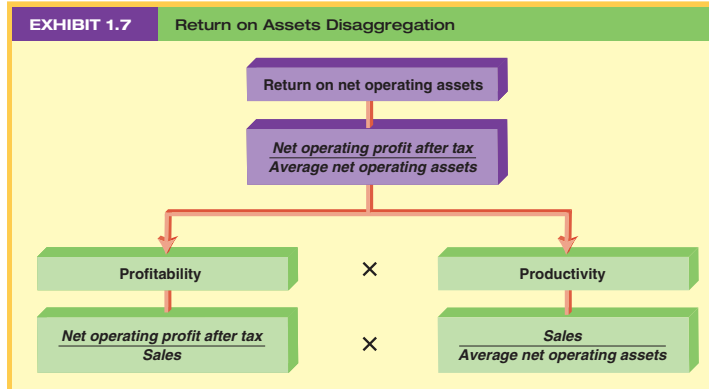
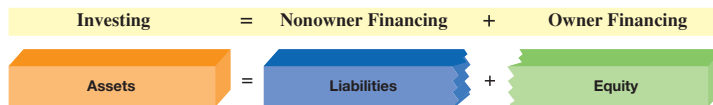


## Quick Review

### Module 1



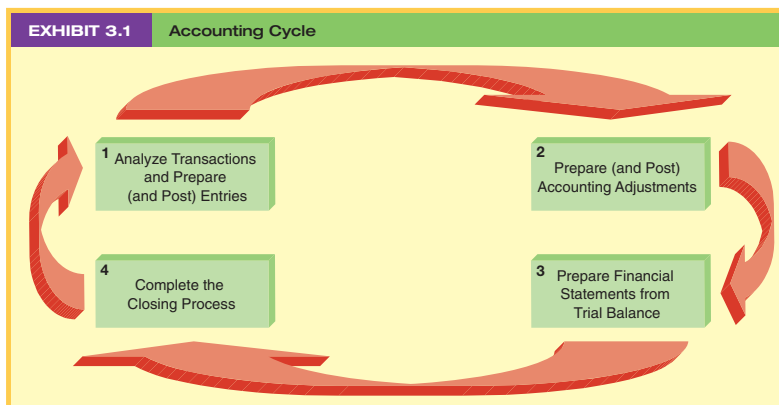
### Module 2

$$\text{Net Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

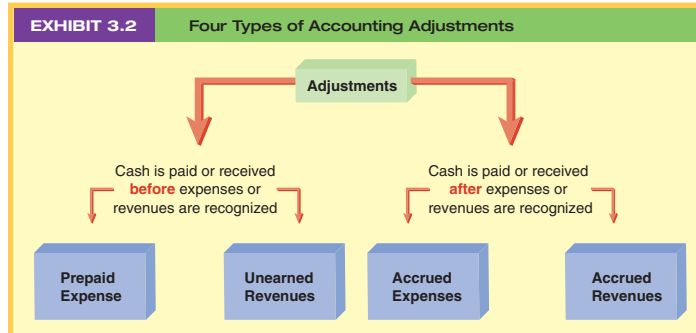
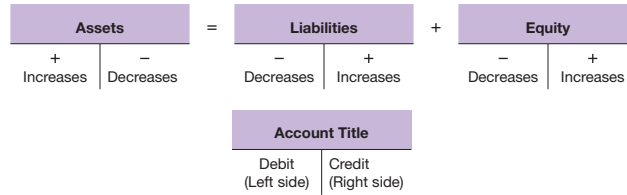
#### Reconciliation of Retained Earnings

Beginning retained earnings
± Net income (loss)
- Dividends
<hr/>
= Ending retained earnings

