Prudential Ratio Analysis for Insurance

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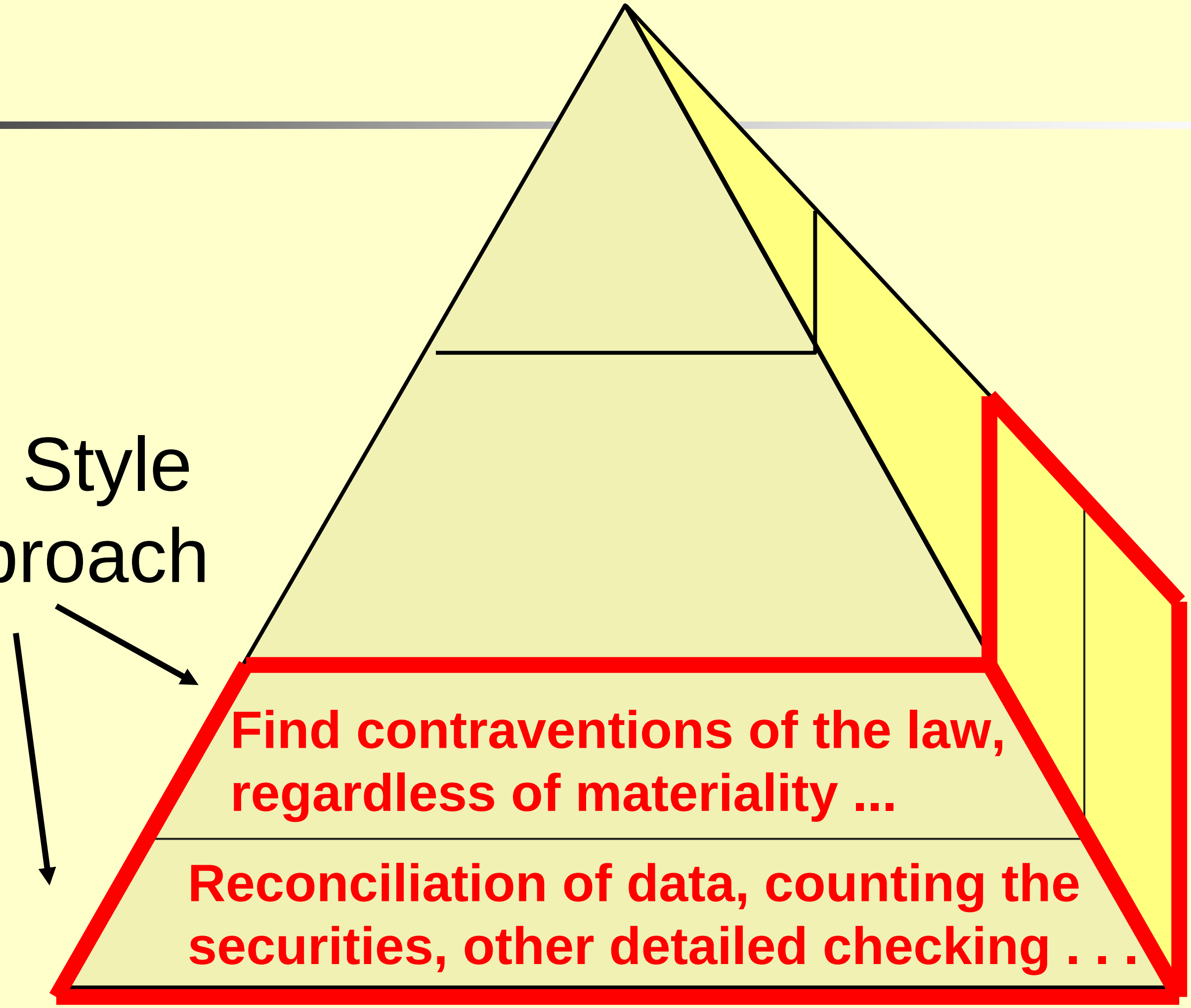
IV. IRIS Ratios for Albania

