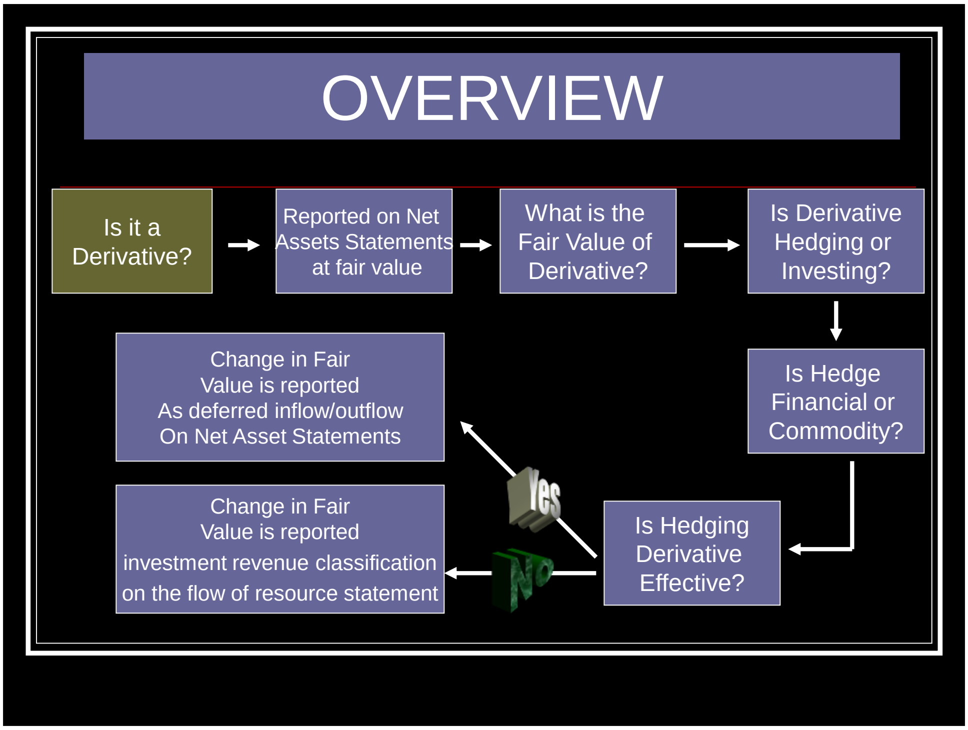
GASB 53

Accounting and Financial Reporting for Derivative Instruments – The Basics


OVERVIEW
Is it a Derivative?
Reported on Net Assets Statements at fair value
What is the Fair Value of Derivative?
Is Derivative Hedging or Investing?
Is Hedge Financial or Commodity?
Is Hedging Derivative Effective?
Yes
No
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Change in Fair Value is reported investment revenue classification on the flow of resource statement

Definition of a Derivative
(must have all three)

1. Settlement Factors
   - 1 or more reference rates; and
   - 1 or more notional amounts
2. Leverage – no initial net investment or smaller than would be required for other types of contracts
3. Net Settlement – Terms require or permit net settlement

SIFMA – Securities Industry and Financial Markets Association – Index sponsored by the Securities Industry and Financial Markets Association of seven-say high-grade tax-exempt variable-rate demand obligations, formerly known as the Bond Market Association swap index

BMA – Bond Market Association swap index

Leverage – A swap with a notional value of $100M is entered into with no initial investment.

GASB 53 – Exclusions

- Derivative instruments that are normal purchases and normal sales contracts
- Certain insurance contracts
- Financial guarantee contracts
- Certain non exchange traded contracts
- Loan commitments'

Certain purchase contracts (gas, electricity, oil) have net settlement features and unit has option to take position of commodity or cash value of contract. These are excluded if it is probable that government will take delivery of commodity

Insurance contracts that meet definition of Statement 10 are excluded – contracts not in Statement 10 are included in GASB 53 –

