edX 15.516x
Financial Accounting

Week 2: Revenue Recognition; Allowance Accounting

Old Revenue Recognition Principles

Earnings = Revenues – Expenses
Old Revenue Recognition Intuition:

- **Earned** Earnings process substantially complete
- **Collectible** Cash collection reasonably assured

Expenses matched to revenues by matching principle

Bad Debts

Two ways of accounting for bad debts:

- the direct method: required for income taxes. cons:
  - Improper matching of expenses to revenues
  - More reliable info but less relevant (i.e. less timely)
- the allowance method: two methods
  - percentage of sales
  - aging method.

  A/R (net) = A/R (gross) – Allowance for doubtful accounts (ADA) A/R (net) = A/R (gross) - ending ADA

The BASE equation

Beginning balance
+ **A**dditions
- **S**ubstractions
= **E**nding Balance
Example:

Beginning balance (e.g. ADA - allowance for doutful accounts)
+ **A**dditions (e.g. bad debt expense a.k.a. provision charged to income statement)
- **S**ubstractions (e.g. write-offs a.k.a. amount deemed uncollectible)
= **E**nding Balance
Beginning ADA + Bad Debt Expense – Amounts Written Off = Ending ADA

Allowance Method 2: Aging Method

Ratios Involving Receivables

A/R Turnover = Revenue / Average Accounts Receivable (net)
Days receivables = (1 / A/R Turnover) * 365

Liability for Return Allowances

Allowances for product returns are very similar to the Allowance for Doubtful Accounts, except that Allowances for product returns are a liability, whereas Allowance for Doubtful Accounts is a contra-asset.

Key Terms and Usage

- **A/R**:Acconts Receivable.
  - Customer purchases' made on account (i.e. you will receive a payment later
  - I/S: Revenue is recognized when earned, not received
  - B/S: Asset account impacted
- **ADA**:Allowance for doubtful accounts
  - Company provisions for uncollectible A/R
  - I/S: Depends on how it changes
  - B/S: Contra-asset account impacted
- **BDE**: Bad debt expense
  - Future projections for uncollectible A/R
  - I/S: Expense recognized as % of sales
  - B/S: Increase ADA account by same amount
- **Write-off**
  - A/R that "goes bad" in that time period (i.e. it becomes clear that the customer cannot pay)
  - I/S: No impact
  - B/S: Reduce ADA and A/R

Week 3: Inventory and IFRS; Long-Term Assets

The Inventory Equation

$BegInventory + Additions = COGS + EndInventory$

US LIFO Conformity Rule

LIFO for tax purposes $\implies$ LIFO for financial reporting FIFO for tax purposes $\implies$ FIFO for financial reporting

Comparability

LIFO and FIFO firms have different account, so we need to adjust the accounting numbers to make them comparable. Data is available to adjust the LIFO firm to FIFO (but not to adjust FIFO to LIFO)
$LIFOReserve = EndingInv_{FIFO} - EndingInv_{LIFO}$

Derivation of adjustment LIFO to FIFO:
(1): $EndInv_{FIFO} = BegInv_{FIFO} + Additions - COGS_{FIFO}$
(2): $EndInv_{LIFO} = BegInv_{LIFO} + Additions - COGS_{LIFO}$
(1)-(2):
$EndInv_{FIFO} - EndInv_{LIFO} = BegInv_{FIFO} - BegInv_{LIFO} - COGS_{FIFO} - -COGS_{LIFO}$
$EndLIFOReserve = BegLIFOReserve + COGS_{LIFO} - COGS_{FIFO}$

$\Delta LIFOReserve = COGS_{LIFO} - COGS_{FIFO}$

$COGS_{FIFO} = COGS_{LIFO} - \Delta LIFOReserve$

Ratios Involving Intentory

$InventoryTurnover = \frac{COGS}{AverageInventory}$

$DaysInventory = \frac{365}{InventoryTurnover}$

FIFO/LIFO Summary

- LIFO results in a more accurate income statement; IFO results in a more accurate balance sheet.
- LIFO-FIFO is import to compare across firms and adjust the LIFO reserve for comparability.

PPE: Property, Plant and Equipment

1. Whats the acquisition cost?
2. How much is the estimated salvage value? (value at disposal net of selling costs)
3. What is the expected useful service life? (period of usage not physical life)
4. What is the depreciation pattern?

Straight Line Method of Depreciation :
$ExpensePerYear = \frac{AcquisitionCost - SalvageValue}{EstimatedUsefulLife}$

Gain or Loss on Sale or Disposal of PPE

Procedure for sale or disposal of PPE:

1. Record cash or the market value of the asset received for the PPE
2. Record disposal of the asset by removing the cost of the asset from PPE
3. Remove the accumulated depreciation associated with the asset
4. Calculate gain or loss as follows:
   $Cash - (Cost - AccDep) = Gain(Loss)$

Disposal of asset G/L: $G/L = Cash - (Cost - AccDep)$ $G/L = SalesPrice - (GrosPPE - AccDep)$ $G/L = AccDep + (GrossPPE - SalesPrice)$ $G/L = AccountingDepreciation - EconomicDepreciation$
We impair or write down the asset by increasing accumulated depreciation.
$Acquisitions = EndingPP\&E - BeginningPP\&E + PP\&ESold$
$Beginningaccumulateddepreciation + Depreciationexpense - depreciationonsoldassets = Endingaccumulateddepreciation$

$Gain(Loss) = Saleprice - BookValue$
$BookValue = Purchaseprice - AccumulatedDepreciation$

Week 4: Intangible Assets; Statement of Cash Flows

Intangible Assets

Intangible assets include:

- Intellectual property (Patents, Copyrights, Trademarks)
- Licenses, Franchise rights
- Brand value
- Customer lists
- Goodwill

Statement of Cash Flows

Financial statements links
$A = L + SE$
$\Delta A = \Delta L + \Delta SE$
$\Delta Cash = -\Delta NonCashAssets + \Delta L + \Delta SE$

It has three sections

- **Operating**: Primary business activities.
- **Investing**: Acquiring and selling productive assets.
- **Financing**: Related to external sources of financing

Working Capital (WC)

$WC = CurrentAssets - CurrentLiabilities$
$Non - Cash - WC = CurrentAssets - Cash - CurrentLiabilities$

CFO : Cash Flow from operations NI: Net Income
$CFO = NI - Accruals$

Start with Net Income, then:
1) **Add non cash expenses**: expenses that reduce NI
2) **Add (subtract) gains (losses)** associated with investing activities
3) **Add (subtract)** changes in non-cash WC. e.g. if A/R decreases by \$100, add \$100 to NI. If A/R decreases by by \$100, subtract \$100 to NI.

$FreeCashFlow = OperatingCashFlow - CapEx$

Accruals are the difference between net income and cash flow from operations, that is:

$NetIncome = CashFlowfromOperations + Accruals$
$Accruals = NetIncome - CashFlowfromOperations$