

FA Module 20: Insurance contracts: GAAP readings from SFAS 60

(The attached PDF file has better formatting.)

### **SFAS 60: Accounting and Reporting by Insurance Enterprises**

- Reading: SFAS 60: Summary; 1-4; 7-11; 13-14; 17-18; 20-22; 28-36

This posting has the sections of SFAS (Statement of Financial Accounting Standard) 60 on the VEE Financial accounting syllabus, along with explanations of the text. The SFAS 60 text is in italics; the explanations follow the text. Some comments compare SFAS 60 with IFRS 17 (discussed in later modules).

### **FAS 60 Summary**

*This Statement ... establishes financial accounting and reporting standards for insurance enterprises ...*

SFAS 60 applies to insurers; IFRS 17 applies to insurance contracts.

- An insurance contract issued by a firm that is not an insurer is covered by IFRS 17 but not necessarily by SFAS 60.
- IFRS 17 removes some non-insurance benefits from an insurance contract, such as investment services and claims handling services, which are covered under other standards (IFRS 9 for investments and IFRS 15 for contracts with consumers) but which are treated as part of the insurance contract under GAAP, though often under SFAS 97 for universal life-type contracts.

*Insurance contracts ... are classified as short-duration or long-duration contracts. Long-duration contracts include contracts, such as whole-life, guaranteed renewable term life, endowment, annuity, and title insurance contracts, that are expected to remain in force for an extended period. All other insurance contracts are considered short-duration contracts and include most property and liability insurance contracts.*

SFAS 60 has different accounting practices for long duration vs short duration contracts. IFRS 17 has a general measurement approach that applies to all contracts and a premium allocation approach that may be applied to the liability for remaining coverage for certain types of short duration contracts.

*Premiums from short-duration contracts ordinarily are recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. Claim costs, including estimates of costs for claims relating to insured events that have occurred but have not been reported to the insurer, are recognized when insured events occur.*

Most short duration insurance contracts provide protection evenly over the policy period, so premium is earned in proportion to the time the policy is in force. An annual policy written on October 1, 20X1, provides 3 months of coverage in 20X1 and 9 months of coverage in 20X2, so one quarter of the premium is earned in 20X1 and three quarters is earned in 20X2.

Actuarial estimates of seasonal claim costs do not affect the insurance protection. For some lines of business, accidents depend on the season: hot weather leads to more fires and more crime. But the insurance contract provides the same protection in all seasons: the fire or theft coverage is the same in all months.

Some insurance contracts have protection that varies over the term. A credit insurance policy pays the loan if the policyholder defaults. If the loan principal is 1200 on January 1 and is paid 100 at the end of each month, the insurance protection is 1200 in January, 1100 in February, ..., and 100 in December.

- The total monthly protection is  $100 \times 12 \times 13 / 2 = 7,800$ .
- The percentage of insurance protection provided in January is  $1,200 / 7,800 = 15.38\%$ .

If the premium for a one-year credit insurance policy effective on January 1 is 100, the premium earned in January is  $15.38\% \times 100 = 15.38$ .

Claims are recognized when they occur, not when they are reported or paid. The report date and payment date of a claim are known; the occurrence date is often estimated.

*Illustration:* A medical malpractice insurance policy effective on October 1, 20X1, may not have any claims reported by December 31. The actuary estimates the claims that have occurred based on past experience of similar policies. The estimated claim costs for the three months October, November, and December are charged to expense on the 20X1 income statement and reported as liabilities on the 20X1 balance sheet.

*Premiums from long-duration contracts are recognized as revenue when due from policyholders. The present value of estimated future policy benefits to be paid to or on behalf of policyholders less the present value of estimated future net premiums to be collected from policyholders are accrued when premium revenue is recognized. Those estimates are based on assumptions, such as estimates of expected investment yields, mortality, morbidity, terminations, and expenses, applicable at the time the insurance contracts are made. Claim costs are recognized when insured events occur.*

*Costs that vary with and are primarily related to the acquisition of insurance contracts (acquisition costs) are capitalized and charged to expense in proportion to premium revenue recognized.*

Long duration contracts and insurance acquisition costs are explained below.

## **SFAS 60 Introduction**

§1. *The primary purpose of insurance is to provide economic protection from identified risks occurring or discovered within a specified period. Some types of risks insured include death, disability, property damage, injury to others, and business interruption. Insurance transactions may be characterized generally by the following:*

- A. *The purchaser of an insurance contract makes an initial payment or deposit to the insurance enterprise in advance of the possible occurrence or discovery of an insured event.*
- B. *When the insurance contract is made, the insurance enterprise ordinarily does not know if, how much, or when amounts will be paid under the contract.*

SFAS 60 applies to insurers ("insurance enterprises"); see the first line of the FAS 60 summary. Insurance contracts are classified as short duration or long duration, their primary purpose is described, and several types of insurance contracts are listed. Insurance transactions are "characterized generally" as noted above, but SFAS 60 does not have a formal definition of insurance contracts.

