

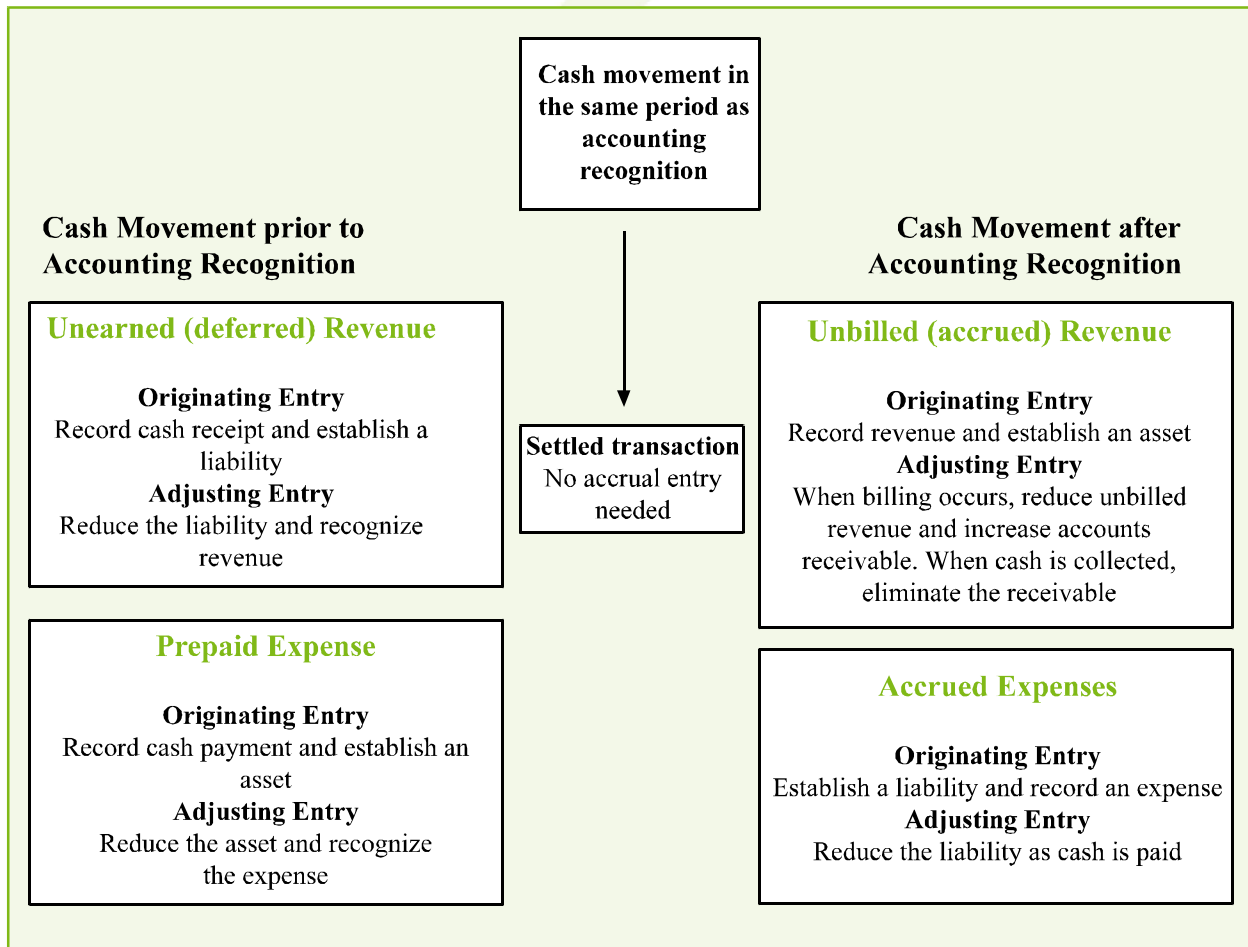
FINANCIAL REPORTING AND ANALYSIS FORMULAE

The Accounting Equation

Assets = Liabilities + Owners' equity

Assets = Liabilities + Contributed capital + Beginning retained earnings + Revenue
- Expenses - Dividends

