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Variable Annuities

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GAAP for Variable and Fixed Annuities

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Agenda

- Introduction to FAS 133
- Variable Annuity Topics
  - Embedded derivatives in variable annuities
    - Identification
    - Accounting ramifications
  - Accounting for various features under SOP 03-1
  - Summary of accounting for different benefit types
  - DAC topics
- Fixed Annuity Topics
  - FAS 133 for EIAs

Introduction to FAS 133

The Ground Rules

- All derivatives must be recognized on balance sheet at fair value unless qualifies for a scope exception
- The offset is either to current earnings or to other comprehensive income
- Must meet specific criteria to elect hedge accounting

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Why is FAS133 so Complex?

- Derivatives are complex
- “Cover all bases” approach in defining “derivative”
- Accommodate hedge accounting to deal with anomalies caused by mixed-attribute model

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FAS 133: The Big Picture

- In summary:
  - Broadly defines a derivative
  - Introduces concept of embedded derivatives
  - All derivatives at fair value on the balance sheet (previously off balance sheet)
  - Default accounting – MTM in earnings
  - Limited hedge accounting permitted

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FASB's Definition of a Derivative

Any contract with ALL of the following:

1. Financial instrument or contract
   - Underlying
   - Notional amount or payment provision
2. No (or smaller) investment at inception
3. Requires or permits net settlement or de facto net settlement

FAS 149 amended – less than 90% of notional

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Definition of Derivative

Examples of Notionals and Underlyings:

Derivative	Underlying	Notional
Stock option	Stock price	Number of shares
Currency forward	Exchange rate	Amount of currency
Commodity future	Commodity price	Number of commodity units
Interest rate swap	Interest rate index	Dollar amount
Purchase order computers	Price of computers	Number of computers

FAS 149 – include occurrence / nonoccurrence of specified events

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Net Settlement

1. Neither party must deliver the underlying asset and the contract settles on a net basis
   - ➢ Net cash or share settlement
2. One party must deliver the underlying asset, but
   - there is a mechanism that facilitates net settlement (e.g. exchange, assignment)

     – **or** –
   - the asset is readily convertible to cash or is itself a derivative (e.g. publicly traded securities would be readily convertible to cash)

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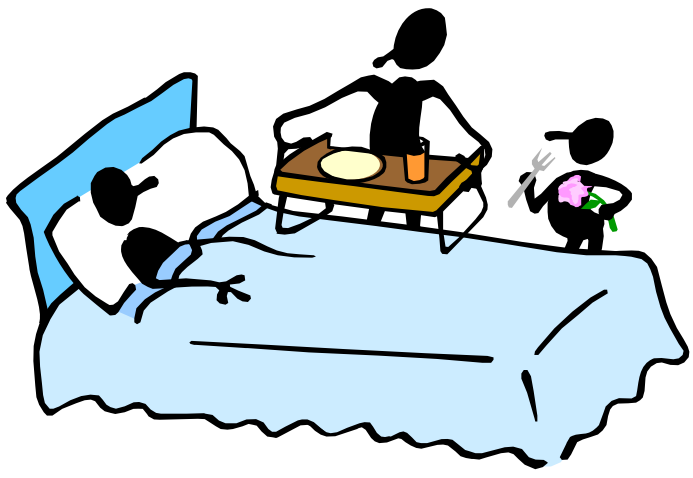
Identifying Embedded Derivatives



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What Are Embedded Derivatives?

