

# ACCOUNTING FOR FINANCIAL INSTRUMENTS AND DERIVATIVES

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## Background

Accounting Standards (AS) 30 and 31 have been issued by our Institute and come into effect from April 1, 2011 with early adoption being recommendatory. AS 30 deals with recognition and measurement of financial instruments (including derivatives). AS 31 deals with presentation aspects and, in particular, with distinction between liabilities and equity. This distinction can be complex where corporates issue instruments like convertible debentures and foreign currency convertible bonds, which carry features of both debt and equity. AS 32 deals with disclosures. Small and medium entities are exempted from these Standards.

Chartered Accountants are likely to find these Standards challenging in view of the sheer size (336 pages in all) and complexity of the content as well as, in many cases, lack of exposure to the domain of derivatives and complex instruments. The Barclays Bank Annual Report of 2007 is a 150+ page document, more than one thirds of which is devoted to disclosures required under the equivalent of AS 32 in the IFRS framework.

## Overview of AS 30

Financial engineering and innovation are increasingly making inroads into the lives of common people. The annual GDP of the world is estimated by experts to be in the region of \$ 50 bio, while derivative open positions are estimated to be more than \$ 500 bio. Thus, the derivative world is much larger than the 'real' world of real goods and real services.

Our own equity derivatives market daily turnover is more than was Rs 1 lakh crores per day as against an equity market turnover of Rs 25,000 crores. In a short span of 12 years, the derivative market had grown to four times the underlying equity market. While on the one hand, this proliferation of derivatives has created huge crises in the world, including the subprime crisis, on the other hand, it has created huge challenges for the accounting community which in many situations does not comprehend the implications of such instruments on risk, on potential earnings, on actual reported earnings and on recognition of assets or liabilities as a result of such exposures.

AS 30 provides guidance on classification, initial measurement, subsequent measurement and de-recognition of financial assets, financial liabilities, derivatives and hedge accounting. Impairment of financial assets, securitization and guidance on fair valuation are also covered in AS 30. Hedge accounting is a complex and vast area of literature covering fair value hedges, cash flow hedges and hedges of net investment in foreign operations.

## **Financial Instruments and Key Definitions**

A financial instrument is a contract that gives rise to a financial asset for one entity and a financial liability or equity for the other.

A financial asset is

- cash
- equity instrument of another entity
- a contractual right to receive cash or other financial asset from another entity
- a contractual right to exchange financial assets or financial liabilities with another entity under conditions that are potentially favorable to the entity
- certain contracts that will or may be settled in the entity's own equity instruments

A financial liability is:

- a contractual obligation to deliver cash or other financial asset to another entity
- a contractual obligation to exchange financial assets or liabilities with another entity on conditions that are potentially unfavorable to the entity
- certain contracts that will or may be settled in the entity's own equity instruments

### **Common Examples of Financial Assets and Liabilities**

Common examples of financial assets and liabilities are cash and bank balances, accounts receivable and payable, bills receivable and payable, loans receivable and payable, bonds receivable and payable, deposits and advances. Contingent rights and obligations like in the case of financial guarantees are financial assets or liabilities notwithstanding the fact that they may not be recognized on the Balance Sheet.

Finance lease receivables and payables are financial assets or liabilities as these are blended amounts comprising principal and interest on the lease. An operating lease contract does not represent financial assets or liabilities as the contracted amount is indicative of future services to be provided by the lessor. The amount already due to be received or paid under an operating lease is a financial asset or liability.

Prepaid expenses, deferred revenues and warranty obligations are not financial assets or liabilities as they represent the right to receive goods or services and not cash. Income taxes and deferred taxes are not financial assets or liabilities as they are not contractual obligations but statutory obligations.

## **Initial Measurement**

All financial assets and liabilities are required to be recognized at fair value at initial recognition. For financial assets and liabilities which are classified as at fair value through P&L, transaction costs are charged to P&L at the point of initial recognition itself. For other financial assets and liabilities, the carrying value at initial recognition includes transaction costs (which are added to or deducted from fair value as the case may be).