### Module 3



### T-Account Framework



Adjustments to Net Income to Yield Operating Cash Flows			
	Change in account balance . . .	Means that . . .	Which requires this adjustment to net income to yield cash profit . . .
Receivables	Increase	Sales and net income increase, but cash is not yet received	Deduct increase in receivables from net income
	Decrease	More cash is received than is reported in sales and net income	Add decrease in receivables to net income
Inventories	Increase	Cash is paid for inventories that are not yet reflected in cost of goods sold	Deduct increase in inventories from net income
	Decrease	Cost of goods sold includes inventory costs that were paid for in a prior period	Add decrease in inventories to net income
Payables and accruals	Increase	More goods and services are acquired on credit, delaying cash payment	Add increase in payables and accruals to net income
	Decrease	More cash is paid than that reflected in cost of goods sold or operating expenses	Deduct decrease in payables and accruals from net income

	Cash flow increases from	Cash flow decreases from
Assets . . . . .	Account decreases	Account increases
Liabilities and equity . . . . .	Account increases	Account decreases

## Module 4

$$ROE = \frac{\text{Net income}}{\text{Average stockholders' equity}}$$

$$ROE = \text{Operating return} + \text{Nonoperating return}$$

$$\text{Tax on operating profit} = \text{Tax expense} + (\text{Net nonoperating expense} \times \text{Statutory tax rate})$$

Tax Shield

$$\text{Tax rate on operating profit} = \frac{\text{Tax expense} + (\text{Net nonoperating expense} \times \text{Statutory tax rate})}{\text{Net operating profit before taxes}}$$

$$NOPAT = \text{Net operating profit before tax} \times (1 - \text{Tax rate on operating profit})$$

$$\text{Net operating assets} = \text{Operating assets} - \text{Operating liabilities}$$

$$RNOA = \frac{NOPAT}{\text{Average NOA}}$$

$$RNOA = \frac{NOPAT}{\text{Average NOA}} = \frac{NOPAT}{\text{Sales}} \times \frac{\text{Sales}}{\text{Average NOA}}$$

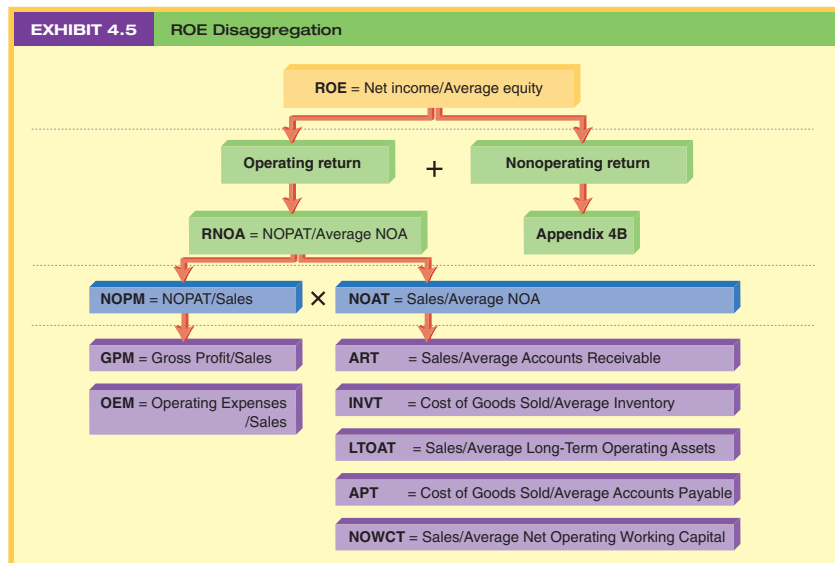
Net operating  
profit margin  
(NOPM)

Net operating  
asset turnover  
(NOAT)

EXHIBIT 4.1	Operating and Nonoperating Items in the Income Statement
Typical Income Statement Operating Items Highlighted	
<b>Revenues</b> Cost of sales <hr/> <b>Gross profit</b> <b>Operating expenses</b> Selling, general and administrative Asset impairment expense Gains and losses on asset disposal <hr/> <b>Total operating expenses</b> <b>Operating income</b> Interest expense Interest and dividend revenue <hr/> Investment gains and losses <hr/> Total nonoperating expenses <hr/> Income before tax, minority interest and discontinued operations <b>Tax expense</b> <hr/> Income before minority interest and discontinued operations Minority interest (see Appendix 4B) Discontinued operations (see Appendix 4B) <hr/> Net income	

