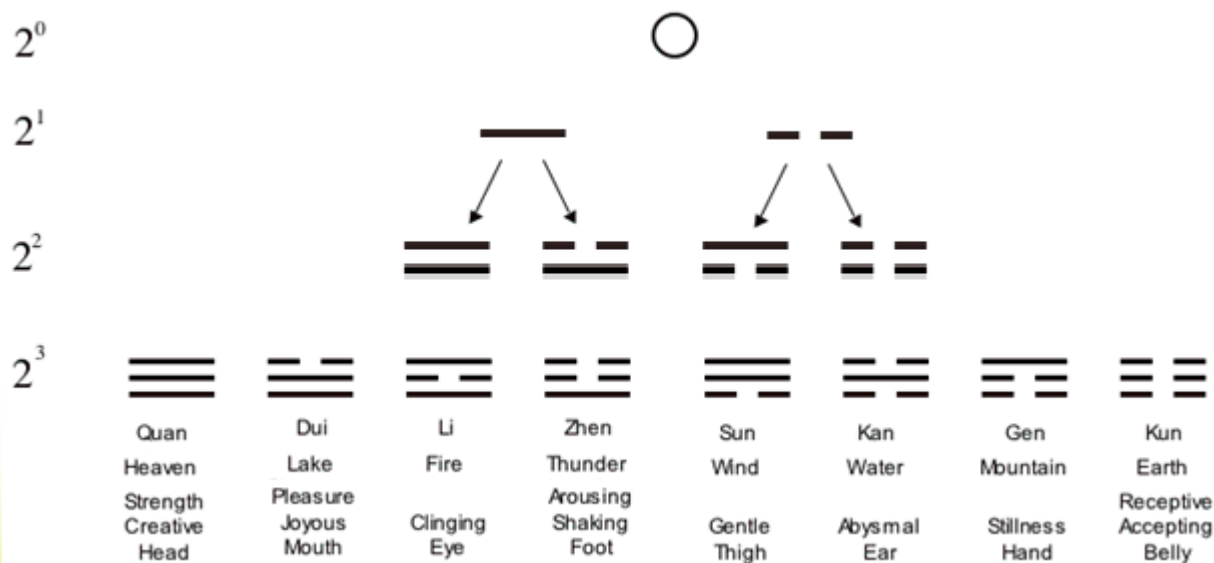


Digital and Conceptual Structures

Introduction the mathematical management in the Orient
Binary sequence → Trigram module → Hexagram module

Math	Symbol	Dimension
$2^0=1$	Creative	Point
$2^1=2$	Two Forms	Line
$2^2=4$	Four Symbols: Diagrams	Plane
$2^3=8$	Eight Trigrams	Cube or sphere
$2^6=64$	Sixty-four Hexagrams, Change (易)	Space and Time

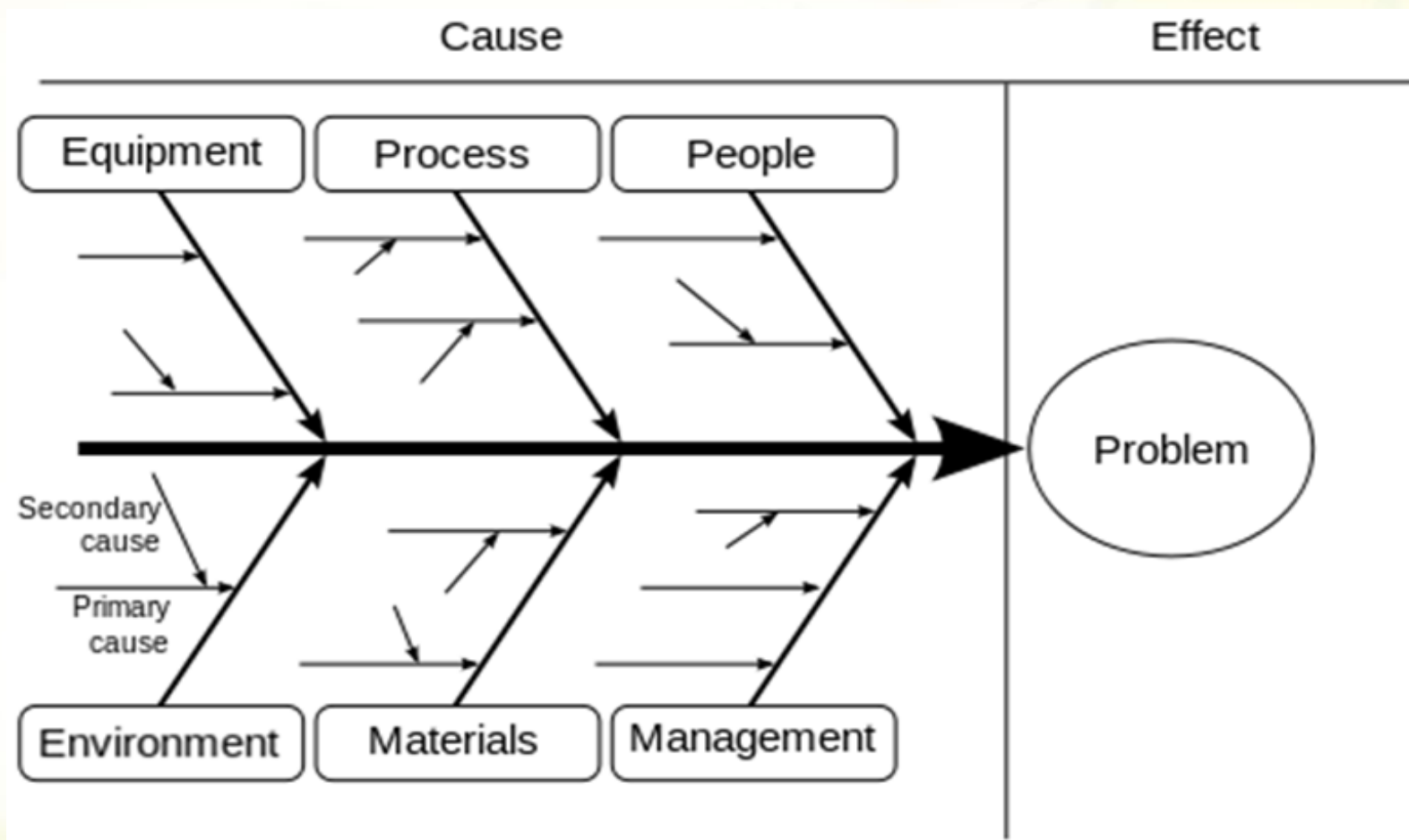
8 Trigrams



64 Hexagrams

上卦 下卦	乾 7 天	兌 6 澤	離 5 火	震 4 雷	巽 3 風	坎 2 水	艮 1 山	坤 0 地
7 乾 天	63 乾為天	62 澤天夬	61 火天大有	60 雷天大壯	59 風天小畜	58 水天需	57 山天大畜	56 地天泰
6 兌 澤	55 天澤履	54 兌為澤	53 火澤睽	52 雷澤歸妹	51 風澤中孚	50 水澤節	49 山澤損	48 地澤臨
5 離 火	47 天火同人	46 澤火革	45 離為火	44 雷火豐	43 風火家人	42 水火既濟	41 山火賁	40 地火明夷
4 震 雷	39 天雷無妄	38 澤雷隨	37 火雷噬嗑	36 震為雷	35 風雷益	34 水雷屯	33 山雷頤	32 地雷復
3 巽 風	31 天風姤	30 澤風大過	29 火風鼎	28 雷風恒	27 巽為風	26 水風井	25 山風蠱	24 地風升
2 坎 水	23 天水訟	22 澤水困	21 火水未濟	20 雷水解	19 風水渙	18 坎為水	17 山水蒙	16 地水師
1 艮 山	15 天山退	14 澤山咸	13 火山旅	12 雷山小過	11 風山漸	10 水山蹇	9 艮為山	8 地山謙
0 坤 地	7 天地否	6 澤地萃	5 火地晉	4 雷地豫	3 風地觀	2 水地比	1 山地剝	0 坤為地

Introduction of the trends (Cause and Effect) of SOLUNAR (YI_CHING)



The **Structure** of Solunar Supervision

Characteristics	Supervision Value Consideration for the Orient Markets		
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True Value Consideration for the Orient Markets

In fact, the financial market is like the brains of economy, directing capital flows, managing the risk of transactions.