I. The Supervisory Model

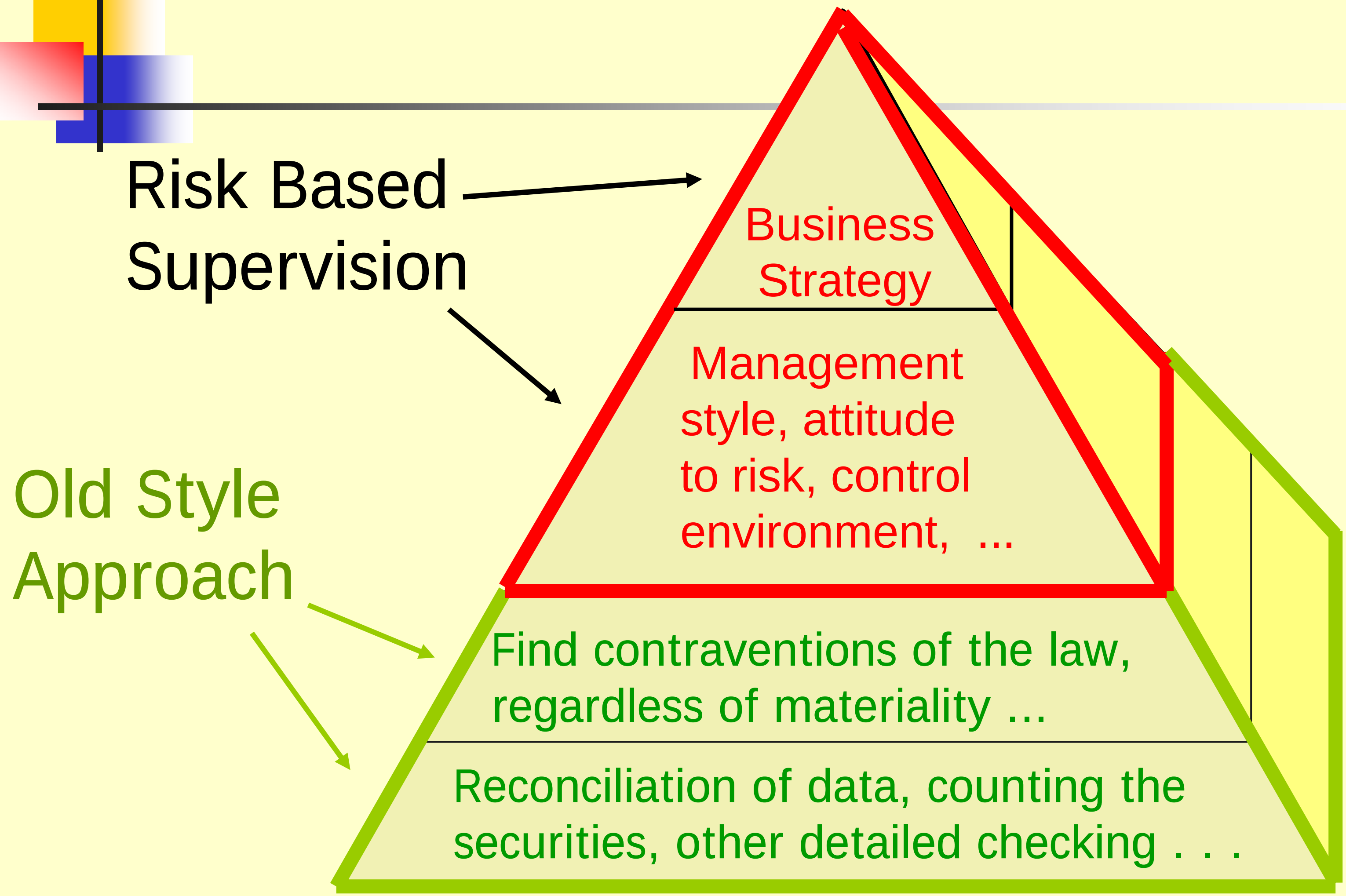
Evolution of Supervisory Approaches

Old Style Approach



Source: L Savage

Evolution of Supervisory Approaches



❖ Today we are concerned with assessing the degree of risk in the company's business operations – and how to reduce risk as required

Risk Based Supervision also forces management to improve

Insurer

Boards of Directors motivated to follow <u>Standards of Sound Business & Financial Practices and good corporate governance</u> by Insurance Act rules.

Supervisor

Supervisory attention and intervention based on <u>RISK</u>.

- Early Warning Test Ratios
- Other Financial Analysis
- On-Site Inspections
- Market Intelligence
- Self-Assessment with audits

Source: L Savage

Three fundamental stages of supervision

1. ‘Conducting off-site monitoring of financial condition using financial statement and market information analysis, and on-site examinations;
2. implementing corrective action plans for financially weakened companies; and
3. undertaking insolvency proceedings’

Two fundamental off-site tools

- Early warning indicators
  - Off-site monitoring
  - Guiding on-site inspection
  - Advising early intervention

- Solvency measures
  - Corrective action plans
  - Insolvency proceedings

Some countries combine these into a regulatory ladder

- Stage 0 - No problems/Normal activities
- Stage 1 - Early warning
- Stage 2 - Risk to financial viability or solvency
- Stage 3 - Future financial viability in serious doubt
- Stage 4 - Company not viable/Insolvency imminent

Early warning indicators – Off-site Analysis

- IRIS, or Insurance Regulatory Information System -ratios
- A scoring system
- An insurer profile system

US IRIS Ratios

IRIS Ratio	**Maximum Normal Range %**	***Minimum Normal Range %***
Gross written premium to statutory capital and surplus.[1]	900	N/A
Net written premium to statutory capital and surplus.	300	N/A
Change in net written premium year to year.	33	-33
Solvency support reinsurance to statutory capital and surplus.	15	N/A

[1] Statutory surplus only allows for admitted assets (i.e. assets that can be counted under the insurance regulations). It is usually less than the capital and surplus shown in the published accounts.

US IRIS Ratios (cont.)

IRIS Ratio	**Maximum Normal Range %**	***Minimum Normal range %***
Two year operating ratio	100	N/A
Investment yield	10.0	4.5
Change in statutory capital and surplus	50	-10
Liabilities to liquid assets	105	N/A

US IRIS Ratios (cont.)

IRIS Ratio	**Maximum Normal Range %**	***Minimum Normal range %***
Gross amount due from agents divided by statutory capital and surplus.	40	N/A
One year development of claims provisions divided by statutory capital and surplus (i.e development of provisions ignoring the current underwriting year).	20	N/A
Two year development of claims provisions divided by surplus	20	N/A
Deficiency in claims provisions as % capital and surplus	25	N/A

On site inspection

- Full scope – when an insurer is in serious trouble, but at least every 3 to 5 years:
  - Accounting methods and procedures, financial statement presentation.
  - Validating figures provided in the insurer’s statutory returns to the insurance supervisor.
  - Verifying the insurance company’s solvency.
  - Determining whether the insurer has complied with the relevant laws and regulations.

On site inspection

- Limited scope – a targeted inspection based on off site analysis and indication of potential distress

Feedback Process

Risk Category	Financial Analysis	On-Site Examination	Actuarial Analysis
5.			
4.			
3.			
2.			
1.			

Highest risk level determines supervisory response.