Accruals and Prepayments



IFRS versus U.S. GAAP

		Similarities	Differences
1	Purpose of the framework	The IASB and FASB frameworks share the common purpose of developing and updating reporting standards.	IASB requires management to consult the framework if a standard does not exist on an issue, but the same condition is not applied by FASB.
2	Objectives	Both the frameworks share a similar objective of providing economic users with useful financial information.	The FASB framework states different objectives for business and non-business entities, while IASB does not differentiate between entities.
3	Underlying assumptions		The going-concern and accrual basis assumptions are given less importance under the FASB framework relative to the IASB framework.
4	Qualitative characteristics	Both FASB and IASB frameworks recognize the same qualitative characteristics.	The FASB framework prioritizes the characteristics. Relevance and reliability are considered to be the primary qualities.
5	Financial statement elements	Measurement attributes are mostly consistent. Both the frameworks lack fully developed concepts regarding measurement.	<p>The FASB framework, in addition to the financial performance elements recognized under the IASB framework (revenues and expenses), also identifies gains, losses and comprehensive income.</p> <p>Reporting elements relating to financial position are defined differently under the FASB framework. Assets are “future economic benefits” rather than “resources”, as defined by IASB framework.</p> <p>Under FASB, the word “probable” is also used to define assets and liabilities, while under the IASB framework it is a criterion for recognition.</p> <p>Regarding measurement of financial elements, FASB does not allow for upward revaluation of assets except for certain categories of financial instruments.</p>
6	Constraints	There is a similar discussion on constraints in both the frameworks.	

Basic EPS

$$\text{Basic EPS} = \frac{\text{Net income} - \text{Preferred dividends}}{\text{Weighted average number of shares outstanding}}$$

Diluted EPS

$$\text{Diluted EPS} = \frac{\left[\text{Net income} - \text{Preferred dividends} \right] + \text{Convertible preferred dividends} + \left[\frac{\text{Convertible debt} \times (1 - t)}{\text{interest}} \right]}{\text{Weighted average shares} + \text{Shares from conversion of convertible preferred shares} + \text{Shares from conversion of convertible debt} + \text{Shares issuable from stock options}}$$

Comprehensive Income

$$\text{Net income} + \text{Other comprehensive income} = \text{Comprehensive income}$$

Gains and Losses on Marketable Securities

	Held-to-Maturity Securities	Available-for-sale Securities	Trading Securities
Balance Sheet	Reported at cost or amortized cost.	Reported at fair value. Unrealized gains or losses due to changes in market values are reported in other comprehensive income within owners' equity.	Reported at fair value.
Items recognized on the income statement	Interest income Realized gains and losses.	Dividend income. Interest income. Realized gains and losses.	Dividend income. Interest income. Realized gains and losses. Unrealized gains and losses due to changes in market values.

Cash Flow Classification under U.S. GAAP

CFO

Inflows	Outflows
Cash collected from customers.	Cash paid to employees.
Interest and dividends received.	Cash paid to suppliers.
Proceeds from sale of securities held for trading.	Cash paid for other expenses.
	Cash used to purchase trading securities.
	Interest paid.
	Taxes paid.

CFI

Inflows	Outflows
Sale proceeds from fixed assets.	Purchase of fixed assets.
Sale proceeds from long-term investments.	Cash used to acquire LT investment securities.

CFF

Inflows	Outflows
Proceeds from debt issuance.	Repayment of LT debt.
Proceeds from issuance of equity instruments.	Payments made to repurchase stock.
	Dividends payments.

Cash Flow Statements under IFRS and U.S. GAAP

	IFRS	U.S. GAAP
Classification of Cash Flows		
Interest and dividends received	CFO or CFI	CFO
Interest paid	CFO or CFF	CFO
Dividend paid	CFO or CFF	CFF
Dividends received	CFO or CFI	CFO
Taxes paid	CFO, but part of the tax can be categorized as CFI or CFF if it is clear that the tax arose from investing or financing activities.	CFO
Bank overdrafts	Included as a part of cash equivalents.	Not considered a part of cash equivalents and included in CFF.
Presentation Format		
CFO (No difference in CFI and CFF presentation)	Direct or indirect method. The former is preferred.	Direct or indirect method. The former is preferred. However, if the direct method is used, a reconciliation of net income and CFO must be included.
Disclosures		
	Taxes paid should be presented separately on the cash flow statement.	If taxes and interest paid are not explicitly stated on the cash flow statement, details can be provided in footnotes.

