

Premium Accounting

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CAS Study Note

Premium Accounting

The purpose of this study note is to explain the key accounting concepts and issues in the recording and evaluation of premium information, specifically with regard to financial reports. Issues to be addressed by this study note include:

- Revenue recognition (written premium versus earned premium)
- Written premium components
- Unearned premium issues
- Unearned premium and loss reserve interaction
- Miscellaneous topics

A glossary is included at the end of the study note for certain terms involved in premium accounting.

Revenue recognition

Income statements in the accounting world focus heavily on revenue as a function of company volume and as a measure of company growth. The principal source of revenue for insurance companies is premium from insurance sales. (The other principal source of revenue for insurers is typically investment income.)

The timing of when a company can recognize sales revenue in its income statement is a major issue for most accounting systems. This has occasionally been a source of fraud or earnings management in various (non-insurance) industries, such as companies involved in the sales of consumer goods or in the sales of services. Some companies facing perceived growth targets from investors have tried to accelerate the recognition of sales revenue, or manage its timing to “bank” high growth periods to release into income during future times of low growth. Hence the accounting world’s major concern with the timing of when sales revenue (such as insurance premiums) should be recognized.

For insurance, these are several possibilities for determining when the policy premium will be recognized as revenue. These include:

- When the insurance contract is signed
- When the premium is due from the policyholder
- When the premium is received
- When the insurance policy becomes effective
- Over time, as the risk covered by the policy runs off

Many life insurance accounting systems recognize premium revenue into income based on the second choice above, when premium is due. In contrast, most property-casualty insurance accounting systems have chosen the last of the above-listed approaches in the recognizing of revenue, recognizing the premium as revenue over time as the risk covered by the policy runs off. This is called a “deferral-matching approach”, as it attempts to defer recognition of any revenue or expense so that it can be matched with the timing of the incurred losses¹.

¹ This is the same approach common in accounting for service contracts, such as maintenance contracts.

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As an example, suppose an insurer wrote a \$400 commercial liability policy lasting one year, effective October 1, 2000. By December 31, 2000, only one quarter of the policy term would have expired, so under a “deferral-matching” approach only one quarter, i.e., \$100, of the premium should be recognized as income.

These deferral-matching approaches generally utilize an account known as “written premiums”. Written premiums for a policy during a reported period are generally defined as the amount of premium charged for that policy during the reporting period. (Complications will be discussed later.) This assumes that the policy in question has already become effective. Any premiums charged on a policy before its effective date will be deferred, not recognized as written premium until the effective date.

The portion of the policy’s written premium for the unexpired policy risk is called the “unearned premium liability²”, a liability set up to defer recognition of the premium revenue. As the coverage period runs off, the unearned premium liability is taken down.

Given the above, premium revenue for a particular policy during a particular period equals the written premium during the period, plus the beginning unearned premium liability less the ending unearned premium liability.

Example 1 – single policy example

Policy is sold March 1, 2000, with a May 1, 2000 effective date. Assume a 12 month policy term, and that the premium charged is \$120.³

For simplicity, also assume no losses, expenses or taxes.

1st quarter 2000

Balance sheet at 3/31/2000

<u>Assets</u>	<u>Liabilities</u>
	Unearned Premium 0 (referred to later as UPR)

<u>Written premium for 1st quarter 2000</u>	
Written Premium	0 (referred to later as WP) ⁴

<u>Income statement for 1st quarter 2000</u>	
Earned Premium (revenue)	0 (referred to later as EP)

² In some jurisdictions, the term “unearned premium reserve”, or “UPR” is commonly used rather than unearned premium liability. Note that other jurisdictions commonly use the term “technical provisions” rather than “reserves”.

³ This example also assumes that the premium is earned evenly over each month of the 12 month policy period.

⁴ Note that the WP is zero during the 1st quarter, even though premium was charged the policyholder during the period. This is because the policy had yet to become effective in that quarter.

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Example 1, continued

2nd quarter 2000

Balance sheet at 6/30/2000

<u>Assets</u>	<u>Liabilities</u>	
	UPR	100

Written premium for 2nd quarter 2000

WP	120	
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Income statement for 2nd quarter 2000

EP (revenue)	20 (equals WP + beginning UPR – ending UPR)	
	120 + 0 - 100	

3rd quarter 2000

Balance sheet at 9/30/2000

<u>Assets</u>	<u>Liabilities</u>	
	UPR	70

Written premium for 3rd quarter 2000

WP	0	
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Income statement for 3rd quarter 2000

EP (revenue)	30 (equals WP + beginning UPR – ending UPR)	
	0 + 100 - 70	

Full year 2000

Balance sheet at 12/31/2000

<u>Assets</u>	<u>Liabilities</u>	
	Unearned Premium	40

Written premium for year 2000

WP	120	
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Income statement for year 2000

EP (revenue)	80 (equals WP + beginning UPR – ending UPR)	
	120 + 0 - 40	

The remaining portion of the policy's unearned premium in this example would become earned (revenue) in 2001, as the policy expires and UPR runs off to zero⁵.