Supervisory Response

Key Inspection Findings

……………………

Inspection Report Summary

…………………………

Letter to Management

………………………………… ………

The off site analysts have a critical role

Examples of Financial Analysis comments that might typically be found in a company at this risk level:

Level 3 High	- Company outside normal ranges on 6 or more Early Warning Ratios. - Risk ratio is in excess of 3.5 to 1. - Highly unprofitable underwriting. - Significant understatement of claims liabilities - Speculative investments have harmed overall performance. - Negative return on equity. - Considerable reliance on reinsurance and reinsurers may be experiencing financial problems - Management has not demonstrated ability to bring problems under control. - Capital is close to being impaired.

II. Solvency and Enforcement

Requirements of minimum statutory solvency

- It is related to risk
- It raises the safety net for insurers
- It is consistent in application
- It provides a legal basis for the supervisor to take enforcement action

Risk-based capital (RBC)

Definition: Risk-based capital (RBC) represents an amount of capital based on an assessment of risks that a company should hold to protect customers against adverse developments.

Items taken into account in determining risk based capital for non life insurers in the US

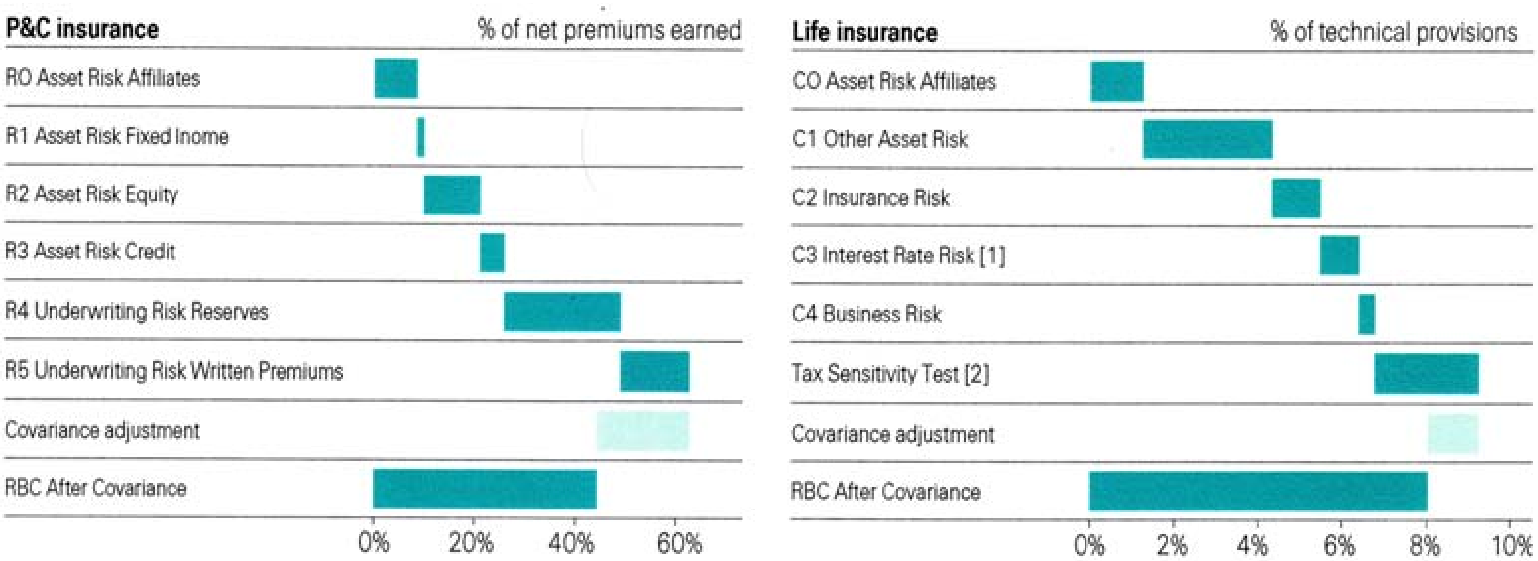
- R0 style risk – asset risk – associated entities
- R1 style risk – asset risk – fixed income
- R2 style risk – asset risk - equity
- R3 style risk – asset risk - credit
- R4 style risk – underwriting risk – provisions
- R5 style risk – underwriting risk - premiums
- Correlations between some of these risks that reduce the required level of capital

The non life RBC formula

$$RBC = R0 + \sqrt{R1^2 + R2^2 + R3^2 + R4^2 + R5^2}$$

Comparing Risk under the US Capital Model

Figure 3
Risk-based capital of US property & casualty and life insurers in 2003



[1] Including health credit risk, 0.002% of technical provisions
[2] The tax sensitivity test cancels the tax discounts included in all risk categories by assuming that the company is not a taxpayer, that its losses are of no value to another taxpayer, and that its deferred total assets and deferred total liabilities are zero.

Source: NAIC

Enforcement actions in the US

- Solvency >100% required amount – no action
- Solvency <100% required amount – recapitalization plan
- Solvency >35%<50% required amount – supervisor may place under administration
- Solvency <35% required amount – supervisor obliged to place under administration

III. Accounting Concepts

Double entry accounting applies

- Debits – assets and expenses – the business itself
- Credits – revenues and liabilities – the resources provided to generate the assets – the claims of others on the business
- Every credit has a corresponding debit or a negative credit
- Every debit has a corresponding credit or negative debit

As applied to insurance

- Premium and technical provisions are credits

- Claims and assets are debits

For example

Premium Written – P&L

	100

Cash at bank or receivable – B/S

100	

For example

Commission paid to agent – Journal		Bank – B/S		Commission expense – P&L		DAC – B/S	
20		-20		12		8	