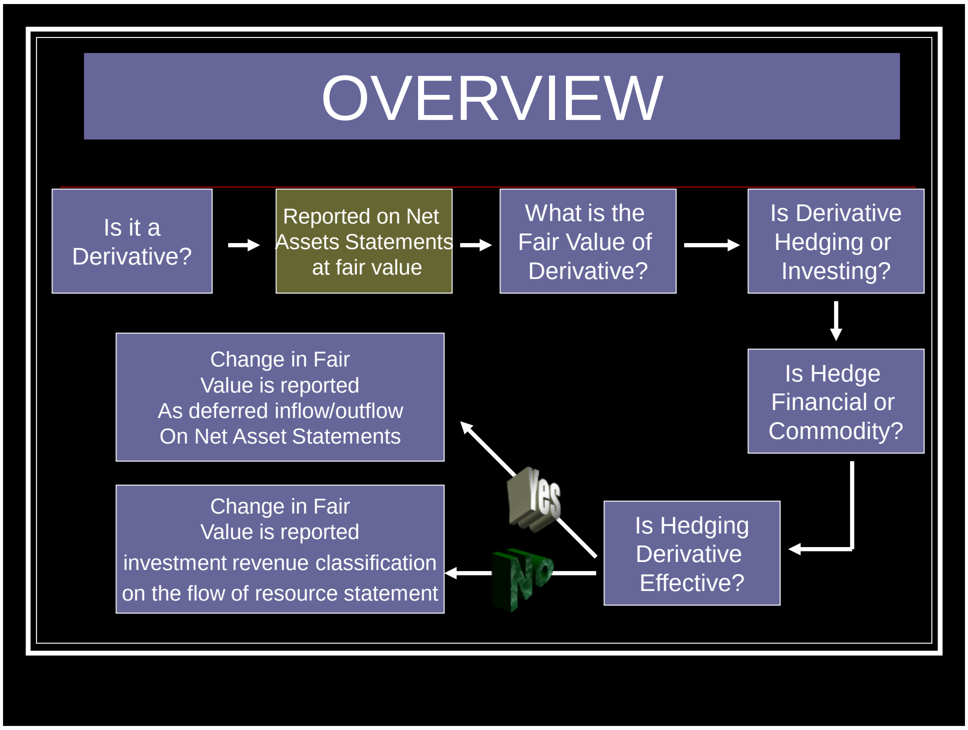
Financial Guarantee contract – specified failure to pay contracts are excluded; however, contracts for payments due to changes in reference rate or payments due to credit rating of debtor falling below a particular level are in the scope of GASB 53

If contract is exchange traded and reference rate is based on one of the following

1. Climatic, geological, or other physical variables
2. Price or value of a nonfinancial asset that can't be readily convertible to cash

Example – agree to buy fleet of cars and contact has liquidated damages as a percentage of vehicles. Contract meets definition of derivative , it is not subject to scope as vehicles are considered non-financial asset

Loan Commitment – example loan commitments to first-time hour buyers for mortgage loans, that may meet the definition of a derivative instrument but not included in scope.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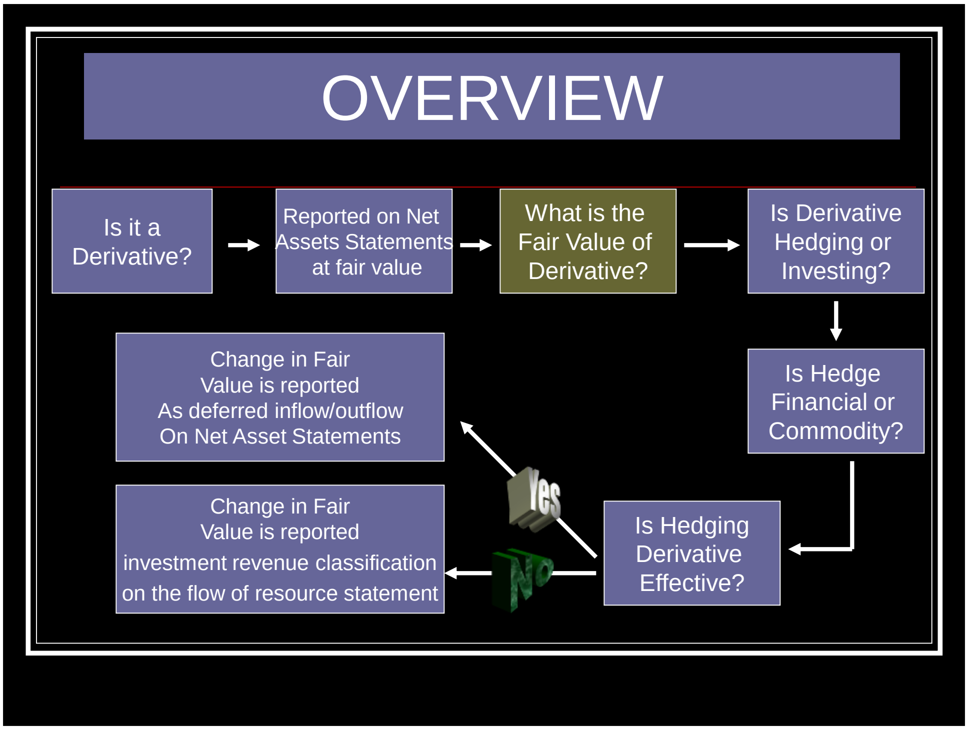
Net Asset Presentation