- Many contracts do not meet the definition of a derivative, but may contain "embedded derivatives"
  - Implicit or explicit terms that affect some or all of the cash flows or the value of other exchanges, in a manner similar to a derivative
  - If certain criteria are met, separate such a ***Composite Instrument*** into "host contract" and "embedded derivative"

FASB – can't hide a derivative by incorporating into another instrument

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Key Terminology

- Found in non-derivative contracts ("**Host**")
- **Host** contract + **embedded** derivative = **composite** contract
- Annuity + equity option = equity-linked annuity

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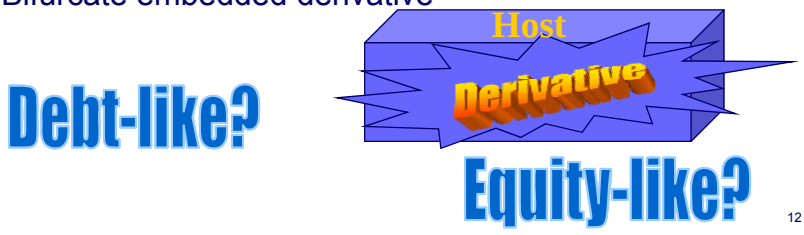
Composite Instruments

- Convertible debt
  - Generally bifurcate embedded derivative
- Calls and puts on equity instruments
  - Bifurcate embedded derivative
- Equity-indexed note
  - Bifurcate embedded derivative



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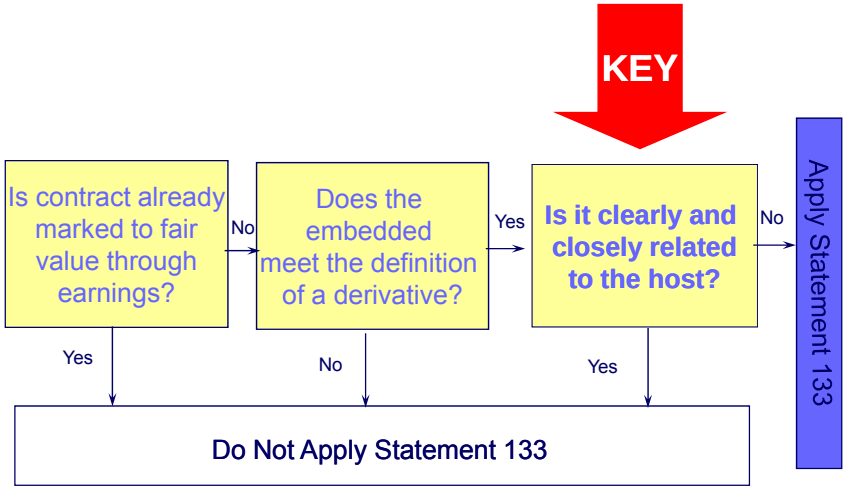
Embedded Derivatives Decision Tree



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What is Clearly and Closely Related?

- Clearly and closely related refers to:
  - Economic characteristics
  - Risks
  - *Defined mostly by examples* in FAS 133
- Factors to consider
  - Type of host
  - Underlying

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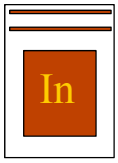
Life Insurance and Annuities

> **Excluded from FAS 133:**

- Traditional whole-life contracts (FAS 60)
- Traditional participating contracts (FAS 120/SOP 95-1)
- Traditional universal-life contracts (FAS 97)



> **Generally Subject to FAS 133 (depends on facts & circumstances):**

- Deferred variable annuity with a minimum guaranteed investment return
- Equity-indexed deferred annuity and life insurance
- Synthetic GICs
- GMAB/WB
- GMIB, if net settled
- Certain reinsurance agreements

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Identifying Embedded Derivatives in Variable Annuities

Separate Account Variable Annuities

- Traditional (US version of product)
  - Separate account "(SA)" assets legally isolated from general account
    - Policyholder not subject to insurance company's risk of default
  - SA assets' performance accrued 100% to policyholder
    - Policyholder subject to investment risk (not shared)
  - Redeemable at any time (subject to surrender charges)
  - FAS 133 conclusion:
    - 100% beneficial interests in assets
    - No embedded derivatives

Separate Account Variable Annuities

- Non-traditional features
  - Most features are not clearly and closely related, because they result in sharing of investment risk
  - However, many such features do not meet the definition of derivative

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Guaranteed Minimum Death Benefits

- Host contract
  - Annuity
- Embedded derivative
  - Option
- Clearly and closely related?
  - No!
  - Embedded derivative scoped out as insurance

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Guaranteed Minimum Accumulation Benefits

- Separate account A issues variable annuity for $1 million.
- Separate account guarantees a minimum account value of $1 million at end of guarantee period.
- If policyholder terminates before end of accumulation period, the policyholder will receive the account value less surrender charges.