Because of long operating cycles balance sheet items need to be created

Claims provisions EOY – B/S

	120

Claims provisions BOY – B/S

	100

Claims Expense

20	

Thus accrual accounts need to be used

- *Earned premium* = written premium + unearned premium provision in – unearned premium provision out

- *Claims incurred* = claims paid + claims provisions out – claims provisions in

Technical provisions need to cover all future claims

- Claims reported
- Claims reported but not enough provision
- Claims incurred but not reported
- Unearned premium provision
- Unexpired risk provision if unearned premium is inadequate

Reinsurance can affect the numbers in the short term

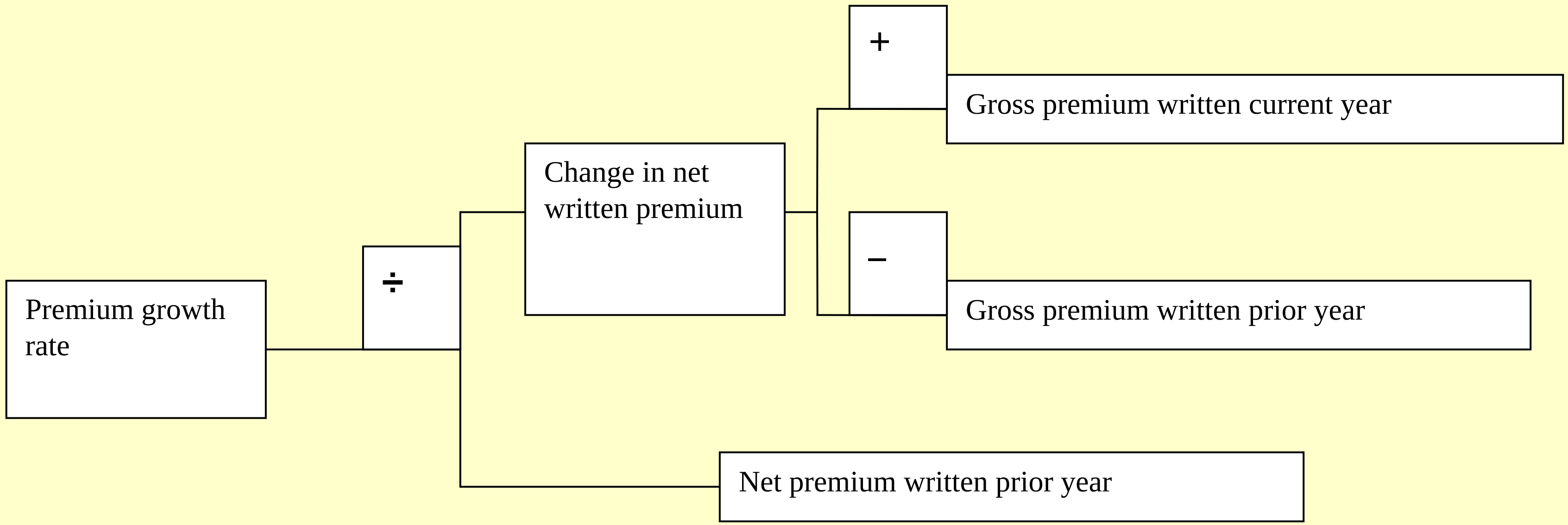
- Surplus relief – Quota Share – generates exchange commission
- Excess – helps to balance the portfolio and protect against catastrophe
- Small insurers can find it difficult to arrange reinsurance
- Not all reinsurers are equal
- Reinsurance can be abused

IV. IRIS Ratios for Albania

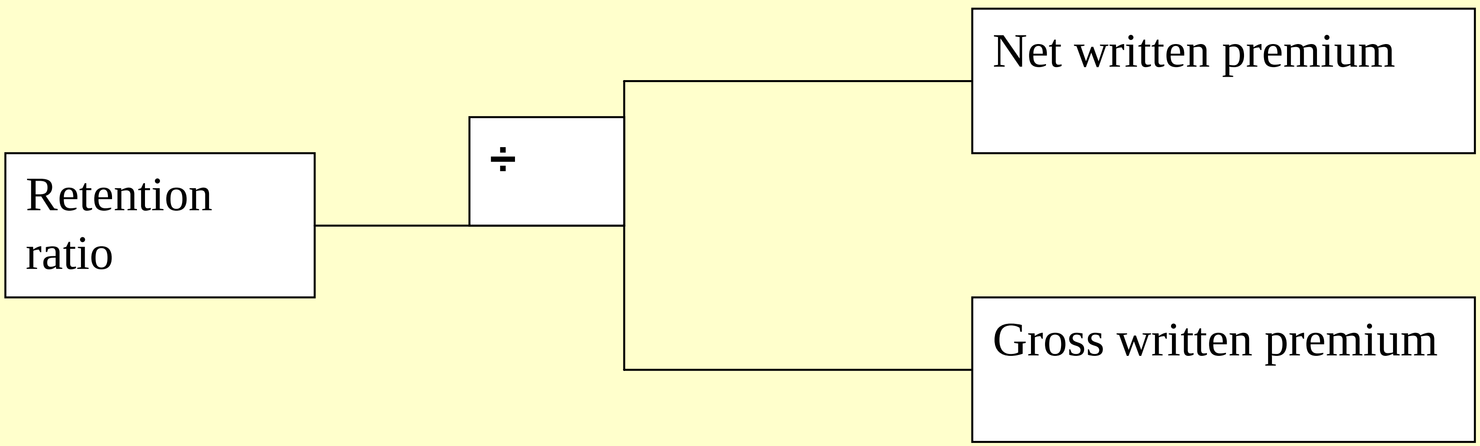
IRIS set for non life insurance in Albania