- All Derivatives are reported on Government-wide, proprietary and fiduciary net assets statements at fair value – They are not reported in governmental funds.
- Exception is that Synthetic Guaranteed Investment Contracts (SGICs) are recorded at contract value

Only SGIC GASB talks about are with 457 plans were employees can enroll in guaranteed investment contracts. Most units in NC have third party administrators running their plans.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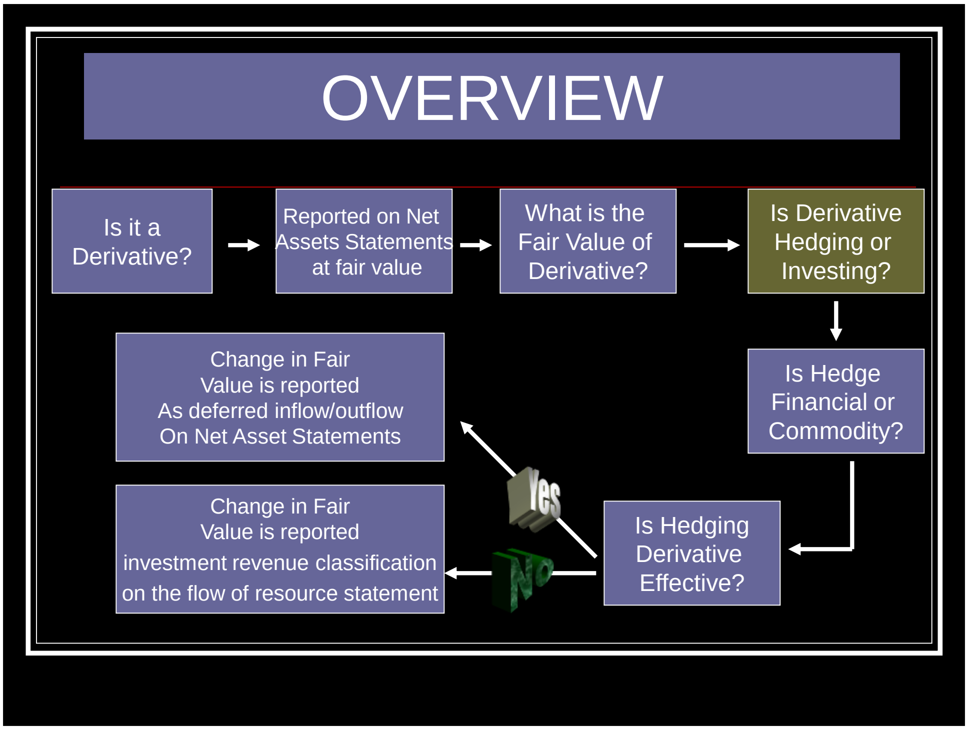
How Do You Determine Fair Value?