EXHIBIT 4.2	Operating and Nonoperating Items in the Balance Sheet
Typical Balance Sheet Operating Items Highlighted	
<b>Current assets</b> <b>Cash and cash equivalents</b> Short-term investments <b>Accounts receivable</b> <b>Inventories</b> <b>Prepaid expenses</b> <b>Deferred income tax assets</b> <b>Other current assets</b>  <b>Long-term assets</b> Long-term investments in securities <b>Property, plant and equipment, net</b> <b>Capitalized lease assets</b> <b>Natural resources</b> <b>Equity method investments</b> <b>Goodwill and Intangible assets</b> <b>Deferred income tax assets</b> <b>Other long-term assets</b>	<b>Current liabilities</b> Short-term notes and interest payable <b>Accounts payable</b> <b>Accrued liabilities</b> <b>Deferred income tax liabilities</b> Current maturities of long-term debt  <b>Long-term liabilities</b> Bonds and notes payable Capitalized lease obligations <b>Pension and other post-employment liabilities</b> <b>Deferred income tax liabilities</b> Minority Interest  <b>Stockholders' equity</b> All equity accounts

EXHIBIT 4.3	Key Ratio Definitions
Ratio	Definition
ROE: Return on equity . . . . .	Net income/Average stockholders' equity
NOPAT: Net operating profit after tax . . . . .	Operating revenues less operating expenses such as cost of sales, selling, general and administrative expense, and taxes; it excludes nonoperating revenues and expenses such as interest revenue, dividend revenue, interest expense, gains and losses on investments, and minority interest.
NOA: Net operating assets . . . . .	Operating assets less operating liabilities; it excludes investments in marketable securities and interest-bearing debt.
RNOA: Return on net operating assets . . . . .	NOPAT/Average NOA
NNE: Net nonoperating expense . . . . .	NOPAT – Net income; NNE consists of nonoperating expenses and revenues, net of tax



$$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Marketable securities} + \text{Accounts receivables}}{\text{Current liabilities}}$$

$$\text{Liabilities-to-equity ratio} = \frac{\text{Total liabilities}}{\text{Stockholders' equity}}$$

## Module 5

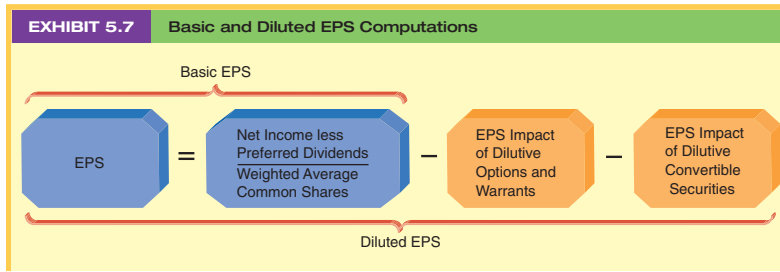
**EXHIBIT 5.1 Distinguishing Operating and Nonoperating Income Components**

Operating Activities	Nonoperating Activities
<ul style="list-style-type: none"> <li>• Sales</li> <li>• Cost of goods sold</li> <li>• Selling, general and administrative expenses</li> <li>• Depreciation expense</li> <li>• Research and development expenses</li> <li>• Restructuring expenses</li> <li>• Income tax expenses</li> <li>• Extraordinary gains and losses</li> <li>• Gains and losses on sales of operating assets</li> <li>• Foreign currency translation effects</li> <li>• Operating asset write-downs</li> <li>• Other income or expenses</li> </ul>	<ul style="list-style-type: none"> <li>• Interest revenues and expenses</li> <li>• Dividend revenues</li> <li>• Gains and losses on sales of investments</li> <li>• Gains and losses on debt retirement</li> <li>• Gains and losses on discontinued operations</li> <li>• Minority interest expense</li> <li>• Investment write-downs</li> </ul>

$$\text{Tax Expense} = \text{Taxes Paid} - \text{Increase (or + Decrease) in Deferred Tax Assets} + \text{Increase (or - Decrease) in Deferred Tax Liabilities}$$

