

## DTL and DTA Calculations

Consider a firm with a 40% tax rate that has \$1,000 in financial statement depreciation and \$3,000 of tax return depreciation, as well as \$500 of warranty expense that cannot be deducted in the current period for taxes.

The firm will report a DTL of  $(3,000 - 1,000)(0.40) = \$800$  and a DTA of  $(500 - 0)(0.40) = \$200$ . Reported income tax expense is greater than taxes payable by  $800 - 200 = \$600$ .

A change in the firm's expected tax rate from 40% to 30% would reduce the DTL to \$600 and the DTA to \$150. The reduction of \$200 in the DTL and the decrease in the DTA of \$50 net to a \$150 decrease in liabilities, which will reduce reported income tax expense (taxes payable – net deferred tax liability) by \$150. Net income/profitability is increased, equity is increased, and leverage is decreased by the change.

## Permanent vs. Temporary Differences

So far, our examples have been temporary differences between taxable income and pretax income that will potentially reverse over time. In the case of interest income on tax-exempt bonds, for example, pretax income is greater than taxable income, and this will not reverse. There is no deferred asset or liability created, and the difference is reflected in a difference between the effective tax rate (income tax expense/pretax income) and the statutory rate on the tax return.

## Valuation Allowance

A firm's management must report a valuation allowance, under U.S. GAAP, if it is probable that part or all of a DTA will not be realized because of the firm's inability to generate taxable income in the future. An increase (decrease) in the valuation allowance decreases (increases) the net DTA and reported income. The analyst should examine the reasons for the change as management can manipulate earnings by changing the valuation allowance.

Firms report the details of DTL and DTA changes over the period, as well as a reconciliation of the differences between their effective tax rate (financial statements) and the statutory tax rate (tax return). These details can help an analyst understand the implications of the events that give rise to changes in deferred tax items and better predict future tax rates by considering the factors that caused a difference between the statutory and effective rates.

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Some differences in reporting result from the fact that under IFRS upward asset revaluations give rise to DTAs, DTLs and DTAs are netted for reporting purposes, and, rather than reporting a valuation allowance, DTAs are adjusted directly for any probability that they will not be realized (reversed).

## NON-CURRENT (LONG-TERM) LIABILITIES

Cross-Reference to CFA Institute Assigned Reading #31

Bonds issued at par:

- *Balance sheet impact.* The value carried on books throughout a bond's life will be equal to face value.
- *Interest expense.* This is always equal to the book value of bonds at the beginning of the period multiplied by the market rate of interest at issuance. With bonds issued at par value, this is the same as the bond's coupon rate.
- *Cash flow.* Cash flow from operations includes a deduction for cash interest expense. Interest expense is equal to the coupon payment. Cash flow from financing is increased by the amount received at issuance and decreased by the payment made when the bonds are redeemed.

Bonds issued at a premium or discount:

- *Balance sheet impact.* Bonds that were originally sold at a premium will always be shown at a premium on the balance sheet. This premium will be amortized toward zero over the life of the bond. Bonds that were originally sold at a discount will always be recorded on the balance sheet at a discount. This discount will be amortized toward zero over the life of the bond. Hence, the book value of both premium and discount bonds will converge to the bond's par or face value at their maturity dates.
- *Interest expense.* In the case of bonds issued at a premium, recorded interest expense will be lower than the coupon payment. Amortization of the bond's premium will serve to reduce the interest expense shown on the income statement. In general, interest expense will equal the coupon payment less the premium amortization. In the case of discount bonds, the interest expense will be higher than the coupon payment. Here, amortization of the bond's discount will serve to increase the interest expense reported on the income statement. In general, interest expense will equal the coupon payment plus the discount amortization.
- *Cash flow.* For premium bonds, the cash coupon is higher than interest expense. Consequently, CFO is lower and CFF is higher, relative to a company that does not have premium bonds in its capital structure. For discount bonds, the cash coupon is lower than interest expense. Consequently, CFO is higher and CFF is lower, relative to a company that does not have discount bonds.

Debt covenants contained in the bond indenture place restrictions on the firm that protect bondholders and thereby increase the value of the firm's bonds. Typically, such covenants include restrictions on paying common dividends if bond interest is not paid; on the values of specific financial ratios; and on additional debt issuance, acquisitions, mergers, and asset sales.

An analyst can find additional information about a firm's financing liabilities in the footnotes. Typically, disclosures will include the nature of the liabilities, maturity dates, call and conversion provisions, restrictions, collateral pledged as security, and the amount of debt maturing in each of the next five years.