⁵ For policies longer than 12 months, the time until the UPR runs off to zero would be even longer. In some countries, policies lasting longer than 12 months are the norm, while for other countries such policies are rare.

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The above discussion ignored any treatment of the actual premium billing process on the accounting results. The following attempts to fill that gap.

As mentioned earlier, the actual billing of the premium under many accounting systems does not affect the balance sheet or income statement until the policy effective date. If the billed premium is received before the effective date, that amount is treated as a deposit until the effective date.

Example 2 – single policy example – balance sheet entries only

Policy is sold March 1, 2000, with a May 1, 2000 effective date. Assume a 12 month policy term, and that the premium charged is \$120. The premium is received as cash on March 15th.

1st quarter 2000

Balance sheet at 3/31/2000

<u>Assets</u>		<u>Liabilities</u>	
Cash	120	Deposit	120
		UPR	0

2nd quarter 2000

Balance sheet at 6/30/2000

<u>Assets</u>		<u>Liabilities</u>	
Cash	120	Deposit	0
		UPR	100

3rd quarter 2000

Balance sheet at 9/30/2000

<u>Assets</u>		<u>Liabilities</u>	
Cash	120	Deposit	0
		UPR	70

Alternatively, the premium for the policy could have been paid after the effective date. When this happens, an asset account called “premiums receivable” or “agents balances” is set up once the premium is booked as written and retained until the premium is paid. The first term, “premiums receivable” is more generic than “agents balances”, allowing for the insurer either billing the customer directly or billing the agent (who is then responsible for the collecting the premium from the customer), but the two terms are sometimes treated as synonyms.⁶

⁶ The two billing methods can have materially different impacts on commission payments. Generally, the amount due from agents is net of commission, as the agent takes their commission out of the money they receive directly from the policyholders. When the insurer bills the policyholder directly, they collect the full amount including commissions, and need to address payment of the agent’s commission separately.

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Example 3 – single policy example – balance sheet entries only

Policy is sold March 1, 2000, with a May 1, 2000 effective date. Assume a 12 month policy term, and that the premium charged is \$120. The premium is received as cash on July 15th.

1st quarter 2000

Balance sheet at 3/31/2000

<u>Assets</u>		<u>Liabilities</u>	
Premium receivable	0		
Cash	0		
		UPR	0

2nd quarter 2000

Balance sheet at 6/30/2000

<u>Assets</u>		<u>Liabilities</u>	
Premium receivable	120		
Cash	0		
		UPR	100

3rd quarter 2000

Balance sheet at 9/30/2000

<u>Assets</u>		<u>Liabilities</u>	
Premium receivable	0		
Cash	120		
		UPR	70

Note that the above assumes ultimate collection of the premium. Billed premium that is later determined to be uncollectible may be written off in several different locations, based on the particular accounting system. For example, U.S. regulatory accounting treats such uncollectible amounts as negative “other income”, while they may be accounted for as underwriting expenses under GAAP accounting. Conceivably another possibility might be negative premium.

The above discussion focused on premium revenue on a calendar period basis. Sometimes actuaries focus on policy year or underwriting year premium data instead. For such approaches, the focus is either on the ultimate revenue for the policy/underwriting year, or the amount of revenue recognized to-date.

When focusing on ultimate premium revenue for a policy/underwriting year, there is no recognition of unearned premium liability. Ultimate premium revenue for that policy/underwriting year equals total WP to-date, with the possible adjustment for written premium amounts expected in the future for that policy/underwriting year. (Examples of such future written premium transactions are late bookings, policy cancellations and endorsements. More examples are discussed later in this study note.)

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When focusing on policy/underwriting year premium revenue to-date, the calculation is generally written premium to-date less unearned premium for that policy/underwriting year as of the desired accounting date.

Example 4 – Policy year premium example

Assume annual policies are written at a stable level through the year 2000, with the initial amount charged equaling \$2 million for each month. Assume the only adjustment necessary is to reflect the fact that half any month's premium is booked one month late.