**EXHIBIT 5.4 Sources of Deferred Tax Assets and Liabilities**

Net Book Value of Assets			
Financial reporting net book value	>	Tax reporting net book value	→ Deferred tax liability on balance sheet
Financial reporting net book value	<	Tax reporting net book value	→ Deferred tax asset on balance sheet
Net Book Value of Liabilities			
Financial reporting net book value	<	Tax reporting net book value	→ Deferred tax liability on balance sheet
Financial reporting net book value	>	Tax reporting net book value	→ Deferred tax asset on balance sheet



**EXHIBIT 5.8 Income Statement Effects from Foreign Currency Movements**

	Revenues	–	Expenses	=	Profit
\$US Weakens . . . . .	Increase		Increase		Increase
\$US Strengthens . . . . .	Decrease		Decrease		Decrease

## Module 6

**Allowance for Uncollectible Accounts Determination**

Beginning allowance for uncollectible accounts . . . . .	\$ 2,200
Add: Provision for uncollectible accounts . . . . .	700
Less: Write-offs of accounts receivable . . . . .	0
Ending allowance for uncollectible accounts . . . . .	\$ 2,900

**EXHIBIT 6.2 Effects of an Accounts Receivable Write-Off**

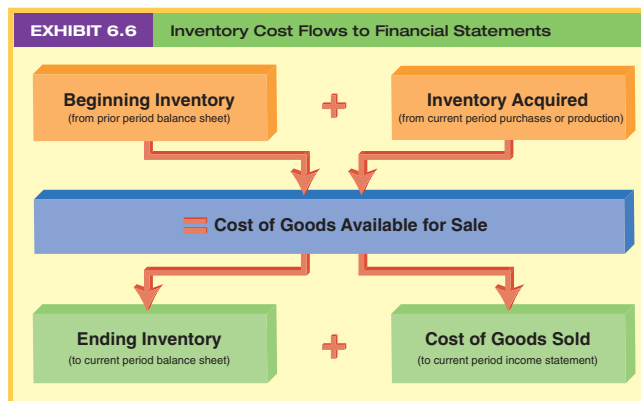
Account	Before Write-Off	Effects of Write-Off	After Write-Off
Accounts receivable . . . . .	\$100,000	\$(500)	\$99,500
Less: Allowance for uncollectible accounts . . . . .	2,900	(500)	2,400
Accounts receivable, net of allowance . . . . .	\$ 97,100		\$97,100

**Accounts Receivable Turnover = Sales/Average Accounts Receivable**

**Average Collection Period = Accounts Receivable/Average Daily Sales**

**EXHIBIT 6.5 Cost of Goods Sold Computation**

Beginning inventory (prior period balance sheet)	
+ Inventory purchased and/or produced	
Cost of goods available for sale	
– Ending inventory (current period balance sheet)	
Cost of goods sold (current income statement)	



**FIFO Inventory = LIFO Inventory + LIFO Reserve**

**FIFO COGS = LIFO COGS – Increase in LIFO Reserve (or + Decrease)**

$$\text{Inventory Turnover} = \text{Cost of Goods Sold} / \text{Average Inventory}$$

$$\text{Average Inventory Days Outstanding} = \text{Inventory} / \text{Average Daily Cost of Goods Sold}$$

$$\text{Depreciation Expense} = \text{Depreciation Base} \times \text{Depreciation Rate}$$

### Straight-Line Depreciation

Depreciation Base	Depreciation Rate
Cost – Salvage value	1/Estimated useful life

### Double-Declining Depreciation

Depreciation Base	Depreciation Rate
Net Book Value = Cost – Accumulated Depreciation	2 × SL rate