Free Cash Flow to the Firm

$$\text{FCFF} = \text{NI} + \text{NCC} + [\text{Int} * (1 - \text{tax rate})] - \text{FCInv} - \text{WCInv}$$

$$\text{FCFF} = \text{CFO} + [\text{Int} * (1 - \text{tax rate})] - \text{FCInv}$$

Free Cash Flow to Equity

$$\text{FCFE} = \text{CFO} - \text{FCInv} + \text{Net borrowing} - \text{Net debt repayment}$$

Inventory Turnover

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Days of Inventory on Hand

$$\text{Days of inventory on hand (DOH)} = \frac{365}{\text{Inventory turnover}}$$

Receivables Turnover

$$\text{Receivables turnover} = \frac{\text{Revenue}}{\text{Average receivables}}$$

Days of Sales Outstanding

$$\text{Days of sales outstanding (DSO)} = \frac{365}{\text{Receivables turnover}}$$

Payables Turnover

$$\text{Payables turnover} = \frac{\text{Purchases}}{\text{Average trade payables}}$$

Number of Days of Payables

$$\text{Number of days of payables} = \frac{365}{\text{Payables turnover}}$$

Working Capital Turnover

$$\text{Working capital turnover} = \frac{\text{Revenue}}{\text{Average working capital}}$$

Fixed Asset Turnover

$$\text{Fixed asset turnover} = \frac{\text{Revenue}}{\text{Average fixed assets}}$$

Total Asset Turnover

$$\text{Total Asset Turnover} = \frac{\text{Revenue}}{\text{Average total assets}}$$

Current Ratio

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

Quick Ratio

$$\text{Quick ratio} = \frac{\text{Cash} + \text{Short-term marketable investments} + \text{Receivables}}{\text{Current liabilities}}$$

Cash Ratio

$$\text{Cash ratio} = \frac{\text{Cash} + \text{Short-term marketable investments}}{\text{Current liabilities}}$$

Defensive Interval Ratio

$$\text{Defensive interval ratio} = \frac{\text{Cash} + \text{Short-term marketable investments} + \text{Receivables}}{\text{Daily cash expenditures}}$$

Cash Conversion Cycle

$$\text{Cash conversion cycle} = \text{DSO} + \text{DOH} - \text{Number of days of payables}$$

Debt-to-Assets Ratio

$$\text{Debt-to-assets ratio} = \frac{\text{Total debt}}{\text{Total assets}}$$

Debt-to-Capital Ratio

$$\text{Debt-to-capital ratio} = \frac{\text{Total debt}}{\text{Total debt} + \text{Shareholders' equity}}$$

Debt-to-Equity Ratio

$$\text{Debt-to-equity ratio} = \frac{\text{Total debt}}{\text{Shareholders' equity}}$$

Financial Leverage Ratio

$$\text{Financial leverage ratio} = \frac{\text{Average total assets}}{\text{Average total equity}}$$

Interest Coverage Ratio

$$\text{Interest coverage ratio} = \frac{\text{EBIT}}{\text{Interest payments}}$$

Fixed Charge Coverage Ratio

$$\text{Fixed charge coverage ratio} = \frac{\text{EBIT} + \text{Lease payments}}{\text{Interest payments} + \text{Lease payments}}$$