Insurers issue diverse contracts that provide insurance protection. Defining them by a common attribute is difficult. Insurers and policyholders know what an insurance contract is. A formal definition codifies practice, which might be counter-productive if the types of insurance contracts change.

SFAS 113 defines *reinsurance* contracts as those that meet the two risk transfer tests. SFAS 113 gives risk transfer tests because some reinsurers sell contracts that are called reinsurance but don't transfer much risk.

IFRS 17 applies to insurance contracts, regardless who issues them. IFRS 17 defines insurance contracts similarly (not exactly) to how SFAS 113 defines reinsurance contracts, but

- the SFAS 113 risk transfer tests determine whether the firm that buys the contract treats it as reinsurance.
- the IFRS 17 tests determine whether the firm that issues the contract treats it as insurance.

IFRS 17 define insurance contracts because the standard applies to all firms, whether or not they are insurers. SFAS 60 applies to insurers only, not to non-insurers that issue insurance contracts.

SFAS 113 and IFRS 17 are explained in other postings on the discussion forum.

§2. *Two methods of premium revenue and contract liability recognition for insurance contracts have developed, which are referred to as short-duration and long-duration contract accounting in this Statement. Generally, the two methods reflect the nature of the insurance enterprise's obligations and policyholder rights under the provisions of the contract.*

Statutory insurance accounting in the United States developed before GAAP. The FASB (Financial Accounting Standards Board) adopted much of statutory accounting for SFAS 60, codifying the accounting principles and modifying some items. Property-casualty insurers (general insurers) were using one method of premium recognition and expense recognition; life insurers were using another method. SFAS 60 adopts the two methods and set principles for when to use each.

§3 *Premiums from short-duration insurance contracts, such as most property and liability insurance contracts, are intended to cover expected claim costs resulting from insured events that occur during a fixed period of short duration. The insurance enterprise ordinarily has the ability to cancel the contract or to revise the premium at the beginning of each contract period to cover future insured events. Therefore, premiums from short-duration contracts ordinarily are earned and recognized as revenue evenly as insurance protection is provided.*

Short duration contracts have two characteristics:

- The policy term is short, generally about a year or less. When a motor insurance policy is renewed each year, a new contract is issued, with a new agreement between the insurer and the policyholder.
- The policy can be canceled by the insurer (and the unearned premium returned to the policyholder) or can be re-priced at the renewal date.

*Illustration:* Motor insurance policies are re-priced at each renewal in most countries. If the policyholder has more than expected accidents, the policy may be canceled by the insurer and the unearned premium returned.

*Illustration:* A five year term life insurance contract may not be canceled by the insurer during its term and may not be re-priced at the renewal dates, so it is a long duration contract.

The premium from short-duration contracts is earned and reported as revenue in the income statement as insurance protection is provided. If the policy is effective on October 1, one quarter of the premium is earned by December 31.

A short duration contract is re-priced at each renewal, so the premium collected is for the current year only. The policy may be canceled, so only premium for the expired portion of the policy is earned. In contrast, whole life insurance policies collect premium at inception that is more than needed for the current year; this extra premium pays for claims of future years. The insurer may not cancel the policy (except for non-payment of premium) and may not re-price the policy, so premium recognition follows a different method.

Some short duration contracts have policy terms longer than a year to simplify book-keeping. A policy written on December 15, 20X1, and lasting until January 1, 20X3, is short duration: the extra 15 days simplify book-keeping by setting future renewals on January 1.

§4 *Premiums from long-duration insurance contracts, including many life insurance contracts, generally are level even though the expected policy benefits and services do not occur evenly over the periods of the contracts. Functions and services provided by the insurer include insurance protection, sales, premium collection, claim payment, investment, and other services. Because no single function or service is predominant over the periods of most types of long-duration contracts, premiums are recognized as revenue over the premium-paying periods of the contracts when due from policyholders. Premium revenue from long-duration contracts generally exceeds expected policy benefits in the early years of the contracts and it is necessary to accrue, as premium revenue is recognized, a liability for costs that are*

*expected to be paid in the later years of the contracts. Accordingly, a liability for expected costs relating to most types of long-duration contracts is accrued over the current and expected renewal periods of the contracts.*

Premium recognition in SFAS 60 for long duration contracts follows statutory accounting of the United States. (IFRS 17 says that its measurement approach accords better with revenue recognition in other industries.)

Premiums for long duration contracts are often level, not varying by year. Whole life insurance policies issued to policyholders in their 30's pay few claims for 20 years but increasing claims afterward, though premiums may be the same each year. Earning premium by the time the policy is in force over-states revenue in early years and under-states revenue in later years.

Earning premium by the expected claims mis-represents the services provided by the insurer. Some people buy whole life insurance for the investment benefits, which are often tax advantaged. The investment services do not depend on the pattern of death claims.

For long duration insurance contracts, SFAS 60 recognizes revenue and expense earlier than most contracts:

- Revenue is recognized when the premium is due, generally before the insurance protection is provided.
- Expenses are the present value of future claims minus the present value of future premiums.
  - Premium of Z increases revenue by Z and increases expense by Z at the same time.

