



SOCIETY OF ACTUARIES

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Session 11: Embedded Derivatives – SFAS 133

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Session 11: Derivatives SFAS 133



The Ground Rules

- All derivatives must be recognized on balance sheet at fair value
- Change in fair value is either recorded through current earnings or other comprehensive income
- Must meet specific criteria to use hedge accounting



FAS 133: The Big Picture

- In summary:
 - Broadly defines a derivative
 - Introduces embedded derivatives
 - All derivatives at fair value on the balance sheet
 - Default accounting – mark-to-market in earnings
 - Limited hedge accounting permitted



Derivatives – Common and not so common

Common

- Options (caps/floors)
- Forwards
- Swaps

Not so common

- Certain reinsurance contracts
- Embedded features (convertible bonds, equity-linked notes, embeddeds in leases, insurance, other agreements)
- Minimum guarantees



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



Examples of Notionals and Underlyings:

<u>Derivative</u>	<u>Underlying</u>	<u>Notional</u>
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



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)



What is an Embedded Derivative?

SFAS 133 paragraph 12

“Contracts that do not in their entirety meet the definition of a derivative instrument such as insurance policies may contain embedded derivative instruments (ED) that affect some or all the cash flows or the value of other exchanges required by the contracts in a manner similar to a derivative instrument.”



What is an Embedded Derivative?

An embedded derivative instrument (ED) shall be separated from the host contract and accounted for as a derivative instrument pursuant to SFAS 133 if it satisfies the following conditions:

- (a) ED is not clearly and closely related to the host
- (b) The hybrid contract is not re-measured at fair value
- (c) A separate instrument with the same terms of the ED would be a derivative instrument subject to the SFAS 133 requirement



Embedded Derivatives Key Terminology

- Found in non-derivative contracts (“**Host**”)
- **Host** contract + **embedded** derivative = **hybrid** contract
- Annuity + equity option = equity-linked annuity



What is Clearly and Closely Related?



- Described primarily by examples in SFAS 133
- Consideration of economic risks and characteristics of the host contract and the embedded feature:
 - Equity features *are* clearly and closely related to Equity host (conversion option in preferred stock)
 - Debt features *are* clearly and closely related to Debt host (interest rate adjustment in debt)
 - Commodity or Equity features *are not* clearly and closely related to Debt host (convertible debt)
- Often will be subjective/judgmental



Insurance Contract Exclusion

- SFAS 133 paragraph 10(c)
- An insurance contract is not subject to SFAS 133 if it entitles the holder (a) to be compensated only if, as a result of an identifiable insurable event (b) incurs a liability or (c) there is an adverse change in the value of a specific asset or liability for which the holder is at risk
- Examples:
 - Traditional life insurance contracts
 - Traditional property and casualty contracts



Products Generally Not Affected

- Variable Annuity GMDB (insurance exclusion)
- Variable Annuity GMIB (not settled in cash)
- Market value adjustment annuity (clear and closely related to host contract)
- Fixed annuities with crediting rates tied to an external interest index (clearly and closely related to host contract)
- Fixed annuities with crediting rates tied to an external cost of living adjustment index (clearly and closely related to host contract)



Affected Insurance Products

- Equity Indexed Annuities (EIA)
- Equity indexed universal life (EIUL)
- Variable annuity with GMWB and GMAB
- Reinsurance of VA GMIB where assuming company settles with the ceding company in cash at annuitization
- Modified Coinsurance treaties



Host Contract and Embedded Derivative

- SFAS 133 does not provide clear guidance on how to bifurcate a hybrid contract into a host contract and an embedded derivative instrument
- DIG Issue B6 - Record the ED at fair value and determine the initial carrying value of the host contract as the difference between the basis of the hybrid contract and the fair value of the ED
- DIG Issue B15 – All embedded derivatives within a hybrid contract must be bundled together as a single, compound ED that could be bifurcated and accounted for separately



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