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Guaranteed Minimum Accumulation Benefits

- Host contract
  - Annuity
- Embedded derivative
  - Option
- Clearly and closely related?
  - No!
  - Sharing of investment risk

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Guaranteed Minimum Withdrawal Benefits

- Separate account A issues variable annuity for $1 million.
- Variable annuity contains a GMWB.
- GMWB guarantees $1 million value through fixed payouts that do not exceed $70,000 per year. (This is equivalent to a guarantee of about 14 years.)

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Guaranteed Minimum Withdrawal Benefits

- Host contract
  - Annuity
- Embedded derivative
  - Option
- Clearly and closely related?
  - No!
  - Sharing of investment risk

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GMWB for Life

- Separate account A issues variable annuity for $1 million.
- Variable annuity contains a GMWB for Life.
- GMWB guarantees $1 million value through fixed payouts that commence at age 65 and do not exceed $5,000 per year, payable for life.

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GMWB for Life (for Life Component)

- Host contract
  - Annuity
- Embedded derivative
  - Option
- Clearly and closely related?
  - No!
  - Sharing of investment risk
  - View A - Life contingent portion scoped out as insurance
  - View B – Conversion of contract to life annuity when account value is zero constitutes a net settlement of derivative; therefore, not scoped out.

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Deferred Variable Annuity w/ Payment Alternatives

- Examples:
  - Guarantee minimum interest rate during accumulation period that would be used in computing periodic annuity payments
  - Guarantee minimum account value if annuitize
  - Guarantee minimum monthly annuity payments
- FAS 133 conclusions:
  - During accumulation period, not derivatives because cannot net settle

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Accounting for Embedded Derivatives

If Not Clearly & Closely Related

- Separate:
  - Host contract - apply applicable GAAP
  - Embedded derivative - apply FAS 133
  - Use the with and without approach at inception
- With and without approach:
  - Initial value of host contract = composite's initial value minus FV of embedded derivative

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Embedded Derivative Instruments

If all criteria are met and the embedded derivative can be reliably identified and measured, bifurcate the composite instrument:

Derivative	→	Apply FAS 133 – fair value
Host	→	Apply applicable GAAP for similar contracts

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Can't Bifurcate?

If the embedded derivative cannot be reliably measured:

- Account for entire contract at fair value through earnings
- Composite may not be used as a hedging instrument
- Should be rare

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What is "Fair Value"?

- FAS 133 indicates use of "fair value"
- FAS 157 establishes definition
- FAS 157 will be discussed in "Fair Value" presentation

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FAS 133 Valuation of GMWB
Common Practices Before FAS 157

- Risk neutral stochastic models
- Liability = expected (PV benefit + PV risk margins - PV fees)
- Pre-157 common practices
  - Discount using risk-free rates or swap rates
  - Update assumptions, in force, stochastic model parameters
  - Assume "risk margin" at issue such that FV of embedded derivative was zero; not many insurers unlocked risk margins in practice (many used "attributed fee" approach)
  - No direct recognition for non-performance risk

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FAS 133 Valuation of GMWB
Valuation Considerations

- Modeling
  - Need relatively granular model in order to minimize offsetting effect of different levels of in-the-moneyness
  - Careful consideration should be given to the interplay of various guarantees
  - Number of scenarios must be sufficient
- Assumptions
  - Economic – fund growth, volatility
  - Non-economic - mortality, persistency (including dynamic lapse), benefit utilization (varies depending on in-the-moneyness); "static" assumptions generally consistent with DAC assumptions
- Changes in value of embedded derivative should flow through EGPs (along with earnings on assets backing embedded derivatives)
- Importance of controls – model risk substantial, as small changes to models can have a large impact