- The Counterparty should provide you fair value using one of the following methods
  - Mark to Market – required if available
  - Zero Coupon
  - Discounted forecasted cash flow
  - Matrix
  - Par Value Method
  - Fair Value by Pricing Index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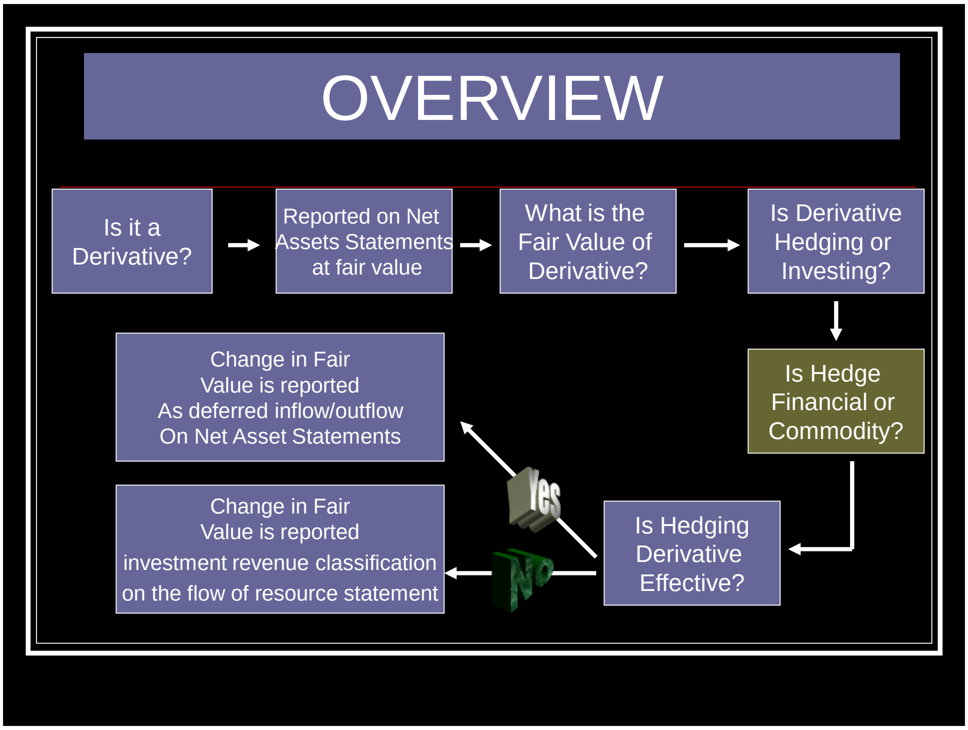
Do you have a Hedging Derivative?

(Must Meet both Criteria)

1. The derivative instrument is associated with a hedgeable item. The following is considered:
   - Is the notional amount consistent with principal amount or quantity of hedgeable item;
   - Both reported in the same fund;
   - Both have consistent time period
2. The potential hedging derivative is effective in significantly reducing the identified financial risk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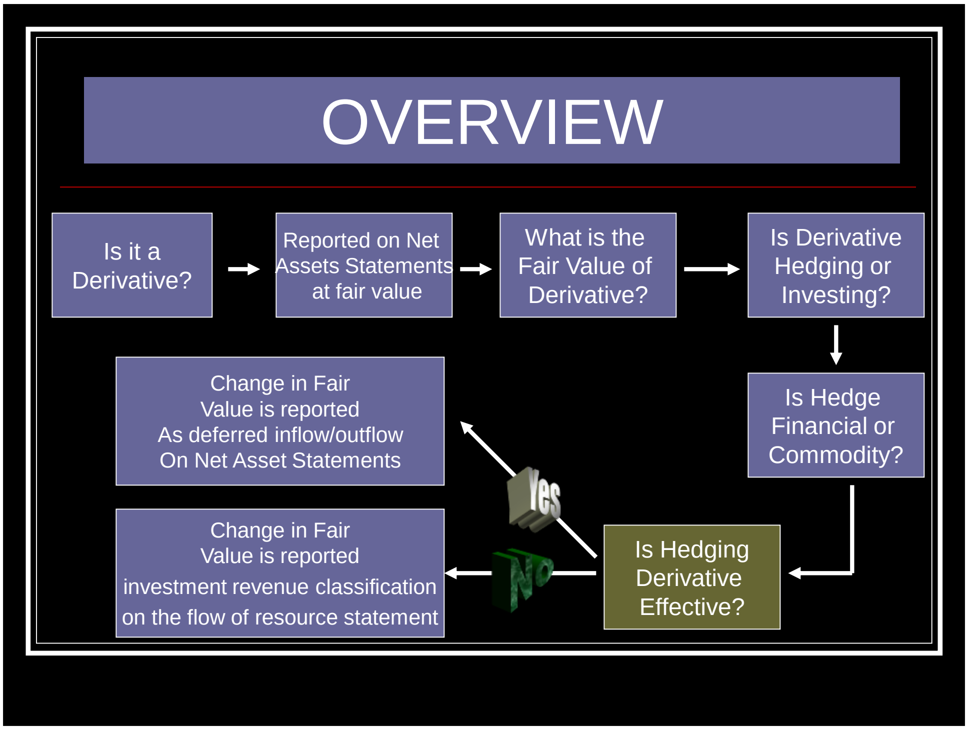
Effectiveness Test for Financial Hedges