(☰ Be Realistic ← Inverse → ☷ Great Taming Insurance Industry)



Insurance, Aleatory contract → "moral"
Utmost Good Faith Contract

**Today, allow me to focus on the critical few problems,
not the insignificant many.**

Asset related issue :

Deliberately transferred the financial asset account

→ Investment In **Debt Security without Active Market**

Increase foreign investment proportion

→ **Unrealized loss** on financial instrument

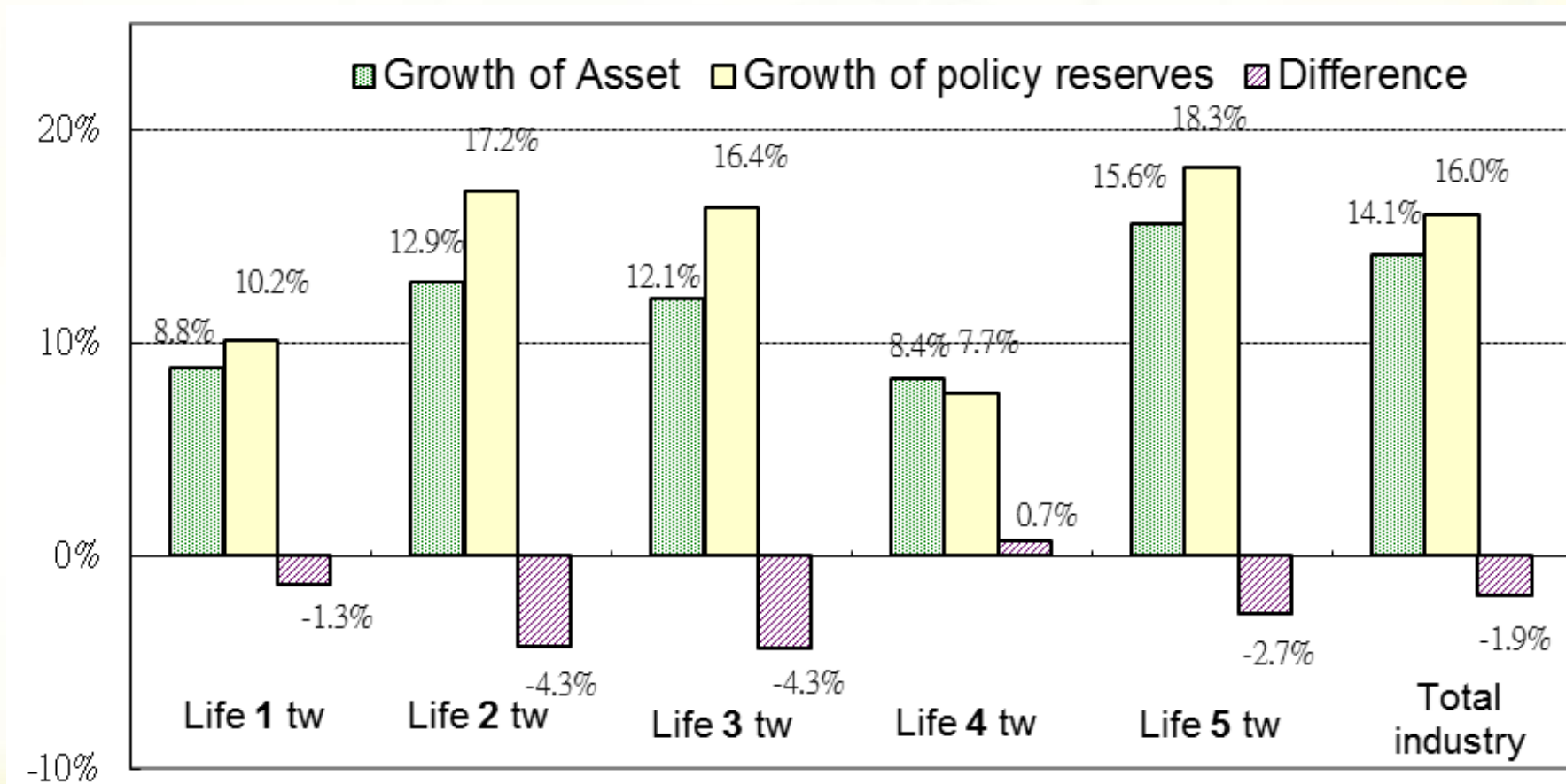
Liability related issue :

Worry 1.

The growth rate of liability was higher than the general account asset, in Taiwan Life Industry, 2013.



Growth comparison of assets and liabilities for the Top 5 main competitors in Taiwan Life Industry



Worry 2.

Comparative pricing continued in 2013

The average growth of **premium deficiency reserve** 37.6%

The main competitors' **premium deficiency reserve** (NT\$BN)

Item	2013	2012	Difference	% Change
Life 1, tw	19.6	17.1	2.5	14.6%
Life 2, tw	10.1	6.5	3.6	55.4%
Life 3, tw	10.5	6.9	3.6	52.2%
Life 4, tw	1.8	1.0	0.8	80.0%
Life 5, tw	3.7	1.4	2.3	164.3%
Other 23	11.4	8.6	2.8	32.6%
Total industry	57.1	41.5	15.6	37.6%

Among the former five, four of them are the use of **single premium** strategy in new businesses **market share concern**.

The **utmost good faith** is a fundamental principle of insurance in order to solve asymmetric information, moral hazard, customers psychological security and other issues.

☰☷ Danger, Pit ← Symmetric → ☰☲ Radiance, Fire



**Danger
Open Pit**



Illuminate, catch opportunity

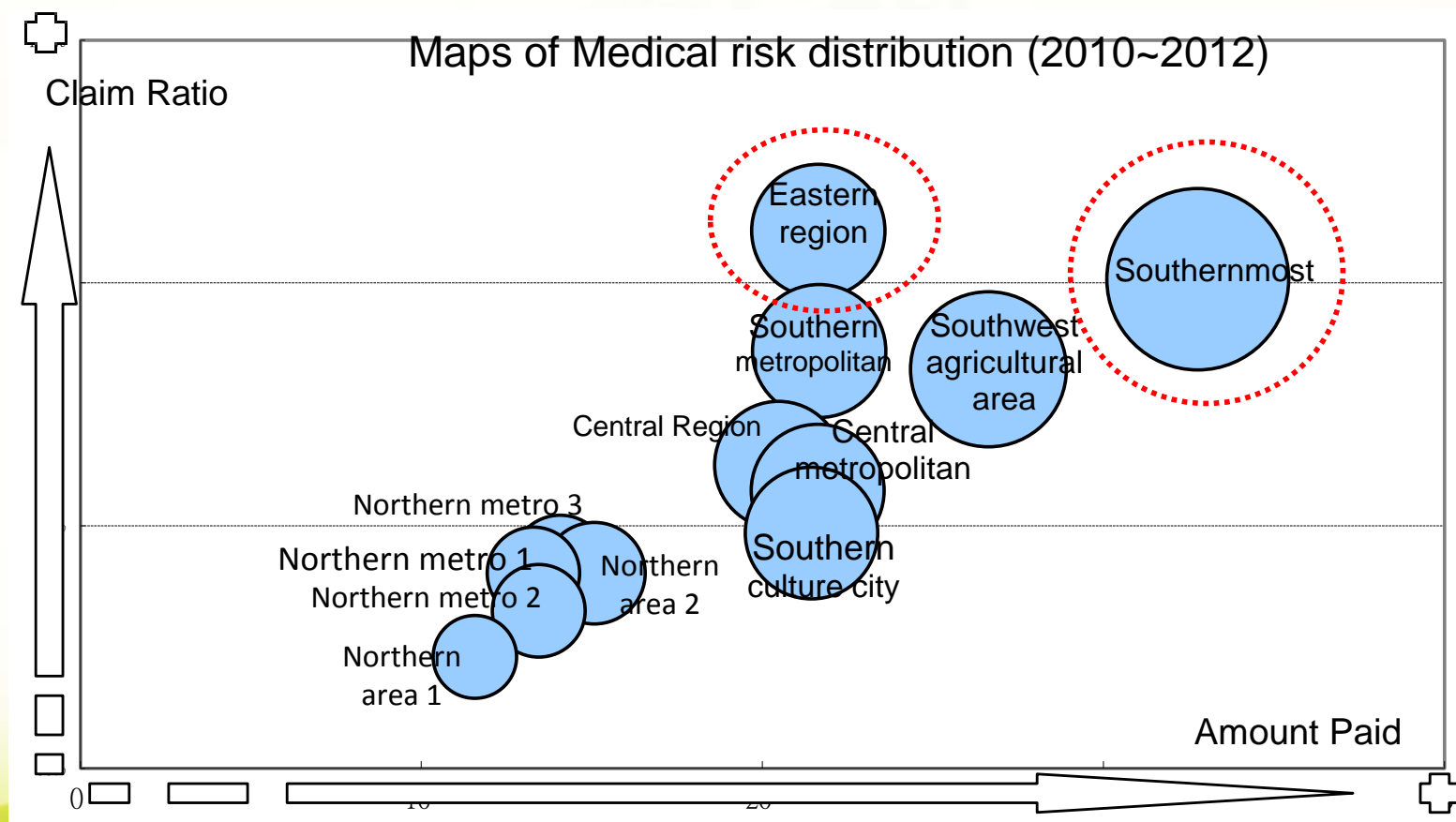
The moral hazard of Executives in assets management