Example - if an entity buys equity shares of L&T for Rs 1,500 and incurs brokerage and other transaction costs of Rs 2, the carrying value of these shares will be Rs 1,500 if these are classified as 'fair value through P&L' and Rs 1,502 if these are classified as 'available for sale' securities.

Short term receivables and payables with no stated interest rate are measured at invoice amount if the effect of discounting is immaterial.

## **Classification of Financial Assets and Liabilities**

Financial assets are classified into four possible categories and financial liabilities into two possible categories as summarized in the following table. The framework for subsequent measurement (which could be at fair value, cost or amortized cost), recognition of mark to market gains and losses and impairment testing principles are also provided.

	<b>Financial Assets</b>	<b>Balance Sheet Carrying Value</b>	<b>MTM Gains / Losses taken</b>	<b>Impairment</b>
1	Financial Assets - Fair Value through P&L * Held for Trading * Derivatives * Designated as such (accounting choice)	Fair Value	Taken to P&L Taken to P&L Taken to P&L Taken to P&L	Not tested
2	Loans and Receivables * Short Term	Amortized Cost Cost	Not Applicable Not Applicable	Tested Tested
3	Held to Maturity	Amortized Cost	Not Applicable	Tested
4	Available for Sale * Equity which cannot be valued	Fair Value Cost	Taken to Reserves Not Applicable	Tested Tested
	<b>Financial Liabilities</b>			
5	Financial Liab - Fair Value through P&L * Held for Trading * Derivatives * Designated as such	Fair Value	To P&L	Not applicable
6	Other Liabilities	Amortized Cost	Not Applicable	Not Applicable

The above table is subject to the principles of hedge accounting which is discussed later in these Articles. When principles of hedge accounting are applied, the above recognition framework will be over-ridden by those principles.

Lets now discuss each class of assets and liabilities in detail.

### **Financial Assets at Fair Value through P&L**

Financial assets which are classified in this basket are carried at fair value in the Balance Sheet, with mark to market gains or losses being carried into the P&L. Fair valuation of such assets will result in earnings becoming volatile to the extent that such assets fluctuate in value from quarter to quarter.

Financial assets held for trading belong here and so do derivatives which are not designated as hedging instruments. The standard also permits management to designate qualifying financial assets into this basket in the following situations.

- Such a designation may eliminate or significantly reduce a recognition or measurement inconsistency (accounting mismatch) that may arise by measuring assets and liabilities or recognition of gains or losses on different bases, or
- A group of financial assets, liabilities or both is managed on a fair value basis and its performance evaluated on this basis

Example - Finance company ABC issues a Nifty linked debenture for Rs 500 crores. Debenture holders will be paid a return of upside on the Nifty over the next three years x 120%. If the Nifty falls over this period, holders will be paid back their capital. The company uses the amount collected to invest partly into its regular truck financing business and partly into Nifty related instruments including derivatives. If Nifty moves up, it will be obliged to recognize its liabilities accordingly - in effect a fair valuation of liabilities based on Nifty will be necessitated. If its assets are recognized on cost, then an accounting mismatch will arise. It will be appropriate for the management to designate financial assets emanating out of the proceeds of these Nifty linked debentures as 'Fair Value thro P&L'.

## **Loans and Receivables**

Loans and Receivables are non-derivative financial assets that are not quoted in an active market. These should not be held for trading nor should be designated at fair value through P&L or as available for sale by the entity.

Initial measurement of loans and receivables is at fair value plus transaction costs. Subsequent measurement is at amortized cost, except for short term receivables which is at invoice amount if the effect of discounting is immaterial, if there is no stated interest rate in the invoice.

The concept of 'amortized cost' involves mathematical computations which accountants are not accustomed to in current practice and hence needs to be discussed in detail.

### **Example for Amortized Cost**

Your entity has provided a loan of Rs 25 lakhs at 12% interest (payable annually in arrears) and has collected a processing fee of Rs 1 lakh (4%) for this loan. The loan is repayable after 5 years (one bullet payment).

Regular interest income on the loan will be Rs 3 lakhs per annum (Rs 25 lakhs x 12%). The processing fee income of Rs 1 lakh is required to be amortized over the five year tenor of the loan in a manner that that the effective interest rate over this five year period is constant.