- Effectiveness Test's are talked about separately in GASB 53 for Financial Hedges and Commodity Hedges
- Same effectiveness methods are used; however, guidance is different based on differences in instruments.
- Based on accounting guidance we could not think of any legal commodity derivatives under GASB 53 definitions
- Effectiveness tests in this presentation are for financial hedges

Certain purchase contracts (gas, electricity, oil) have net settlement features and unit has option to take position of commodity or cash value of contract. These are excluded if probable that government will take delivery of commodity.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Is Your Hedging Effective?

- Two Major Categories of Determining Effectiveness
  1. Consistent Critical Terms Method
  2. Quantitative Methods
     1. Synthetic Instrument Method
     2. Dollar-offset method
     3. Regression analysis
     4. Others meeting criteria in paragraph 48

Which Effectiveness Test do I use?

- Evaluation of Effectiveness of Hedging Derivative for years other than the first – Use same method used in prior year – if derivative fails test you may try using another method to meet effectiveness test

- Evaluation of Effectiveness in First Year – If you use "consistent critical terms" method and fail you must try at least one quantitative method.

Consistent Critical Terms Method of Effectiveness -

(Just what it sounds like- compare terms of derivative to the debt it is hedging – all 10 criteria must be met)

- Cash Flow Hedge
  1. Notional amount is the same as principal amount of hedgeable item throughout the life
  2. Interest rate swap has a zero fair value upon association with the hedgeable item
  3. Formula for computing net settlements under the interest rate swap is the same for each net settlement

Consistent Critical Terms Method of Effectiveness -
(Just what it sounds like- compare terms of derivative to the debt it is hedging – all 10 criteria must be met)

- Cash Flow Hedge
  4. The reference rate is consistent with one of the following:
     - The reference rate or payment of the hedgeable item
     - A benchmark interest rate
       - Tax-exempt debt - SIFMA or AAA general obligations index
       - Taxable debt – direct treasury obligations of US gov. or LIBOR – % of reference rate requires use of quantitative method- not eligible for critical terms method
  5. Interest receipts or payments of the swap occur during the term of the hedgeable item – swap that hedges 10 of 15 year debt meets this criteria

Consistent Critical Terms Method of Effectiveness -
(Just what it sounds like- compare terms of derivative to the debt it is hedging – all 10 criteria must be met)

- Cash Flow Hedge
  6. The reference rate of swap does not have a floor or cap unless the hedgeable item has a comparable floor or cap.
  7. The time interval of the reference rate of swap is the same time interval as rate reset of the hedgeable item
  8. The frequency of the rate resets of the payments of the swap and the hedgeable item are the same.

Consistent Critical Terms Method of Effectiveness -
(Just what it sounds like- compare terms of derivative to the debt it is hedging – all 10 criteria must be met)

- Cash Flow Hedge
  9. The rate reset dates of the interest rate swap are within 6 days of the rate reset dates of the hedgeable item.
  10. The periodic interest rate swap payments are within 15 days of the periodic payments of the hedgeable item

Consistent Critical Terms at a Glance

	Interest Rate Swap	Variable-Rate Demand Bonds
Notional Amount	100,000,000	100,000,000
Termination	June 1, 2019	June 1, 2019
Computation of Net Settlements are same	Yes	Yes
Variable Payment / Benchmark interest rate	SIFMA swap index	SIFMA swap index
Fair Value at inception	0	0
Floor or Cap	No	No
Time interval of reference rate	Every 7 days	Every 7 days
Frequency of Rate Resets	Weekly	Weekly
Rate reset Dates	Wednesday	Thursday
Swap payment date	The 1st of every month	The 10th of every month

Consistent Critical Terms Method of Effectiveness – Fair Value Hedge

- Previous slides discussed 10 criteria for Critical Terms method of effectiveness for cash flow hedges
- Paragraph 38 in GASB #53 discusses similar criteria for Critical Terms method of effectiveness for fair value
- Most derivatives in NC appear to be cash flow hedges – will not go into detail in this document

Quantitative Methods

- Synthetic Instrument
- Dollar-offset Method
- Regression Analysis
- Other quantitative methods that meet requirements of paragraphs 48 or 62 if depending on if it is financial hedge or commodity hedge.