Unrealized Gains/Losses on Financial Instruments (NT\$BN)

Item	2013	2012	Difference	% Change
Life 1, tw	-6.1	17.6	-23.7	-134.7%
Life 2, tw	-38.4	45.5	-83.9	-184.4%
Life 3, tw	-60.2	-7.9	-52.3	662.0%
Life 4, tw	2.5	-0.9	3.4	-377.8%
Life 5, tw	-13.5	23.7	-37.2	-157.0%
Other 23	-28.2	32.2	-60.4	-187.6%
Total industry	-143.9	110.2	-254.1	-230.6%

The moral hazard of policyholders in liabilities management

Maps of Medical risk distribution in Taiwan



The happenings of Supervisory Pillars

- ① **Measurements** (Quantitative)
- ① **Managements** (Qualitative)
- ① **Disclosure** (Discipline)

The **Structure** of Solunar Supervision

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Measurement happenings

(Quantitative Capital Requirements)

The cause 1 of quantitative change

Market risk (䷍ Swallowing ← Symmetric → ䷍ Transformation)

Table manner
Organic investment

Be care of inappropriate
development



The cause 1 of quantitative change (cont.)

(䷔ Swallowing ← Symmetric → ䷔ Transformation)



The investment discipline...
with legitimate way to seek
the food in your mouth.



The market risk of investment likewise.

**The pursuits of foreign investment
have increased the risk of foreign exchange.**

**The Domestic and Foreign Asset Allocation
of Taiwan Life Insurance Industry (NT\$BN)**

Item	2013	2012	Difference	% Change
Domestic Asset Allocation	8,280.9	7,534.6	746	9.9%
Foreign Asset Allocation	6,396.7	5,224.0	1,173	22.4%
Total Admitted Assets (for investment)	14,677.7	12,758.6	1,919	15.0%

The growth Comparison of main competitors' **Foreign Asset Allocation**

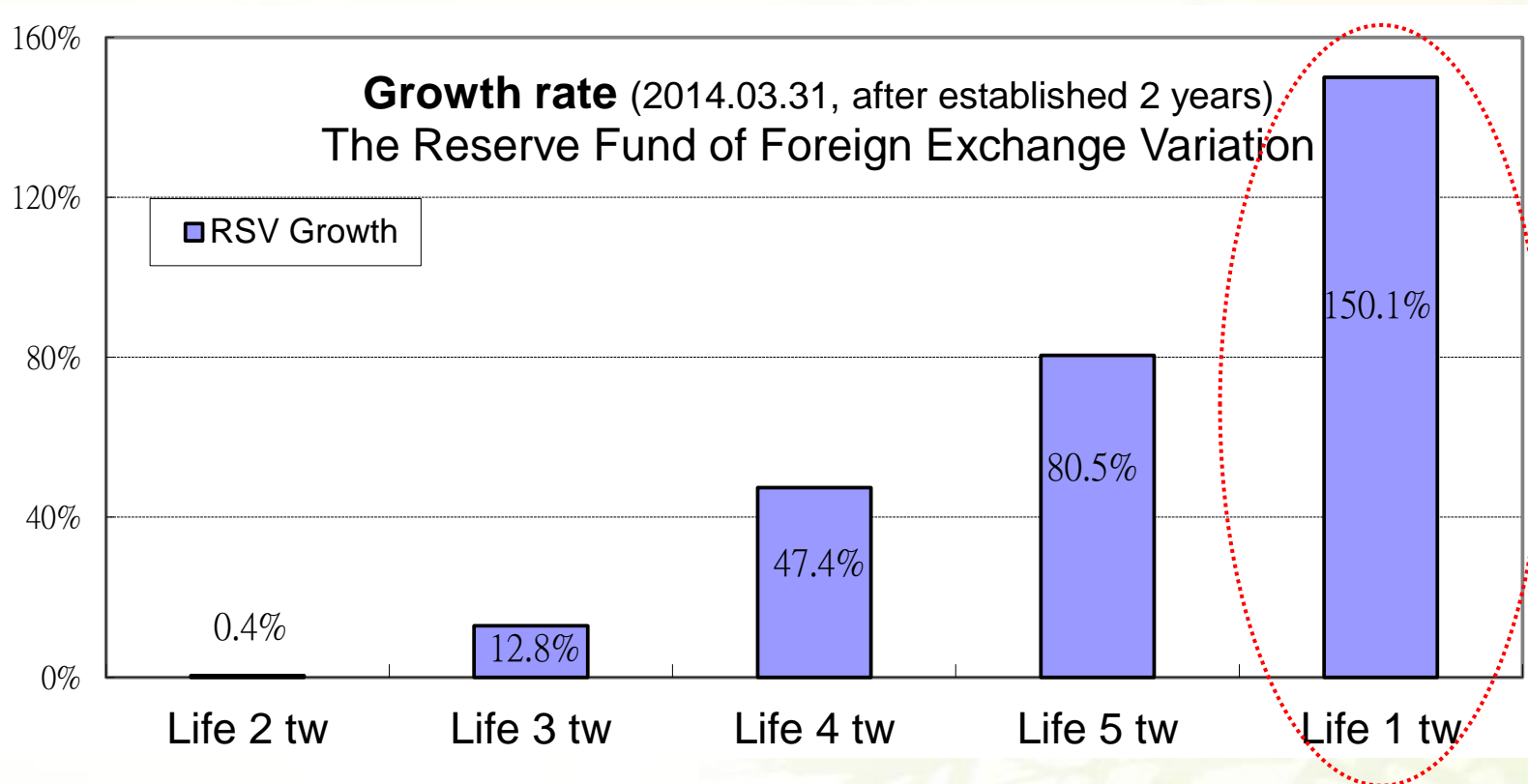
(NT\$BN)

Item	2013	2012	Difference	% Change
Life 1, tw	1,687.6	1,455.4	232.2	16.0%
Life 2, tw	1,015.6	850.0	165.6	19.5%
Life 3, tw	1,044.0	885.2	158.8	17.9%
Life 4, tw	745.3	622.6	122.7	19.7%
Life 5, tw	378.7	315.1	63.6	20.2%
Other 23	1,525.5	1,095.7	429.8	39.2%
Total industry	6,396.7	5,224.0	1,172.7	22.4%

The **Reserve Fund** of the **Foreign Exchange Variation**, Main competitors Growth comparison (NT\$BN)