If the cash flows of the loan are tabulated and an IRR function applied to these cash flows, the effective interest rate works out to 13.1412%. Thus the carrying value of the loan will be Rs 24 lakhs on day zero (Rs 25 lakhs disbursed minus Rs 1 lakh collected as fees). On this amount, income for year one will be computed as Rs 3.1539 lakhs. At the end of year one, the carrying value of the loan (at amortized cost) will increase to Rs 24.1539 lakhs (Rs 24 lakhs opening plus yield accrual of Rs 3.1539 minus collection of Rs 3 lakhs). This process will continue over the five year tenor of the loan with carrying value becoming zero on repayment of principal at the end of the term.

Year	CashFlow	Income	Carrying Value
0	(24.0000)		24.0000
1	3.0000	3.1539	24.1539
2	3.0000	3.1741	24.3280
3	3.0000	3.1970	24.5250
4	3.0000	3.2229	24.7478
5	28.0000	3.2522	(0.0000)

Participants can imagine the complexity that financial institutions disbursing thousands of loans every year will face. In practice, loans are not repaid in bullet at the end of the tenor and could be repaid on a monthly basis, transactions happen every day and not neatly at the beginning of the financial year as in the above example (where IRR would not be adequate and XIRR would be called for), interest rates are not fixed but floating, processing fees vary, there are origination costs apart from fees (which require similar amortization treatment), contractual tenor is not the same as actual tenor in view of prepayments and sometimes rescheduling due to late payments and hence actual tenor is not known upfront.

## Financial Assets - Held to Maturity

Held to maturity financial assets are non-derivatives with fixed or determinable payments and fixed maturity that an entity has a positive intention and ability to hold to maturity. These assets are initially recognized at fair value plus transaction costs directly attributable to the transaction. They are subsequently measured at amortized cost using the effective interest method and are tested for impairment. The methodology of the computation of effective interest method was discussed in Part One of this series of Articles.



The amount of loss on impairment is measured as the difference between the carrying value and the present value of expected future cash flows discounted at the effective interest rate computed at the point of initial recognition. Such impairment can be reversed in subsequent periods if it can be established that the event leading to such reversal occurred after the date of recognition of the impairment.

Merely because an entity intends to hold the asset for an indefinite period, the asset cannot be categorized as held to maturity. If the entity intends to sell the financial asset as a result of changes in interest rates, risks, yields, liquidity needs, foreign currency rates, then it cannot categorize the instrument as held to maturity. If the issuer of the instrument has a right to settle the instrument at a value significantly lower than its amortized cost, such an instrument cannot be categorized as held to maturity.

An equity instrument and perpetual debt instruments cannot be categorized as held to maturity as they do not have a fixed or determinable redemption date. Floating interest rate instruments can be classified as held to maturity. A default risk does not by itself preclude this categorization. If the instrument is callable by the issuer, the instrument can be classified as held to maturity if at this point, the holder can recover all or substantially all of the carrying value. If the callable price is such that the holder cannot recover a substantial portion of the carrying value, then such an instrument cannot be classified as held to maturity. A puttable financial asset cannot be classified as held to maturity because a put feature is not consistent with intention to hold to maturity.

If the entity transfers a held to maturity financial asset before maturity, the consequences could be significantly adverse. The entity is required to reclassify its entire held to maturity basket out of this basket immediately. Further, the entity is not allowed to categorize any new financial asset as held to maturity in this financial year and in the succeeding two financial years. Exceptions to this treatment are few and include the following:

- Sale of the financial asset as a result of significant decline in credit worthiness of the issuer

- Changes in tax laws that may eliminate or reduce tax exempt status of such assets
- Major business combination or disposition that necessitates transfer of such assets to maintain the entity's risk management or interest rate policies
- Changes in statutory or regulatory requirements including changes in risk weightages of such financial assets

The entity's intention and ability to hold such financial assets to maturity are required to be re-evaluated at each reporting date.