Gross Profit Margin

$$\text{Gross profit margin} = \frac{\text{Gross profit}}{\text{Revenue}}$$

5-Way Dupont Decomposition

$$\begin{array}{c}
 \text{Interest burden} \qquad \qquad \qquad \text{Asset turnover} \\
 \downarrow \qquad \qquad \qquad \qquad \qquad \downarrow \\
 \text{ROE} = \frac{\text{Net income}}{\text{EBT}} \times \frac{\text{EBT}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{Revenue}} \times \frac{\text{Revenue}}{\text{Average total assets}} \times \frac{\text{Average total assets}}{\text{Avg. shareholders' equity}} \\
 \downarrow \qquad \qquad \qquad \downarrow \qquad \qquad \qquad \qquad \qquad \downarrow \\
 \text{Tax burden} \qquad \qquad \text{EBIT margin} \qquad \qquad \qquad \qquad \qquad \text{Leverage}
 \end{array}$$

Price-to-Earnings Ratio

$$\text{P/E} = \frac{\text{Price per share}}{\text{Earnings per share}}$$

Price to Cash Flow

$$\text{P/CF} = \frac{\text{Price per share}}{\text{Cash flow per share}}$$

Price to Sales

$$\text{P/S} = \frac{\text{Price per share}}{\text{Sales per share}}$$

Price to Book Value

$$\text{P/BV} = \frac{\text{Price per share}}{\text{Book value per share}}$$

Per Share Ratios

$$\text{Cash flow per share} = \frac{\text{Cash flow from operations}}{\text{Average number of shares outstanding}}$$

$$\text{EBITDA per share} = \frac{\text{EBITDA}}{\text{Average number of shares outstanding}}$$

$$\text{Dividends per share} = \frac{\text{Common dividends declared}}{\text{Weighted average number of ordinary shares}}$$

Dividend Payout Ratio

$$\text{Dividend payout ratio} = \frac{\text{Common share dividends}}{\text{Net income attributable to common shares}}$$

Retention Rate

$$\text{Retention Rate} = \frac{\text{Net income attributable to common shares} - \text{Common share dividends}}{\text{Net income attributable to common shares}}$$

Growth Rate

$$\text{Sustainable growth rate} = \text{Retention rate} \times \text{ROE}$$

LIFO versus FIFO (with rising prices and stable inventory levels.)**LIFO versus FIFO when Prices are Rising**

	LIFO	FIFO
COGS	Higher	Lower
Income before taxes	Lower	Higher
Income taxes	Lower	Higher
Net income	Lower	Higher
Cash flow	Higher	Lower
EI	Lower	Higher
Working capital	Lower	Higher

Type of Ratio	Effect on Numerator	Effect on Denominator	Effect on Ratio
Profitability ratios. NP and GP margins	Income is lower under LIFO because COGS is higher	Sales are the same under both.	Lower under LIFO.
Debt to equity	Same debt levels	Lower equity under LIFO	Higher under LIFO
Current ratio	Current assets are lower under LIFO because EI is lower.	Current liabilities are the same.	Lower under LIFO
Quick ratio	Assets are higher as a result of lower taxes paid	Current liabilities are the same	Higher under LIFO
Inventory turnover	COGS is higher under LIFO	Average inventory is lower under LIFO	Higher under LIFO
Total asset turnover	Sales are the same	Lower total assets under LIFO	Higher under LIFO

LIFO to FIFO Conversion

$$EI_{\text{FIFO}} = EI_{\text{LIFO}} + \text{LIFO reserve}$$

$$COGS_{\text{FIFO}} = COGS_{\text{LIFO}} - (LR_{\text{ending}} - LR_{\text{beginning}})$$

Financial Statement Effects of Capitalizing versus Expensing

Effect on Financial Statements	
Initially when the cost is capitalized	<ul style="list-style-type: none"> • Noncurrent assets <i>increase</i>. • Cash flow from investing activities <i>decreases</i>.
In future periods when the asset is depreciated or amortized	<ul style="list-style-type: none"> • Noncurrent assets <i>decrease</i>. • Net income <i>decreases</i>. • Retained earnings <i>decrease</i>. • Equity <i>decreases</i>.
When the cost is expensed	<ul style="list-style-type: none"> • Net income <i>decreases</i> by the entire amount of the cost. • No related asset is recorded on the balance sheet and therefore, no depreciation is charged in future periods. • Operating cash flow <i>decreases</i>.

