Financial Accounting Recitation: Finals

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Housekeeping

- 20:00 - 20:45: Review session
  - A quick *high-level* and *non-exhaustive* review of the key issues in the course (20 min)
  - Sample finals Questions 2 & 6 (25 min)
  - Other questions will not be solved individually, but I will address them in the slides
- 20:45 - 21:00: Open for questions
- You are advised to use these slides as a reference and focus on the core materials (i.e., slides, problem sets, sample exams) in class
- Materials (slides + Excel templates) used in this session will be shared through email

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Basics

- Financial statements: Balance sheet, income statement (reconciles retained earnings across years in B/S), cash flow statement (explains the change in cash in B/S)
- Accounting equation: Assets = Liabilities + Equity (+ Revenue - Expense)
- Double-entry accounting: the recording of an economic event affects at least two accounts
  - Identify the accounts -> identify the effects -> balance the accounting equation

Balance Sheet

- Balance sheet items: Assets (current, non-current), liabilities (current, non-current), owners' equity (paid-in capital, retained earnings)
- Intertemporal relationship: EB = BB + inflow - outflow
  - Ending Bad Debt Allowance = Beginning + BDE - Write-offs
  - Ending Book Value of Bonds = Beginning + Int Exp - Coupon Payments
  - More examples...
- Two sides of the same coin: (wage payable, wage prepaid), (unearned revenue, advances from customers), (deferred tax assets, deferred tax liabilities)...

Income Statement

- Reconcile R/E in B/S: Ending R/E = beginning R/E + N/I - dividends
- The hierarchical structure of the income statement: Sales revenue - cost of sales -> gross profit - operating expense -> operating profit +/- other income -> net income before income taxes - tax provisions -> net income
- Accrual-basis accounting: Revenue recognition, matching principle

Cash Flow Statement

- Reconcile Cash in B/S: Ending Cash = beginning Cash + (CFO + CFI + CFF)
- Structure: Operating, investing, financing; Approaches: direct, **indirect**
- Operating activities: Start from N/I
  1. (+) depreciation and amortization
  2. (-) change in operating assets and (+) change in operating liabilities
  3. Adjust for other non-cash and non-operating activities that affect N/I
  4. Adjust for other cash-related operating activities that do not affect N/I
- Investing activities
  - Adjust for cash changes from purchases/sales of long-term assets (e.g., PP&E, intangibles), purchases/sales of other firms' securities/debts, etc.
- Financing activities
  - Adjust for issuance of common stock/bonds, payment of dividends, stock repurchases, etc.
- This is relevant for *Sample Final Q2*

Receivables

- Recognition: At the time of sale (matching principle)
  Dr. bad debt expense (+)
    Cr. allowance for doubtful accounts (+)
- Write-offs: The net value of A/R is unchanged
  Dr. allowance for doubtful accounts (-)
    Cr. accounts receivable (-)
- Reinstatement: Book value of A/R and total assets unchanged, cash and bad debt allowance $\uparrow$, net value of A/R $\downarrow$ (Conservatism: more allowance reserved for future...)
  Dr. accounts receivable (+)
    Cr. allowance for doubtful accounts (+)
  Dr. cash (+)
    Cr. accounts receivable (-)

Intertemporal Relationship of BDA

- Ending Balance BDA = Beginning Balance BDA + Bad Debt Expense - Write-offs
- It might be useful to analogize to depreciation expense and PP&E...
- If we work with the B/S approach, *usually*...
    - BB and EB can be inferred from the A/R on B/S based on the recognition rules
    - Write-offs are known
    - BDE needs to be backed out by the relationship
- If we work with the I/S approach, *usually*...
    - BB is inherited from (the EB of) the last period
    - Write-offs are known
    - BDE is determined from the credit sales (increase in A/R) based on the recognition rules
    - EB will be determined by BB, write-offs, and BDE
- This is related to *PS5 Q2*

Bond Valuation

- The time value of money and the present value of bonds

$$PV = \frac{Face\ Value}{(1 + Yield)^n} + \sum_{k=1}^{n} \frac{Coupon}{(1 + Yield)^k}$$