### **Available for Sale**

These are non-derivative financial assets that are either designated as available for sale or are not designated as any of the other three categories, viz Held at fair value through profit and loss, loans & receivables or held to maturity. They are measured at fair value plus transaction costs directly attributable to the transaction on initial recognition. They are subsequently measured at fair value without any adjustment for potential transaction costs on disposal. However, if this category includes any equity investments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured, then these are measured at cost. This category of financial assets is subject to impairment tests.

Gains and losses on revaluation of available for sale financial assets are recognized in an equity reserve account. These gains or losses are accumulated from period to period in this account and recycled into the Profit and Loss Account on sale or transfer of the financial asset. Dividends are recognized in the Profit and Loss Account when the right to receive dividends is established. Interest income or expense is recognized in the Profit and Loss Account based on effective interest rate methodology. Impairment losses and foreign exchange gains or losses are also recognized in the Profit and Loss Account.

## Derivatives

A derivative is a financial instrument or other contract which has all the following three characteristics (para 8.1 of AS 30)

- Its value changes in response to changes in an underlying (the underlying could be a specified interest rate, a financial instrument, a commodity, a currency, an index, a credit rating or index, or other variable)
- It requires no or small initial net investment (than the investment that would be required if an entity were to enter into other contracts that would be expected to have a similar response to changes in the price of the underlying)
- It is settled at a future date

Common examples of derivatives are forwards, futures, calls, puts and swaps. Derivatives may be exchange traded or over-the-counter contracts. If the underlying is a non-financial variable, the standard specifies that the variable should not be specific to a party to the contract. Derivative contracts may be net settled or gross settled. The definition and accounting of a derivative does not depend upon the method of settlement. In both settlement systems, the accounting remains the same.

If a company buys Crude Oil Futures on a commodity exchange, it typically pays a small Initial Margin which may range from 5% to 20% in most cases. The company is exposed to risk arising from movements in the price of Crude Oil, which will impact prices of Crude Oil Futures resulting in gains or losses. The contract will be settled at a future date. In practice, most futures contracts are net settled. If the company bought futures at a price of \$ 41 per barrel and on the date of expiry, the price of spot and futures (which will converge on expiry) are \$ 47, the company would have gained \$ 6 per barrel which would be paid to the company on expiry in a net settlement framework. In a gross settlement framework, the company would pay \$ 41 and receive delivery of crude oil.

## **Recognition and Measurement**

A derivative instrument is by default classified as a Financial Asset or a Financial Liability held for trading. Derivatives which are financial guarantees or designated as hedging instruments are exceptions. Assets and liabilities held for trading fall under the broader category “Financial Assets and Liabilities held at fair value through Profit and Loss”.

Accordingly, derivatives (other than exceptions above) are initially recognized at fair value on the date of acquisition or issue (para 47 of AS 30). Transaction costs are recognized as expenses. Subsequently, they continue to be carried at fair value without deduction for transaction costs that may be incurred on sale or disposal (para 51 and 52 of AS 30).

As a consequence of continuous fair valuation of derivative positions, corporates will be exposed to earnings volatility. Derivative fair values are known to fluctuate substantially and a high exposure to derivatives which do not qualify for hedge accounting treatment is a major challenge that corporates need to manage well.

### **Example of a Forward Contract**

The accounting community will be familiar with recognition and measurement of forward dollar contracts under the AS 11 framework. The principles of AS 30 are quite different and it may be useful to compare the two methodologies.

Corporate XYZ Ltd buys a three month forward dollar contract for \$ 1 on May 1, 2009 at a forward rate of Rs 50.25. The spot rate on that day was Rs 49.65 and the premium paid on the forward was Rs 0.60. The contract was entered into to hedge an import payment that is due three months later.

Let us assume that the spot rate on June 30, 2009 was Rs 51.00 and the forward rate of a one month forward on June 30, 2009 was Rs 51.12.

### **AS 11 Framework**

The premium of Rs 0.60 will be amortized over three months. The June quarter financials will therefore recognize an expense of Rs 0.40 (two months proportionate amortization). On June 30, 2009, the forward contract will be revalued to spot Rs 51.00. However, the underlying payable will also be revalued to Rs 51.00. The impact of revaluing the underlying payable and the long forward will offset each other so that the impact on the profit would be zero.