- These methods may use historical data; however, if there are new market conditions, effectiveness should be evaluated using fair values such as dollar-offset or maybe regression analysis of fair values

GASB listed a change in income tax rates of individual taxpayers that affect the demand for tax-exempt debt as a change in market conditions Buy American bonds could be change in market

Auditors might decide that there has been significant market disruption; therefore, use of methods that use historical data would not be appropriate. Discuss with your auditors.

Synthetic Instrument Method
(evaluating effectiveness of hedging derivative)

- Can only use this method for cash flow hedges were the hedgeable items are interest bearing and carry a variable rate and all four of the following criteria are meet
    1. Notional amount is same for derivative and hedge item for life of the relationship
    2. Upon association with variable-rate asset or liability, the hedging derivative has a zero fair value or the forward price is at-the-market
    3. The formula for computing net settlements under the derivative is the same for each net settlement
    4. The interest receipts or payments of the derivative occur during the term of the variable-rate asset or liability

Synthetic Instrument Method (cont.)
(evaluating effectiveness of hedging derivative)

- Calculated by combining the hedgeable item and potential hedging derivative to simulate a third synthetic instrument. The hedge is effective if its total variable cash flows substantially offset the variable cash flows of hedgeable item
- Evaluation may be made using either changes in the current period or on a life-to-date basis

Important for units to track and save data on derivatives

Dollar-offset Method
(evaluating effectiveness of hedging derivative)

- Compares changes in expected cash flows or fair values of the derivative with the hedgeable item
- Evaluation may be made using either changes in the current period or on a life-to-date basis

Dollar-offset Method (we are evaluating effectiveness of hedging derivative)

- Derivative is effective if changes in hedgeable item divided by changes in derivative is within a range of 80 to 125 percent in absolute terms. Test is also met if changes in derivative divided by changes in hedgeable item falls within range of 80 to 125

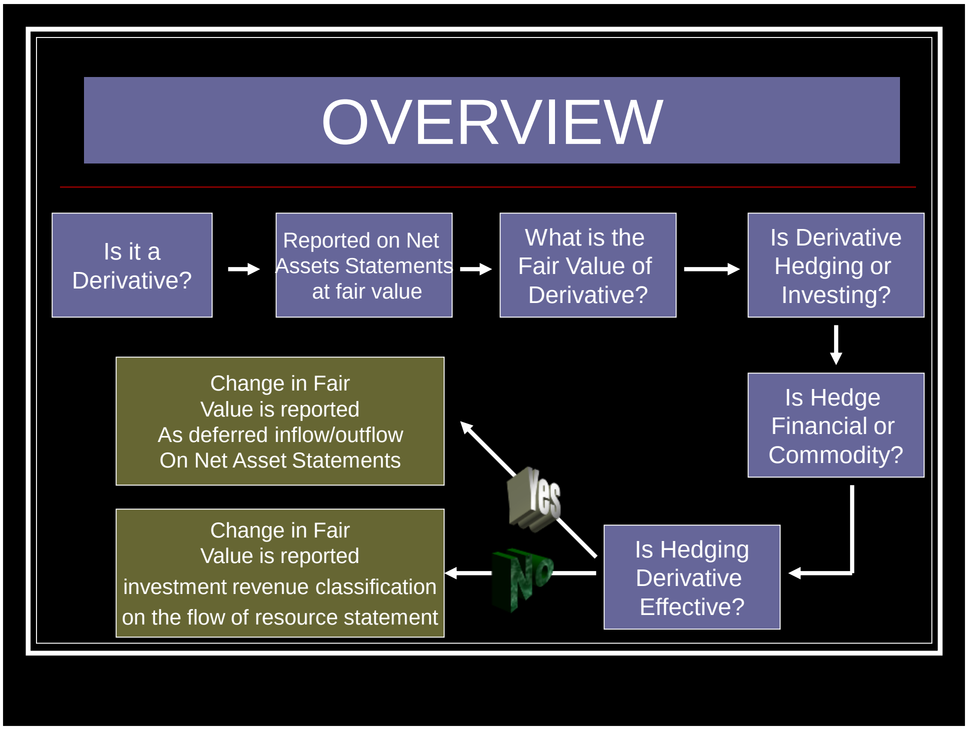
Regression Analysis
(evaluating effectiveness of hedging derivative)