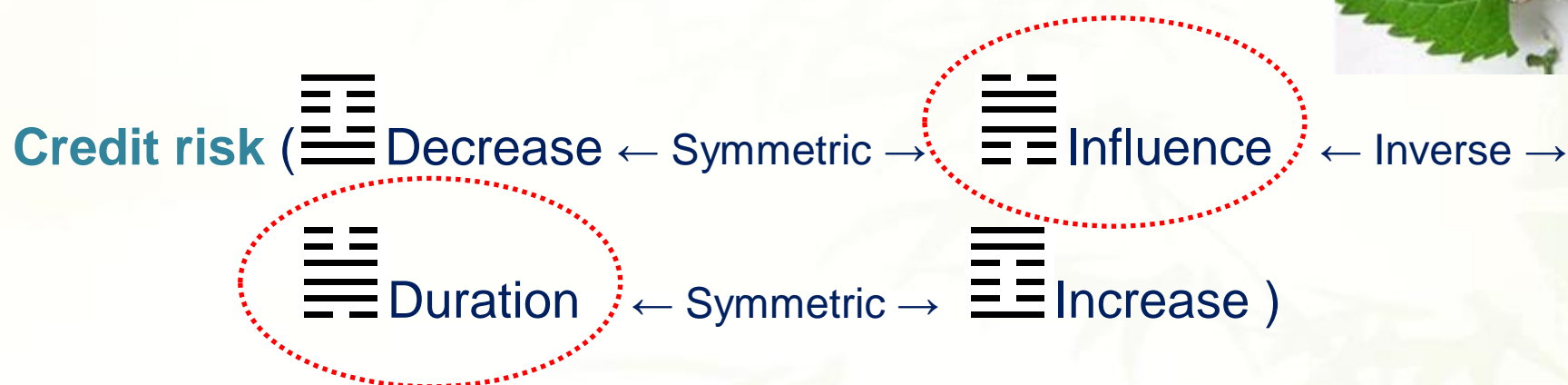
Item	2012.03 initial value (1)	(Period : 2012.03~2014.03)			2014.03 Balance (2)	Growth (2)/(1)
		Amount of Mandatory Deposited	Amount of Additional Deposited	write off/ (reimburse)		
Life 1, tw	4.51	4.64	7.89	-5.76	11.28	150.11%
Life 2, tw	2.02	1.78	2.07	-3.84	2.03	0.50%
Life 3, tw	4.50	1.13	3.25	-3.80	5.08	12.89%
Life 4, tw	4.07	1.86	4.78	-4.71	6.00	47.42%
Life 5, tw	1.75	0.92	2.97	-2.48	3.16	80.57%

The Growth in the Reserve Fund of Foreign Exchange Variation, after established 2 years



more adequate fund to mitigate
the fluctuations of foreign exchange

The cause 2 of quantitative change



The destine of “hold-to-maturity financial assets” were modified to “Investments In Debt Security without Active Market”. (shift the account item)

The financial assets in Taiwan Life Insurance industry

(NT\$BN)

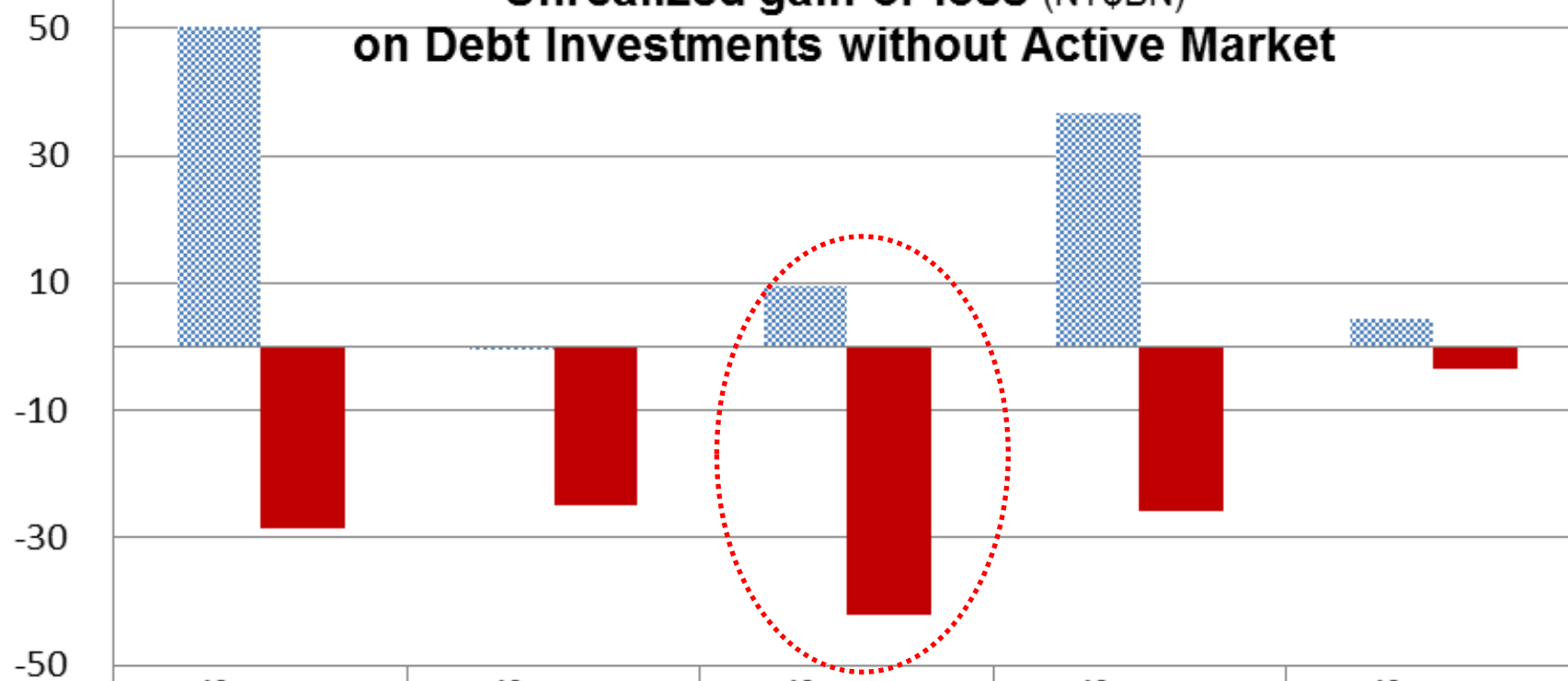
Item	2013	2012	Difference	% Change
financial asset at fair value through profit or loss	258.8	196.7	62	31.6%
Financial assets available for sale	5,124.1	5,213.1	-89	-1.7%
Financial assets in held-to-maturity	1,814.0	1,528.6	285	18.7%
Investments In Debt Security without Active Market	3,958.4	2,624.2	1,334	50.8%
Derivative financial assets for hedging	0.7	1.5	-1	-53.3%
Financial assets at cost - noncurrent	9.8	9.2	1	6.5%
Others	217.8	180.3	38	20.8%
Total financial assets	11,383.6	9,753.6	1,630	16.7%

Investments In the Debt Security without Active Market, Main competitors Growth comparison

(NT\$BN)

	2013	2012	Difference	% Change
Life 1, tw	1,020.1	814.5	205.6	25.2%
Life 2, tw	359.6	317.9	41.7	13.1%
Life 3, tw	701.5	312.2	389.3	124.7%
Life 4, tw	591.6	516.2	75.4	14.6%
Life 5, tw	290.9	158.1	132.8	84.0%
Other 23	995	505	489.4	96.9%
Total industry	3,958.4	2,624.2	1,334.2	50.8%

Unrealized gain or loss (NT\$BN) on Debt Investments without Active Market



	Life 1, tw	Life 2, tw	Life 3, tw	Life 4, tw	Life 5, tw
2012	50.3	-0.02	9.5	36.6	4.5
2013	-28.7	-24.8	-42.2	-25.7	-3.4

Risk would be offset by relative risk changing

- **Long-term investments** should comply with discipline of the **long-term duration**.
- In order to reduce the **short-term incentive of bonus**, the **reward function** of insurance industry should be based on **long-term performance to implement the balance of risk**.

