

Session 4: Universal Life

US GAAP for International Life Insurers

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SFAS 97

- Effective 1989
- Applicability
 - Limited-Payment Contracts
 - Universal Life-Type Contracts
 - Investment Contracts



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Universal Life - Definition

- Long duration life insurance or annuity contract with significant mortality risk and:
 - Charges assessed against the policyholder are not fixed and guaranteed, or
 - Amounts credited to the policyholder are not fixed and guaranteed, or
 - Premium amount and timing may be varied without the consent of the insurer



Universal Life - Definition

- Includes
 - Universal life
 - Variable Life / Unit-Linked Life
 - Variable Annuities (if significant mortality risk)
- Does not include
 - Non-guaranteed premium products
 - Traditional participating products
 - Accident & health insurance



Universal-Life Type Contracts - Revenue Recognition

- Amounts received as payments are not reported as revenues.
- Amounts reported as revenues include
 - investment income earned on amounts deposited
 - charges assessed against policyholder, including mortality charges and surrender charges.
- For variable products, fees from separate account are shown as revenue



Universal-Life Type Contracts - Revenue Recognition

- Payments to policyholders that represent a return of policyholder balances are not expenses.
- Amounts reported as expenses include
 - death benefits in excess of account balance,
 - expenses of contract administration,
 - interest accrued to policyholders and
 - amortization of capitalized acquisition costs.



Universal-life Type Contracts -Policy Reserves

- Under SFAS 97 - Basic Reserve = Account Balance = the sum of the following:
 - Premiums received plus
 - Interest credited less
 - Charges assessed against policyholder less
 - Withdrawals
- Surrender charges are not reflected in determining the liability for policy benefits.



SOP 03-1 Valuation of Liabilities

- Accrued account balance equals
 - Deposits net of withdrawals
 - + Credited amounts
 - - Fees and charges
 - + Additional interest
 - +/- Other adjustments
- No reduction for surrender charges or Market Value Adjustments



SOP 03-1 Valuation of Liabilities

- Basic Reserve equals
 - Accrued account balance +
 - Additional liability for death/insurance benefits +
 - Additional liability for annuitization benefits +
 - Additional liability for sales inducements



Universal-life Type Contracts -Policy Reserves

- Total Reserve =
 - Basic Reserve plus
 - Unearned Revenue Liability plus
 - Refundable assessments plus
 - Loss Recognition Reserve

(Note: Refundable assessments and loss recognition reserves are rare in UL contracts)



Unearned Revenue Liability

- Amounts assessed against policyholder for
 - Services to be performed later and
 - As consideration for contract initiation
- Should be recognized in income over the period benefited using same assumptions as amortization of DAC



Universal-Life Type Contracts –DAC Amortization

- Acquisition costs are amortized over the life of a book of contracts at a constant rate based on the present value of future estimated gross profits (EGPs)
- Using the rate of interest that accrues to policyholder balances (Crediting rate).



Estimated Gross Profits (EGPs)

- Estimated gross profit includes projections of the following on a best estimate basis **without** provision for adverse deviation:
 - Mortality margin
 - Expense margin
 - Investment spread
 - Surrender charges
 - +/- other adjustments



DAC Amortization - SFAS 97

- For each period,
EGP = COI charges – benefits in excess of account balances
 - + expense charges – maintenance expenses
 - + investment earnings – interest credited
 - + surrender charges
 - +/- other adjustments such as Δ SOP 03-1 liabilities/assets



Estimated Gross Profits (EGPs)

Items to note:

- Deferrable and non-deferrable acquisition expenses excluded from gross profits
- Overhead expenses excluded from gross profits
- DAC discount rate equals credited rate (option to lock in at issue or float)
- Realized capital gains included in gross profits



DAC Amortization - SFAS 97

- $PV \text{ capitalized expenses} / PV \text{ EGPs} = \text{amortization factor} = k\text{-factor}$
- $k\text{-factor} \times EGP = \text{DAC amortization charges}$
- $DAC_t = (DAC_{t-1} + AE_t) \times (1+i^c) - k \times EGP_t$



DAC Amortization – SFAS 97

- **Amortization assumptions**
 - Best estimate at all durations
 - No provision for adverse deviation
 - Actual experience from issue date to valuation date
- **Calculation methodology**
 - Projection of estimated gross profits
 - Deferred acquisition costs amortized in proportion to profits with interest at credited rate
 - Calculation may be on a cohort basis or seriatim
 - Assumptions are reviewed “regularly”