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Application of SOP 03-1 to Variable Annuities

Separate Account Considerations
Separate Account Criteria

- "The portion of separate account assets representing contract holder funds should be measured at fair value and reported in the insurance enterprise's financial statements as a summary total, with an equivalent summary total for related liabilities"
- Must meet four criteria in ¶ 11
  - Separate Account legally recognized
  - Separate Account assets legally insulated from General Account liabilities
  - Allocations of Separate Account funds directed by the contract holder
  - Investment performance passed through to the contract holder (net of fees and assessments)

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Separate Account Considerations
Accounting Implications

- Some VA-like products (e.g., MVAs, UK Unit-linked) are not eligible for Separate Account treatment
- Reserves for minimum guarantees are held in general account
- Insurer seed money is reclassified as General Account asset
- Assets transferred between General Account and Separate Account may create gains or losses

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Valuation of Liabilities
Determining Significance of Mortality / Morbidity Risk

- Contracts classified either as “Universal Life type” or “Investment” contracts; no additional liability allowed for investment contracts
- Significance determined at contract inception (other than transition)
- Compare PV of excess benefit payments to PV of contract holder assessments
- In performing the analysis, consider both frequency and severity under a full range of scenarios

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Valuation of Liabilities
Additional Reserves for Mortality / Morbidity Risk

- Requires a liability in addition to the account value for "Universal Life type" contracts when "amounts assessed for the insurance benefits result in profits followed by losses from the insurance benefit function"
- "Rebuttable presumption" of significant risk where benefit varies significantly with capital market volatility
- Excludes benefits already fair-valued under FAS 133
- Common variable annuity benefits requiring additional GAAP liability are GMDB and components of GMWBs not already fair-valued under FAS 133

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Valuation of Liabilities
Additional Reserves for Mortality / Morbidity Risk

- Additional mortality reserve equals
  - Current benefit ratio × cumulative assessments
  - Less cumulative excess payments and related expenses
  - Plus accreted interest
- Benefit ratio (determined over the life of the contract) equals

$$\frac{\text{PV of expected excess insurance payments}}{\text{PV of total expected assessments}}$$

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Valuation of Liabilities
Additional Reserves for Mortality / Morbidity Risk

- Additional reserves never less than zero
- Assumptions should be consistent with DAC
- Use historic experience from issue to valuation date, and expected experience thereafter
- Expected experience should be based on a range of possible scenarios
- Estimates regularly re-evaluated for actual experience
- Changes to the additional liability reported as a charge or credit to benefit expense – a type of dynamic unlocking
- EGPs should be adjusted to include change in mortality liability, therefore DAC amortization is affected

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Valuation of Liabilities
Reserves for Annuitization Features (e.g., GMIB)

- Only contract features not valued under FAS 133 are considered
- PV of expected annuitization payments are compared to expected account balance at an expected annuitization date; if positive – establish additional liability

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Valuation of Liabilities – Reserves for Annuitization Features

- Additional annuitization liability equals
  - Current benefit ratio × cumulative assessments
  - Less cumulative excess payments and related expenses
  - Plus accreted interest
- Benefit ratio equals

$$\frac{\text{PV of expected annuitization payments less expected AV}}{\text{PV of total expected assessments during accumulation phase}}$$

- Additional annuitization liability is never less than zero

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Valuation of Liabilities Reserves for Annuitization Features

- Expected experience based on a range of possible scenarios
- Expected utilization of benefit is a key assumption
- Estimates regularly re-evaluated for actual experience
  - Changes to the additional liability reported as a charge or credit to benefit expense – a type of dynamic unlocking
  - EGPs should be adjusted to include change in annuitization liability; therefore, DAC amortization is affected
- Excess annuitization considers the PV of the annuity purchased, not the value available to purchase an annuity