Under both U.S. GAAP and IFRS, recent changes allow firms to report more financial liabilities at fair value. An increase (decrease) in market rates decreases (increases) the present value of the future liability. For analysis, the fair value of liabilities may be more appropriate than amortized historical proceeds as a firm with lower-rate debt is in better financial shape than one that differs only by having higher-rate debt. A downward (upward) adjustment in the value of a firm's liabilities will increase (decrease) its equity and decrease (increase) its leverage ratios.

### Derecognition of Debt

When bonds mature, no gain or loss is recognized by the issuer. At maturity, any original discount or premium has been fully amortized; thus, the book value of a bond liability and its face value are the same. The cash outflow to repay a bond is reported in the cash flow statement as a financing cash flow.

A firm may choose to **redeem** bonds before maturity because interest rates have fallen, because the firm has generated surplus cash through operations, or because funds from the issuance of equity make it possible (and desirable).

When bonds are redeemed before maturity, a gain or loss is recognized by subtracting the redemption price from the book value of the bond liability at the reacquisition date. For example, consider a firm that reacquires \$1 million face amount of bonds at 102% of par when the carrying value of the bond liability is \$995,000. The firm will recognize a loss of \$25,000 (\$995,000 carrying value – \$1,020,000 redemption price). Had the carrying value been greater than the redemption price, the firm would have recognized a gain.

Under U.S. GAAP, any remaining unamortized bond issuance costs must be written off and included in the gain or loss calculation. Writing off the cost of issuing the bond will reduce a gain or increase a loss. No write-off is necessary under IFRS because the issuance costs are already accounted for in the book value of the bond liability.

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Any gain or loss from redeeming debt is reported in the income statement, usually as a part of continuing operations, and additional information is disclosed separately. Redeeming debt is usually not a part of the firm's day-to-day operations; thus, analysts often eliminate the gain or loss from the income statement for analysis and forecasting.

When presenting the cash flow statement using the indirect method, any gain (loss) is subtracted from (added to) net income in calculating cash flow from operations. The redemption price is reported as an outflow from financing activities.

## **Leases**

A firm may choose to lease, rather than purchase, assets:

- To conserve cash.
- Because of attractive financing (lower interest costs).
- To avoid risk of asset obsolescence.
- To avoid reporting a balance sheet liability (with an operating lease) and improve leverage ratios.
- Flexibility to design custom lease liability.
- Tax advantage (U.S.) if an off-balance-sheet lease can be treated as ownership for tax (deduct depreciation and interest expense).

## **Lease Classification**

Under U.S. GAAP, a lease must be classified by the lessee as a *finance (capital) lease* if any one of the following four criteria is met:

- The title is transferred to the lessee at the end of the lease period.
- A bargain purchase option exists.
- The lease period is at least 75% of the asset's life.
- The present value of the lease payments is at least 90% of the fair value of the asset.

If none of the criteria hold, the lease will be classified as an *operating lease*. Lease classification under IFRS is similar (without specific quantitative tests) and a lease must be classified as a finance lease if substantially all of the risks and rewards of ownership are transferred to the lessee.

## **Financial Statement Effects of Leases**

When a lease is reported as a finance lease, the firm adds a lease asset and a lease liability to its balance sheet in equal amounts. Over time, the firm recognizes interest expense on the lease liability and depreciation expense on the lease asset.

The liability decreases each period by the excess of the lease payment over the interest expense.

When a lease is classified as an operating lease, no balance sheet entries are made, and the lease payment is reported as an expense each period.

Because of these differences, compared to a firm reporting a lease as an operating lease, a firm reporting the same lease as a finance lease will report: higher assets, higher liabilities, higher operating cash flow and lower financing cash flow (portion of lease payment that reduces the lease liability is considered a financing cash flow) over the life of the lease. Since the sum of interest expense and depreciation is greater than the lease payment in the early years of a finance lease, reporting a lease as a finance lease will decrease net income and profitability ratios compared to reporting the lease as an operating lease.

The following tables summarize the effects of capital leases compared to operating leases on financial statement items and ratios.

