ACCOUNTING

Income Statement (IS) -- a financial statement that measures a company's financial performance over a specific accounting period

- Revenue / COGS and Operating Expenses / Operating Income (EBIT) / Interest Interest or Expense / Pre-Tax Income / Taxes / Net Income
- Items that appear on the IS have two criteria: (1) they MUST affect the Company's tax situation, and (2) they MUST correspond to the period shown on the IS (ex: CapEx)

Balance Sheet (BS) -- a financial statement that summarizes a company's assets, liabilities and shareholders' equity at a specific point in time (i.e. what the Company owns and owes); A=L+E

- *Asset* - results in additional cash in future; *Liability* - results in less cash in the future and funds external operations; *Equity* - funds international operations
- Assets: Cash, ST Investments, Accounts Receivables, Prepaid Expenses, Inventory, PP&E, Other Intangible Assets, LT Investments, Goodwill
- Liabilities: Revolver, Accounts Payable, Accrued Expenses, Deferred Revenue, Deferred Tax Liability, LT Debt
- Equity: Common Stock & APIC, Treasury Stock, Retained Earnings, AOCI

Cash Flow Statement (CF) -- a financial statement that shows how changes in the balance sheet accounts and income affect cash in and out of the Company

- CF is necessary because (1) non-cash items might have appeared on the IS and need to be adjusted to determine how your cash balance actually changes, and (2) there may be additional cash inflow and outflows that the IS does not capture
- CF from Operations: Net Income / Adjust for non-cash expenses and take into account how operational Balance Sheet items have changed (NWC)
- CF from Investing: Items related to the Company's investments, acquisitions and PP&E; purchases show up as negative and sales are positive
- CF from Financing: Items related to debt, dividends and issuing / repurchasing shares
- If an item already has already been recorded on the IS and is a true cash expense / revenue, it will not appear on the CF *except* for "Gains / Losses from Asset Sales"
    - This is because you are re-classifying that CF by subtracting it out of CFO and instead including it in the full selling price of assets in CFI

How to Link the 3 Statements

1. Net Income from bottom of IS to top of CF
2. Add back non-cash expenses from IS (and flip the signs)
3. Reflect changes from operational BS line items -- if an Asset increases, CF goes down; if a Liabilities increases, CF goes up
4. Reflect Purchases and Sales of Investments and PP&E in CF from Investing
5. Reflect Dividends, Debt issued or repurchased, and Shares issued or repurchased in CF from Financing
6. Calculate net change in Cash at bottom of CF and link to next period's Cash on BS
7. Update the BS to reflect changes in Cash to reflect changes in Cash, Debt, Equity, Investments, PP&E and anything else from CF statement

Changes on the Statements -- divided into 4 buckets

Bucket #1 -- Changes to true Cash Item on Income Statement

- Example: Revenue, COGS, Interest Income / Expense, etc.
- What changes is the Pre-Tax Income, Net Income; Retained Earnings and Cash changes on the BS

Bucket #2 -- Changes to Non-Cash or Re-Classified Item on Income Statement

- Changes PT Income / Net Income and Cash / Retained Earnings as well, but another line item on the BS would change as well to make up the difference
- Examples: Depreciation (PP&E), Amortization (Other Intangible Assets), Stock-Based Compensation (Common Stock & APIC), Gains / (Losses) on PP&E (PP&E), Write-Downs (The Asset that you are writing down), Impairment Charges (The Asset that you are impairing)