### **AS 30 Framework**

There is no concept of amortization of forward premium. The derivative contract would be recognized at fair value on the date of inception. A typical on-market forward would have a fair value of zero on the date of inception. In other words, if the corporate were to turn around and square up the contract immediately after inception, it would be able to do so at the same forward rate as it contracted.

At quarter end, the derivative contract will be fair valued. If the contracted forward rate was Rs 50.25 and the forward rate on June 30, 2009 was Rs 51.12, the corporate has generated a gain of Rs 0.87. This will be present valued (discounted) as there is one month left for expiry. Suppose the present value comes to Rs 0.86. This is the fair value of the derivative to be recognized as an Asset in the Balance Sheet as at June 30, 2009. Please note that the spot rate of the dollar on June 30, 2009 is not relevant for fair valuing the forward contract, but would be relevant for revaluing the underlying payable.

The second effect of this fair valuation could either be recorded as a gain in the Profit and Loss account or could be carried to Hedging Reserves, depending upon whether the derivative contract qualifies as a hedge and the type of hedge definition.

## Hedge Accounting

Hedge Accounting is a choice of accounting policy which corporates may or may not exercise. Hedge accounting allows the corporate to offset the volatility which earnings are exposed to as a consequence of derivative fair valuation at the end of every reporting period. It allows the corporate to either recognize an offsetting gain or loss in the profit and loss itself (and thus negate the derivatives impact) or to recognize the derivative gains or losses directly in Reserves. While it is common to hedge using derivative instruments, it is possible to use regular financial non-derivative instruments for hedging.

The AS 30 framework envisages primarily two types of hedged risks

- (a) those arising from changes in fair values of existing assets, existing liabilities or unrecognized firm commitments (Fair Value Hedging) and
- (b) those arising from changes in future cash flows (which could emanate from existing assets, existing liabilities as well as from highly probable forecasted transactions) (Cash Flow Hedging)

Both risks should affect profit and loss of the entity in order to qualify for hedge accounting treatment. Some examples of underlyings, risks, classification for the purpose of hedging and type of hedge are provided below. The type of hedge indicated here is the one most commonly designated but it is possible to argue that a cash flow hedge also exposes a corporate to a fair value risk and vice versa and hence such designations need to be effected with care.

<b>Underlying</b>	<b>Risk</b>	<b>Classification of underlying</b>	<b>Type of Hedge</b>
Receivables in USD	Volatility in USD INR	Existing Asset	Fair Value Hedge
Import LC	Volatility in USD INR	Unrecognized Firm Commitment	Fair Value Hedge
Floating Rate INR Loan	Volatility in Interest Rates	Forecasted Transaction	Cash Flow Hedge
Fixed Rate INR Loan	Volatility in Interest Rates	Existing Liability	Fair Value Hedge
Exports in USD over the next 2 years	Volatility in USD INR	Forecasted Transaction	Cash Flow Hedge

## **Hedge Definitions and Effectiveness**

Each hedge should be formally documented in an elaborate manner. The documentation will include a formal risk management policy, the hedging instrument, the hedged item, the hedged risk, effectiveness testing methodology to be adopted by the corporate and approval processes. This area needs involvement of non-accounting managers from the corporate, including the top management, operations and treasury.

Effectiveness testing is required on a prospective basis to establish that the hedge is expected to be effective in managing the risk which it seeks to mitigate. At each reporting period end, the hedge needs to be retrospectively tested to establish whether it was de facto effective in its stated objective. The standard specifies that the change in the fair value of the hedging instrument should retrospectively fall between 80% to 125% of the change in the value of the hedged item attributable to the hedged risk. If the hedge is not effective, hedge accounting principles cannot be applied.