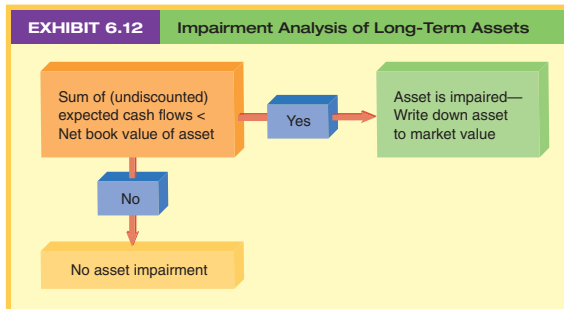
**EXHIBIT 6.11 Comparison of Straight-Line and Double-Declining-Balance Depreciation**

Year	Straight-Line		Double-Declining-Balance	
	Depreciation Expense	Book Value at End of Year	Depreciation Expense	Book Value at End of Year
1	\$18,000	\$82,000	\$40,000	\$60,000
2	18,000	64,000	24,000	36,000
3	18,000	46,000	14,400	21,600
4	18,000	28,000	8,640	12,960
5	18,000	10,000	2,960	10,000
	<u>\$90,000</u>		<u>\$90,000</u>	

All depreciation methods yield the same salvage value

Total depreciation over asset life is identical for all methods

$$\text{Gain or Loss on Asset Sale} = \text{Proceeds from Sale} - \text{Net Book Value of Asset Sold}$$

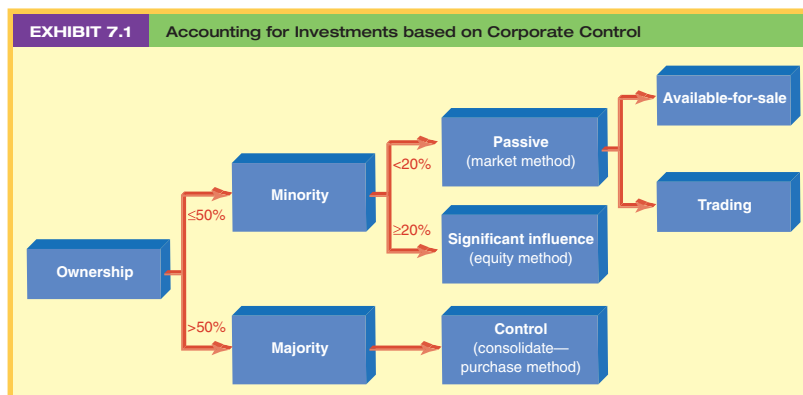


$$\text{PPE Turnover (PPET)} = \text{Sales} / \text{Average PPE Assets}$$

$$\text{Estimated Average Useful Life} = \text{Depreciable Asset Cost} / \text{Depreciation Expense}$$

$$\text{Percent Used Up} = \text{Accumulated Depreciation} / \text{Depreciable Asset Cost}$$

## Module 7



**EXHIBIT 7.2** Investment Type, Accounting Treatment, and Financial Statement Effects

	Accounting	Balance Sheet Effects	Income Statement Effects	Cash Flow Effects
Passive	Market method	Investment account is reported at current market value	Dividends and capital gains included in income Interim changes in market value may or may not affect income depending on whether the investor actively trades the securities Sale of investment yields capital gain or loss	Dividends and sale proceeds are cash inflows Purchases are cash outflows
Significant influence	Equity method	Investment account equals percent owned of investee company's equity*	Dividends reduce investment account Investor reports income equal to percent owned of investee income Sale of investment yields capital gain or loss	Dividends and sale proceeds are cash inflows Purchases are cash outflows
Control	Consolidation	Balance sheets of investor and investee are combined	Income statements of investor and investee are combined (and sale of investee yields capital gain or loss)	Cash flows of investor and investee are combined (and sale/purchase of investee yields cash inflow/outflow)

\*Investments are often acquired at purchase prices in excess of book value (on average, market prices are 1.5 times book value for public companies). In this case the investment account exceeds the proportionate ownership of the investee's equity.