- Considers the statistical relationship between the cash flows or fair values of the derivative and the hedgeable item
- Derivative is considered effective if all three criteria are met
  1. R-squared of the regression analysis is at least 0.80
  2. F-statistic calculated for the regression model demonstrates that the model is significant using a 95 percent confidence interval
  3. The regression coefficient for the slope is between -1.25 and -0.80

Paragraph 46 and 47 provides additional detail on specifics for using regression analysis

Other Quantitative Methods

- Other Quantitative Methods are allowed if meet all the following
  1. Through analysis of critical terms - changes in cash flow or fair values in derivative offset changes in cash flow or fair values of hedgeable item
  2. Replicable evaluations of effectiveness are generated - complete and documented - different evaluators using the same method and assumptions would reach substantially similar results
  3. Substantive characteristics that could affect either cash flows or fair values are considered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Flow of Resources Statement

Government-wide, Proprietary and Fiduciary Net Assets Statements

- Investment Derivatives and hedging derivatives determined to be ineffective must record changes in fair value from year to year in investment revenue classification on the flow of resource statement
- Hedging Derivatives, determined to be effective, report changes in fair value from year to year on Net Asset Statement as deferred inflows or outflows

Hybrid Instruments

- Must meet all Three criteria

1. Companion instrument is not measured on the statement of net assets at fair value
2. A separate instrument with the same terms as the derivative instrument would meet the definition of a derivative instrument

Hybrid Instruments

3. Economic characteristics and the risks of the derivative instrument are not closely related to those of the companion instrument – examples
   - Up-front payment with off-market terms
   - Written option that is in-the-money – generates an up-front payment
   - Inconsistent reference rate with companion instrument
   - Potential negative yield – gov. issues note at above mkt. rate with terms to reset yield to zero if mkt. exceeds a certain level
   - Leveraged Yield – embedded derivative meets both criteria
     1. Initial rate of return is at least doubled
     2. Rate of return is at least twice what the mkt. return would be

Hybrid Instruments

- On-behalf payments included in derivative instrument payments – Swap is set so that counterparty is compensated for legal and advisory fees. Cost should be treated as expenses / expenditures consistent with how they would have been reported if paid directly.

- The embedded derivative should be recognized and measured in accordance with GASB 53 and companion instrument should be measured and in accordance with reporting requirements applicable to that instrument. (debt, lease, insurance)

Termination of Hedge Accounting

- Hedge Accounting should be discontinued when one of the following occur
    1. Hedging derivative is no longer effective
    2. The likelihood of a hedged expected transaction is no longer probable
    3. The hedged asset/liability such as a hedged bond is sold or retired but not reported as a current or advanced refunding
    4. The hedging derivative is terminated
    5. A current refunding or advanced refunding resulting in the hedged debt is executed
    6. The hedged expected transaction occurs, such as the purchase of an energy commodity or sale of bonds

Termination of Hedge Accounting

- If termination event is 1 through 4 on previous slide -the balance in the deferral account should be reported on the flow of resources statement within investment revenue classification – if separate line is used titled "increase (decrease) upon hedge termination"

- If termination is due to current or advanced refunding -the balance in the deferral account should be included in the net carrying amt of the old debt for purposes of calculating the difference between that amount and the reacquisition price of the old debt in accordance with Statement 23.