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Summary of Accounting Models for Different Benefit Types

Types of Living and Death Benefits

Benefit	Guaranteed Minimum Accumulation Benefit (GMAB)	Guaranteed Minimum Withdrawal Benefit (GMWB)	Guaranteed Minimum Death Benefit	Guaranteed Minimum Income Benefit (GMIB)
Description	After specified period, account value set to the greater of: the current AV or the GMAB.	Guarantees specified annual withdrawal benefit that may be redeemed over a specified period of time (sometimes life) or is subject to a specified maximum lifetime amount.	Guarantees a death benefit	Guarantees a specified income stream that may be redeemed over a specified period of time.
Use	Pre-Retirement Protection of Principal	Retirement Income protection	Death Benefit protection	Retirement Income protection
Variations on Guaranteed Amount	Initial Premium + Interest	Initial Premium, maximum annual withdrawal % of premium, step-ups, resets	Initial Premium + Interest, rollups, ratchets	Initial Premium + Interest; guaranteed annuitization rates
Possible Caps/Floors on Benefits	Cap on overall benefit level Limits on fund mix Benefit waiting period	Cap on overall benefit level, limits on fund mix, benefit waiting period, frequency of reset, penalties for early withdrawals, ability to increase fee	Cap on overall benefit level, limits on fund mix, partial withdrawal impact on benefit differs	Cap on overall benefit level, limits on fund mix, benefit waiting period
Typical Accounting Model	FAS 133	FAS 133 and / or SOP 03-1, depending upon nuances of design	SOP 03-1	SOP 03-1; FAS 133 if net settlement is an option

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Variable Annuity DAC Topics

Background
DAC Unlocking

- FAS 97
  - Updating historical information to actuals (true up)
  - Reevaluation of prospective EGPs (prospective unlocking)
- Actual and projected EGPs can vary significantly for products with capital markets volatility
- Issue is how to derive future separate account growth assumption in context of FAS 97 “best estimate” requirements

Background
DAC Unlocking

- FAS 97 requirement is to revise estimates when experience indicates EGPs should be revised
- True Up: Replace current period projected EGPs with actual gross profits each valuation period
  - K-factor recalculated by substituting original projected EGPs for the period with actual profits.
  - Higher than expected actual gross profits result in a negative true up (i.e., larger DAC amortization for the period)
- Prospective unlocking: Update current in force data and, to the extent indicated by experience/market data, update prospective assumptions
  - K-factor recalculated by substituting original projected EGPs for future periods with revised projections.
  - Decreased future EGPs results in a negative unlocking (i.e., "catch-up" adjustment to increase cumulative DAC amortization)

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Overview of DAC Methods in Practice

- No change in future separate account growth assumptions
  - True up and updating of prospective assumptions and EGPs (and therefore DAC) are performed regularly
  - Company must defend future growth assumption as "best estimate"

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Overview of DAC Methods in Practice

- Mean reversion
  - True up is performed, but prospective EGPs assume a return to original projected account value within x years
  - "Back into" mean reversion return such that it produces the originally projected account value (generally without regard to lapse) in x years
  - Typically includes cap and floor on mean return rate, if breached may return to cap/floor or mean
  - Company still must defend resulting assumption as "best estimate"
- Stochastic (rare)
  - True up is performed, but prospective equity growth assumptions are not changed until a predefined threshold of stochastic results is breached
  - Stochastic test usually PV future EGPs
  - Threshold typically based on a confidence interval
  - Note - Company must defend resulting assumption as "best estimate"; most difficult if threshold is confidence interval is not narrow