- Premium growth rate
- Net retention
- Net claims (or loss) ratio
- Expense ratio
- Combined ratio
- Investment income ratio
- Other income ratio
- Operating ratio
- Profit ratio
- Capital and surplus to gross premium
- Capital to technical provisions
- Solvency coverage

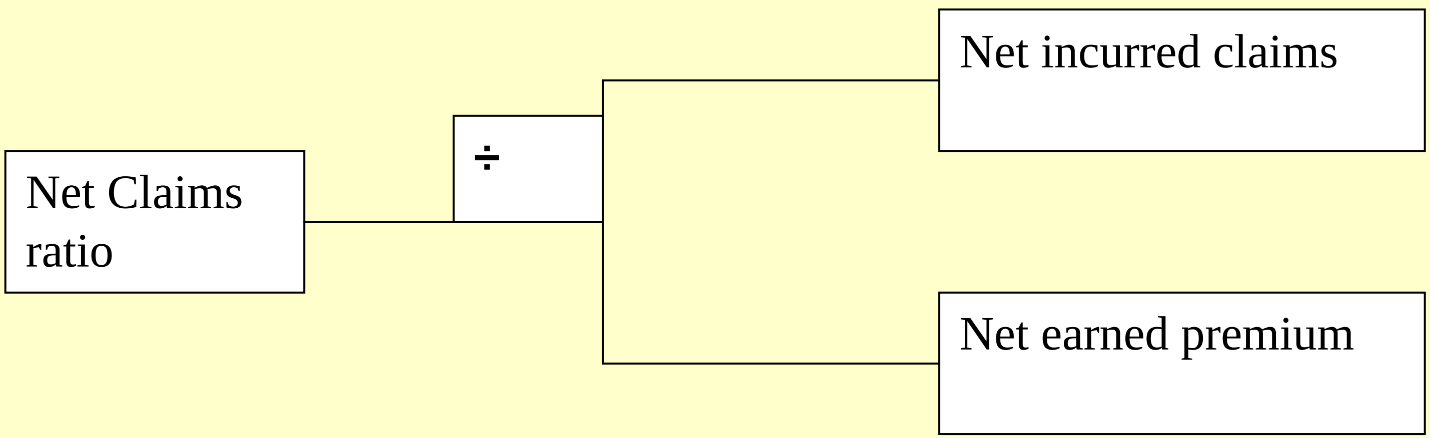
Premium Growth Ratio



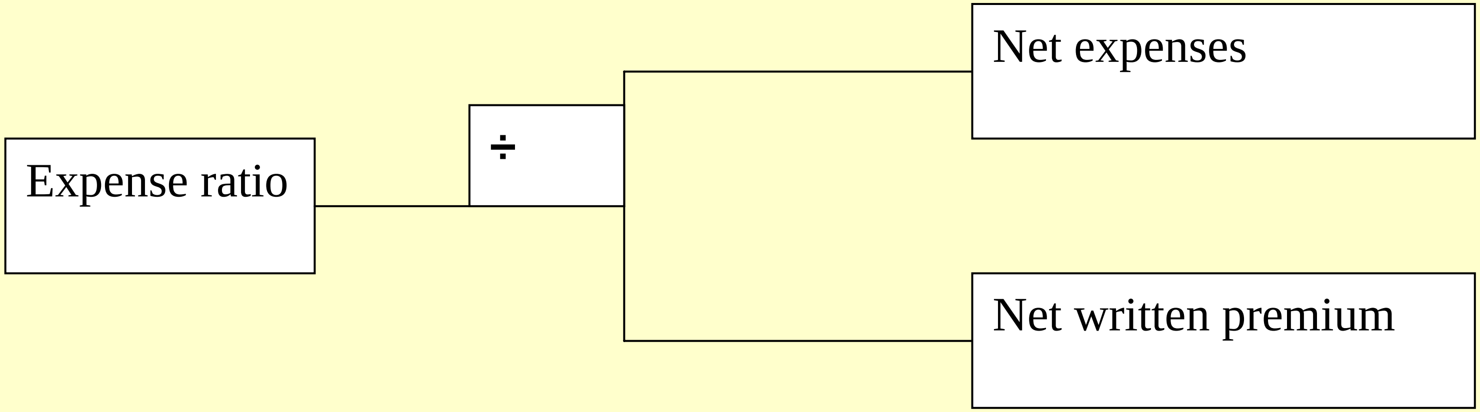
Net Retention Ratio