Bucket #3 -- Changes to Operational Balance Sheet Items

- Such as: Inventory, Account Receivable, Account Payable, Accrued Expenses, Prepaid Expenses, Deferred Revenues
- Two things to keep in mind: (1) Will these changes impact the IS? and (2) How is an item increasing versus an item decreasing different?
- *Example 1: Accounts Receivables* -- you have received the revenue, but haven't received it in cash. AR increases by $100 → Revenue increases by $100 and Net Income by $60 (after tax) → Flows to top of CF (+$60) → Subtract $100 (take out when subtracting change in NWC) from CFO → Cash down by $40 → Flows to BS → AR is up $100 → BS Asset side net +$60 → Retained Earnings from Net Income +$60 → :)
    - If AR decreases, it means you have collected your cash. There is **no** change on IS. Cash up, AR down
- *Example 2*: *Prepaid Expenses* -- you paid in expense in cash for a future product / service that is not recorded as expense on IS yet. If it is increasing, there are **no** changes on IS: cash goes down and prepaid expenses go up.
    - PE decreases by $100 → PT Income decreases by $100 and Net Income by $60 → Flows to top of CF (-$60) → Subtract -$100 (mathematically add) in NWC → CF up $40 → Flows to BS → PE is down $100 → BS Asset net -$60 → Retained Earnings is -$60 → :)
- *Example 3*: *Inventory* -- when inventory increases, it means that the products have been purchased but has not been manufactured or recognized as revenue yet: **no** changes on IS and Cash on BS decreases. When inventory decreases and finished product is sold to customers, see PE above.
- *Example 4*: *Accrued Expenses* -- Company has recorded these as expenses on IS, but hasn't yet paid them out in cash (think salary, utilities, rent). AE increases by $100 → PT Income decreases by $100 and Net Income by $60 → Flows to top of CF (-$60) → Add $100 (NWC) to CFO → Cash total up by $40 → Flows to BS → AE on Liability side up by $100, but Retained earnings down by $60 → Cash on Asset side up by $40 → :)
    - If AE decreases, it means the Company is paying out the cash in an expense previously recorded on IS; **no** change on IS and Cash decrease
- *Example 5*: *Accounts Payable* -- the Company received a product/service, recorded it as an expense on the IS, but haven't paid for it in cash yet. Same treatment as Accrued Expenses.

- *Example 6: Deferred Revenues* -- the Company has collected cash **in advance** from customers for products / services yet to be delivered, and it will recognize as real revenue over time. When DR increases, the cash has been collected (cash UP), but there are **no** changes on IS.
    - When DR decreases by $100 (previously collected cash is recognized) → Revenue increases by $100 and Net Income by $60 → Flows to top of CF (+$60) → Add -$100 in NWC to CFO (i.e. subtract $100) → Cash down by $40 → Flows to BS → DR is down by $100, but Retained Earnings up by $60 → :)

Bucket #4 -- Changes to Non-Operational BS Item or CF Statement

- There are no changes on IS; only net inflow or outflow of cash on CF and BS adjustments (cash and the corresponding BS line item)
- Examples: Purchasing or Selling Securities (Short-Term or Long-Term Investments), Capital Expenditures or Selling PP&E (PP&E), Raising Debt or Paying Off Debt (Debt), Issuing Stock or Repurchasing Stock (Common Stock & APIC), Issuing Dividends (Retained Earnings)

Single-Step Scenarios

- What happens when a Company issues $100 worth of shares to investors?
    - Bucket #4. No changes to IS (doesn't affect taxes and does not correspond to current period); CF from FInancing up by $100 due to share issuance → CF total up by $100; Cash up by $100 on Asset and Common Stock up by $100 on SHEquity side
- What happens when a Company issues $100 work of SBC?
    - Bucket #2. Hits IS as additional expense → NI down by $60; Add back SBC on CF → Cash up by $40; Asset up by $40 on Assets side and Common Stock / APIC up by $100 but Retained Earnings down by $60
- What happens when a Company issues $100 in dividends?
    - Bucket #4: No changes to IS (financing activity and not tax-deductive); CF from Financing is down by $100 → Cash down by $100; Cash down by $100 on assets die and retained earnings down by $100 on SHEquity side
- What happens when the Company has recorded $100 in income tax expense on its IS and all $100 of it is paid, in cash, in the current period. Now we change it and only $90 of it is paid in cash, with $10 being deferred to future periods. How do the statements change?
    - **Nothing** changes on the IS. Both current AND deferred taxes are recorded as "taxes" and NI remains the same. NI changes *only* if the TOTAL amount of taxes changes.
    - CF: Add back $10 worth of deferred taxes in CF from operations -- Cash Flow up by $10; Balance Sheet: Cash up by $10 and Deferred taxes up by $10
    - Intuition: Deferred taxes save us on cash in the current period, at the expense of additional cash taxes in the future
- What happens when there is a $100 write-down of debt?
    - Counter-intuitive: When a liability is written down, you record it as an addition on the Income Statement (v/v of an asset write-down, which is a subtraction)
    - IS: PT Income goes up by $100 and NI by $60 → CF: IT is up by $60, but need to **subtract** the Debt write-down because it was non-cash, so cash is down by $40 (liabilities down, cash down) → CF: Cash down by $40, and debt down by $100, but NI up by $60
    - If it is better for a company to write down liabilities to boost NI, should a Company do it all the time? Helpful in the short term, but in the long term, hurts Company's credibility and ability to borrow in the future; if Company continually writes down liabilities, investors will stop trusting it
- LIFO versus FIFO -- two different ways of recording the value of inventory and COGS
    - Inventory = Beginning Inventory + Net Purchases - COGS
    - LIFO: "Last-In, First-Out": Use the value of the most recent Inventory additions for COGS (Cookie Jar)
    - FIFO: "FIrst-In, FIrst-Out": Use the value of the oldest Inventory additions for COGS (Conveyor Belt)
    - LIFO COGS tend to higher than FIFO COGS, so LIFO would have a lower PT Income and Net Income. It would also result in tax savings, given that inventory prices rise over time. Ending inventory value would also be higher under FIFO and lower under LIFO; LIFO doesn't give a good valuation of inventory because old prices could be obsolete