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Examples

- Deferred Annuity with the following baseline assumptions:
  - Initial deposit: $100,000
  - Acquisition expenses: $5,000
  - Separate account return: 10.0%
  - M&E fees: 2.0%
  - Expense loads: 2.0% of account value
  - Maintenance expenses: 2.0% of account value
  - Lapse rate: 2.0% all years
  - Projection period: 6 years
- Market shock scenarios:
  - 18% drop on last day of 2006, still within boundary*
  - 28% drop on last day of 2006, outside boundary*

**** Boundary is either (a) rate cap for mean reversion, or (b) corridor for stochastic***

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Examples

- No Change in Separate Account Growth Assumption
- Mean Reversion
- Stochastic

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Example
No Change in SA Growth Assumption

Original Projection

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	107,495	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
DAC Amortization			1,170	1,213	1,258	1,304	1,352

Actual Through 2006, Annual Unlocking

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	79,626	82,556	85,595	88,744
EGPs	7,273		2,000	2,074	1,593	1,651	1,712
Amortization Ratio (k)	0.68752						
Revised DAC Balance EOP		5,000	4,025	2,921	2,060	1,090	-
Revised DAC Amortization			1,375	1,426	1,095	1,135	1,177
Reported DAC Balance		5,000	4,230	2,921	2,060	1,090	-

Actual market return of -18% in 2006 results in significant reduction in EGPs and accelerated DAC amortization ("catch up") in 2006

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Example
Mean Reversion

Original Projection

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	107,495	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
DAC Amortization			1,170	1,213	1,258	1,304	1,352

Actual Through 2006, 3 Year Mean Reversion

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	79,626	91,242	104,553	119,805
EGPs	7,658		2,000	2,074	1,593	1,825	2,091
Amortization Ratio (k)	0.65289						
Revised DAC Balance EOP		5,000	4,094	3,068	2,274	1,264	-
Revised DAC Amortization			1,306	1,354	1,040	1,191	1,365
Reported DAC Balance		5,000	4,230	3,068	2,274	1,264	-

AV drops 18% at the end of 2006, so solved for prospective separate account return assumption (21.36%) that results in projected account balance equal to original estimate in three years. (For simplicity / illustrative purposes, example shows mean reversion after lapse taken into account.)

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Example
Mean Reversion

Original Projection

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	107,495	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
DAC Amortization			1,170	1,213	1,258	1,304	1,352

Actual Through 2006, 3 Year Mean Reversion (pierce cap)

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	69,673	80,263	92,463	106,518
EGPs	7,174		2,000	2,074	1,393	1,605	1,849
Amortization Ratio (k)	0.69693						
Revised DAC Balance EOP		5,000	4,006	2,881	2,141	1,193	-
Revised DAC Amortization			1,394	1,445	971	1,119	1,289
Reported DAC Balance		5,000	4,230	2,881	2,141	1,193	-

AV drops 28% at the end of 2006, requires mean reversion rate in excess of 22% threshold, therefore 22% return assumed over next three years (alternative approach would be to return to the mean assumption of 10%)

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Example
Stochastic Approach

Original Projection

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	107,495	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
DAC Amortization			1,170	1,213	1,258	1,304	1,352

Actual Through 2006, Stochastic (within corridor)

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	79,626	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
Revised DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
Revised DAC Amortization			1,170	1,213	1,258	1,304	1,352
Reported DAC Balance		5,000	4,230	3,356	2,366	1,252	-

For first stochastic example, AV drops 18% at the end of 2006 – corridor is not breached so return to initial projection immediately

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Example
Stochastic Approach

Original Projection

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	107,495	111,451	115,553	119,805
EGPs	8,548		2,000	2,074	2,150	2,229	2,311
Amortization Ratio (k)	0.58496						
DAC Balance EOP		5,000	4,230	3,356	2,366	1,252	-
DAC Amortization			1,170	1,213	1,258	1,304	1,352

Actual Through 2006, Stochastic (outside corridor)