**Figure 3: Effects of Lease Classification (Financial Statement Totals)**

<i>Financial Statement Totals</i>	<i>Finance Lease</i>	<i>Operating Lease</i>
Assets	Higher	Lower
Liabilities	Higher	Lower
Net income (in the early years)	Lower	Higher
Cash flow from operations	Higher	Lower
Cash flow from financing	Lower	Higher
Total cash flow	Same	Same

**Figure 4: Effects of Lease Classification (Ratios)**

<i>Ratios</i>	<i>Finance Lease</i>	<i>Operating Lease</i>
Current ratio (CA/CL)	Lower	Higher
Working capital (CA – CL)	Lower	Higher
Asset turnover (Sales/TA)	Lower	Higher
Return on assets (EAT/TA)	Lower	Higher
Return on equity (EAT/E)	Lower	Higher
Debt/equity	Higher	Lower

With a finance lease, the next lease payment is recognized as a current liability, reducing the current ratio and net working capital. Operating income (EBIT) is higher for a finance lease because the interest expense is not subtracted in its

calculation. Total net income will be the same over the entire lease term regardless of classification, but net income will be lower in the early years for a finance lease because interest costs are higher in the early years (the sum of depreciation and interest expense exceeds the lease payment).

### Lessor Treatment of Lease Transactions

If the conditions for a finance lease are not met, a lessor reports a lease as an operating lease. A lessor reports the lease payments as income and depreciates the leased asset on its balance sheet.

If the conditions for a finance lease are met, a lessor reports the lease as either a **sales-type lease** or a **direct financing lease**. From a lessor's perspective, when the carrying value of the leased asset is less than the present value of the lease payments, as is the case when the lessor is the manufacturer of the leased asset, the lease is treated as a sales-type lease. In this case, the lessor reports the transaction as if the asset were sold at the lease value (recognizing profit at lease initiation) and as if a loan was provided to the lessee. A lease receivable (asset) is added to the lessor's balance sheet. Interest income and a reduction in the value of the lease receivable asset (future lease payments) are reported as lease payments are received. The interest income is treated as operating cash inflow and the reduction in the asset value is treated as an investing cash inflow.

If the lessor's book value for the leased asset is the same as the present value of the lease, the lease is reported as a direct financing lease. An example would be a leasing company that leases cars to customers, first purchasing the automobiles from various manufacturers. The lessor records interest income over the life of the lease (as if it were purely a loan transaction) and no profit at the inception of the lease. Interest income is reported as an operating cash inflow and reduction in the value of the lease asset is reported as an investing cash inflow, just as with a sales-type lease.

With a sales-type finance lease, recognizing profit at the inception of the lease increases the lessor's net income, retained earnings, and assets compared to an operating lease or direct financing lease. The lessor reports higher net income in the early years for a direct financing lease compared to an operating lease. This pattern results because interest income from the direct financing lease decreases over time, while the payment on the operating lease is level. Over the life of the lease, lessor net income is the same whether a lease is treated as an operating lease or as a direct financing lease.

## Pension Plans

A **defined contribution plan** is a retirement plan in which the firm contributes a sum each period to the employee's retirement account. The firm makes no promise to the employee regarding the future value of the plan assets. The investment decisions are left to the employee, who assumes all of the investment risk. On the income statement, pension expense is simply equal to the employer's contribution. There is no future liability to report on the balance sheet.