**EXHIBIT 7.3** Accounting Treatment for Available-for-Sale and for Trading Investments

Investment Classification	Reporting of Market Value Changes	Reporting of Dividends Received and Gains and Losses on Sale
Available-for-Sale (AFS)	Market value changes bypass the income statement and are reported in accumulated <i>other comprehensive income</i> (OCI) as part of equity	Reported as <i>other income</i> in income statement
Trading (T)	Market value changes are reported in the income statement as unrealized gains or losses; impacting equity via retained earnings	Reported as <i>other income</i> in income statement

### Summary of Equity Method Accounting

- Investments are recorded at their purchase cost.
- Dividends received are treated as a recovery of the investment and, thus, reduce the investment balance (dividends are not reported as income as with passive investments).
- The investor reports income equal to its percentage share of the investee's reported income; the investment account is increased by the percentage share of the investee's income or decreased by the percentage share of any loss.
- Changes in market value do not affect the investment's carrying value.

### Effects of Equity Method Investments on ROE Components

- Net operating profit margin (NOPM = NOPAT/Sales).** Most analysts include equity income (sales less expenses) in NOPAT since it relates to operating investments. However, investee's sales are not included in the NOPM denominator. The reported NOPM is, thus, *overstated*.
- Net operating asset turnover (NOAT = Sales/Average NOA).** Investee's sales are excluded from the NOAT denominator. This means that NOAT is *understated*. (When investee assets exceed the investment balance, the impact on NOAT is *indeterminate*.)
- Financial leverage (FLEV = Net nonoperating obligations/Average equity).** Financial leverage is understated due to the absence of investee liabilities in the numerator.

EXHIBIT 7.6 Mechanics of Consolidation Accounting (Purchase Price above Book Value)				
	Penman Company	Nissim Company	Consolidating Adjustments	Consolidated
Current assets	\$ 5,000	\$1,000		\$ 6,000
Investment in Nissim	4,000	0	(4,000)	0
PPE, net	10,000	4,000	300	14,300
Goodwill			700	700
Total assets	<u>\$19,000</u>	<u>\$5,000</u>		<u>\$21,000</u>
Liabilities	\$ 5,000	\$2,000		\$ 7,000
Contributed capital	11,000	2,000	(2,000)	11,000
Retained earnings	3,000	1,000	(1,000)	3,000
Total liabilities and equity	<u>\$19,000</u>	<u>\$5,000</u>		<u>\$21,000</u>

## Module 8

**Accounts Payable Turnover (APT) = Cost of Goods Sold / Average Accounts Payable**

**Accounts Payable Days Outstanding (APDO) = Accounts Payable / Average Daily Cost of Goods Sold**

EXHIBIT 8.1 Coupon Rate, Market Rate, and Bond Pricing		
Coupon rate > market rate	→	Bond sells at a <b>premium</b> (above face amount)
Coupon rate = market rate	→	Bond sells at <b>par</b> (at face amount)
Coupon rate < market rate	→	Bond sells at a <b>discount</b> (below face amount)

Interest Expense Computation for Bonds		
Cash interest paid		Cash interest paid
+ Amortization of discount	or	- Amortization of premium
Interest expense		Interest expense

**Gain or Loss on Bond Repurchase = Net Bonds Payable – Repurchase Payment**

## Module 9

### Components of Stockholders' Equity:

- Contributed capital: common stock, preferred stock, additional paid-in capital, treasury stock, minority interest
- Earned capital: retained earnings, accumulated other comprehensive income (AOCI)

### Stock Issuance:

- Common stock is increased by number of shares issued × par value
- Additional paid-in capital is increased for the balance of the issue price

### Treasury Stock:

- Record at purchase cost
- When reissued, treasury stock is reduced by the cost of the shares reissued and the balance is reflected as an increase in additional paid-in capital