Multi-Step Scenario #1

Apple buys $100 worth of new iPad factories with debt at Yr1	IS: Nothing; CF: -$100 in CapEx and +$100 in Debt = Net change of 0 in Cash Flow; BS: PP&E up by $100 and Debt is up by $100
Start of Yr2: Debt is high-yield, so no principal is paid off, with interest rate of 10%. Factories also depreciate at 10% a year	IS: Operating Income decrease by $10 due to 10% depreciation change and $10 in add'l interest expense, so PT Income decreases by $20 altogether → NI falls by $12. CF: NI down by 12; $10 Depreciation added back, so net cash flow down by 2 BS: Cash down by $2 and PP&E down by 10; Retained Earnings down by $12
End of Yr2: All factories break down and value is written down to $0. Loan must also be paid back.	After 2 years, incof factories is worth $80 (100-2*10), which will get written down. Interest expense will also get paid down in Yr2. IS: $10 in depreciation, $80 write down, $10 of add'l interest expense. PT Income down by $100, so NI down by $60 CF: NI down by $60 but add back $80 in write-down and depreciation because non-cash expenses. CF from Op up by $30. CF from Financing down by $100 because of loan payback. Overall, cash is -$70 BS: Cash down by $70, PP&E down by $90 (don't forget Dep), so Assets side down by $160. L/SEquity side: debt down by $100 and NI down by $60
Apple is ordering $10 of add'l iPad inventory, using cash on hand. Inventory not manufactured or sold	IS: No changes; CF: Inventory up by $10, so CF from Operations down by $10; BS: Inventory up by $10, but Cash down by $10

Multi-Step Scenario #2

Apple is ordering $10 of add'l iPad inventory, using cash on hand. Inventory not manufactured or sold	IS: No changes; CF: Inventory up by $10, so CF from Operations down by $10; BS: Inventory up by $10, but Cash down by $10
Apple sells iPads for revenue of $20 at cost of $10	IS: Revenue up by $20 and COGS up by $10, so gross profit up by $10 and NI up by $6; CF: NI up by $6 and Inventory has decreased by $10, so CF from Operations up by $10 (subtracting a negative); BS: Cash up by $16 and Inventory down by $10, so Assets up $6. Retained Earnings up by $6 Intuition: Cash increases by $16 not 6, reflecting the "release" you got by selling off the Inventory
Company raises $100 worth of Debt at 5% and 10% yearly principal repayment to purchase $100 of ST securities with 10% interest	Immediately after the purchase: IS: No changes yet; CF: $100 purchase of ST securities shows up as reduction of CF from Investing and $100 Debt raise shows up as $100 increase under CF from Financing → no net cash change; BS: ST securities on assets side +$100 and Debt up by $100

What happens at the end of Yr1?	Company has earned interest, paid interest, and paid back some of the debt principal IS: Interest Income is +$10, Interest Expense is -$5, so PT Income increases by $5, and NI increases by $3; CF: NI is up by $3, and $10 worth of principal is paid down, so cash is down by $7; BS: Cash is down by 7 while Debt is down by $10 and retained earnings up by $3
End of Yr1: company sells the $100 of ST Securities and gets a price of $110. Uses the proceeds to repay the $90 worth of remaining debt	IS: Gain of $10 from ST securities, so NI up by $6 CF: NI up by $6, but subtract the gain of $10 because non-cash, so CF from Operations is down by $4; CF from Investing up by $110 from ST securities sale, but Debt (CF from Financing) is down by $90, so net CF effect is +6-10+110-90=+16 BS: Cash is up by $16, but ST securities is down by $100, so Assets is down by $84. Debt is down by $90, but Retained Earnings is up by $6.