### General Principles

§7 *Insurance contracts, for purposes of this Statement, shall be classified as short-duration or long-duration contracts depending on whether the contracts are expected to remain in force for an extended period. The factors that shall be considered in determining whether a particular contract can be expected to remain in force for an extended period are:*

- Short-duration contract. The contract provides insurance protection for a fixed period of short duration and enables the insurer to cancel the contract or to adjust the provisions of the contract at the end of any contract period, such as adjusting the amount of premiums charged or coverage provided.*
- Long-duration contract. The contract generally is not subject to unilateral changes in its provisions, such as a noncancelable or guaranteed renewable contract, and requires the performance of various functions and services (including insurance protection) for an extended period.*

The table below summarizes the differences between short duration and long duration contracts.

<i>Short Duration Contract</i>	<i>Long Duration Contract</i>
insurance protection	insurance protection + other services
fixed, short period	extended period, often not fixed
insurer often may cancel contract	noncancelable or guaranteed renewable contract
insurer can adjust contract terms at renewal date	insurer cannot adjust contract at renewal date

**Question:** What is a guaranteed renewable contract?

**Answer:** The insurer must renew a guaranteed renewable health insurance contract for a specified period even if the health of the policyholder changes. The insurer may revise the premium rate for an entire class of policyholders but not for an individual policyholder based on changes in health or other characteristics.

§8 *Examples of short-duration contracts include most property and liability insurance contracts and certain term life insurance contracts, such as credit life insurance. Examples of long-duration contracts include*

*whole-life contracts, guaranteed renewable term life contracts, endowment contracts, annuity contracts, and title insurance contracts. Accident and health insurance contracts may be short-duration or long-duration depending on whether the contracts are expected to remain in force for an extended period ... individual and group insurance contracts that are noncancelable or guaranteed renewable (renewable at the option of the insured) or collectively renewable (individual contracts within a group are not cancelable) ordinarily are long-duration contracts.*

Know that motor insurance, property insurance, liability insurance, and credit life insurance are short duration contracts, and whole life insurance, endowment contracts, and annuity contracts are long duration contracts. The final exam does not test which health insurance contracts are short duration vs long duration.

§9 *Premiums from short-duration insurance contracts ordinarily shall be recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. A liability for unpaid claims (including estimates of costs for claims relating to insured events that have occurred but have not been reported to the insurer) and a liability for claim adjustment expenses shall be accrued when insured events occur.*

Premiums of short duration contracts are recognized as revenue on the income statement in proportion to the insurance protection provided, which usually is proportional to the time elapsed. Claims and claim adjustment expenses are accrued and charged to expense on the income statement when the accidents (or other insured events) occur (or are presumed to occur).

*Illustration:* An insurer writes a one-year fire insurance policy on October 1, 20X1, for a premium of 100. Claims are reported immediately after the fire. The insurer expects claims of 80 for the year. The premium revenue for 20X1 is  $100 / 4 = 25$ . The claim expense is based on the reported fires in 20X1.

*Illustration:* An insurer writes a one-year medical malpractice policy on October 1, 20X1, for a premium of 100. Claims are reported six to twelve months after they occur, so no claims are reported by year-end. The expected claims and claim adjustment expenses have a nominal value of 120 and a present value of 80. The insurer recognizes  $100 / 4 = 25$  of premium revenue in 20X1 and  $120 / 4 = 30$  of claims expense. Claims for short duration contracts are not discounted. Even though medical malpractice claims may not be paid until years after the accident, the policy is a short duration contract.

Claims adjustment expenses accrue when the claims occur, not when the expenses occur.

*Illustration:* A liability claim occurs in 20X1, the claim is reported in 20X2, a defense attorney is hired in 20X3, and the litigation costs occur in 20X4 and 20X5. An estimate of defense costs is reported as 20X1 expense.

§10 *Premiums from long-duration contracts shall be recognized as revenue when due from policyholders. A liability for expected costs relating to most types of long-duration contracts shall be accrued over the current and expected renewal periods of the contracts. The present value of estimated future policy benefits to be paid to or on behalf of policyholders less the present value of estimated future net premiums to be collected from policyholders (liability for future policy benefits) shall be accrued when premium revenue is recognized. Those estimates shall be based on assumptions, such as estimates of expected investment yields, mortality, morbidity, terminations, and expenses, applicable at the time the insurance contracts are made. In addition, liabilities for unpaid claims and claim adjustment expenses shall be accrued when insured events occur.*

*Illustration:* An insurer writes a whole life insurance contract with premiums of 100 due each January 1, which is reported as revenue on the income statement when it is due. The present value at policy inception of all the net premium (premium less acquisition costs) after the first premium is 1,800. One claim is expected in 25 years, with a present value of 2,000 at policy inception, so the insurer recognizes an expense for  $2,000 - 1,800 = 200$ .