The cause 3 of quantitative change

Insurance risk (䷗ Adapting, Following at Random

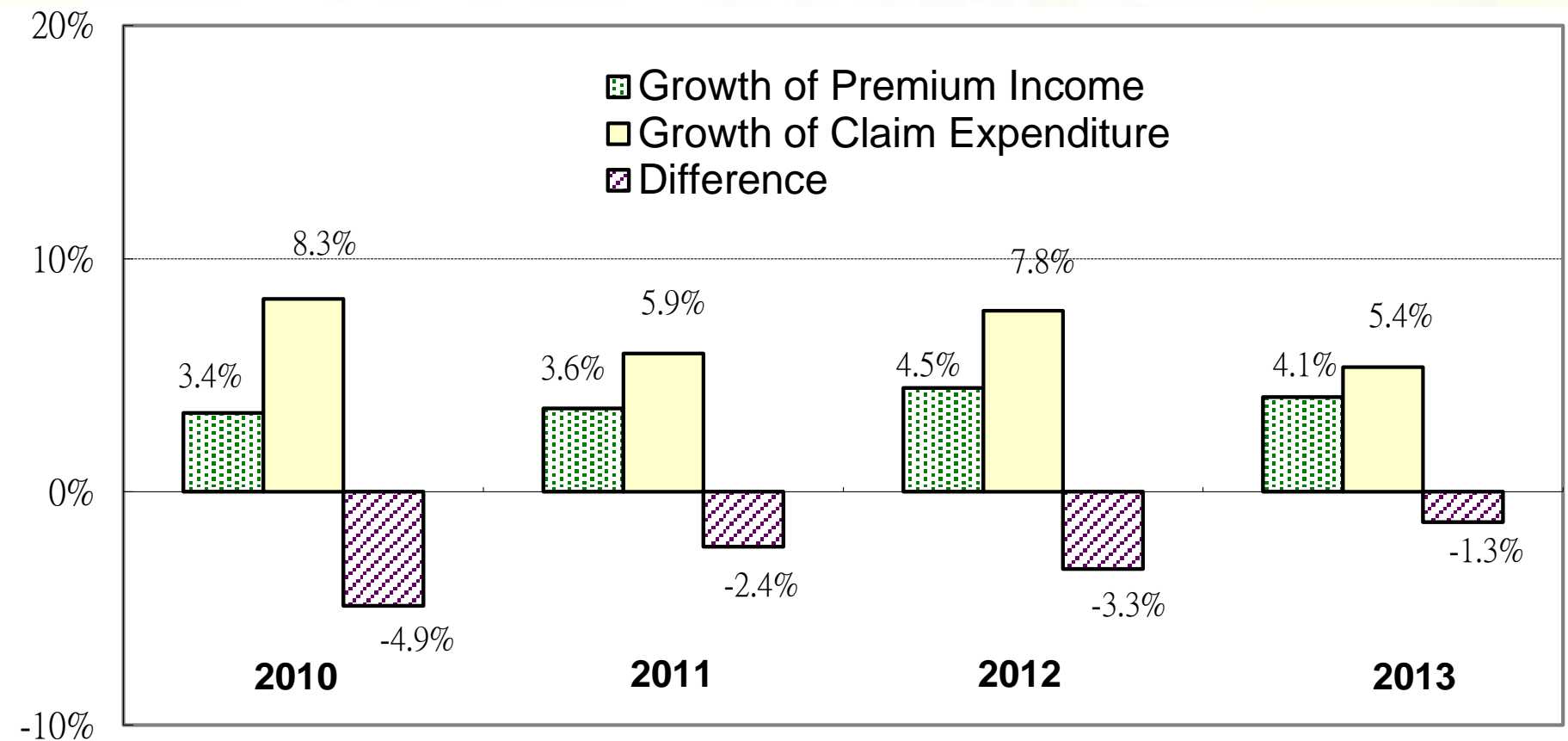
← Inverse → ䷗ Decayed, Repair, Remove Disorder)

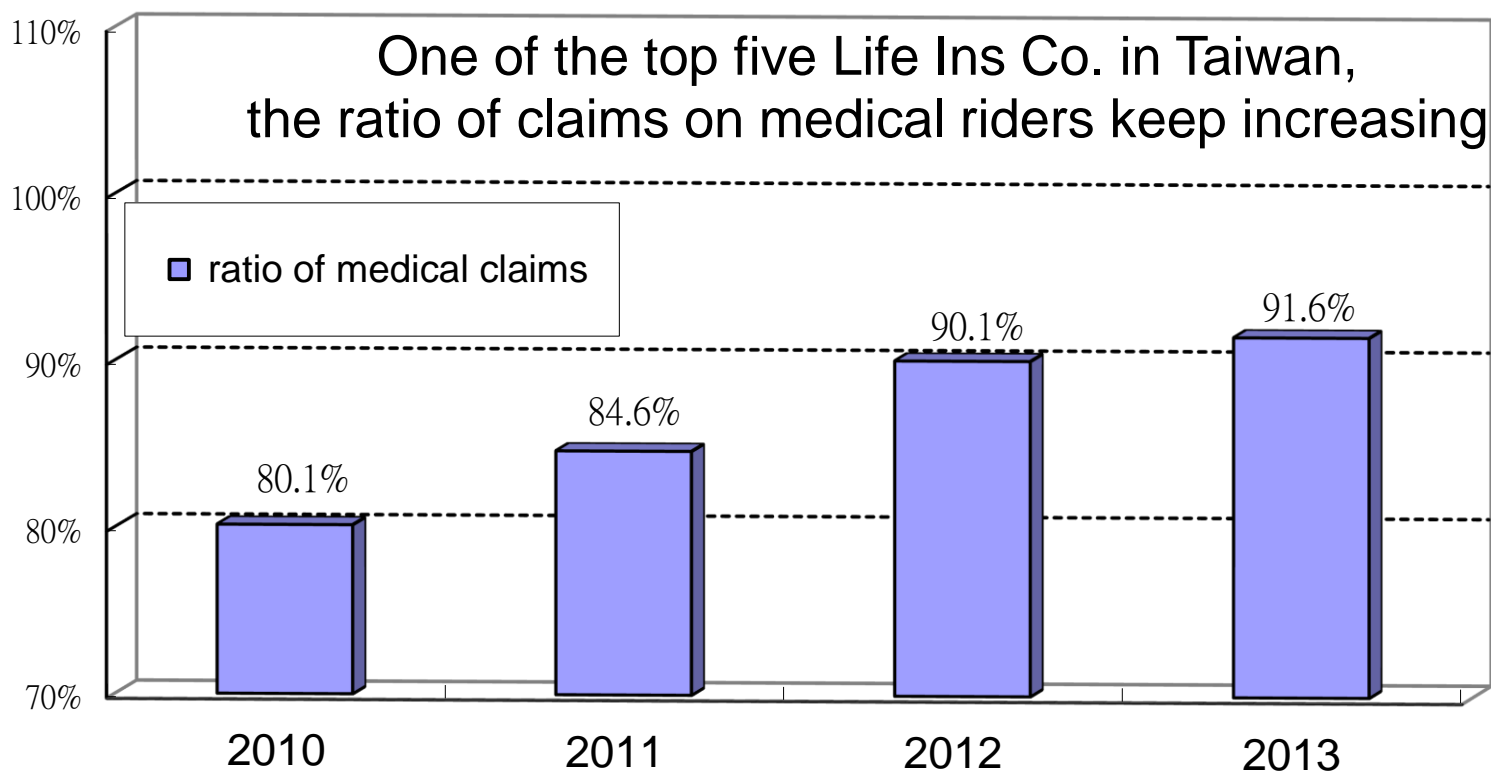


In recent years, tracking one of the top Five Life Ins Co. in Taiwan, the claim expenditures on medical riders had been increased obviously. (the ratio of claims ↑ likewise)