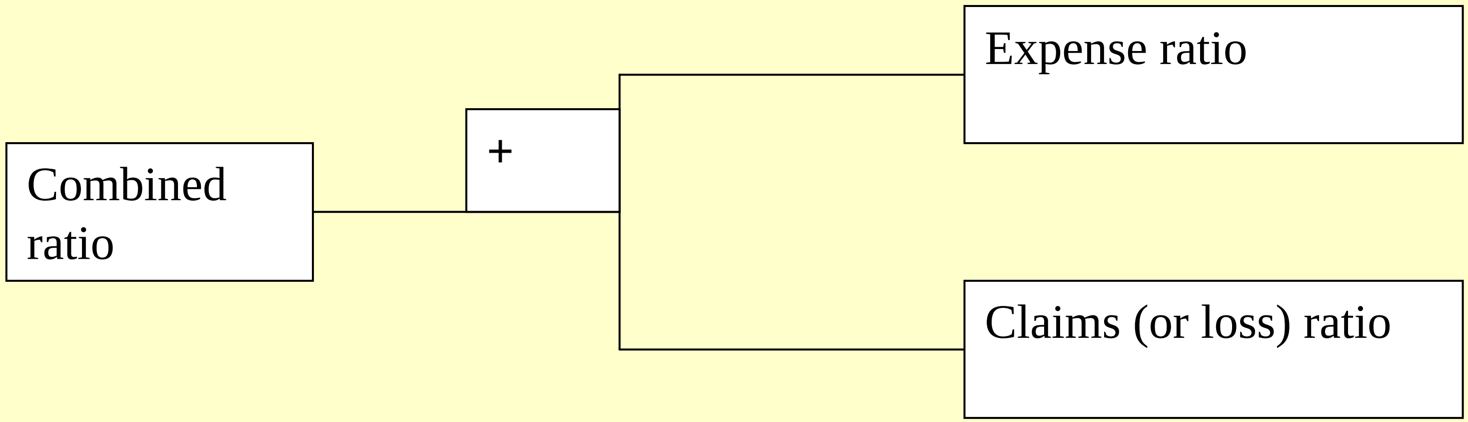
Net Claims Ratio



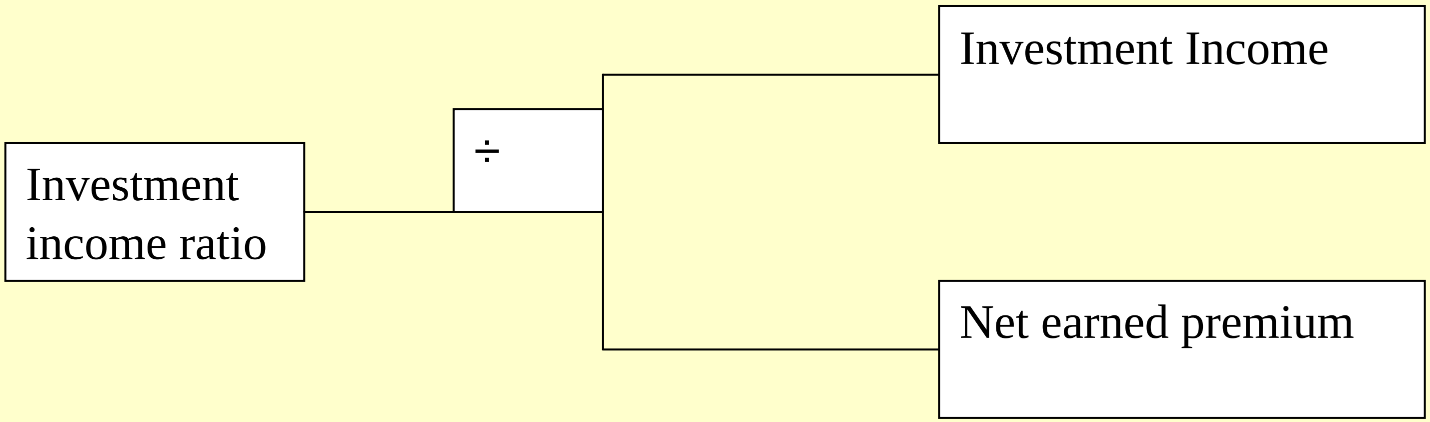
Expense Ratio



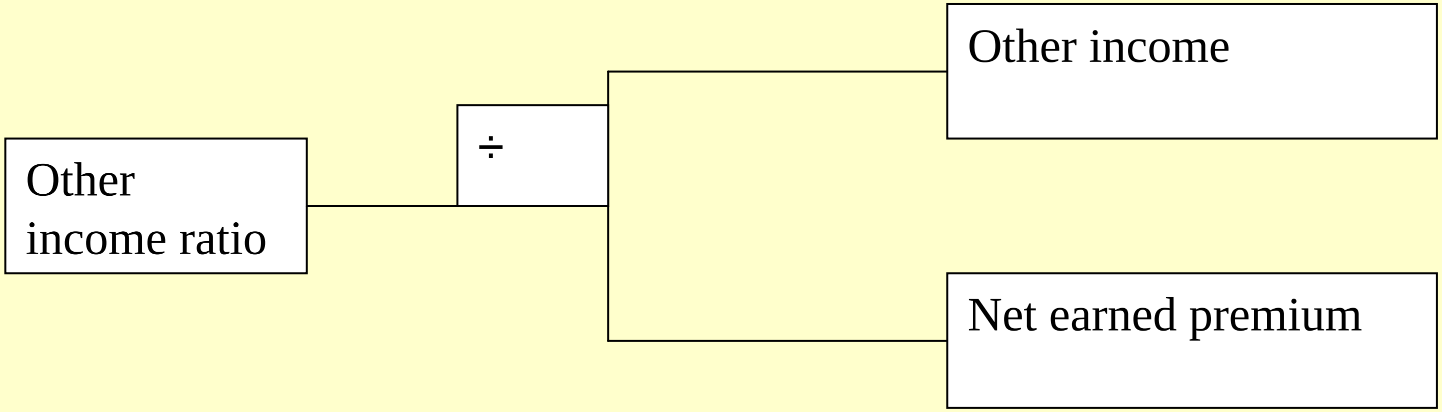
Combined Ratio



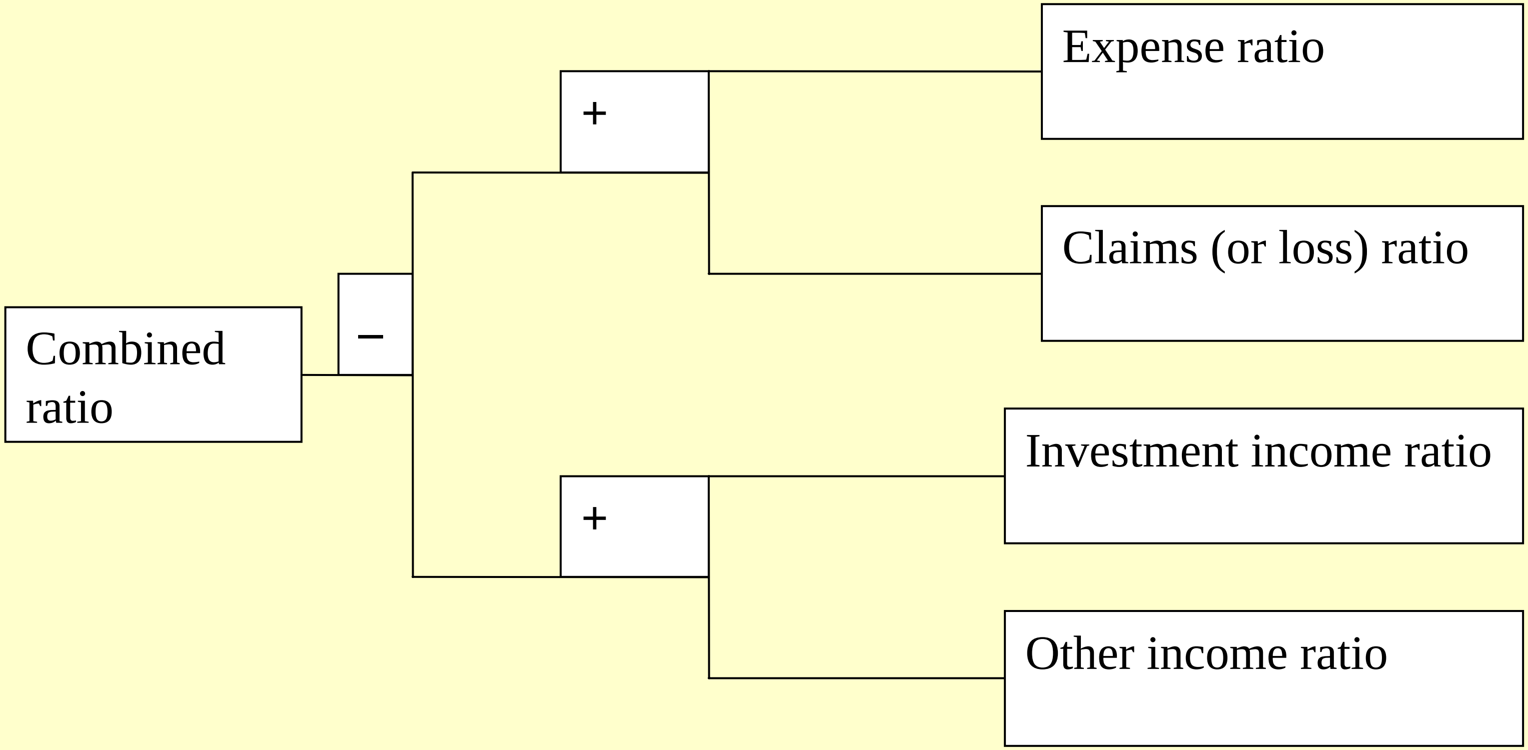
Investment Income Ratio



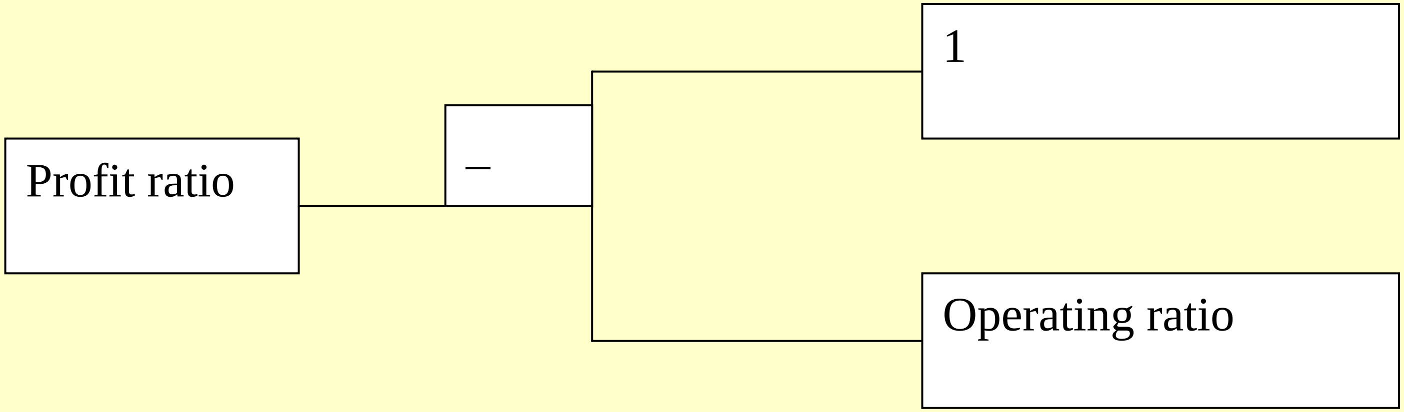
Other Income Ratio



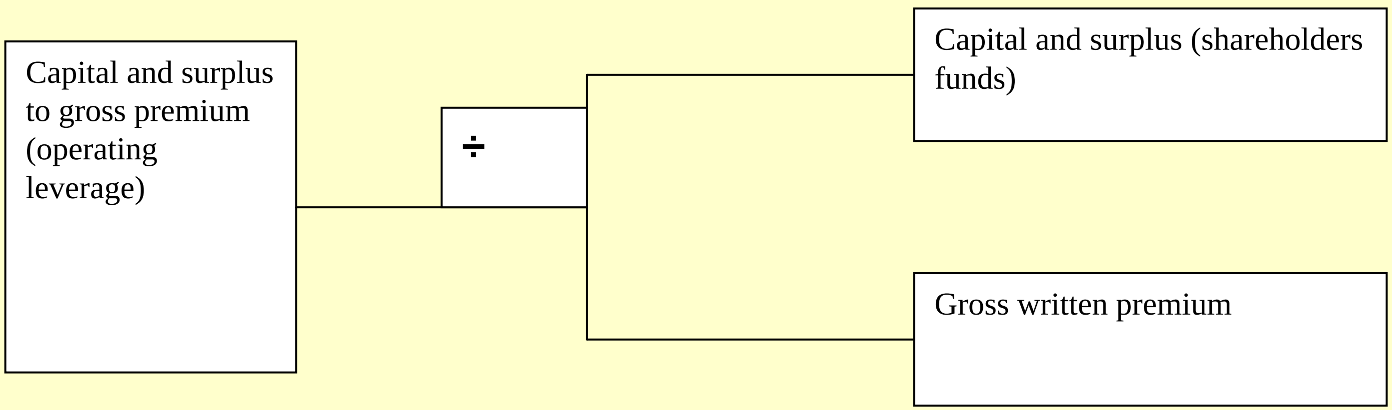
Operating Ratio



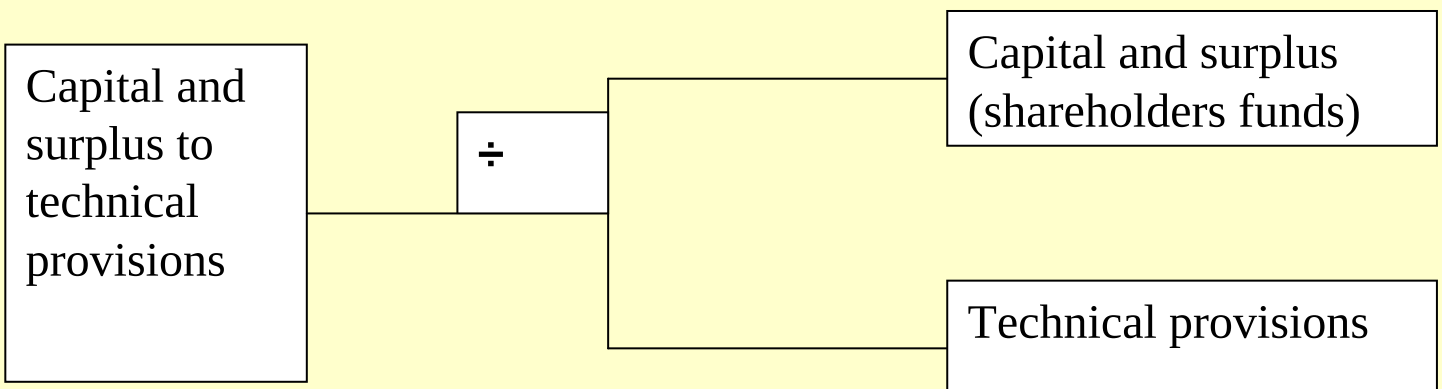