	PV	12/31/2004	12/31/2005	12/31/2006	12/31/2007	12/31/2008	12/31/2009
Account Value EOP		100,000	103,680	69,673	72,237	74,895	77,651
EGPs	6,817		2,000	2,074	1,393	1,445	1,498
Amortization Ratio (k)	0.73344						
Revised DAC Balance EOP		5,000	3,933	2,727	1,923	1,017	-
Revised DAC Amortization			1,467	1,521	1,022	1,060	1,099
Reported DAC Balance		5,000	4,230	2,727	1,923	1,017	-

AV drops 28% at the end of 2006 so corridor is breached and projections are unlocked back to the original assumption of 10%

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Comparison of Methods

Method	Observations
No change in separate account growth assumption	▸Relatively easy calculation ▸Relatively easy to justify as “best estimate” ▸Most short-term volatility when actual separate account performance differs from expected performance
Mean reversion	▸ Relatively easy calculation ▸ Reduces short term volatility versus “no change” method ▸Occasional large unlocking, when formula produces “best estimate” company is not comfortable with
Stochastic	▸Significantly decreases short term volatility, unless corridor is breached ▸Valuation methodology consistent with those used for GM*Bs ▸Complex calculation ▸Occasional very large unlocking when corridor is breached

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FAS 133 for EIAs

EIAs under FAS 133

- Bifurcate equity component from host contract
- Equity component valuation
  - Black scholes
  - Full stochastic valuation
  - Option budget method
- Host equals total AV less ED at issue
- Future valuation of host based on accrual at "solved for" rate to reach maturity value

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ED Valuation Methods

- Black Scholes
  - Works well for *current* option component valuation
  - Simple calculation
  - Cannot be used directly to value future option components in more complex contracts
- Full stochastic analysis
  - All insurance cash flows projected over a range of risk neutral stochastic scenarios
  - At each future option component purchase date, Black Scholes valuation can be used to value new option components within stochastic projection
  - Complex

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ED Valuation Methods

- Option Budget Method
  - Simpler than stochastic, but allows for valuation of future option components
  - Commonly used industry method
  - Assumes constant "budget" for purchase of future option components
  - Constant budget (% of AV) used to determine future account additions
  - Expected payments to policyholders in excess of guarantee valued using risk free rates

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EIA Valuation Example

- Initial deposit of $100,000
- Guaranteed return of 3% on 90% of initial deposit
- 10 year contract with annual reset
- No surrender charges
- Risk free rate at 3%, plus 1% credit spread*
- Option budget calculated at 4.5% based on stochastic analysis

* Credit adjustment added based on requirements of FAS 157, which will be discussed in detail in a later presentation

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EIA Valuation Example

Year	AV	GMSV	Guar AV	Lapse	Persist	AV paid on lapse	GV paid on lapse	Benefits (Excess)	PV Excess
	100,000	90,000			1				
1	104,635	92,700	100,000	1%	0.990	1,046	1,000	46	45
2	109,485	95,481	100,000	2%	0.970	2,168	1,980	188	174
3	114,559	98,345	100,000	3%	0.941	3,334	2,911	424	377
4	119,869	101,296	101,296	4%	0.903	4,512	3,813	699	598
5	125,425	104,335	104,335	5%	0.858	5,666	4,713	953	783
6	131,239	107,465	107,465	6%	0.807	6,758	5,534	1,224	968
7	137,322	110,689	110,689	7%	0.750	7,755	6,251	1,504	1,143
8	143,686	114,009	114,009	8%	0.690	8,625	6,843	1,781	1,302
9	150,346	117,430	117,430	9%	0.628	9,340	7,295	2,045	1,437
10	157,315	120,952	120,952	100%	0.000	98,818	75,977	22,841	15,431
						148,024	116,318	31,706	22,255

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EIA Valuation Example

- Resulting initial ED: $22,255
- Resulting host contract: $77,745
- Host contract therefore accreted at 4.52% (guaranteed maturity value of $120,952/$77,356)^ (1/10)
- At future durations, host contract based on accretion at 4.52% and option value based on revaluation at current market conditions

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