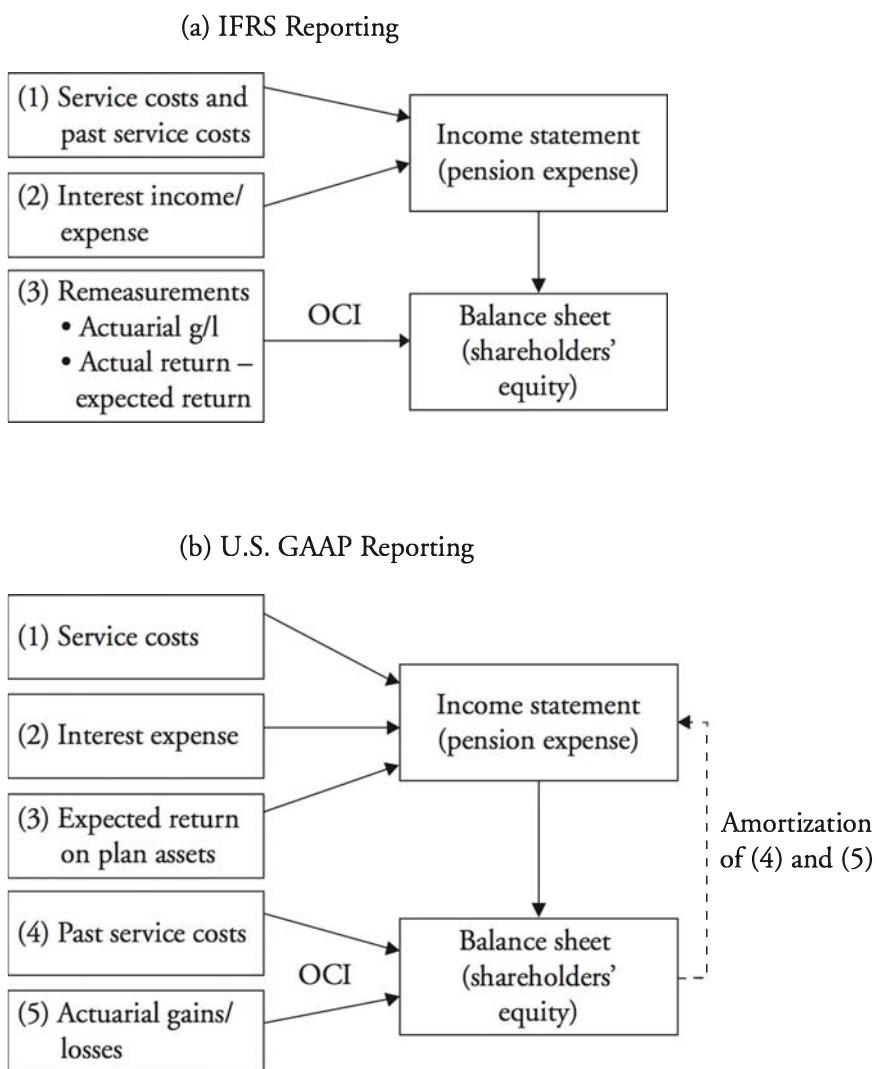
In a **defined benefit plan**, the firm promises to make periodic payments to employees after retirement. The benefit is usually based on the employee's years of service and the employee's compensation at, or near, retirement. For example, an employee might earn a retirement benefit of 2% of her final salary for each year of service. Because the employee's future benefit is defined, the employer assumes the investment risk.

Financial reporting for a defined benefit plan is much more complicated than for a defined contribution plan because the employer must estimate the value of the future obligation to its employees. The obligation involves forecasting a number of variables, such as future compensation levels, employee turnover, retirement age, mortality rates, and an appropriate discount rate.

For defined benefit plans, if the fair value of the plan's assets is greater than the estimated pension liability, the plan is said to be **overfunded** and the sponsoring firm records a **net pension asset** on its balance sheet. If the fair value of the plan's assets is less than the estimated pension liability, the plan is **underfunded** and the firm records a **net pension liability** on its balance sheet.

The change in the net pension asset or liability is reported each year. Some components of the change are included in net income while others are included in other comprehensive income. Figure 5 illustrates the treatments under IFRS and U.S. GAAP.

Figure 5: Components of the Change in a Net Pension Asset or Liability



Under IFRS, the change in net pension asset or liability has three components: service costs, net interest expense or income, and remeasurements. Pension expense on the income statement is the sum of service costs (present value of additional benefits earned over the year) and net interest expense or income (beginning value of net pension liability or asset multiplied by the discount rate used to determine the present value of plan assets).

Remeasurements are recognized as other comprehensive income. These include actuarial gains or losses and the difference between the actual return on plan assets and the return included in net interest expense or income. Under IFRS, remeasurements are not amortized to the income statement over time.

Under U.S. GAAP, the change in net pension asset or liability has five components. Pension expense in the current period has three components: service costs, net interest expense, and the expected return on plan assets (a positive expected return decreases pension expense).

Past service costs (retroactive benefits awarded to employees when a plan is initiated or amended) and actuarial gains or losses are recognized as other comprehensive income. These are amortized to pension expense over time.

## **STUDY SESSION 9: FINANCIAL REPORTING AND ANALYSIS— FINANCIAL REPORTING QUALITY AND FINANCIAL STATEMENT ANALYSIS**

### **FINANCIAL REPORTING QUALITY**

Cross-Reference to CFA Institute Assigned Reading #32

When discussing the quality of a firm's financial statements, we must distinguish between the quality of its financial reporting and the quality of its reported results.

**Financial reporting quality** refers to the characteristics of a firm's financial statements, primarily with respect to how well they follow generally accepted accounting principles (GAAP). However, given that GAAP allow choices among methods, estimates, and specific treatments, compliance with GAAP by itself does not necessarily produce financial reporting of the highest quality.