The expected investment yields, mortality, morbidity, and terminations are estimated at policy inception (when the insurance contracts are made) and remain unchanged at future dates. In contrast, IFRS 17 uses current estimates at each valuation date.

*Illustration:* A death claim for 800 is expected in 20 years. At policy inception, the expected investment yield is 5% *per annum*, so the present value of future policy benefits is  $800 / 1.05^{20} = 301.51$ . One year later, the investment yield is 6% *per annum*. If the claim is now expected in 19 years, its present value is

- GAAP:  $800 / 1.05^{19} = 316.59$  (investment yield is frozen at policy inception)
- IFRS 17:  $800 / 1.06^{19} = 264.41$  (discount rate is re-estimated each valuation date)

§11 *Costs that vary with and are primarily related to the acquisition of insurance contracts (acquisition costs) shall be capitalized and charged to expense in proportion to premium revenue recognized. Other costs incurred during the period, such as those relating to investments, general administration, and policy maintenance, shall be charged to expense as incurred.*

Acquisition costs generally occur up-front, when the policy is issued.

- Underwriters' salaries are paid when the policies are written.
- Agents' commissions are paid when the policies are sold; independent agents remit only the premium net of their commissions.

Acquisition costs are of two types:

Some costs vary with and are primarily related to the acquisition of insurance contracts (both new and renewal contracts). The costs may be a percentage of the gross premium (agents' commission), a function of the number of policies issued (printing and mailing costs), or a function of the time spent issuing the policies (salaries for underwriters). These costs are capitalized as an asset (deferred policy acquisition costs = DPAC), and they are charged to expense on the income statement as premium revenue is recognized.

The GAAP matching principle says that revenue and expenses related to the same transactions should be allocated to the same periods. Premiums and deferrable acquisition costs (agents' commissions, salaries for underwriters) relate to the same insurance contracts, so they are allocated to the same periods.

Other costs are fixed, even if they serve to acquire insurance contracts. Renting a sales office, developing a sales web site, or paying for advertising are fixed costs that do not vary with sales volume. They are charged to expense when they occur, not matched to premium revenue.

*Illustration:* An insurer writes a whole life insurance contract with premiums of 100 due each January 1 for 20 years and pays acquisition costs at policy inception of

- 160 for costs that vary with and are primarily related to the acquisition of insurance contracts
- 40 for other costs

At policy inception, the insurer capitalizes a deferred policy acquisition cost (DPAC) asset for 160 and charges 40 to expense. When each premium is due (and recognized on the income statement), the insurer reduces the DPAC by  $160 / 20 = 8$  and charges 8 to expense on the income statement.

The amortization schedule for deferred policy acquisition costs is

- the amount of insurance in force each year, if this amount can be reliably predicted
- the number of contracts outstanding each year, if the insurance in force cannot be reliably predicted

*Illustration:* An insurer writes a one-year medical malpractice policy on October 1, 20X1, for a premium of 100 and pays 20 for agents' commission and underwriters' salaries. The insurer capitalizes a DPAC for 20 when

it writes the policy, charges 5 to expense on the income statement in 20X1, and reduces the DPAC to 15 at December 31.

*Question:* All firms have sales expenses; are acquisition costs different for insurers?

*Answer:* Most firms pay sales expenses when their product or service is sold, so the revenue and expense occur at the same time. Insurers pay the acquisition costs up-front, but the premium revenue is recognized over the policy period, which may extend for the policyholder's lifetime.

### **Premium Revenue Recognition for Short-Duration Contracts**

§13 *Premiums from short-duration contracts ordinarily shall be recognized as revenue over the period of the contract in proportion to the amount of insurance protection provided. For those few types of contracts for which the period of risk differs significantly from the contract period, premiums shall be recognized as revenue over the period of risk in proportion to the amount of insurance protection provided. That generally results in premiums being recognized as revenue evenly over the contract period (or the period of risk, if different), except for those few cases in which the amount of insurance protection declines according to a predetermined schedule.*

A one-year property insurance contract in an area subject to fires and hurricanes recognizes the premium evenly over the contract period, even though fires are more common in hot months and hurricanes occur in the hurricane season (when ocean waters are warm), since the insurance protection is equal each month. A credit life insurance contract whose insurance protection declines according to a pre-set schedule recognizes the premium according to the schedule.

§14 *If premiums are subject to adjustment (for example, retrospectively rated or other experience-rated insurance contracts for which the premium is determined after the period of the contract based on claim experience or reporting-form contracts for which the premium is adjusted after the period of the contract based on the value of insured property) ... the estimated ultimate premium shall be recognized as revenue over the period of the contract. The estimated ultimate premium shall be revised to reflect current experience ...*

Commercial insurance contracts may charge premiums as a percentage of sales or payroll. A liability premium may be 0.5% of sales; a health insurance premium may be 2% of payroll. Sales or payroll are estimated for the coming policy period, and the percentage times the estimate is the premium revenue. The final premium may be revised by a sales audit or a payroll audit after the policy expires to reflect current experience.