Termination of Hedge Accounting

- Termination event is the occurrence of the hedged expected financial transaction
  - If unit is reexposed to hedged risk - balance of deferral account is reported in flow of resources statement in investment revenue or
  - If unit is **not** reexposed to hedged risk - the balance in the deferral account is reported on flow of resources statement consistent with hedged item
  - Future fixed rate debt issue hedged by interest rate lock is good example of the above two bullets

Note Disclosure

- Information should be organized:
  - governmental activities, business-type, and fiduciary funds.
  - Cash flow hedges and fair value hedges and investment derivatives
  - Categories should be aggregated by type: receive-fixed swaps, pay-fixed swaps, swaptions, rate caps, basis swaps, or futures contracts

Note Disclosure
Hedging Derivatives

- Summary should include:
  1. **Objective** for entering into derivative instruments
  2. Disclose significant **Terms of the Agreement**:
     - Notional Amount
     - Reference rates, such as indexes or interest rates
     - Embedded options, such as caps, floors or collars
     - the date when the hedging derivative instrument was entered into and when it is scheduled to terminate or mature
     - The amount of cash paid or received, if any, when a forward contract or swap (including swaptions) was entered into.

Note Disclosure
Hedging Derivatives

3. **Risk** - Unit must disclose their exposure to the risks that could give rise to financial loss. Risk disclosures are limited to hedging derivative instruments that are reported as of the end of the reporting period. These disclosures might be required by other paragraphs in GASB 53; however, these disclosure must be presented in the context of a hedging derivative's risk.

Note Disclosure
Hedging Derivatives – Credit Risk

- Ratings of counterparties as of end of the reporting period
- Amt. of loss due to credit risk, based on fair value that gov. would incur if counterparties failed to perform
- Summary of description, aggregate amount of collateral or other security that reduces credit risk exposure and info about gov. access to collateral
- Government's policy of entering into master netting arrangements, description and aggregate amount of of liabilities in these arrangements
- The aggregate fair value of hedging derivative instruments in asset (positive) positions net of collateral posted by the counterparty and the effect of master netting arrangements
- Significant concentrations of net exposure to credit risk with individual counterparties and groups of counterparties

Note Disclosure
Hedging Derivatives

- **Interest Rate Risk / Basis Risk** – Disclose any derivative terms that increase a government's exposure to interest rate risk / basis risk
- **Termination risk** along with termination events that have occurred, dates hedging instrument may be terminated and/or out-of-the-ordinary termination "additional termination events contained in International Swap Dealers Association master agreement

Note Disclosure
Hedging Derivatives

- **Rollover risk –** disclose maturity of both derivative and hedged item
- **Market-access risk**
- **Foreign Currency Risk –** US dollar balance of derivative, organized by currency and type of instrument

Rollover risk – risk that hedging derivative does not extend to the maturity of that hedge able item.   Example debt is 20 year and derivative is 10 years. After 10 years unit losses the benefit of swap payments.

Market-access risk – Government will not be able to enter credit markets or that credit will become more costly. Example – objective of derivative is issuance of refunding bonds planned in the future. If at time the government is unable to enter credit markets, expected cost savings may not be realized.

Foreign currency risk – The risk that changes in exchange rates will adversely affect the cash flows of fair value of a transaction.

Note Disclosure
Hedging Derivatives

- Hedged Debt – governments should disclose hedging derivative's net cash flows based on requirements established by Statement No. 38 *Certain Financial Statement Note Disclosures*
- If another quantitative method was used to determine effectiveness, unit must disclose:
  - Identity and characteristics of the method used
  - Range of critical terms the method tolerates
  - Actual critical terms of the hedge

Implementation Issues

Number refers to implementation guide question number

- Accounting changes adopted to conform with GASB 53 should be applied retroactively by restating financial statements, if practical, for all prior periods presented.
- 53. If unit changes method of evaluating effectiveness this is not considered a change in accounting principle

Implementation Issues

- Existing derivatives – determine effectiveness at end of current period
  - If effective – treat as if effective from inception
  - If ineffective - Evaluate at end of previous reporting period
    - If effective at end of previous reporting period treat like termination of hedge accounting according to paragraph # 23.
    - If ineffective at end of previous reporting period then apply paragraph #80 – retroactive restating back to earliest period presented.

Implementation Issues
Number refers to implementation guide question number

- 107. If evaluating a pre-existing hedging relationship in year of implementation you should use the fair value at the inception of the pre-existing hedge when determining if consistent critical terms or synthetic instrument method criteria have been met.
- 110. A swaption with an upfront payment entered into prior to effective date of this standard should separate the borrowing transaction from the derivative transaction as of beginning of the implementation period.