Example

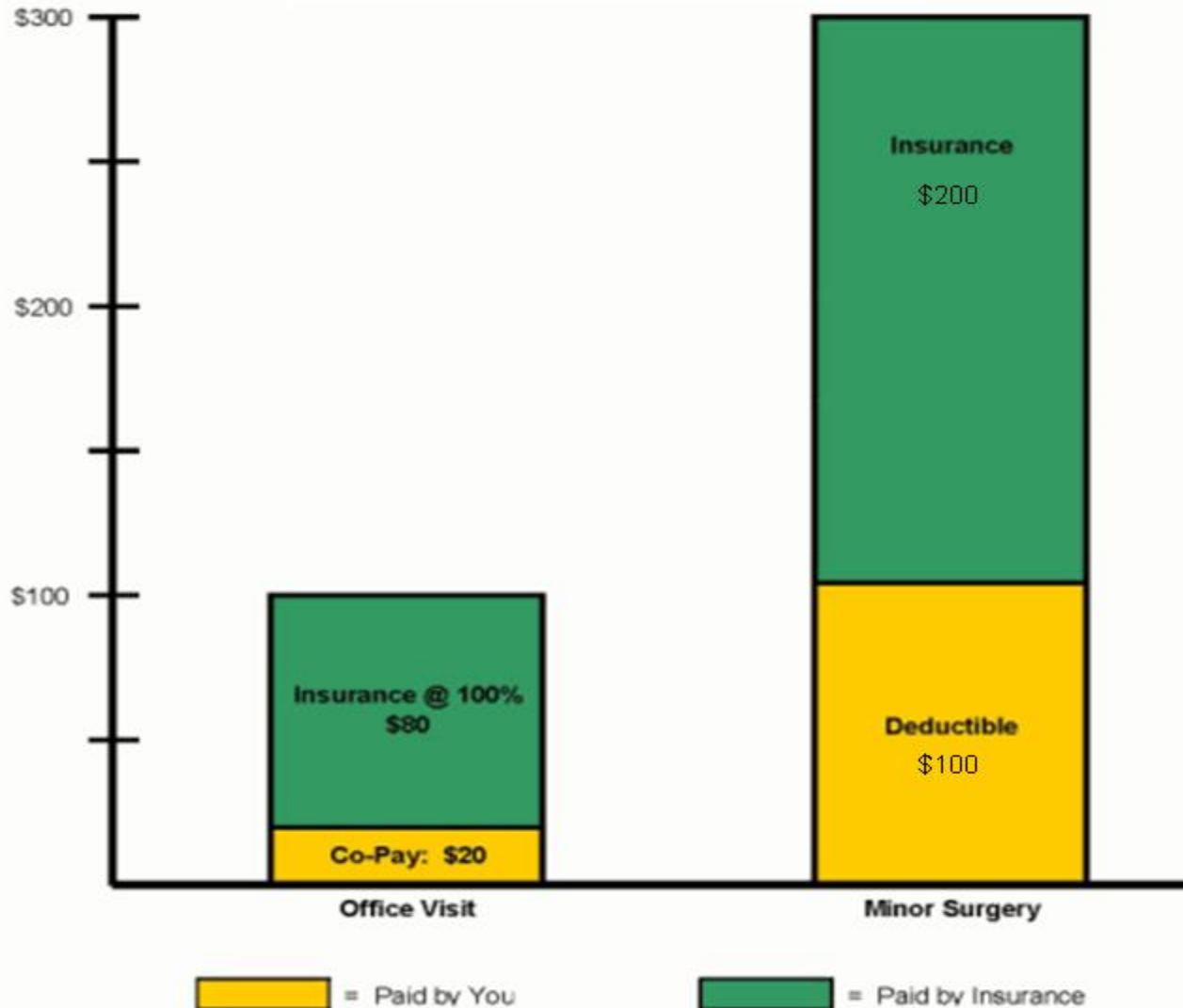
The Growth of **Claim Expenditures** compared with **Premium Income**, for Medical Riders in Taiwan Life Insurance Industry





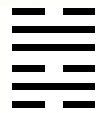
Risk would be offset by relative risk changing.

Co-Pay, Deductible Example



The effect of quantitative change

Enterprise Considerate
Stable control of cash flow
Continue to develop the market potential



Exhaustion, Oppression

← Inverse →



Replenishing, The Well



Capital Sufficient requirements and supervisory adjustments

The **owners' equities** of last three Life Ins. Co continued negative



(NT\$BN)

Item	2013	2012	Difference
Negative 1	-23.3	-21.3	-2.0
Negative 2	-23.2	-20.8	-2.4
Negative 3	-1.7	-1.0	-0.7

The above serious N1 and N2 companies had appeared significant deterioration of the financial situation.

The **Structure** of Solunar Supervision

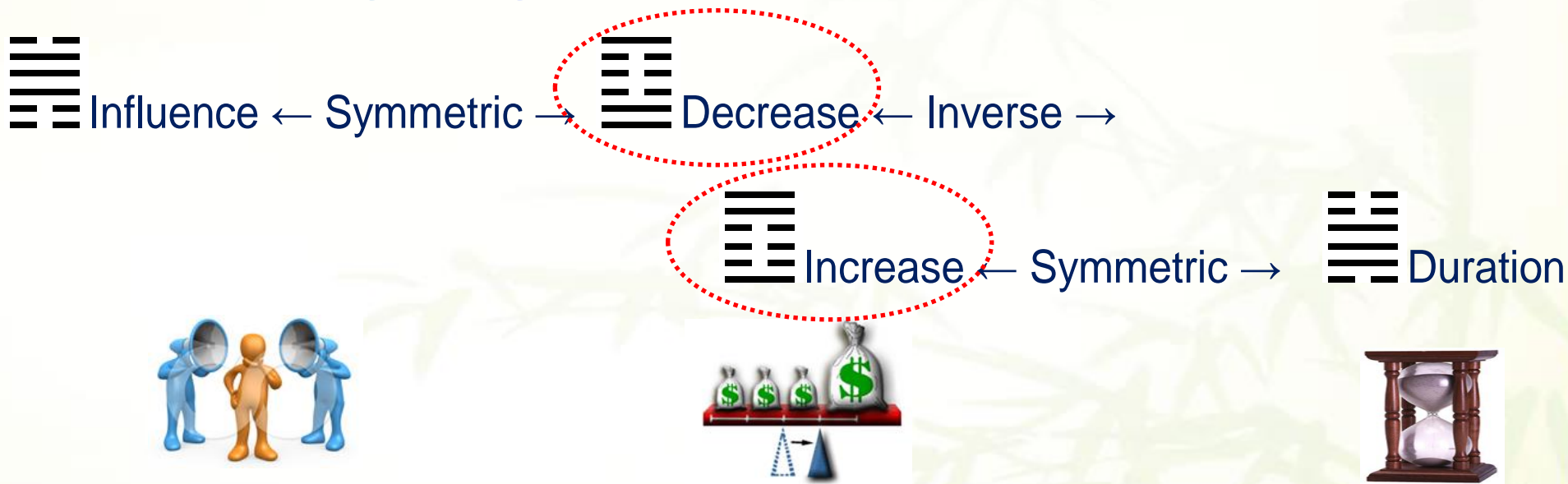
Characteristics	Supervision		
	Value Consideration for the Orient Markets		
Supervisory Framework	Measurements	Managements	Disclosure
	Quantitative	Qualitative	Discipline
Supervisory Foundation	Company Solvency Management Pro-cyclical & counter-cyclical wisdom		

Management happenings

(Qualitative Supervisory Requirement)

The qualitative evaluation of the risks
that are difficult to quantify.

Including risk governance structure, internal control.



The effectiveness of internal control
eventually would be presented in the account of profit or loss.

The inevitable pressure in Executive tenure (strategy risk)

**Achieve short-term investment performance,
or to implement someone else's beforehand,
even to evade their own responsibility of stop-loss.**

**The proportion of valuable assets gradually decreased,
the owner's equity is relatively eroded away.**

The main competitors changed in owners' equity (NT\$BN)

Item	2013	2012	Difference	% Change
Life 1, tw	146.6	137.2	9.4	6.9%
Life 2, tw	147.8	166.9	-19.1	-11.4%
Life 3, tw	115.5	159.2	-43.7	-27.4%
Life 4, tw	64.9	53.9	11.0	20.4%
Life 5, tw	54.1	63.3	-9.2	-14.5%
Other 23	115.6	104.7	10.9	10.4%
Total industry	644.5	685.2	-40.7	-5.9%