*Illustration:* A liability policy is issued on January 1, 20X1, with a premium equal to 0.5% of sales. Premium of 50 is collected up front, and additional premium is collected (or refunded) after an audit on April 1, 20X2.

On December 31, 20X1, the insurer estimates sales as 12,000, so it reports premium revenue of  $12,000 \times 0.5\% = 60$ . The additional premium of  $60 - 50 = 10$  is recognized as revenue on the income statement even if it is not collected from (or billed to) the policyholder.

An audit on April 1, 20X2, shows 20X1 sales of 9,000, so the revised premium is  $9,000 \times 0.5\% = 45$ . The insurer refunds  $50 - 45 = 5$  to the policyholder: the 50 collected minus the 45 earned.

- The premium earned in 20X1 is 60 (based on the sales estimate), not the 50 collected at policy inception.
- The premium earned in 20X2 is  $45 - 60 = 15$ , not  $45 - 50 = 5$ .

The premium of  $45 - 60 = -15$  is accrued on the 20X2 income statement, not the 20X1 income statement. Changes to estimates are accrued when the change occurs, not when the insurance transaction occurred, so the  $45 - 60 = 15$  is 20X2 revenue, not 20X1 revenue. Similarly, changes to claim estimates are accrued when the change occurs, not when the claim occurs.

### **Claim Cost Recognition**

§17 A liability for unpaid claim costs ... including estimates of costs relating to incurred but not reported claims, shall be accrued when insured events occur ...

If an insured event, such as a motor accident, occurs in 20X1 and the insurance claim is reported in 20X2, the liability is posted in 20X1, not 20X2.

*Question:* If the claim is reported in 20X2, the insurer does not know of the insured event in 20X1. Does the insurer retroactively record the liability in its 20X1 financial statements?

*Answer:* At December 31, 20X1, the insurer estimates the liabilities for unreported claims occurring in 20X1. When the claims are reported, the difference between the reported claim and the initial estimate is an expense in 20X2; it is not retroactively reported as a 20X1 expense.

§18 *The liability for unpaid claims shall be based on the estimated ultimate cost of settling the claims (including the effects of inflation and other societal and economic factors), using past experience adjusted for current trends ... Changes in estimates of claim costs resulting from ... differences between estimates and payments for claims shall be recognized in income of the period in which the estimates are changed or payments are made ...*

The liability for claims differs for short duration contracts vs long duration contracts:

- short duration contracts: the liabilities are ultimate costs (nominal values)
- long duration contracts: the liabilities are discounted values

Changes in estimates (or between estimates and payments) are recognized when the change occurs.

*Illustration:* An insurer writes a short duration insurance contract on January 1, 20X1.

- December 31, 20X1, the insurer estimates a claim as 300.
- December 31, 20X2, it re-estimates the claim as 400.
- May 31, 20X3, it pays the claim for 250.

The insurer reports claim expense of

- 20X1: 300
- 20X2:  $400 - 300 = 100$
- 20X3:  $250 - 400 = -150$

§20 *A liability for all costs expected to be incurred in connection with the settlement of unpaid claims (claim adjustment expenses) shall be accrued when the related liability for unpaid claims is accrued. Claim adjustment expenses include costs associated directly with specific claims paid or in the process of settlement, such as legal and adjusters' fees. Claim adjustment expenses also include other costs that cannot be associated with specific claims but are related to claims paid or in the process of settlement, such as internal costs of the claims function.*

Claim adjustment expenses differ from other expenses.

- Claim adjustment expenses are estimated and accrued when the claims occur, even if the claims have not yet been reported. The claim adjustment expense accrues even though the expense has not occurred.
- Other expenses are accrued when the expenses occur.

*Illustration:* An insurer rents a home office. Suppose the claims department expenses in any year are for the claims of the preceding four years (equally weighted).

- Rent expense for 20X5 is accrued in 20X5 for all departments except the claims function.
- The estimated claims department rent expense for 20X5 is accrued in 20X1 – 20X4.



- The 20X5 rent expense for the claims department is for claims occurring in 20X6 – 20X9.

Claims are adjustment expenses may be related to specific claims (legal defense) or general expenses (rent for claims department). The accounting rules are the same for these two types of expenses. Certain statutory accounting disclosures in the United States differ for the two types of expenses, so they are both mentioned in SFAS 60.

*Illustration:* An insurer writes medical malpractice insurance contracts in 20X1. Most claims will be reported in 20X2 and later years, and they will be litigated in court and settled over the next twenty years. The insurer does not know in 20X1 what claims have occurred or what legal defense costs it will accrue over the twenty years, so its actuaries must estimate the claims and claim adjustment expense. These estimates are accrued on the 20X1 financial statements.