Policy year 2000 at 12/31/2000

Written Premium	\$23 million
WP adjustment	\$ 1 million (anticipated amount of premium from December 2000 effective month that will be booked in January 2001)
Total ultimate WP	\$24 million
WP thru 12/31/00	\$23 million
UPR at 12/31/00	\$11 million ⁷
EP thru 12/31/00	\$12 million⁸

Sometimes the actuary will want to look at premium revenue for a past calendar period after adjustment for reporting lags and other distortions. This is especially useful when trying to compare estimates of incurred losses to premium revenue. If the incurred loss estimate is at an ultimate level but the premium revenue amount is distorted due to booking lags, the actuary may produce erroneous indications of profitability, especially during periods of change such as periods of rapid growth.

Other premium accounting approaches

During preliminary discussion of a new accounting standard for insurance contracts, the International Accounting Standards Board (IASB) discussed moving to an asset-liability approach for all insurance contracts rather than a deferral-matching approach. Under an asset/liability approach, revenue would be recognized up front, once the insurer gained control of the asset resulting from the revenue.

⁷ The UPR was calculated by assuming that the average policy for each month was written in the middle of the month, such that only 1/24th was still unearned for the January 2000 policies, 3/24th for the February 2000 policies, etc., with \$2 million for each effective month except for \$1 million for December 2000 (due to the booking lag).

⁸ Notice that the booking lag in this example had no impact on earned premium. This is because the booking lag was small, and applied only to a portion of premium that was mostly unearned at the time of the valuation. When carried out to more decimals, the earned premium in this example is \$11.96 million.

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When the full amount of premium charged is recognized when the policy becomes effective, there is no UPR. Instead, other liabilities must be set up for losses and expenses expected for the unexpired portion of the policy. Deposit or similar liabilities must still be established for any premiums received before the effective date. When the full premium is recognized even earlier, at date of sale (such as when the contract is signed) or date of premium receipt even if before the effective date, then no deposit liability is called for.

Note that these approaches do not utilize the concept “Earned Premium”. Therefore, any income statement or other performance measures that rely on earned premium (such as the loss ratio) would need to be adapted to reflect the different premium revenue recognition treatment. Policy or underwriting year concepts may fit this premium accounting approach better than calendar/accident year.

Written Premium Components

Written premium is commonly used in the property/casualty insurance industry as a measure of business growth. Therefore, an understanding of the components of written premium is necessary to evaluate growth correctly. Absent this understanding, a user of written premium information may misinterpret the true growth rate of an insurer, especially during periods of rapid change (such as a change in processing systems or transition to a different type of business.)

In the simplest case, the policy premium is known and fixed in advance once the policy is sold. The policy is never changed via endorsement or cancellation, and is allowed to run its course. In such a case, it is easy to interpret the amount of business an insurer has sold from the reported written premium.

Many complications can arise that deviate from this simple model. They include some of the following, all considered part of premiums: (Note that under a deferral/matching approach, these items are earned immediately to the extent they reflect past periods, or earned over time through the establishment of an unearned premium reserve to the extent they reflect unexpired portions of a policy.)

- Deposits - Policies may be “bound”, or formally agreed to, before all the details are worked out. This can result in a “binder” premium, or initial deposit. Policies can also be sold for which the pricing exposure is not initially known, also requiring an initial deposit premium until an estimate of the ultimate premium can be obtained. (Deposit premiums are sometimes used for reinsurance treaties where the final premium is a function of the subject business during the treaty effective period.)
- Estimates – Where the pricing exposure is not initially known, it may sometimes be estimated. Such written premiums are generally expected to be followed by a premium adjustment once the actual pricing exposure level is determined. (Examples of such estimated premiums include a commercial policy for which the premium is a function of the insured’s business sales during the policy period, or a reinsurance treaty whose premium is a function of the final subject premium.)