Supervision Inspection and Analysis

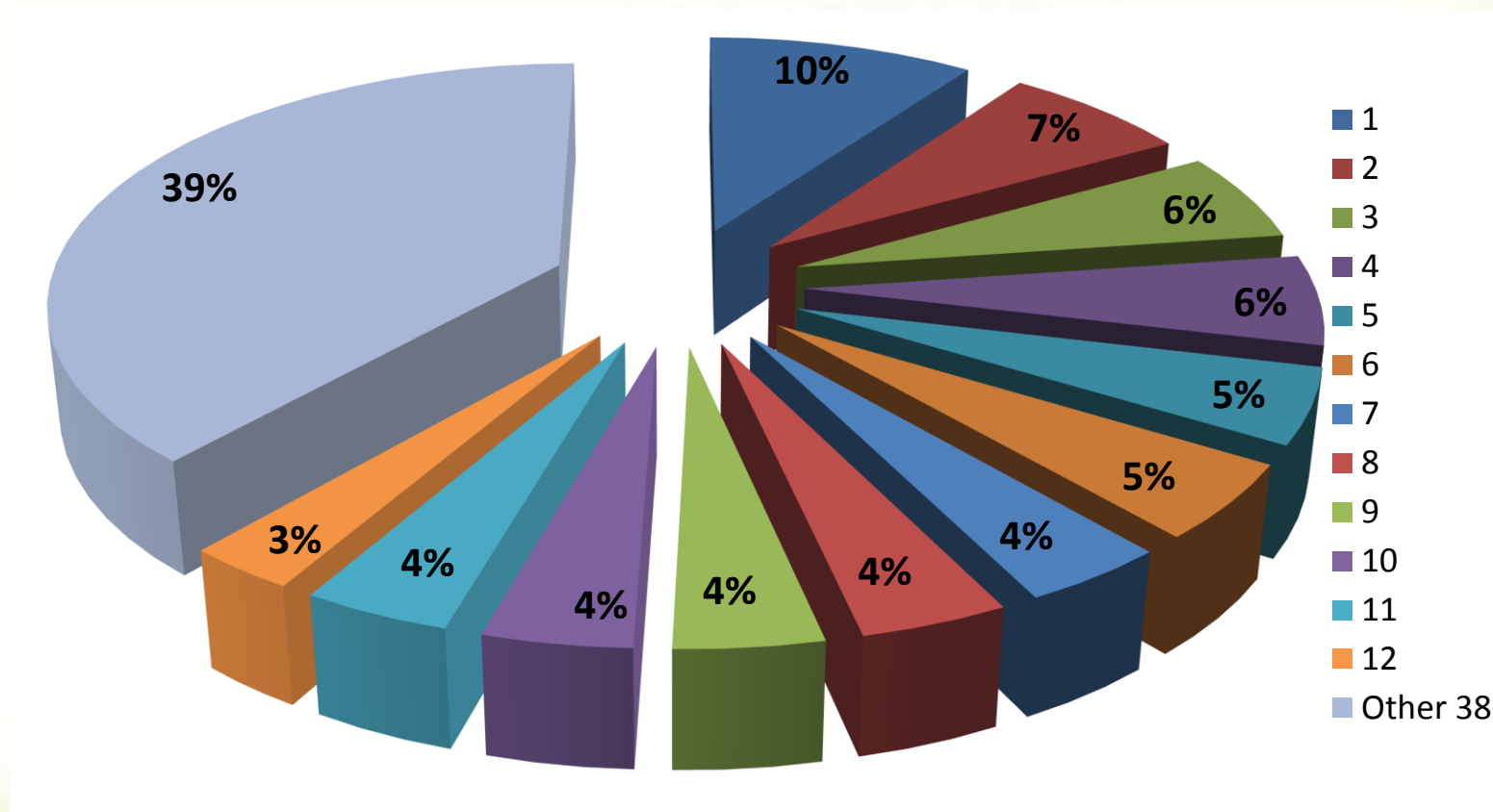
Defects summarized:
malfunction of governance structure,
ineffectiveness of internal control

The other four types of risks, applied to Supervisory Pillars, are **operational risk**, **strategic risk**, **reputational risk** and **liquidity risk**.

The proportion of the risk events, related to the current supervisory actions in 2009~2013 of local data, be displayed as following :

The proportion of the risk events, related to the current supervisory actions in 2009~2013 of local data :

Supervisory Inspections and Defects Analysis



The related penalty cases of life insurance industry , in recent 5 years (Statistics, 2009 ~ 2013)

Code	Event	Risk Type	count
1	Discrepancy of the pre-sale procedures for insurance products	Operational Risk	27
2	Discrepancy of underwriting & claim procedure	Insurance Risk	19
3	Violation of the interested party transaction	Strategic Risk & Reputation Risk	16
4	Internal control or internal audit is not established, not fully implemented.	Operational Risk	15
5	Discrepancy of the Information disclosure for the Public	Operational Risk	13
6	Not fully disclose the investment-linked insurance related notice	Operational Risk	13

The related penalty cases (cont.)

Code	Event	Risk Type	count
7	Violation of asset allocation	Liquidity Risk	12
8	Discrepancy of the telemarketing sale-procedure	Operational Risk	11
9	Discrepancy of the Sales-agent qualification	Reputation Risk	10
10	Discrepancy of risk based capital ratio	Liquidity Risk & Reputation Risk	10
11	Discrepancies of the reserve fund	Insurance Risk	10
12	Discrepancy of ineffective real estate investment (low utilization within two years)	Strategic Risk & Reputation Risk	8
The other	The other 38 items	Related to the above four types of risks	107

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Disclosure happenings

(Market Discipline Mechanism)

Market discipline can be **an effective tool**.

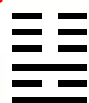
The **disciplinary effect** in the market will become an important complement for the current supervision.

Leverage market disciplinary effect, by means of public disclosures.

Enhance the market discipline mechanism to improve market conditions.

Discount Rate Assumption (inconsistent) of EV Report

Items	2009	2010	2011	2012	2013
Life 1, tw	2010-2013 : 10% 、 2014+ : 10.8%	10%	10%	10%	10.0%
Life 2, tw	10%	11%	11%	Policy in force : 11% 、 New Business : 10.5%	Policy in force : 11% 、 New Business : 10.5%
Life 3, tw	None				
Life 4, tw	9.50%	10%	10.50%	10.50%	10.5%
Life 5, tw	10.50%	10.50%	10.50%	10.50%	10.5%



Darkening, take cover, sheltering

← Inverse →



Disclosure, promotion, prospering

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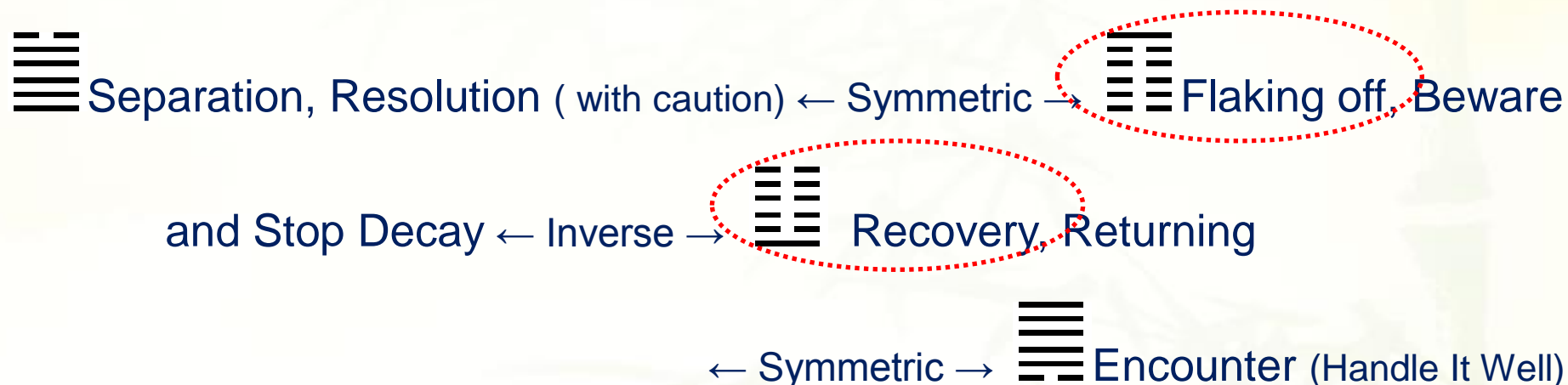
Supervisory Foundation

Mutually constrained and stimulated



Supervisory Foundation (cont.)

Dual thinking of the Pro & counter cyclical supervision



Additional supervision and capital might be required for **pro-cyclical**.