### Liability for Future Policy Benefits

§21 *A liability for future policy benefits relating to long-duration contracts ... shall be accrued when premium revenue is recognized. The liability, which represents the present value of future benefits to be paid to or on behalf of policyholders and related expenses less the present value of future net premiums (portion of gross premium required to provide for all benefits and expenses), shall be estimated using methods that include assumptions, such as estimates of expected investment yields, mortality, morbidity, terminations, and expenses, applicable at the time the insurance contracts are made. ... The assumptions shall include provision for the risk of adverse deviation. Original assumptions shall continue to be used in subsequent accounting periods to determine changes in the liability for future policy benefits (often referred to as the "lock-in concept") unless a premium deficiency exists (paragraphs 35-37). Changes in the liability for future policy benefits that result from its periodic estimation for financial reporting purposes shall be recognized in income in the period in which the changes occur.*

GAAP and IFRS have different provisions for risk:

- GAAP adjusts actuarial assumptions for the risk of adverse deviation. The best estimate of the mortality rate may be 0.5%, but the insurer may use 0.6% in its GAAP financial statements. The *provision for the risk of adverse deviation* is implicit in the actuarial assumptions.
- IFRS 17 uses (unbiased) best estimates for actuarial assumptions.
  - The risk adjustment for non-financial risk is an explicit entry, separate from the claims liability.
  - The risk adjustment for financial risk may be an adjustment to the discount rate.

The claims liability for long duration contracts is accrued when the premium revenue is recognized, *not* when the insured events occur.

*Illustration:* An insurer sells a single-premium whole life insurance policy on January 1, 20X1. The expected future life of the policyholder is 30 years. The premium is 50, and the present value of future benefits is 40. A claims liability of 40 is accrued when the premium is due, not when the insured event (the death) occurs.

Original assumptions are *locked in* and not changed unless the new assumptions cause a premium deficiency.

*Illustration:* An insurer sells a single-premium whole life insurance policy on January 1, 20X1. The expected future life of the policyholder is 30 years. The claims liability discount rate is 8% on January 1, 20X1, and it decreases to 6% on January 1, 20X2. The insurer uses a discount rate of 8% in 20X2 for this policy, even though its new policies use the current discount rate of 6%. But if the current 6% discount rate causes a premium deficiency for the 20X1 policy, the current 6% discount rate is used for this policy as well. (Premium deficiencies are explained below.)

IFRS 17 uses current assumptions for the present value of future cash flows. If the discount rate changes in 20X2, the new rate is used even for the 20X1 policies and claims.

## Investment Yields

§22 Interest assumptions used in estimating the liability for future policy benefits shall be based on estimates of investment yields (net of related investment expenses) expected at the time insurance contracts are made. The interest assumption for each block of new insurance contracts ... shall be consistent with ... actual yields, trends in yields, portfolio mix and maturities ...

The interest rate should be market consistent, based on actual market yields, maturities, and trends. The interest rate selected when the insurance contracts are made is used for estimating the liability even for future policy benefits.

*Question:* Why not use current interest rates for the policy liabilities?

*Answer:* Long duration contracts are like bonds: the insurer pays a fixed amount at maturity, like the principal repayment of a bond. When SFAS 60 was issued, bonds were reported at amortized value: the yield to maturity at issue of the bond was used for all future years. Amortized value smooths fluctuations in net worth. If the insurer uses current discount rates to value the policy liabilities,

- its liabilities would decrease and its equity would increase when interest rates rose
- its liabilities would increase and its equity would decrease when interest rates declined.

If bonds are held at amortized value, the accounting mis-match (the different rules for assets vs liabilities) might distort its true net worth. If no economic mis-match exists (assets and liabilities have similar maturities), interest rate movements should cause offsetting changes in assets and liabilities, with small changes in equity. If bond values are fixed but policy liabilities change, accounting mismatch exists and changes in equity may not reflect the true net worth of the firm.

## Acquisition Costs

§28 *Acquisition costs are those costs that vary with and are primarily related to the acquisition of new and renewal insurance contracts. Commissions and other costs (for example, salaries of certain employees involved in the underwriting and policy issue functions, and medical and inspection fees) that are primarily related to insurance contracts issued or renewed during the period in which the costs are incurred shall be considered acquisition costs.*

Acquisition costs include agents' commissions and the salaries of underwriters and other personnel dealing with acquiring insurance contracts.

§29 Acquisition costs shall be capitalized and charged to expense in proportion to premium revenue recognized. To associate acquisition costs with related premium revenue, acquisition costs shall be allocated by groupings of insurance contracts consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts. Unamortized acquisition costs shall be classified as an asset.

Acquisition costs are capitalized as a deferred policy acquisition cost (DPAC) asset when they occur, and they are charged to expense on the income statement as the premium revenue is earned.

For short duration contracts, with policy terms of one year or less, the amortization of acquisition costs relates to the recognition of expense in the year of policy issue vs the next year.

*Illustration:* An insurer writes a one-year insurance contract on October 1, 20X1, and pays 200 for the agent's commission, 100 for the underwriter's salary, and 120 for general expenses.