### Dividends and Splits:

- Cash: reduce retained earnings by the cash dividends paid
- Stock (small): reduce retained earnings by the market value of the shares distributed and increase common stock and additional paid-in capital by the market value of the shares issued
- Stock (large): reduce retained earnings by the par value of the shares issued and increase common stock by the same amount (no increase in additional paid-in capital)
- Split: no accounting entry (adjust number of shares outstanding and their par value, if any)

### Components of Comprehensive Income:

- Currency translation adjustment
- Unrealized gains and losses on available-for-sale securities
- Minimum pension liability adjustment
- Unrealized gains and losses on certain derivatives

EXHIBIT 9.3 Balance Sheet Effects of Euro Strengthening versus the Dollar					
Currency	Assets	=	Liabilities	+	Equity
\$US weakens .....	Increase	=	Increase	+	Increase
\$US strengthens.....	Decrease	=	Decrease	+	Decrease

## Module 10

EXHIBIT 10.1 Financial Statement Effects of Lease Type for the Lessee				
Lease Type	Assets	Liabilities	Expenses	Cash Flows
<b>Capital</b> .....	Lease asset reported	Lease liability reported	Depreciation and interest expense	Payments per lease contract
<b>Operating</b> .....	Lease asset <b>not</b> reported	Lease liability <b>not</b> reported	Rent expense	Payments per lease contract

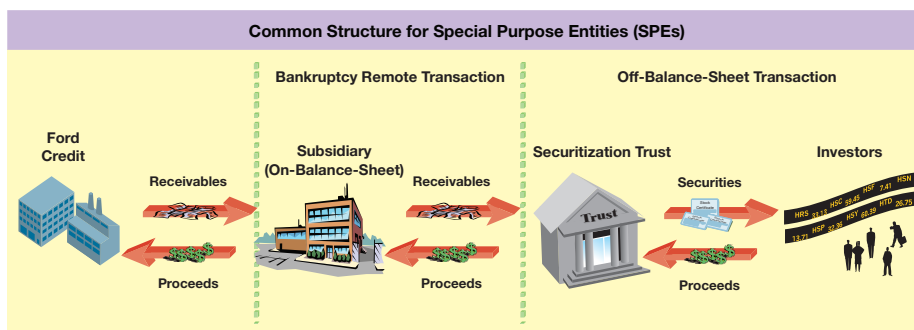
Pension Plan Assets
Pension plan assets, beginning balance
+ Actual returns on investments (interest, dividends, gains and losses)
+ Company contributions to pension plan
- Benefits paid to retirees
= Pension plan assets, ending balance

Pension Obligation
Projected benefit obligation, beginning balance
+ Service cost
+ Interest cost
+/- Actuarial losses (gains)
- Benefits paid to retirees
= Projected benefit obligation, ending balance

Net Pension Liability (or Asset)
Pension plan assets (at market value)
- Projected benefit obligation (PBO)
Funded status

Net Pension Expense
Service cost
+ Interest cost
- Expected return on pension plan assets
± Amortization of deferred amounts
Net pension expense

Effects from Changes in Pension Assumptions		
Estimate change	Probable effect on pension expense	Reason for effect
Discount rate increase .....	Increase	While the higher discount rate reduces the PBO, the lower PBO is multiplied by a higher rate. The rate effect is larger than the discount effect, resulting in increased pension expense.*
Investment return increase .....	Decreases	The dollar amount of expected return on plan assets is the product of the plan assets balance and the expected long-term rate of return. Increasing the return increases the expected return on plan assets, thus reducing pension expense.
Wage inflation increase .....	Increases	The expected rate of wage inflation affects future wage levels that determine expected pension payments. An increase, thus, increases PBO, which increases both the service and interest cost components of pension expense.