- The relationship depends on the market yield and the coupon rate

ⓐ At a discount	Price $<$ Face value	Yield $>$ Coupon rate	Int Exp $>$ Coupon
ⓑ At a premium	Price $>$ Face value	Yield $<$ Coupon rate	Int Exp $<$ Coupon
ⓒ At par	Price $=$ Face value	Yield $=$ Coupon rate	Int Exp $=$ Coupon

- ⓐ the company pays LESS than the market does (a discount is therefore offered)
- ⓑ the company pays MORE than the market does (a premium is therefore charged)
- ⓒ the company pays the SAME as the market does (a fair game)

Bond Amortization

- It is useful to think about amortization in this way: At the issuance of the bond, we have n future coupon payments, where the discount will "unfold" for each interest payment
- Each year after the coupon payment, a portion of the total discount (premium) should be reduced because that has already been "incurred"
- We expense a portion of the discount (premium) on each coupon payment since the discount comes from the fact that coupon rate $<$ ($>$) market rate
- At maturity, the bond discount or premium will be amortized to zero
- EB BV of Bonds = BB BV + Int Exp - Coupon Payment
  - Interest expense = beginning book value $\times$ yield
  - Coupon payment = face value $\times$ coupon rate = reduction in cash
  - Amortization = Int Exp - Coupon (>0: amortize discount; <0: amortize premium)
- This is related to *PS7 Q1 & Sample Final Q6*

Cost Accounting

- Cost-flow identification: FIFO, LIFO, specific identification method (trivial...), and weighted-average cost method (cost weighted by quantities)
- Activity-based costing (ABC):
  - Group similar types of overhead costs together into cost pools
  - For each cost pool, determine an allocation basis (or cost driver)
  - Compute allocation rates separately for each cost pool and driver
- Might be useful to think of ABC as a way to "weigh" different inputs into the product/project...

Long-Lived Assets

- Different depreciation schemes (refer to *HOPPT08b AssetsPPE* for examples)
  - Straight-line
  - Accelerated: sum-of-the-years'-digits, declining balance, Accelerated Cost Recovery System
  - Usage: units-of-production/hours-of-operation
- Three core equations
  - Ending PP&E = Beginning PP&E + Purchase - Sale/Disposal (All in gross terms)
  - Ending Acc Dep = Beginning Acc Dep + Dep Exp - Acc Dep Related to Sale/Disposal
  - Gain/Loss on Sale of PP&E = Proceeds - (Gross Value of PP&E - Related Acc Dep)
- Typical roadmap: 1) Use one equation to back out one unknown, x; 2) Use the intermediary result, x, to back out other unknowns in other equations
- Assume PP&E is depreciated w/ straight-line, then remaining life $= \frac{\text{net BV - salvage value}}{\text{dep per year}}$

Tax Accounting

- The discrepancies between GAAP and IRS tax codes cause accounting issues
- Permanent differences: Different jurisdictions; different items for income/tax purposes
- Temporary differences: Differences between GAAP-basis income and tax-basis income resulting from differences in the time of recognition
  - For each economic activity, the difference decays to zero in the long run

Tax Accounting (Cont'd)

- Useful to classify the terms into the tax-code, accounting-principle, and reconciling terms
- Taxable income = pretax income (EBT) - temporary differences - permanent differences
- Income tax expense...

$$
\begin{aligned}
&= \text{tax (current), or tax payable} \pm \text{tax (deferred), or DTA/DTL} \\
&= \text{statutory tax rate} \times (\text{taxable income} \pm \text{temporary difference}) \\
&= \text{statutory tax rate} \times (\text{pretax income} \pm \text{permanent difference})
\end{aligned}
$$

- Note that...
  - tax (current), or tax payable = statutory tax rate × taxable income
  - tax (deferred), or DTA/DTL = statutory tax rate × temporary difference
- P.S. Net income = pretax income - tax expense; ETR = tax expense / pretax income
- This is related to *PS7 Q2 & Banin*

More Examples

- Ending A/R = Beginning A/R + Credit Sales - Collections
- Ending A/P = Beginning A/P + Credit Purchases - Cash Payments
- Ending Inventory = Beginning Inventory + Purchases of Inventory - COGS
- Ending W/P = Beginning W/P + Wage Expense - Cash Payments
- Ending T/P = Beginning T/P + Tax Expense - Cash Payment
- Ending Dep = Beginning Dep + Dep Expense - Realized Dep in Sale of PP&E
- And more... back