- The premium revenue is recognized one quarter in 20X1 and three quarters in 20X2.
- The 120 of general expenses are accrued when they occur (in 20X1).
- The  $200 + 100 = 300$  of acquisition expenses are accrued

- $25\% \times 300 = 75$  in 20X1.
- $75\% \times 300 = 225$  in 20X2.

For long duration contracts, with terms of more than one year, the amortization of acquisition costs relates to the recognition of expense by year.

*Illustration:* An insurer writes a 10 year term life insurance policy on October 1, 20X1, and pays 200 for the agent's commission, 100 for the underwriter's salary, and 120 for general expenses.

- The 120 of general expenses is accrued when incurred (in 20X1).
- The 300 of deferrable acquisition expenses are accrued  $10\% \times 300 = 30$  each year for ten years.

SFAS 60 matches deferred policy acquisition costs to premiums. SFAS 97 and SFAS 120, which govern other types of life insurance contracts, match to estimated gross profits or estimated gross margins. This course deals with SFAS 60 only.

*§30 If acquisition costs for short-duration contracts are determined based on a percentage relationship of costs incurred to premiums from contracts issued or renewed for a specified period, the percentage relationship and the period used, once determined, shall be applied to applicable unearned premiums throughout the period of the contracts.*

If acquisition costs are charged to expense when they are incurred, the accounting mechanics are easy: the costs on the ledger all flow through the income statement. Capitalizing and amortising acquisition costs adds complexity. For each policy, one capitalizes the actual underwriting costs, agents' commissions, and policy issue costs and amortizes them over the policy term. Using percentages based on average costs is simpler: one ignores differences by policy and uses averages for capitalizing and amortising the costs.

*Illustration:* Suppose underwriting costs range from 8% to 12% of premium, depending on the policy. The insurer may estimate the average cost (say 10% of premium) for capitalization and amortization.

*§31 Actual acquisition costs for long-duration contracts shall be used in determining acquisition costs to be capitalized as long as gross premiums are sufficient to cover actual costs. However, estimated acquisition costs may be used if the difference is not significant ...*

For long duration contracts, differences in acquisition costs by policy are greater than for short duration contracts. Some policies have rigorous medical underwriting and high agents' commission; other policies have only a written application. Insurers capitalize and amortize the actual acquisition costs by policy. Averages may be used if the totals are not materially distorted.

### *Premium Deficiency*

*§32 A probable loss on insurance contracts exists if there is a premium deficiency relating to short-duration or long-duration contracts. Insurance contracts shall be grouped consistent with the enterprise's manner of acquiring, servicing, and measuring the profitability of its insurance contracts to determine if a premium deficiency exists.*

Premium deficiencies depend on the aggregation of contracts. When they write a policy, insurers rarely know if the policy will generate a profit or a loss. Many insurers use routine underwriting methods that reduce costs but do not evaluate the likely profitability of each policy. Requiring insurers to judge whether each policy is likely to generate a profit or a loss adds costs with no benefit.

GAAP requires insurers to separate their policies into groups, based on the manner of acquiring, servicing, and measuring profitability. The level of aggregation differs among insurers. Suppose an insurer writes motor insurance and expects profits on most policies but losses on young unmarried male drivers.

- To set class relativities, actuaries measure profitability by class: young unmarried male drivers separately from other drivers.
- The insurer sells and services all policyholders by the same employees and methods.

Most insurers do not separate young unmarried male drivers into a separate group for premium deficiencies.

IFRS 17 requires finer groupings, with more emphasis on expected profitability. Insurers must separate their contracts into those that are onerous, those that have little likelihood of becoming onerous, and all others. For the illustration here, insurers would separate young unmarried male drivers into an onerous group and place other drivers into a non-onerous group. ("Onerous" is the IFRS 17 term for unprofitable contracts.)

#### *Premium deficiency for Short-Duration Contracts*

**§33** *A premium deficiency shall be recognized if the sum of expected claim costs and claim adjustment expenses, expected dividends to policyholders, unamortized acquisition costs, and maintenance costs exceeds related unearned premiums.*

The premium deficiency prevents insurers from deferring losses once they are anticipated (even though profits may not be anticipated).

- On profitable blocks of business, expenses are matched to revenue, and profit is not recognized until the insurance services are provided.
- On unprofitable blocks of business, losses (that is, the excess of expenses over revenue) are recognized as soon as they are anticipated.

For short duration contracts, liabilities for expected claim costs and claim adjustment expenses are reported at nominal values, not discounted values. The paragraph on premium deficiency considers the expected costs and unamortized costs, not the carrying values of those costs. Insurers may evaluate the premium deficiency using either nominal values or present values. A footnote to this paragraph adds that the insurer must disclose "whether it considers anticipated investment income in determining if a premium deficiency relating to short-duration contracts exists."

**§34** *A premium deficiency shall first be recognized by charging any unamortized acquisition costs to expense to the extent required to eliminate the deficiency. If the premium deficiency is greater than unamortized acquisition costs, a liability shall be accrued for the excess deficiency.*

For profitable policies, acquisition expenses are capitalized as a DPAC asset when they occur, not reported as an expense on the income statement. If the policy is unprofitable, insurers first report any unamortized acquisition costs as an expense. Once the unamortized acquisition costs are reduced to zero, the remaining loss on the policy is reported as a premium deficiency reserve on the balance sheet and as an expense on the income statement.