## Accounting for Fair Value Hedges

In fair value hedges, gains and losses arising from both instruments, viz the hedged item and the hedging instrument are recognized in the statement of profit and loss, thus creating an offset such that the net gains or losses impact the reported profit. In more formal terms, the following treatment is adopted:

- Gain or loss arising from re-measuring the hedging instrument at fair value are recognized in the statement of profit and loss
- Gain or loss arising from the hedged item attributable to the hedged risk are recognized in the statement of profit and loss

### Example - Export Receivables

Corporate XYZ has exported merchandise for \$ 100,000 recognized at spot rate of Rs 50.00 on the day of export. The corporate sold 3 month forward dollars at Rs 50.60 on the same day. At the quarter end, the spot rate was Rs 50.75 and forward rate (of an equivalent tenor as that outstanding on that forward) was Rs 51.02.

The corporate needs to designate the risk sought to be hedged in a precise manner. This risk can be defined in two ways (a) risk of the volatility of the spot dollar (b) risk of the volatility of the forward dollar. Each designation will lead to difference in hedge accounting measurements as well as effectiveness.



## **Risk of Spot Volatility**

The spot has moved by Rs 0.75 while the forward has moved by Rs 0.42 between the date of export and the period end. The forward would be discounted to present value as the realizability of the forward is expected only on its final settlement. Let us assume the present value of the forward gain is Rs 0.41. Hedge effectiveness percentage would come to 55% and the hedge would fail. The derivative fair value will be charged to the profit and loss statement while the receivable would be revalued under AS 11 and the restatement gain taken to the profit and loss statement.

## **Risk of Forward Volatility**

The forward element of the receivable has hypothetically moved by Rs 0.41 (when fair valued) and the forward contract has also moved by Rs 0.41 (when fair valued). Thus the hedge is effective. This loss on the forward would be recognized in the statement of profit and loss, while the movement in the spot would be recognized under AS 11 in the profit and loss.

The final impact on the net profit is the same in this illustration irrespective of whether the hedge is effective or otherwise. However, the line item classification within the statement of profit and loss may differ. Hedged items related gains and losses are commonly classified along with the underlying transactions while gains and losses on ineffective hedges are classified as derivative losses, which, if material, would merit a separate line item disclosure in the statement of profit and loss.

## Cash Flow Hedge Accounting

Gains and losses on hedging instruments designated as cash flow hedges, if effective, are recognized directly in equity (generally in Hedging Reserves). These gains and losses are recycled into the statement of profit and loss when the underlying transaction impacts the statement of profit and loss.

### Example - Forecasted Revenue

Corporate ABC forecasts dollar revenues of \$ 10 mio for the year to end March 2013. These sales relate to the month of January 2013. It faces a risk of dollar volatility and has sold forward dollars for each month in this financial year so as to hedge itself at Rs 51.27 today, when the spot dollar was Rs 50.00. At the end of the June quarter, spot dollar was Rs 50.65 while the forward dollar of equivalent tenor was Rs 51.75.

The corporate needs to designate the hedged risk in a precise manner. In particular, the hedged risk may be defined as (a) the risk of volatility in the spot or (b) the risk of volatility in the forward.

If the spot risk is designated, hedge effectiveness will be tested as under. Change in the value of the hedging instrument (based on forward dollar) is Rs 0.48, while the change in the value of the hedged item (i.e. forecasted revenues based on spot dollar) is Rs 0.65. The hedge effectiveness ratio will work out to 74% and the hedge will be considered ineffective. Please note that the forward dollar will need to be present valued to arrive at the fair value, but that process will make the hedge further ineffective.

The loss on the forward will be recognized in the statement of profit and loss as the hedge is ineffective.

If the forward risk is designated, hedge effectiveness will be computed at 100% (as both the hedging instrument and the hedged

item will change by the same amount of the present value of Rs 0.48). The loss on the forward will therefore be recognized in equity. This accounting process will shield the present earnings from derivative volatility.

In the quarter in which the revenue forecasted actually happens (in our example the Jan-March 2013 quarter), the cumulative gains or losses parked in reserves will be recycled into the statement of profit and loss.

## **Conclusion**

Derivative accounting and hedge accounting are complex areas which need a deep understanding of economic hedging, derivative instruments, risk management concepts as well as the accounting standard requirements. Systemic challenges around hedge definitions and accounting are stringent and corporates need to plan in advance to establish these systems well. In many cases, a committed involvement of operational managers as well as information technology is required to implement hedge accounting successfully.