High quality financial reporting must be *decision-useful*. Two characteristics of decision-useful financial reporting are *relevance* and *faithful representation*. Financial statements are relevant when the information presented is useful in making decisions and likely to affect these decisions. Faithful representation encompasses the qualities of completeness, neutrality, and the absence of errors.

The **quality of earnings** is a separate issue. The quality of reported earnings (not the quality of earnings reports) is high if earnings represent an adequate return on equity and are sustainable; that is, they are expected to recur in future periods. A firm can have high financial reporting quality but low earnings quality (inadequate returns/unsustainable), but if a firm has low-quality financial reporting, we might not be able to determine the quality of its earnings.

Quality of financial reports may be ranked from best to worst, based on the quality of earnings and financial reporting:

1. Reporting is compliant with GAAP and decision-useful; earnings are sustainable and adequate.

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2. Reporting is compliant with GAAP and decision-useful, but earnings are not sustainable or not adequate.
3. Reporting is compliant with GAAP, but earnings quality is low and reporting choices and estimates are biased.
4. Reporting is compliant with GAAP, but the amount of earnings is actively managed to increase, decrease, or smooth reported earnings.
5. Reporting is not compliant with GAAP, although the numbers presented are based on the company's actual economic activities.
6. Reporting is not compliant and includes numbers that are fictitious or fraudulent.

### Neutral Accounting vs. Conservative or Aggressive Accounting

Financial statements should be neutral (unbiased) to be most valuable to users. Biased reporting can be conservative or aggressive. Choices made within GAAP are considered **conservative** if they tend to decrease the company's reported earnings and financial position for the current period and considered **aggressive** if they increase reported earnings or improve the financial position for the current period. Aggressive accounting often results in decreased earnings in future periods, while conservative accounting will tend to increase future period earnings.

Both these types of bias are used by management to **smooth earnings**. During periods of higher-than-expected (or higher than a specific benchmark) earnings, management may employ a conservative bias (e.g., by adjusting an accrued liability upward to reduce reported earnings for that period). This effectively defers the recognition of these earnings to a future period. If, in a future period, earnings are less than expected, a more aggressive earnings choice (e.g., decreasing the accrued liability) can increase reported earnings. The initial increase in the accrued liability is sometimes referred to as putting earnings in the “cookie jar” (so that they may be enjoyed later).

Conservatism in financial reporting is not necessarily “good.” Either type of bias is a deviation from neutral reporting or faithful representation. Sometimes GAAP themselves can introduce conservatism by imposing higher standards of verification for revenue and profit than for expenses and accrual of liabilities. While conservative bias is not ideal for users of financial statements, it may be beneficial in reducing the probability of future litigation from users claiming they were misled, in reducing current period tax liability, and in protecting the interests of those who

have less complete information than management, such as buyers of the company's debt.

Some examples of conservative versus aggressive financial reporting choices are shown in Figure 6.

**Figure 6: Aggressive and Conservative Accounting**

<i>Aggressive</i>	<i>Conservative</i>
Capitalize current period costs	Expense current period costs
Longer estimates of the lives of depreciable assets	Shorter estimates of the lives of depreciable assets
Higher estimated salvage values	Lower estimated salvage values
Straight-line depreciation	Accelerated depreciation
Delayed recognition of impairments	Early recognition of impairments
Smaller reserve for bad debt	Greater reserve for bad debt
Smaller valuation allowances on deferred tax assets	Larger valuation allowances on deferred tax assets

### Motivations and Conditions for Low-Quality Financial Reporting

Three factors that typically exist in cases where management provides low-quality financial reporting are *motivation*, *opportunity*, and *rationalization* of the behavior.

One important motivation for aggressive accounting choices is to meet or exceed benchmark or expected earnings per share growth. The manager's motivation may be to enhance her reputation and improve future career opportunities or to simply increase incentive compensation. Other possible motivations are to gain credibility with equity market investors or improve the way the company is viewed by its customers and suppliers. For companies that are highly leveraged and unprofitable, aggressive accounting may be motivated by a desire to avoid violating debt covenants.

Circumstances that provide opportunity for low-quality, or even fraudulent, financial reporting include weak internal controls, inadequate oversight by the board of directors, the large range of acceptable accounting treatments, or inconsequential penalties in the case of accounting fraud.

The third likely factor in low-quality financial reporting is rationalization by management for less-than-ethical actions. Whether the story is "I'll fix it next period" or "I have to do it to get my bonus and pay for my parents' care," the resulting behavior is the same.

