Understanding Financial Metrics in a General Context

In many financial domains, especially during risk evaluation, calculating the amount of money paid periodically is essential.

For instance, to determine how much an individual needs to pay based on a certain insured amount and a predefined rate,

the following relation is often used:

The total payment is derived by multiplying the sum insured by the rate applied and then dividing the result by one thousand.

This is commonly referred to as the premium.

Premium is equal to the sum insured multiplied by the rate, and the product is divided by one thousand.

Assessing the actual payout can be tricky. When someone files a claim, the final disbursed amount is calculated

by subtracting all applicable deductions from the promised coverage amount.

Claim amount is calculated as the sum insured minus any deductions or deductibles applicable.

Operating profits need to consider both the incoming gross premium and the expenditures associated with commissions and

administrative charges. Thus, the net income generated purely from premiums is computed as follows:

Net premium equals the gross premium minus the commission and also minus the expenses related to operations.

To evaluate how much a company is spending versus earning, one important ratio is the loss ratio. It is expressed

as a percentage and is calculated by dividing the incurred losses by the earned premium, then multiplying the result by one hundred.

Loss ratio is calculated as incurred losses divided by earned premium, multiplied by one hundred.

Sometimes, the total performance metric is obtained by adding individual expense-related ratios together.

Combined ratio equals the loss ratio plus the expense ratio.

For risk management, firms often transfer a portion of their premium to other companies. This transferred amount is

determined by multiplying the total premium by the reinsurance rate.

Reinsurance ceded is calculated as total premium multiplied by the reinsurance rate.

Performance metrics such as return on investment help in assessing efficiency. This is calculated as the percentage

of net gains over total capital deployed.

Return on investment equals net profit divided by total investment, then multiplied by one hundred.

An institution's ability to meet liabilities is reflected by a solvency metric, generally expressed as follows:

Solvency ratio is the net assets divided by net premiums written.

There are cases where expected future liabilities are unknown at the time of evaluation. These are considered

Incurred But Not Reported claims, calculated by subtracting reported claims from the estimated future claims.

Incurred but not reported is equal to estimated future claims minus reported claims.

The policy discontinuation rate is also crucial. This can be represented as follows:

Lapse ratio equals the number of lapsed policies divided by the total number of issued policies, then multiplied by one hundred.

General Operational Insight

In industries where sales and client servicing overlap, calculations such as net commission, payout ratios,

or even coverage densities follow similar arithmetic principles. Financial teams often consolidate

multi-line datasets to compute these key performance indicators.

Please note: The above examples demonstrate common principles used in actuarial science, finance, and operations.

They may be interpreted differently across institutions.