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- Audits – In those cases where the pricing exposure is not known at contract inception, audits may be used to determine the actual final exposure. These audits can occur during the policy term or at the end of the policy term, depending on the pricing exposure base characteristics. For example, a policy whose final premium is based on the insured's sales (e.g., a commercial liability policy for a retail store) or payroll (e.g., a workers' compensation policy) during the policy period will require an audit after the policy has expired to determine the final premium.
- Endorsements/cancellations – Policies may be changed in mid-term in a way that affects the charged premium (via endorsement). Policies may even be cancelled mid-term. (A cancellation can be viewed as an extreme form of endorsement.) A common endorsement for auto policies occurs when a new car is purchased, when the existing policy is endorsed to reflect the purchase of the new car in addition to or in place of the car(s) already covered by the in-force policy.
- Reinstatements – Many catastrophe (or per event excess-of-loss) reinsurance treaties require the payment of a reinstatement premium in the event of a covered catastrophe. The purpose of this premium is to reinstate the original policy limit (after it has been exhausted by the covered catastrophe) in order to cover another possible catastrophe under the reinsurance policy. In general, such a premium must be accounted for once the loss that would trigger such premium is incurred.
- Retrospective premium adjustments – Some policies have their final premium determined based on the losses incurred under the contract. Such "retrospectively rated" policies result in an initial premium, followed by a series of adjustment premium entries based on the covered losses under the policy (subject to limitations such as minimums and maximums, etc.) These adjustments can sometimes continue for many years after the original policy term has expired. For example, large workers' compensation or commercial liability contracts in the United States can be written on a retrospectively rated basis such that premium adjustments continue for 10 years or more after the original effective. Reinsurance contracts are also sometimes written in such a way that future premium adjustments are made as incurred losses under the contract change.

Note that the above list does not include installment premiums. This is because the decision to use installments versus an up-front premium is often a function of the billing system and does not affect written premium. In the U.S., the total of all known future installment premiums is generally booked up front as written premiums. Installments due but not yet collected are categorized in one premium receivable account, while those to-be-billed in the future and not yet due are in another premium receivable account.

The above items may apply to either direct insurance contracts, or reinsurance contracts. Where ceded reinsurance exists, the premium components mentioned above may trigger corresponding ceded premium entries.

There are also some entries related to premiums that may or may not be treated as premiums, depending on the context. These include:

- Policyholder dividends – Under some property/casualty policies the policyholder is eligible for discretionary dividends paid by the insurer. The treatment of these relative to

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premium can vary based on the rules of the jurisdiction, or even the preference of management (for management accounting purposes). Possible treatment includes negative premium or positive expense.

Example 5 – impact of varying policyholder dividend treatment

Written premium:	\$110
Earned premium:	\$100
Incurred losses:	\$ 60
Underwriting expense	\$ 18
Policyholder dividends (pol dvd)	\$ 4

Loss ratio: (incurred losses divided by earned premium)

Pol. dvd treated as expense	$60/100 = 60\%$
Pol. dvd treated as premium	$60/96 = 62.5\%$

Expense ratio: (underwriting expense divided by written premium)

Pol. dvd treated as expense	$(18+4)/110 = 20\%$
Pol. dvd treated as premium	$18/106 = 17\%$

- Tax surcharges – In some jurisdictions, the insurer is used as a tax collector for special purpose taxes levied on the policyholder as a function of premium. While billed as a function of premium, some of these may not be included in reported premium. Instead, they are characterized separately and may not even be reported as part of income or expense⁹. Their only impact is on the balance sheet, impacting the “cash” asset account and a non-insurance liability account until the actual payments are remitted to the taxing authority.

⁹ The decision as to whether or not to include such tax surcharges as “premiums” may be based on law, regulation or accounting rules, depending on the jurisdiction and the particular tax surcharge. In the U.S., the criteria for such treatment is that the surcharge is shown separately on the premium bill sent to the policyholder, and the insurer is not liable for the portion of such amounts not collected.

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Unearned Premium Issues

Two views as to unearned premium purpose

The unearned premium reserve may have multiple roles under a deferral-matching accounting system. It may be viewed as a reflection of the refund liability in the event of policy cancellation¹⁰. It may also be viewed as a way of deferring revenue so that revenue timing matches expense. These two views may result in different values, such as when a penalty would be charged the policyholder for early policy cancellation, although in practice such differences are generally ignored. Ideally the accounting system will clarify which view to use in quantifying the unearned premium reserve when the two views result in different values.

Pro rata approaches (over time)

With regard to the revenue deferral view of unearned premium reserves, the current U.S. GAAP guidance (for property/casualty insurance) is to recognize premiums “as revenue over the period of the contract in proportion to the amount of insurance protection provided”. In practice, it is common to use a pro-rata over time method of calculation, which assumes that the insurance protection is evenly spread over the policy term.

Non-pro rata approaches (over time)

There are some policies for which the insurance protection is not evenly spread over the policy term. Examples include:

- Policies covering seasonal risks (such as losses from insuring snowmobiles, for which the risk is concentrated in the winter months).
- Aggregate excess policies, covering the risk that total losses over a period are above a certain amount. The risk here is greater towards the end of the policy term than for the beginning.
- Warranty policies, as warranty claims (and mechanical breakdowns) usually increase as the product being warranted ages.
- Financial Guarantee (and other performance bonds), where initial underwriting should make it unlikely for immediate non-performance, resulting in greater likelihood of non-performance as the contract ages.