Universal Life Contracts

- **Effect**
 - Profit emerges in proportion to gross profits plus cumulative catch-up
- **Impact on Income Statement**
 - Margins Replace Premiums
 - Change in Reserve Eliminated
 - Only Benefits in excess of Account Balances
 - Change in DAC is an Additional Item
 - Change in Unearned Revenue may be needed



Universal Life Contracts

- **Impact on Balance Sheet**
 - Benefit Reserve Set Up as a Liability
 - Unearned Revenue Reserve Set Up as a Liability
 - DAC Set Up As Asset
- **Presentation Issues**
 - Premiums are Eliminated
 - Revenues are mortality and expense charges, surrender charges, interest earned
 - Expenses are benefit payments in excess of account balances, interest credited, expenses



Effect of Estimated Gross Profit on Income Statement

- ◆ EGP is used only for calculating DAC
- ◆ EGP affects income indirectly, but it is not part of the income statement
- ◆ EGP includes investment yield rate times account value, whether or not there are related assets
 - ◆ Interest margin = $(i^E - i^C) \times AV$



Amortization Example - UL

Assume DAC of \$200 at the beginning of year 1 and projected EGP of \$100 per year.

<u>Year</u>	<u>Projected EGP</u>	<u>EOY DAC</u>
1	100	160
2	100	120
3	100	80
4	100	40
5	100	0
PV @ 0 %	<u>500</u>	

Amortization Ratio = 200 divided by 500 = 40 %



Amortization Example - UL

Assume that it is now year 3 and that $egp = 0$

<u>Year</u>	<u>Projected EGP</u>	<u>EOY DAC</u>
1	100	160
2	100	120
3	0	?
4	?	
5	?	
PV @ 0 %	<u>?</u>	



Amortization Example - UL

Possibility 1: Suppose it is an interest-related capital loss and we expect the loss to reverse in the future.

<u>Year</u>	<u>Projected EGP</u>	Recalculated <u>DAC</u>	Reported <u>DAC</u>
1	100	160	160
2	100	120	120
3	0	120	120
4	150	60	60
5	150	0	0
PV @ 0 %	<u>500</u>		

Amortization Ratio = 200 divided by 500 = 40 %



Amortization Example - UL

Possibility 2: Suppose the shock came from a one-time mortality hit: and we may expect the same future profit as before.

<u>Year</u>	<u>Projected EGP</u>	Recalculated <u>DAC</u>	Reported <u>DAC</u>
1	100	150	160
2	100	100	120
3	0	100	100
4	100	50	50
5	100	0	0
PV @ 0 %	<u>400</u>		

Amortization Ratio = 200 divided by 400 = 50 %



Amortization Example - UL

Possibility 3: Suppose the shock came from a problem that is expected to recur. Assume that we expect future profit to be cut in half.

<u>Year</u>	<u>Projected EGP</u>	Recalculated <u>DAC</u>	Reported <u>DAC</u>
1	100	133.3	160
2	100	66.7	120
3	0	66.7	66.7
4	50	33.3	33.3
5	50	0	0
PV @ 0 %	<u>300</u>		

Amortization Ratio = 200 divided by 300 = 66.7 %



DAC Recoverability/Loss Recognition

- Recoverability Must be Demonstrated Before Expenses Can Be Deferred
- Regular Demonstration that Future Profits Will Amortize DAC
 - Gross Premium Valuation
 - Current Best-Estimate Assumptions Including Discount Rate
- VOBA must be Recoverable
- Block of Business Basis



Rules: Recoverability/Loss Recognition

- Rules
 - Write Down DAC First
 - If DAC Written to Zero and Still in Loss Position, Increase Reserve (Not Investment Contracts)



Amortization Example - UL

This time, the first year is normal,
but a big problem arises in year 2.

<u>Year</u>	<u>Projected EGP</u>	Recalculated <u>DAC</u>	Reported <u>DAC</u>
1	100	80	160
2	20	60	60
3	20	40	40
4	20	20	20
5	20	0	0
PV @ 0 %	180		

Amortization Ratio = 200 divided by 180 > 100 %
DAC must be written down



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Any Questions?



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