To use the offset effect of retrieve or regain reserve for **counter-cyclical**

Conclusion

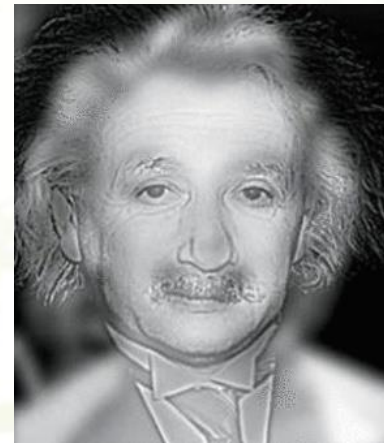
1. Execution of Supervision in the insurance industry can be referenced by the SOLUNAR Wisdom, providing the Interpretation of the greatest core risk ... the inside of human.
2. Compared with Western modern development of risk management, the SOLUNAR has the same purpose.

Conclusion (cont.)

3. Although there are always some conflicts within the tenure of Executives' Duty, we still look forward to implementing a long-term ALM in life insurance industry.



Shortsighted

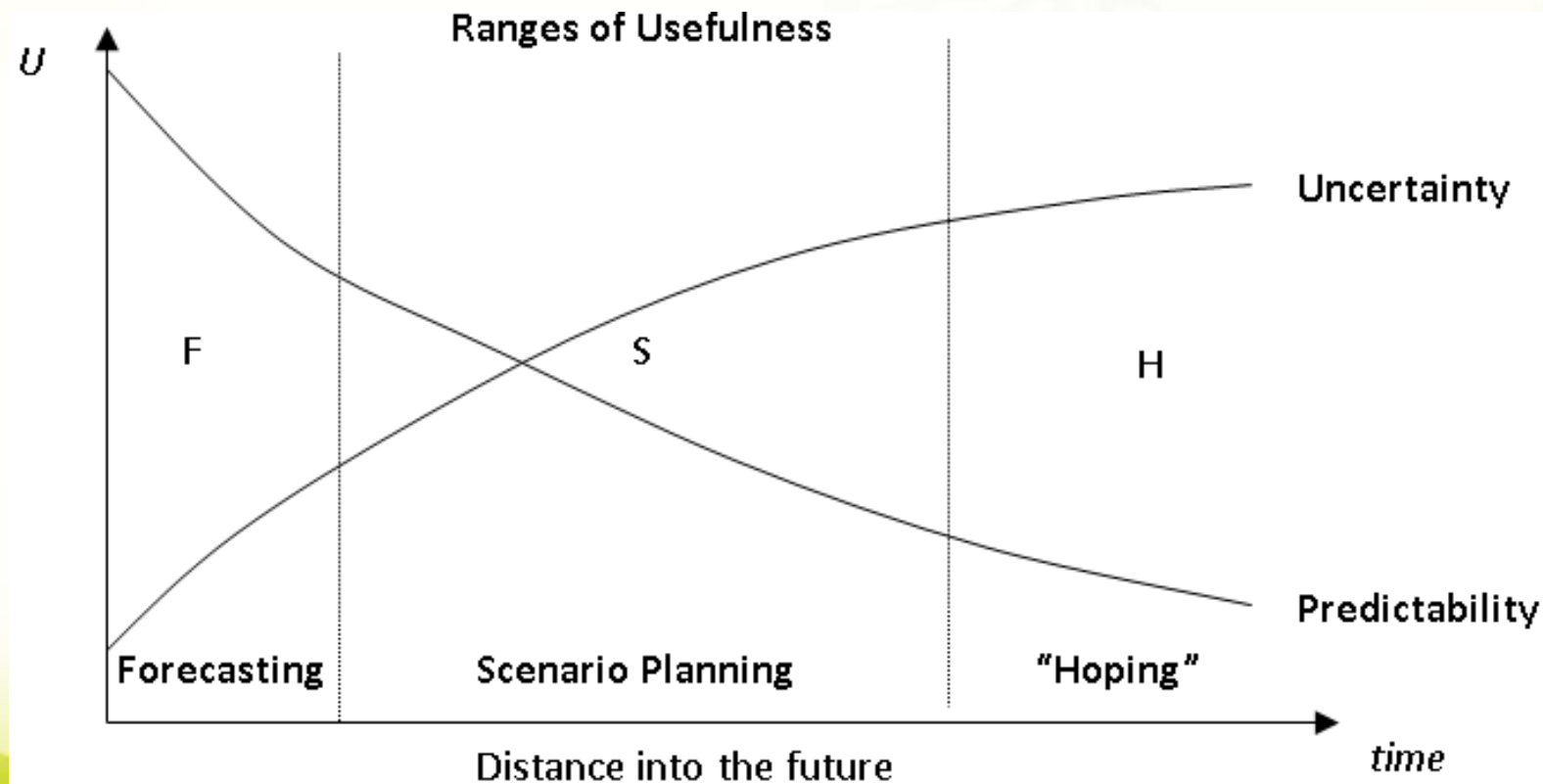


Look farther

If someone sees Marilyn Monroe instead of Albert Einstein, he is a little bit nearsighted.
Look farther will get the wisdom of Einstein.

Conclusion (cont.)

4. To build **your own risk** management **culture**, could be **better** than to purchase the external management model should have more long-term warranty and valid.



Conclusion (cont.)

5. Risk would be offset by relative risk changing

- Strengthen the shared responsibility by policyholder, to prevent the moral risk of medical indemnity. (co-pay)
- Enhance the asset allocations with the Risk Adjusted Performance Measurement.

6. Dual thinking, Orient supervision wisdom

- Have the pro-cyclical business strategy with the counter-cyclical consideration, could alleviate and prevent the accumulation of systemic risk.
- Makes **E**veryone as **R**isk **M**anager!!!

Conclusion (cont.)

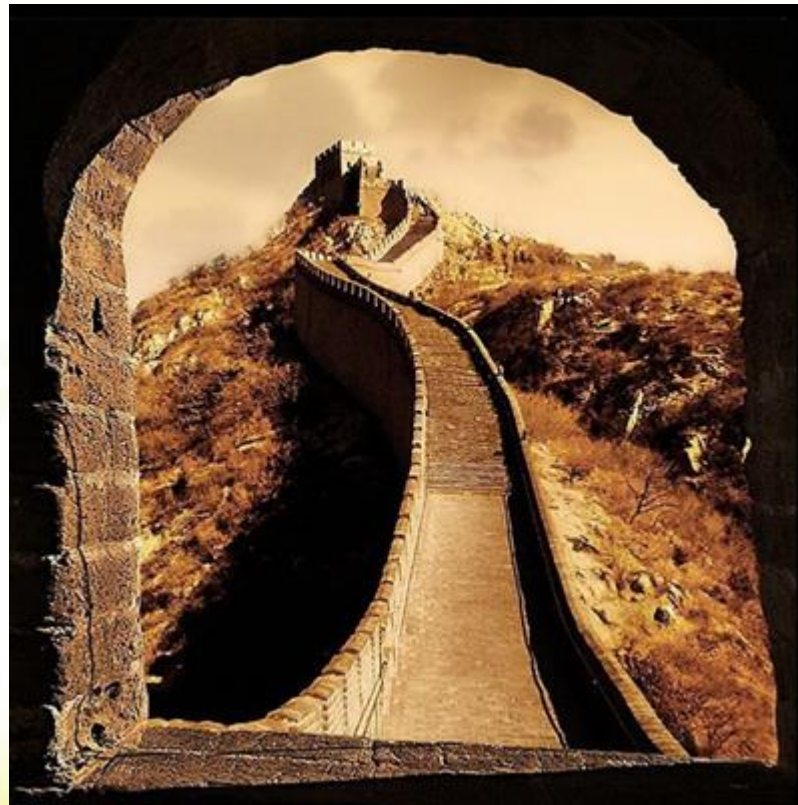


7. **SOLUNAR**, Solar and Lunar,
is same as **Justice Louis D. Brandeis** said:
Publicity is justly commended as a **remedy** for social
and industrial diseases.
Sunlight is said to be the best of **disinfectants**;
electric light the most **efficient policeman**.



Conclusion (cont.)

8. SOLUNAR is a **microcosm** of the Oriental culture, a **telescope** of management wisdom.



Questions



Thanks !