For such policies where the insurance risk is not evenly spread throughout the policy period, it may be necessary (and may be required) to calculate a non-pro rata earning pattern for the premium. This may involve an actuarial calculation for how the risk of loss varies over the contract period.

¹⁰ Note that this view of the unearned premium reserve that not apply for non-cancelable policies (such as some warranty contracts).

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Example 6 – Aggregate excess policies

Assume a policy with a \$2 million premium that reimburses the policyholder when aggregate losses for the calendar year exceed \$10 million. Assume that the losses covered by the policy are generally low severity/high frequency, with minimal catastrophe potential (i.e., the policy is meant to cover mostly pricing risk, not large loss risk). Also assume that the expected losses are \$8 million, and that the expected losses normally occur evenly throughout the year.

After one quarter, losses would have to be 500% of expected for attachment to occur. After two quarters, losses would have to be 250% of expected for attachment to occur. After three quarters, losses would have to be 167% of expected for attachment to occur. For the full year, losses would need to be 125% of expected for attachment to occur. As such, attachment is much less likely early in the year than later. If premium is earned evenly, then the earnings would be biased high early in the year, to the detriment of earnings later in the year.

In this example, first quarter losses of \$4.5 million may make ultimate attachment more likely, but they do not trigger a loss. In most accounting systems, such greater probability of loss might be recognized as an unearned premium reserve deficiency, not necessarily as a loss reserve need.

Example 7 – Auto “extended warranty” coverage

Assume a company provides coverage that effectively extends the original warranty on an automobile. (Legal reasons may prevent the issuer from labeling such coverage as “warranty”, but for simplicity purposes this study note will call this coverage “extended warranty coverage”.) How should premium of \$100 be earned that extends a manufacturer’s 3 year warranty for 2 more years? Assume an expected loss ratio of 50%, no expenses, and that 20% of losses are expected in year 4 and 80% in year 5 (in the last year of the extended warranty). The following compares the possible results of earning the premium evenly over time versus earning the premium based on expected losses.

Year	<u>Pro rata over time</u>			<u>Based on expected losses</u>		
	EP	Loss	Loss ratio	EP	Loss	Loss ratio
1	20	0	0%	0	0	-
2	20	0	0%	0	0	-
3	20	0	0%	0	0	-
4	20	10	50%	20	10	50%
5	20	40	200%	80	40	50%
Total	100	50	50%	100	50	50%

The danger is that management under the pro rata method will overestimate the underlying profitability, decreasing the price and growing the business. When carried to the extreme, such decision making can result in significant losses being locked in for several years before the company is aware of the mistake.

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Non-pro rata earning approaches are generally more complex and involve more estimation than pro rata approaches. As such, the accounting rules may allow the more simplistic pro rata methods to be used where the impact is not material to the financial statements.

Earning of deposits, other adjustments

There may be multiple possible approaches for earning items such as deposits, interim audits¹¹ and other such premium components. Where the accounting system does not dictate the earning approach, the overall goal would normally be to choose an approach that focuses on the total earned premium, with as simple an approach as possible for the pieces that contribute to that total. This may be a function of the individual processing systems and policies that the company uses.

Premium Deficiency Reserve

As mentioned earlier, one view of the unearned premium reserve is that of deferred revenue. But what if it is determined that the deferred revenue will not be sufficient to cover the corresponding losses and expenses? Most accounting systems require the booking of an additional liability (sometimes called a “premium deficiency reserve”) in such a situation.

The premium deficiency reserve is generally equal to the difference between the losses and expenses expected from the runoff of the unexpired policy term, and the unearned premium liability already held with respect to the unexpired policy term. (The accounting system may or may not also reflect the time value of money in this calculation.) Note that this calculation results in a positive liability only if the unearned premium is not expected to be sufficient to cover the runoff. If this calculation results in a zero or negative value, then no liability is established.

The concept here is that any liability that is set up should be subject to a “liability adequacy test”, i.e., a test to see if the liability is expected to be insufficient at runoff. If the liability is expected to be insufficient, then the financial statements are generally considered to be biased in that a future earnings loss (i.e., negative income) would be expected from the liability runoff. To prevent such a bias, a “premium deficiency reserve” is calculated. This concern about bias is somewhat one-sided in many accounting systems, in that they find almost totally unacceptable the booking of a liability expected to be insufficient, but sometimes acceptable the booking of a liability expected to be excessive.