*Illustration:* An insurer writes property insurance on July 1, 20X1, with premium of 800 and acquisition costs of 200. The DPAC (deferred policy acquisition cost) is 200 on July 1 and declines to 100 on December 31.

- If expected claims are 550, the insurer has no premium deficiency.
- If expected claims are 650, the insurer has a premium deficiency, since  $650 + 200$  is more than 800.
  - The DPAC is 150 on July 1, and declines to 75 on December 31, 20X1.
- If expected claims are 850, the insurer has a premium deficiency, since  $850 + 200$  is more than 800.
  - The insurer reduces the DPAC to zero, which still leaves a premium deficiency of 50.
  - It posts a premium deficiency reserve of 50 on July 1, which declines to 25 on December 31, 20X1.

Insurers generally believe their business is profitable at policy inception; they recognize future losses as claims occur. The losses on claims that have already occurred (even if not yet reported) is recognized immediately in the income statement and is not a premium deficiency. The premium deficiency is the expected losses on claims that have not yet occurred.

*Illustration:* An insurer writes property insurance on July 1, 20X1, with premium of 800 and acquisition costs of 200. It expects losses of 550: 275 for July–December 20X1 and 275 for January–June 20X2. Actual claims from July through December 20X1 are 425. Income in 20X1 before computing any premium deficiency is

net revenue (earned premium) of 400  
 – amortization of acquisition costs of 100  
 – claim costs of 425  
 = income of  $400 - 100 - 425 = (125)$ .

The premium deficiency depends on the insurer's expected claims for January–June 20X2.

- If the insurer believes the 425 for July–December 20X1 was a random fluctuation and it still expects 275 for January–June 20X2, it makes no further accounting entries.
- If the insurer now expects 375 for January–June 20X2, it reduces the DPAC from 100 to 25, so the 375 is covered by the 400 unearned premium reserve minus the 25 unamortized acquisition costs.
  - The reduction of the DPAC is an expense of  $100 - 25 = 75$  for acquisition costs in the 20X1 income statement.
  - The total 20X1 profit/(loss) is  $-125 - 75 = (200)$ .
- If the insurer now expects 425 for January–June 20X2, it reduces the DPAC from 100 to 0 and sets up a premium deficiency reserve of 25. The 425 expected claims are covered by the 400 unearned premium reserve plus the 25 premium deficiency reserve.
  - The elimination of the DPAC is an expense of 100 for acquisition costs in the 20X1 income statement.
  - The increase in the premium deficiency reserve from 0 to 25 is reported as a debit of 100 for acquisition costs in the 20X1 income statement.
  - The total 20X1 profit/(loss) is  $-125 - 100 - 25 = (250)$ .

A group of insurance contracts has (i) unamortized acquisition costs or (ii) a premium deficiency reserve, but not both. The insurer may have some groups with unamortized acquisition costs and some with premium deficiency reserves.

#### *Premium deficiency for Long-Duration Contracts*

§35 *Original policy benefit assumptions for long-duration contracts ordinarily continue to be used during the periods in which the liability for future policy benefits is accrued ... actual experience with respect to investment yields, mortality, morbidity, terminations, or expenses may indicate that existing contract liabilities, together with the present value of future gross premiums, will not be sufficient (a) to cover the present value of future benefits to be paid to or on behalf of policyholders and settlement and maintenance costs relating to a block of long-duration contracts and (b) to recover unamortized acquisition costs. In those circumstances, a premium deficiency shall be determined as follows:*

Present value of future payments for benefits and related settlement and maintenance costs, determined using revised assumptions based on actual and anticipated experience	\$×
– Present value of future gross premiums, determined using revised assumptions based on actual and anticipated experience	×
= Liability for future policy benefits using revised assumptions	×
– Less the liability for future policy benefits at the valuation date – unamortized acquisition costs	×
= Premium deficiency	\$×

*Illustration:* An insurer has

- liability for future policy benefits at the valuation date (original assumptions) = 500
- unamortized acquisition costs = 150
- present value of future payments for benefits, using revised assumptions = 600
- present value of future gross premiums, using revised assumptions = 200

The premium deficiency reserve =  $(600 - 200) - (500 - 150) = 50$

§36 *A premium deficiency shall be recognized by a charge to income and (a) a reduction of unamortized acquisition costs or (b) an increase in the liability for future policy benefits ...*

A premium deficiency causes two offsetting entries:

- a charge to expense on the income statement (a debit)
- a reduction of unamortized acquisition costs, called the DPAC asset (a credit) or
  - an increase in the liability for future policy benefits (a credit)

The premium deficiency reserve is part of the liability for future policy benefits using revised assumptions. For short duration contracts, the premium deficiency reserve is separate from the unearned premium reserve.