	Capitalizing	Expensing
Net income (first year)	Higher	Lower
Net income (future years)	Lower	Higher
Total assets	Higher	Lower
Shareholders' equity	Higher	Lower
Cash flow from operations	Higher	Lower
Cash flow from investing	Lower	Higher
Income variability	Lower	Higher
Debt to equity	Lower	Higher

Summary of Treatment of R&D Costs under IFRS and U.S. GAAP

Type of Expenditure	IFRS	U.S. GAAP
Research	Expensed as incurred.	Expensed as incurred.
Development	Capitalized if certain criteria are met.	Expensed as incurred, except for: <ol style="list-style-type: none"> 1. Costs associated with developing a software product for sale after feasibility has been established. 2. Certain costs associated with developing software for internal use.
In process R&D (IP R&D) acquired in a business combination.	Either identified as a separate asset with a finite life, or included as part of goodwill.	Expensed immediately upon acquisition.

Straight Line Depreciation

$$\text{Depreciation expense} = \frac{\text{Original cost} - \text{Salvage value}}{\text{Depreciable life}}$$

Accelerated Depreciation

$$\text{DDB depreciation in Year X} = \frac{2}{\text{Depreciable life}} \times \text{Book value at the beginning of Year X}$$

Estimated Useful Life

$$\text{Estimated useful life} = \frac{\text{Gross investment in fixed assets}}{\text{Annual depreciation expense}}$$

Average Cost of Asset

$$\text{Average age of asset} = \frac{\text{Accumulated depreciation}}{\text{Annual depreciation expense}}$$

Remaining Useful Life

$$\text{Remaining useful life} = \frac{\text{Net investment in fixed assets}}{\text{Annual depreciation expense}}$$

Ratio Effects of AROs

Ratio	Effect on Numerator	Effect on Denominator	Effect on Ratio
Debt to equity	Liabilities increase by the amount of the ARO.	Equity falls because depreciation and accretion expense reduce net income.	Increases/ worsens
Interest coverage	EBIT falls as depreciation expense is charged on the asset.	Interest expense increases (accretion of ARO liability).	Falls/ worsens
Return on assets	Net income falls due to accretion expense and depreciation.	Assets increase by the amount of the ARO.	Falls/worsens
Asset turnover	Sales are unaffected by recognition of the ARO.	Assets increase by the amount of the ARO.	Falls/ worsens

Treatment of Temporary Differences

Balance Sheet Item	Carrying value vs. tax base	Results in...
Asset	Carrying amount is greater.	DTL
Asset	Tax base is greater.	DTA
Liability	Carrying amount is greater.	DTA
Liability	Tax base is greater.	DTL

Income Tax Accounting under IFRS versus U.S. GAAP

	IFRS	U.S. GAAP
ISSUE SPECIFIC TREATMENTS		
Revaluation of fixed assets and intangible assets.	Recognized in equity as deferred taxes.	Revaluation is prohibited.
Treatment of undistributed profit from investment in subsidiaries.	Recognized as deferred taxes except when the parent company is able to control the distribution of profits and it is probable that temporary differences will not reverse in future.	No recognition of deferred taxes for foreign subsidiaries that fulfill indefinite reversal criteria. No recognition of deferred taxes for domestic subsidiaries when amounts are tax-free.
Treatment of undistributed profit from investments in joint ventures.	Recognized as deferred taxes except when the investor controls the sharing of profits and it is probable that there will be no reversal of temporary differences in future.	No recognition of deferred taxes for foreign corporate joint ventures that fulfill indefinite reversal criteria.
Treatment of undistributed profit from investments in associates.	Recognized as deferred taxes except when the investor controls the sharing of profits and it is probable that there will be no reversal of temporary differences in future.	Deferred taxes are recognized from temporary differences.
DEFERRED TAX MEASUREMENT		
Tax rates.	Tax rates and tax laws enacted or substantively enacted.	Only enacted tax rates and tax laws are used.
Deferred tax asset recognition.	Recognized if it is probable that sufficient taxable profit will be available in the future.	Deferred tax assets are recognized in full and then reduced by a valuation allowance if it is likely that they will not be realized.
DEFERRED TAX PRESENTATION		
Offsetting of deferred tax assets and liabilities.	Offsetting allowed only if the entity has right to legally enforce it and the balance is related to a tax levied by the same authority.	Same as in IFRS.
Balance sheet classification.	Classified on balance sheet as net noncurrent with supplementary disclosures.	Classified as either current or noncurrent based on classification of underlying asset and liability.