While it is a function of the unearned premium liability, the actual location of the “premium deficiency reserve” in the balance sheet can vary significantly by accounting system. A portion of it may even be accounted for as a negative asset¹².

¹¹ Interim premium audits are audits (that modify the premium charged) that are performed before policy expiration. The earning of audits performed after expiration is generally not an issue, as they are immediately earned when booked as written. In general, any written premium is wholly earned immediately if it relates wholly to a period that has expired.

¹² In U.S. GAAP accounting, any premium deficiency reserve is first set up as a contra-asset reducing the corresponding pre-paid acquisition expense asset, with a liability set up only for the remainder after the pre-paid expense asset has been reduced to zero.

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Example 8 – Premium Deficiency Reserve

Assume:

Unearned Premium Liability of \$100

Estimated losses from the unearned premium runoff of \$95

Estimated expenses remaining from the runoff of the unearned premium liability \$15

Also assume no investment income or time value of money potential.

Premium Deficiency Reserve = $(95 + 15) - 100 = \$10$.

If instead the expected losses were 75, then no premium deficiency reserve would be set up.

An evaluation of this reserve can be quite involved, but there are a few basic concepts worthy of particular stress:

- It is an estimate of **expected** unearned premium liability deficiency **at the balance sheet date**. It should not reflect events subsequent to the balance sheet date not existing at the balance sheet date. For example, the unearned premium reserve for property insurance on December 31st should not reflect the impact of an earthquake that occurred 15 days later on January 15th, even if the calculation is performed after the earthquake occurred. Such an event would not be reflected in the calculation unless it was anticipated in advance.
- Only marginal expenses directly related to the runoff of the contract are looked at, not fixed and general overhead expenses. These marginal expenses are typically much lower than the overall expense level used in pricing.
- The level of aggregation is very important in this reserves calculation, given that indicated negative values are set equal to zero. The finer the level at which it is calculated, the more likely a positive reserve will result (and the higher any positive reserve will be). This is illustrated in the following example:

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Example 9 – Premium Deficiency Reserve – aggregation issue

Assume:

The premium deficiency reserve is calculated in two pieces, one piece is operation A and another piece is operation B.

The premium deficiency reserve on a stand-alone basis is as follows, before any application of minimum values:

Operation A:	-\$20
Operation B:	\$10

If the premium deficiency reserve is calculated for the combination of A and B, then the result is:
[-20 + 10] = -10 before applying the minimum
0 after applying the minimum

If the premium deficiency reserve is calculated by piece, then added, the result is:

Operation A:	-20 before minimum, or 0 after minimum
Operation B:	10 before and after minimum
Total:	0 plus 10 = 10

In this example, the premium deficiency reserve is 0 if calculated on an overall aggregate basis, and \$10 if calculated on an operation basis separately, then added together.

Unearned premium and loss reserve interaction

Under a deferral and matching approach, losses are only recognized and reserved for after the event triggering coverage has occurred, i.e., for events during the expired portion of the policy period. Losses arising from the unexpired portion of the policy are not covered by the loss reserve but instead are covered by the Unearned Premium Reserve.

It is possible that either reserve may become deficient to cover their respective losses. The recorded liability for loss reserves may become deficient to cover the estimated ultimate cost of incurred losses. Possible causes include new information or events such as legal rulings. The recorded liability for unearned premiums may be determined to be deficient to cover the expected losses over the unexpired policy term. Possible reasons include new information regarding pricing and/or underwriting decisions or legal interpretations of policy language since the policy was sold.

Deficiency in one category should generally not be confused with deficiency in the other category. In general, any expected deficiency in the reserves for events that have not yet occurred is to be reflected in the unearned premium reserve (and/or the premium deficiency reserve), and any deficiency in the reserves for events that have occurred is to be reflected in the loss reserves.

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Miscellaneous topics

The following miscellaneous topics are covered in this section.

- Financing – premiums versus service charges
- Multi-year policies
- Earning premium before it is written
- Extended reporting endorsements (definite versus indefinite periods)
- Reinsurance lags
- “Large” deductible credits

Financing – premiums versus service charges

Some premium payment plans allow the payment to be spread over a period of time. These payment plans may also include additional payments, above the amount required if the premium was paid in full at policy inception. These additional payments may be recorded as additional premium, as service charges, or as financing charges, depending on the applicable payment terms and the jurisdiction.