Profit Ratio



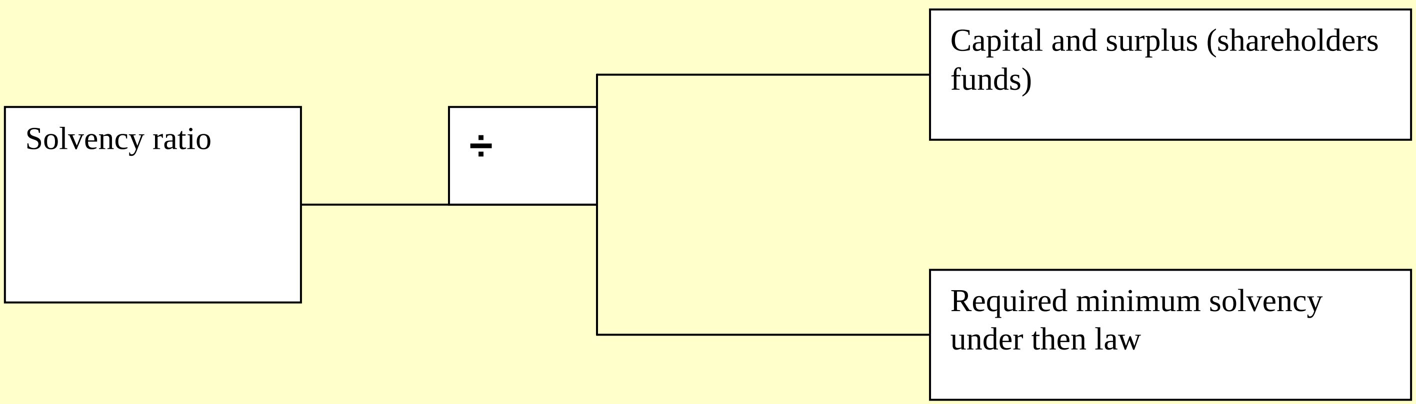
Capital and Surplus to Gross Premium



Capital and Surplus to Technical Provisions



Solvency



Solvency ratio
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Capital and surplus (shareholders funds)
Required minimum solvency under then law

Normal Ranges – Developing Country

Ratio	**High End %**	**Low end %**
Premium growth rate	+40	-40
Net Retention	80	40
Expense	50	25
Net claims	80	50
Combined	105	85
Investment income	8	4
Other income	1	N/A
Operating	101	80
Profit	20	-1
Capital and surplus to GWP	50	20
Capital and surplus to technical provisions	30	10
Solvency	300	150

Information for the Test

- Start time is 9:30 a.m.
- Estimated duration of 1 hour, with more time available if needed
- Format is multiple choice
- Open book
- Please bring calculator