Effective Tax rate

$$\text{Effective tax rate} = \frac{\text{Income tax expense}}{\text{Pretax income}}$$

Income Tax Expense

$$\text{Income tax expense} = \text{Taxes Payable} + \text{Change in DTL} - \text{Change in DTA}$$

Income Statement Effects of Lease Classification

Income Statement Item	Finance Lease	Operating Lease
Operating expenses	Lower	Higher
Nonoperating expenses	Higher	Lower
EBIT (operating income)	Higher	Lower
Total expenses- early years	Higher	Lower
Total expenses- later years	Lower	Higher
Net income- early years	Lower	Higher
Net income- later years	Higher	Lower

Balance Sheet Effects of Lease Classification

Balance Sheet Item	Capital Lease	Operating Lease
Assets	Higher	Lower
Current liabilities	Higher	Lower
Long term liabilities	Higher	Lower
Total cash	Same	Same

Cash Flow Effects of Lease Classification

CF Item	Capital Lease	Operating Lease
CFO	Higher	Lower
CFF	Lower	Higher
Total cash flow	Same	Same

Impact of Lease Classification on Financial Ratios

Ratio	Numerator under Finance Lease	Denominator under Finance Lease	Effect on Ratio	Ratio Better or Worse under Finance Lease
Asset turnover	Sales- same	Assets- higher	Lower	Worse
Return on assets*	Net income lower in early years	Assets- higher	Lower	Worse
Current ratio	Current assets- same	Current liabilities- higher	Lower	Worse
Leverage ratios (D/E and D/A)	Debt- higher	Equity same. Assets higher	Higher	Worse
Return on equity*	Net income lower in early years	Equity same	Lower	Worse

* In early years of the lease agreement.

Operating versus Finance Lease

	Direct Financing Lease	Operating Lease
Total net income	Same	Same
Taxes (early years)	Higher	Lower
Total CFO	Lower	Higher
Total CFI	Higher	Lower

Impact of Reclassification of Sale of Receivables

CFO	Lower
CFF	Higher
Total cash flow	Same
Current assets	Higher
Current liabilities	Higher
Current ratio	Lower
(Assuming it was greater than 1)	

Credit Analysis

Credit Ratio	Numerator	Denominator
EBIT interest coverage	EBIT	Gross Interest
EBITDA interest coverage	EBITDA	Gross Interest
Free operating cash flow to total debt	CFO	Total debt
Return on capital	EBIT	Capital = Average Equity
Total debt to total debt plus equity	Total debt	Total debt plus equity

Industry Specific Ratios

Ratios	Numerator	Denominator
Business Risk		
Coefficient of variation of operating income	Standard deviation of operating income	Average operating income
Coefficient of variation of net income	Standard deviation of net income	Average net income
Coefficient of variation of revenues	Standard deviation of revenues	Average revenue

Financial Sector Ratios

Capital adequacy- Banks	Various components of capital	Risk weighted assets, market risk exposure, and level of operational risk assumed
Monetary reserve requirement	Reserves held at central bank	Specified deposit liabilities
Liquid asset requirement	Approved "readily marketable securities"	Specified deposit liabilities
Net interest margin	Net interest income	Total interest-earning assets

Retail Ratios

Same store sales	Average revenue growth year on year for stores open in both periods	Not applicable
Sales per square foot (meter)	Revenue	Total retail space in feet or meters

Service Companies

Revenue per employee	Revenue	Total number of employees
Net income per employee	Revenue	Total retail space in feet or meters

Hotels

Average daily rate	Room revenue	Number of rooms sold
Occupancy rate	Number of rooms sold	Number of rooms available

Segment Analysis

Segment Ratios	Numerator	Denominator	Measures
Segment margin	Segment profit (loss)	Segment revenue	Operating profitability relative to sales.
Segment turnover	Segment revenue	Segment assets	Overall efficiency-how much revenue is generated per dollar of assets.
Segment ROA	Segment profit (loss)	Segment assets	Operating profitability relative to assets.
Segment debt ratio	Segment liabilities	Segment assets	Solvency of the segment.