As an example, for U.S. regulatory accounting, those that are fixed per payment date, regardless of the amount of premium paid, are treated as service charges and not part of premium. Those that are a function of the amount of payment are treated as finance charges and not part of premium. (The distinction between service charge and finance charge could potentially have an impact on which rules or regulations apply, depending on the jurisdiction.)

Example 10 – Service charge versus Finance Charge – U.S. regulatory accounting

Two insureds with annual policies want to pay their premium quarterly rather than paying one amount up front.

Insured A: Annual premium \$200

Insured B: Annual premium \$400

If insured A is offered the ability to pay \$55 per quarter and B is allowed to pay \$105 per quarter, where the rule is to add a \$5 per billing fee, then the additional amounts charged are treated as service fees.

If insured A is offered the ability to pay \$55 per quarter and B is allowed to pay \$110 per quarter, where the rule is to add 10% to the amounts, then the additional amounts charged are treated as finance charges.

Multi-year policies

Multi-year policies may be less likely to have the risk spread evenly over the policy term, especially in a high inflation environment. As such, they may be candidates for non-pro rata

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earned premium recognition. (For example, if inflation is 20% a year, then for a three policy with expected losses of \$100 the first year, the expected losses would be \$120 the second year and \$144 the third year. This would imply that only about 27%, or $100/364$, of the three year premium should be recognized the first year.)

Issues may also arise with defining written premium for multiple year policies. Some systems account for multiple year policies with annual premium payments as a string of annual policies, with only the premium for the current year treated as “written”. This is especially true for policies of indefinite term, such as reinsurance treaties that are automatically renewed annually unless canceled before a new year begins. (This policies are sometimes called “continuous”.) In the extreme, a written premium definition for a continuous policy based on estimated ultimate premium for the policy’s life could result in an infinite value, hence the desire to book only one year of premium at a time.

Earning premium before it is written

Some components of premium revenue are not known with certainty, can only be reliably estimated on an aggregate basis, or do not lead to a timely billing of the amount due until some time after the exposure period. Examples include:

- Audit premium, which may be reasonably estimable during the coverage period in the aggregate but may not be assignable and/or billable to individual customers until some time after the exposure period.
- Reinstatement premium, whose payment may be likely or near certain given the current loss reserves, but actual payment is not due until paid losses breach the attachment point, which could be many years in the future.

These amounts can be sizable for some products and in some situations (such as during an economic expansion for audit premium or after a major catastrophe for reinstatement premium). Therefore, delaying recognition of this revenue until the premium is charged could result in distorted earnings reports.

How can they be reflected in revenue, when their amount, timing and/or assignment to individual policies is uncertain? One way is to record as written premium an estimate of their amount. This requires a slight deviation from the previously provided definition of written premium as the amount of premium charged during the period¹³. As the actual audits are performed or reinstatement premium triggered, the actual audit or reinstatement is booked as written premium and the estimated amount previously booked is reversed. This approach also requires additional financial controls, as written premium generally results in either cash receipt or the establishment of a premium receivable. There would be no cash received when these estimates are booked, and there may be no clearly identified counterparty from whom the receivable will be collected.

There is another way to record premium revenue for these situations in a deferral-matching accounting system. Remember that premium revenue under such systems is equal to written premium plus beginning unearned premium less ending unearned premium. In short, premium revenue is a function of both written premium and unearned premium. Rather than impacting

¹³ This is because there would be no premium charged to a party (or payable to a party in the case of reinstatement premiums on ceded contracts) as a result of these written premium bookings.

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premium revenue through the written premium component of this equation, we can impact premium revenue through the unearned premium component.

For example, if audit premium of \$100 is expected to be booked in the future on existing or past policies, with 75% of this related to exposure periods that have already occurred, the desired earned premium effect can be produced by adjusting unearned premium down by \$75. Given that earned premium equals written premium plus beginning unearned premium less ending unearned premium, a \$75 drop in ending unearned premium results in \$75 more in premium revenue. Under this approach, the unearned premium adjustment is continually updated, just as other reserve items are updated (such as loss reserves)¹⁴.

(Note: Two terms sometimes used to represent premium that has been earned but not billed include EBUB – Earned but not billed, and EBNR – Earned but not reported.)

Extended reporting endorsements (definite versus indefinite periods)

Some policies only cover claims reported during the policy term. (This is common in some markets for Directors & Officers liability and for Professional Liability policies.) These policies sometimes allow for extension of such claim reporting timeframes, sometimes for no additional cost if a certain event occurs, and sometimes for a fixed cost determined at policy inception. The accounting for these extended reporting periods can vary. In the U.S., the regulatory accounting system requires the liability for such extended periods to be recorded as unearned premium reserves when the extension is for a definite period into the future, and as loss reserves when the extension is for an indefinite period.