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Requiring audited financial statements is one mechanism to discipline financial reporting quality. However, an unqualified or “clean” audit opinion does not guarantee that no fraud has occurred; it only offers reasonable assurance that the financial statements (prepared under the direction of management) have been “fairly reported” with respect to the applicable GAAP. The auditor is selected and paid by the firm being audited.

### **Non-GAAP Measures**

Firms will sometimes report accounting measures that are not defined or required under GAAP. Such measures typically exclude some items in order to make the firm’s performance look better. Management may exclude items because they are one-time or nonoperating costs that will not affect operating earnings going forward, because the items are non-cash charges, or to “improve comparability with companies that use different accounting methods” for depreciation or restructuring charges.

In the United States, companies that report non-GAAP measures in their financial statements are required to:

- Display the most comparable GAAP measure with equal prominence.
- Provide an explanation by management as to why the non-GAAP measure is thought to be useful.
- Reconcile the difference between the non-GAAP measure and the most comparable GAAP measure.
- Disclose other purposes for which the firm uses the non-GAAP measure.
- Include, in any non-GAAP measure, any items that are likely to recur in the future, even those treated as nonrecurring, unusual, or infrequent in the financial statements.

IFRS require that firms using non-IFRS measures in financial reports must:

- Define and explain the relevance of such non-IFRS measures.
- Reconcile the differences between the non-IFRS measure and the most comparable IFRS measure.

### **Accounting Methods, Choices and Estimates, and Warning Signs**

*Revenue recognition.* Firms can choose where in the shipping process the customer takes title to the goods: free-on-board (FOB) at the shipping point or FOB at the destination. Choosing terms of FOB at the shipping point will mean that revenue is recognized earlier compared to FOB at the destination.

Firms can also manage the timing of revenue recognition by accelerating or delaying shipments. If additional revenue is required to meet targets, firms can

offer discounts or special financing terms to increase orders in the current period or ship goods to distributors without receiving an order. Overloading a distribution channel with more goods than would normally be sold during a period is referred to as **channel stuffing**. In periods when high earnings are expected, management may wish to delay recognition of revenue to the next period and hold or delay customer shipments to achieve this.

In a **bill-and-hold transaction**, the customer buys the goods and receives an invoice but requests that the firm keep the goods at their location for a period of time. The use of fictitious bill-and-hold transactions can increase earnings in the current period by recognizing revenue for goods that are actually still in inventory. Revenue for future periods will be decreased as real customer orders for these bill-and-hold items are filled but not recognized in revenue, offsetting the previous overstatement of revenue.

Accounting warning signs related to revenue recognition may include:

- Changes in revenue recognition methods.
- Use of barter transactions.
- Use of rebate programs that require estimation of the impact of rebates on net revenue.
- Lack of transparency with regard to how the various components of a customer order are recorded as revenue.
- Revenue growth out of line with peer companies.
- Receivables turnover is decreasing over multiple periods.
- Decreases in total asset turnover, especially when a company is growing through acquisition of other companies.
- Inclusion of nonoperating items or significant one-time sales in revenue.

*Estimates of credit losses.* On the balance sheet, the reserve for uncollectible debt is an offset to accounts receivable. If management determines the probability that accounts receivable will be uncollectible is lower than their current estimate, a decrease in the reserve for uncollectible debt will increase net receivables and increase net income. An increase in the estimate of credit losses would have the opposite effect.

A firm that simply underestimates the percentage of receivables that will be uncollectible will report higher receivables and higher net income as a result. At some point, when actual uncollectible accounts exceed the low estimate, the firm will report an additional expense that will reduce net income and net receivables.

Other reserves, such as a reserve for warranty expense, can also be changed to manage reported earnings. A decrease in the estimated warranty expense as a percentage of sales will increase earnings, while an increase in the reserve for warranty expense will decrease earnings.

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*Valuation allowance.* Recall that, under U.S. GAAP, a valuation allowance reduces the carrying value of a deferred tax asset based on managers' estimates of the probability it will not be realized. Similar to the effects of an allowance for bad debt, increasing a valuation allowance will decrease the net deferred tax asset on the balance sheet and reduce net income for the period, while a decrease in the valuation allowance will increase the net deferred tax asset and increase net income for the period. The valuation allowance can be understated to show higher asset values, and it can be adjusted over time to smooth earnings. Under IFRS, while no explicit valuation allowance is reported, deferred tax assets (and liabilities) are adjusted to the expected recoverable amount.