## Module 11

### EXHIBIT 11.1 Common Income Statement Adjustments

1. Separate persistent and transitory items; examples of items to exclude:
  - a. Gains and losses relating to
    - Asset sales of long-term assets and investments
    - Asset write-downs of long-term assets and inventories
    - Stock issuances by subsidiaries
    - Debt retirements
  - b. Transitory items reported after income from continued operations
    - Discontinued operations
    - Extraordinary items
  - c. Restructuring expenses
  - d. Merger costs
  - e. LIFO liquidation gains
  - f. Liability accruals deemed excessive
  - g. Lawsuit gains and losses
  - h. Revenue or expense from short-term fluctuations in tax rates and from changes in deferred tax valuation allowance
2. Separate operating and nonoperating items; examples:
  - a. Treating interest revenue and expense, and investment gains and losses, as nonoperating
  - b. Treating pension service cost as operating, and pension interest costs and expected returns as nonoperating
  - c. Treating debt retirement gains and losses as nonoperating
  - d. Treating income and losses from discontinued operations as nonoperating
3. Include expenses not reflected in net income; examples:
  - a. Inadequate (or excessive) reserves for bad debts or asset impairment
  - b. Reductions in R&D, advertising, and other discretionary expenses that were made to achieve short-term income targets; conversely, exclude excessive expenses related to product or market development
  - c. Employee stock option expense (for financial statements issued before 2006)

### EXHIBIT 11.2 Common Balance Sheet Adjustments

1. Exclude nonoperating assets and liabilities
  - a. Eliminate assets and liabilities from discontinued operations
  - b. Write-down of assets, including goodwill, that is judged to be impaired
2. Include operating assets and liabilities not reflected in balance sheet; examples:
  - a. Capitalize operating assets from operating leases; nonoperating capitalized lease liabilities are also increased
  - b. Consolidate off-balance-sheet investments:
    - Equity method investments
    - Special purpose entities (SPEs)
  - c. Accrue understated liabilities and assets

### EXHIBIT 11.3 Common Statement of Cash Flow Adjustments

1. Adjust operating cash flows for transitory items; examples of adjustments that potentially impact operating cash flows:
  - a. Adjust discretionary costs (advertising, R&D, maintenance) to normal, expected levels
  - b. Adjust current operating assets (receivables, inventory) to normal, expected levels
  - c. Adjust current operating liabilities (payables, accruals) to normal, expected levels
2. Adjust investing cash flows for transitory items, such as cash proceeds from asset disposals (including disposals of discontinued operations) and from tax benefits due to exercise of stock options
3. Review cash flows and reassign them, if necessary, to operating, investing, or financing sections; examples:
  - a. Reclassify operating cash inflows from asset securitization to the financing section
  - b. Reclassify interest payments from the operating to the financing section

$$\text{Forecasted Year-End Account Balance} = \frac{\text{Forecasted Sales (or Cost of Goods Sold)}}{\text{Estimated Turnover Rate}}$$

Forecasted Cash	Possible Adjustments to Forecasted Balance Sheet and Income Statement
Too low	<ul style="list-style-type: none"> <li>Liquidate marketable securities (then adjust forecasted investment income)</li> <li>Raise cash by increasing long-term debt and/or equity (then adjust forecasted interest expense and/or expected dividends)</li> </ul>
Too high	<ul style="list-style-type: none"> <li>Invest excess cash in marketable securities (then adjust investment income)</li> <li>Repay debt or pay out to shareholders as repurchased (treasury) stock or dividends (then adjust forecasted interest expense and/or expected dividends)</li> </ul>

## Module 12

### DCF Valuation Model

$$\text{Firm Value} = \text{Present Value of Expected Free Cash Flows to Firm (FCFF)}$$

$$\text{FCFF} = \text{NOPAT} - \text{Increase in NOA}$$

where

NOPAT = Net operating profit after tax

NOA = Net operating assets

### ROPI Valuation Model

$$\text{Firm Value} = \text{NOA} + \text{Present Value of Expected ROPI}$$

$$\text{ROPI} = \text{NOPAT} - \underbrace{(\text{NOA}_{\text{Beg}} \times r_w)}_{\text{Expected NOPAT}}$$

where

$\text{NOA}_{\text{Beg}}$  = Net operating assets at beginning (*Beg*) of period

$r_w$  = Weighted average cost of capital (WACC)