Categories of Marketable Securities and Accounting Treatment

Classification	Balance Sheet Value	Unrealized and Realized Gains and Losses	Income (Interest & Dividends)
Held-to-maturity	Amortized cost (Par value +/- unamortized premium/ discount).	<i>Unrealized:</i> Not reported <i>Realized:</i> Recognized on income statement.	Recognized on income statement.
Held-for-trading	Fair Value.	<i>Unrealized:</i> Recognized on income statement. <i>Realized:</i> Recognized on income statement.	Recognized on income statement.
Available-for-sale	Fair Value.	<i>Unrealized:</i> Recognized in other comprehensive income. <i>Realized:</i> Recognized on income statement.	Recognized on income statement.

Inventory Accounting under IFRS versus U.S. GAAP

	Balance Sheet	Permitted Cost Recognition Methods	Changes in Balance Sheet Value
U.S. GAAP	Lower of cost or market.	<ul style="list-style-type: none"> ▪ LIFO. ▪ FIFO. ▪ Weighted average cost. 	Permits inventory write downs, but not reversal of write downs.
IFRS	Lower of cost or net realizable value.	<ul style="list-style-type: none"> ▪ FIFO. ▪ Weighted Average Cost. 	Permits inventory write downs, and also reversals of write downs.

Property, Plant and Equipment

	Balance Sheet	Changes in Balance Sheet Value	Effects of Changes in Balance Sheet Value
U.S. GAAP	Cost minus accumulated depreciation.	Does not permit upward revaluation.	No effect.
IFRS	Cost minus accumulated depreciation.	<p>Permits upward revaluation.</p> <p>Asset is reported at fair value at the revaluation date less accumulated depreciation following the revaluation.</p>	<p>The increase in the asset's value from revaluation is reported as a part of equity unless it is reversing a previously-recognized decrease in the value of the asset.</p> <p>A decrease in the value of the asset is reported on the income statement unless it is reversing a previously-reported upward revaluation.</p>

Long-Term Investments

Percent Ownership	Extent of Control	Accounting Treatment
Less than 20%	No significant control	Classified as held-to-maturity, trading, or available for sale securities.
20% - 50%	Significant Influence	Equity method.
More than 50%	Significant Control	Consolidation.
Shared (joint ventures)	Joint Control	Equity method/ proportionate consolidation.

Identifiable Intangible Assets

	Balance Sheet	Changes in Balance Sheet Value	Effects of Changes in Balance Sheet Value
U.S. GAAP	<p>Only purchased intangibles may be recognized as assets. Internally developed items cannot be recognized as assets.</p> <p>Reported at cost minus accumulated amortization for assets with finite useful lives.</p> <p>Reported at cost minus impairment for assets with infinite useful lives.</p>	<p>Does not permit upward revaluation.</p>	<p>No Effect.</p>
IFRS	<p>Only purchased intangibles may be recognized as assets. Internally developed items cannot be recognized as assets.</p> <p>Reported at cost minus accumulated amortization for assets with finite useful lives.</p> <p>Reported at cost minus impairment for assets with infinite useful lives.</p>	<p>Permits upward revaluation.</p> <p>Assets are reported at fair value as of the revaluation date less subsequent accumulated amortization.</p>	<p>An increase in value is recognized as a part of equity unless it is a reversal of a previously-recognized downward revaluation. A decrease in value is recognized on the income statement unless it is a reversal of a previously-recognized upward revaluation.</p>

Long-Term Contracts

	Outcome can be reliably estimated	Outcome cannot be reliably estimated
U.S. GAAP	Percentage-of-completion method.	Completed contract method.
IFRS	Percentage-of-completion method.	Revenue is recognized to the extent that it is probable to recover contract costs. Profit is only recognized at project completion.