*Depreciation methods and estimates.* Compared to straight-line depreciation, an accelerated depreciation method increases expenses and decreases net income in the early years of an asset's life. In the later years of an asset's life, this will reverse; expenses will be lower, and net income will be higher.

Estimates of useful life and salvage value can also affect depreciation expense and, thereby, net income and the carrying value of an asset. An increase in salvage value will decrease depreciation expense, increase operating income, and result in a greater carrying value for the asset. A smaller salvage value will have the opposite effects. If the salvage value of an asset is set higher than the actual sale price at the end of the asset's life, a loss on the sale of the asset will decrease net income in the period in which the asset is disposed of. Using a longer estimated useful life decreases periodic depreciation expense and increases net income in the early years of an asset's life compared to using a shorter estimated useful life.

Depreciation methods, estimated asset lives, or estimates of salvage values that are out of line with those of peer companies in the industry are an accounting warning sign.

*Amortization and impairment.* Management choices and estimates regarding amortization of purchased intangible assets are similar to those for depreciation of tangible assets. The intangible asset goodwill is not amortized but is subject to an impairment test. By ignoring or delaying recognition of an impairment charge for goodwill, management can increase earnings in the current period.

*Inventory method.* During periods of rising prices, cost of goods sold (COGS) under the FIFO method will be less than COGS under the weighted-average costing method. Gross profit, gross margin, and earnings will all be greater under the FIFO method than under the weighted-average method as a result. Balance sheet inventory value will be greater under FIFO than under the weighted-average method. During periods of decreasing prices, the opposite is true.

FIFO results in more accurate balance sheet inventory values because inventory value is closer to current replacement cost than under the weighted-average cost or LIFO method. Conversely, COGS are closer to current (replacement) cost under the LIFO and weighted-average cost method so that gross and net margins better reflect economic reality under those methods.

Accounting warning signs related to inventories may include a declining inventory turnover ratio or, for a firm using LIFO under U.S. GAAP, drawing down inventory levels so that COGS reflects the lower costs of items acquired in past periods, which increases current period earnings.

*Related-party transactions.* If a public firm does business with a supplier that is private and controlled by management, adjusting the price of goods supplied can shift profits either to or from the private company to manage the earnings reported by the public company.

*Capitalizing expenses.* Any expense that can be capitalized creates an asset on the balance sheet, and the impact of the expense on net income can be spread over many years. Capitalization also affects cash flow classifications. If an expense is capitalized, the entire amount is classified as an investing cash outflow so that operating cash flow is increased by that amount. Analysts should take notice if a firm capitalizes costs that are not typically capitalized by firms in their industry.

Capitalizing interest expense will decrease cash flow from investing and increase cash flow from operations, along with its effects on the pattern of earnings from depreciating the interest expense over time rather than expensing it all in the current period. The ability under IFRS to classify interest received and dividends received as either operating or investing cash flows, and interest paid and dividends paid as either operating or financing cash flows, gives management some ability to manage reported operating cash flow.

*Stretching payables.* Delaying payments that would normally be made near the end of a reporting period until the beginning of the next accounting period will increase operating cash flow in the current period and reduce it in some subsequent period. There is no effect on reported earnings in the current period from stretching payables.

*Other accounting warning signs:*

- The ratio of operating cash flow to net income is persistently less than one or declining over time.
- Fourth-quarter earnings show a pattern (either high or low) compared to the seasonality of earnings in the industry or seasonality of revenue for the firm.

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- Certain expenses are classified as nonrecurring but appear regularly in financial reports.
- Gross or operating profit margins are noticeably higher than are typical for the industry and peer companies.
- Management typically provides only minimal financial reporting information and disclosure.
- Management typically emphasizes non-GAAP earnings measures and uses special or nonrecurring designations aggressively for charges.
- Growth by purchasing a large number of businesses can provide many opportunities to manipulate asset values and future depreciation and amortization and make comparisons to prior period earnings problematic.

**FINANCIAL STATEMENT ANALYSIS: APPLICATIONS**

Cross-Reference to CFA Institute Assigned Reading #33

This topic covers the use of common-size financial statements and other ratio analysis to evaluate past performance, prepare projections of future earnings, assess credit quality, and screen for equity investments; and adjusting financial statements to facilitate comparison between companies.