¹⁴ On advantage of this approach is that it eliminates the need to continually reverse written premium estimates booked a year or more in the past. Hence it should require fewer steps to implement.

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Reinsurance lags

Some reinsurance contracts (especially those involving reinsurance pools) result in material lags in the reporting of premiums and losses. This can cause misleading results, particularly if the late reported losses are later reported to the correct accident/policy/underwriting year. The net effect can be distortion in loss development or historic calendar/accident year measures.

One way of correcting for this is to require companies to book estimates of the premiums and losses that are reported late. These estimates would be trued up as actual values become known.

Example 12 – Reinsurance lag

A company writes workers' compensation business in the state of Connecticut, thereby requiring it to participate in the state's residual market pool for that line of business. Participants share in pool results, with results reported with a 3 month lag.

At year-end 2005, the company has only received reports from the pool administrators covering periods through September 30, 2005. The company would have to estimate the written and earned premium impacts expected from the 4th quarter 2005 report not yet received. (Accruals would also have to be estimated for the corresponding losses and expenses from pool participation.)

“Large” deductible credits

In some contracts with deductibles, the insurer pays the full claim then seeks reimbursement from the insured for the deductible portion of the contract. In some jurisdictions, such arrangements are also known as “large deductibles”. The resulting policy premium for such large deductible policies is expected to be smaller than if no deductible existed. Different accounting systems may choose to treat the premium reduction due to the deductible credit differently. For example, regulatory accounting systems may wish to gross up the reported premiums for such deductible credits, with regard to premium assessment systems.

For example, assume that a state is using the insurance industry's premium for liability coverage ABC to fund ancillary benefits for society, such as certain safety programs to reduce the types of accidents that trigger such liability. Assume total industry premium is \$10 billion, with 20% or \$2 billion coming from the largest insureds. Assume that these insureds can cut their premium in half by the use of “large deductibles” as described above. If no adjustment is made, the assessable premium will now drop to \$9 billion, shifting some of the burden of funding the safety program to the smaller insureds. The state may want to include the deductible credits to some degree in the assessable premium base, in order to prevent the assessment burden from shifting.¹⁵

¹⁵ Note that a similar problem will arise if the same insureds move to self-insured programs, or self-insurance combined with excess insurance for the higher layer losses.

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Glossary

In-force - A policy is considered “in-force” during the entire time between the effective and expiration date. Note that a policy no longer in-force can still have open claims (and in some cases even IBNR claims) after the expiration date.

Written Premium – The premium charged (or to be charged) for a policy or group of policies.

Earned Premium – The premiums recognized as revenue for the period in question. Note that the term “earned premium” requires implicit or explicit statement of the corresponding block of time.

Direct Premiums – Premiums arising from policies covering the customer’s risks, other than risks from the customer’s insurance/reinsurance or retrocession policies when the customer is an insurer (or reinsurer).

Reinsurance Premiums – Premiums arising from policies covering risks from direct insurance policies.

Retrocession Premiums – Premiums arising from policies covering risks from reinsurance policies.

Assumed – Related to reinsurance or retrocession business sold by the company, whereby the company is taking on the risk from the business.

Ceded – Related to reinsurance or retrocession policies bought by the company, whereby the company is transferring the risk from the business.

Deposit premiums – Premiums paid as a deposit (or first payment) toward the full policy premium.

Deposit liability – A balance sheet liability representing amounts owed to another party, equaling the net amount received from the other party, possibly including interest on that liability.

Prospective – With regard to an insurance, reinsurance or retrocession policy, dealing with future exposure periods, i.e., the coverage of future events.

Retroactive - With regard to an insurance, reinsurance or retrocession policy, dealing with past exposure periods, i.e., coverage of past events.

Retrospective – With regard to premiums, where the final premium determination is determined after-the-fact, based on subsequent activity under the policy.

Primary – Covering the first dollar of loss from the insured.

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Excess – Covering above the first dollar of loss from the insured.

References

Financial Accounting Standards Board, Statement No. 60 (“FAS 60”)

National Association of Insurance Commissioners, Accounting Practices and Procedures Manual, Statement of Statutory Accounting Principles Nos. 53, 65 (“SSAP 53, 65”)

Insurance Accounting and Systems Association, Property-Casualty Insurance Accounting (Eighth Edition), 2003, Chapters 4, 6 (“IASA Chapters 4, 6”)