**Analysis Based on Ratios**

Trends in financial ratios and differences between a firm's financial ratios and those of its competitors or industry averages can indicate important aspects of a firm's business strategy and whether a strategy is succeeding. Some examples of interpreting ratios are:

- Premium and custom products are usually sold at higher gross margins than less differentiated commodity-like products, so we should expect cost of goods sold to be a higher proportion of sales for the latter.
- We might also expect a company with products that have cutting-edge features and high quality to spend a higher proportion of sales on research and development. This proportion may be quite low for a firm purchasing components from suppliers rather than developing new features and capabilities in-house.
- The ratio of gross profits to operating profits will be larger for a firm that has relatively high research and development and/or advertising expenditures.
- If a firm claims it will improve earnings per share by cutting costs, examination of operating ratios and gross margins over time will reveal whether the firm has actually been able to implement such a strategy.

## Forecasting Financial Performance for a Firm

A forecast of future net income and cash flow often begins with a forecast of future sales based on the top-down approach (especially for shorter horizons).

- Begin with a forecast of GDP growth, often supplied by outside research or an in-house economics group.
- Use historical relationships to estimate the relationship between GDP growth and the growth of industry sales.
- Determine the firm's expected market share for the forecast period, and multiply by industry sales to forecast firm sales.
- In a simple forecasting model, some historical average or trend-adjusted measure of profitability (operating margin, EBT margin, or net margin) can be used to forecast earnings.
- In complex forecasting models, each item on an income statement and balance sheet can be estimated based on separate assumptions about its growth in relation to revenue growth.
- For multi-period forecasts, the analyst typically employs a single estimate of sales growth at some point that is expected to continue indefinitely.
- To estimate cash flows, the analyst must make assumptions about future sources and uses of cash, especially as regards changes in working capital, capital expenditures on new fixed assets, issuance or repayments of debt, and issuance or repurchase of stock.
- A typical assumption is that noncash working capital as a percentage of sales remains constant.
- A first-pass model might indicate a need for cash in future periods, and these cash requirements can then be met by projecting necessary borrowing in future periods. For consistency, interest expense in future periods must also be adjusted for any increase in debt and reflected in the income statement, which must be reconciled with the pro forma balance sheet by successive iterations.

## Role of Financial Statement Analysis in Assessing Credit Quality

The three Cs of credit analysis are:

1. **Character:** *Character* refers to firm management's professional reputation and the firm's history of debt repayment.
2. **Collateral:** The ability to pledge specific *collateral* reduces lender risk.
3. **Capacity:** The *capacity* to repay requires close examination of a firm's financial statements and ratios. Since some debt is for periods of 30 years or longer, the credit analyst must take a very long-term view of the firm's prospects.

Study Sessions 6, 7, 8, & 9  
**Financial Reporting and Analysis**

Credit rating agencies, such as Moody's and Standard and Poor's, use items to assess firm creditworthiness that can be separated into four general categories:

1. *Scale and diversification.* Larger companies and those with more different product lines and greater geographic diversification are better credit risks.
2. *Operational efficiency.* Such items as operating ROA, operating margins, and EBITDA margins fall into this category. Along with greater vertical diversification, high operating efficiency is associated with better debt ratings.
3. *Margin stability.* Stability of the relevant profitability margins indicates a higher probability of repayment (leads to a better debt rating and a lower interest rate). Highly variable operating results make lenders nervous.
4. *Leverage.* Ratios of operating earnings, EBITDA, or some measure of free cash flow to interest expense or total debt make up the most important part of the credit rating formula. Firms with greater earnings in relation to their debt and in relation to their interest expense are better credit risks.

### **Screening for Potential Equity Investments**

In many cases, an analyst must select portfolio stocks from the large universe of potential equity investments. Accounting items and ratios can be used to identify a manageable subset of available stocks for further analysis.

Criteria commonly used to screen for attractive equity investments include low P/E, P/CF or P/S; high ROE, ROA, or growth rates of sales and earnings; and low leverage. Multiple criteria are often used because a screen based on a single factor can include firms with other undesirable characteristics.

Analysts should be aware that their equity screens will likely include and exclude many or all of the firms in particular industries.

### **Financial Statement Adjustments to Facilitate Comparisons**

Differences in accounting methods chosen by firms subject to the same standards, as well as differences in accounting methods due to differences in applicable accounting standards, can make comparisons between companies problematic. An analyst must be prepared to adjust the financial statements of one company to make them comparable to those of another company or group of companies.

Common adjustments required include adjustment for:

- Differences in depreciation methods and assumptions.
- Differences in inventory cost flow assumptions/methods.
- Differences in the treatment of the effect of exchange rate changes.
- Differences in classifications of investment securities.
- Operating leases.
- Capitalization decisions.
- Goodwill.