UCLA Spring 2019
ENG 111 Midterm Exam
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97/100 Excellent!

**1.** (10 points) Rowan just prepared its end-of-year Balance Sheet today (given below). Its tax rate is 34% and it is using a straight-line depreciation method. It does not distribute any dividends. Its competitor has exactly the same financials (same numbers for all revenue, cost, asset, liability accounts) as of today, except, it does not have any depreciation.

What is the difference between the accumulated retained earnings of Rowan and its competitor a year from today if neither company purchases or sells any fixed assets throughout the year and they grow at 0%?

Rowan Company
Comparative Balance Sheet
(dollars in millions)

| | Ending Balance | Beginning Balance |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 70 | $ 91 |
| Accounts receivable | 536 | 572 |
| Inventory | 620 | 580 |
| Total current assets | 1,226 | 1,243 |
| Property, plant, and equipment | 1,719 | 1,656 |
| Less accumulated depreciation | 640 | 480 |
| Net property, plant, and equipm | 1,079 | 1,176 |
| Total assets | $2,305 | $2,419 |
| **Liabilities and Stockholders' E** | | |
| Current liabilities: | | |
| Accounts payable | $ 205 | $ 180 |
| Accrued liabilities | 94 | 105 |
| Income taxes payable | 72 | 88 |
| Total current liabilities | 371 | 373 |
| Bonds payable | 180 | 310 |
| Total liabilities | 551 | 683 |
| Stockholders' equity: | | |
| Common stock | 800 | 800 |
| Retained earnings | 954 | 936 |
| Total stockholders' equity | 1,754 | 1,736 |
| Total liabilities and stockholders' equity | $2,305 | $2,419 |

Rowan Net Income
= 954 - 936
= 18
~~Since all~~
Depreciation belongs in Net Income Calculation.
Rowan Depreciation = 640 - 480
= 160 ✓
If Rowan doesn't grow and doesn't ~~buy get~~ /sell fixed assets,
Net Income will stay the same.
Rowan final retained earnings = 954 + 18
= 972
Net income = 66% × Pretax income
18 = 66% × ($Revenue - COGS - Depreciation - Interest - etc)
∴ Pretax income w/o depreciation = $\left(18 \times \frac{100}{66}\right) + 160$
= 187.2727
Competitor net income = 66% × 187.2727
= 123.59998
Competitor final retained earnings = 954 + 123.60
= 1077.60

∴ Difference in retained earnings
= 1077.60 - 972
= 105.60 ✓
with competitor having higher accumulated retained earnings. *

**2.** (5 points) When company A acquires (purchases) company B at a higher price than the acquired company's total assets, company A's Goodwill Account as well as its Equity will go up.

Do you agree? Explain with one sentence.

~~No~~ No ~~Yes~~, the Goodwill Account will increase because of the ~~price~~ difference between price and Company B's total assets, but ~~and~~ Equity will ~~go up because company A now owes equity to~~ not necessarily go up because company A could've used long-term debt to finance the purchase for example. ✓

**3.** (5 points) Takeover threat cannot be considered as a mitigating factor for agency problem.

Do you agree? Explain with one sentence.

I do not agree. Because if a company is taken over, usually the process includes some consolidation of departments ~~&~~/ employees especially managers so managers will wish for a higher stock price for fear of losing their job in the event of a takeover.

**4.** (5 points) Which of the following events would not change the Total Equity of a company in the short run:

a) purchasing company's own stock
b) selling new stock,
c) an economy-wide slowdown
d) increasing dividend payout ratio
e) none of the above

(-2)

**5.** (5 points) A company that has consistently high EBIT but low NI cannot be a good candidate for takeover.

Do you agree? Explain with one sentence.

~~Could Can't Diffi~~ No, I don't agree because the company could be taking on high levels of debt (thus leading to high interest expense) to finance lucrative growth opportunities in which case the company might be a good candidate for takeover.

**6.** (5 points) A company purchases a fixed asset using funds obtained from investors. Then, we know that *fixed assets* will go up and *equity* will go down among other changes on the Balance Sheet.

Do you agree? Explain with one sentence.

No, assets must equal equity and liabilities so equity must go up in order to balance the increase in assets.

**7.** (5 points) The Stockholders Equity of a company is given below. How much did this company collect from the markets by selling stock at the time of the sale if the company did not issue new stock after its IPO?

| **Stockholders' Equity** | |
|---|---|
| Common Stock | 26,000 |
| Capital Surplus | 196,000 |
| Treasury Stock | -4,500 |
| Accumulated Retained Earnings | 73,500 |
| | |
| Total Stockholder Equity | 291,000 |

It collected (26000+ 196000) = $222,000 #

(-2)

$\frac{Debt}{Equity}$ $\overline{FA} + \overset{\downarrow}{CA} = \overset{\downarrow}{E} + \overset{\uparrow}{L}$

8. (5 points) A firm has a financial objective of keeping its debt to equity ratio constant. Which of the following is most likely to happen if the firm makes a loss and does not sell any stocks or any of its fixed assets?

Retained earnings ↓ ⇒ Equity ↓

A. short term debt will rise
B. long term debt will rise
C. either short or long term debt or both will rise
D. net working capital will fall ← my answer
E. equity will rise

9. (5 points) A company purchases an equipment to be used for 4 years in 2014 for $20,000. If the company is using straight line depreciation method and if the tax rate is 34%,

A. interest is deducted from income and increases the total taxes incurred.
B. the tax rate is applied to the earnings before interest and taxes when the firm has both depreciation and interest expenses.
C. depreciation is shown as an expense but does not affect the taxes payable.
D. depreciation reduces both the pretax income and the net income.
E. interest expense is added to earnings before interest and taxes to get pretax income.

10. (5 points) Which one of the following is a capital budgeting decision?

A. determining how much debt should be borrowed from a particular lender
B. deciding whether or not to open a new store
C. deciding when to repay a long-term debt
D. determining how much inventory to keep on hand
E. determining how much money should be kept in the checking account

11. (5 points) Which one of the following statements concerning a sole proprietorship is correct?

A. A sole proprietorship is the least common form of business ownership.
B. The profits of a sole proprietorship are taxed twice. X
C. The owners of a sole proprietorship share profits as established by the partnership agreement. X
D. The owner of a sole proprietorship may be forced to sell his/her personal assets to pay company debts.
E. A sole proprietorship is often structured as a limited liability company.

12. (10 points) For the first time, UBER will make its financial statements available to the public when they IPO. As we talked in class, some information can be inferred from these statements and some cannot. Here is a list of things that you would like to know about the company. Circle the ones that CAN BE inferred directly from the Financial Statements:

Debt/Equity Ratio
UBER's Market Share
Future Growth Opportunities
Patents that UBER holds
Price that is paid to image and future potential for the companies UBER acquired to date.
Human Capital used by UBER

13. (5 points) Draft a common-size income statement for a hypothetical firm using the following information: The tax rate is 50% . Net income, Depreciation, and Interest Expense are each 10% of Sales. Cost of Goods Sold is six times as big as Depreciation.

| | (%) |
|---|---|
| Sales | 100 |
| COGS | 60 |
| Depreciation | 10 |
| EBIT | 30 |
| Interest Expense | 10 |
| PreTax Income | 20 |
| Tax (50%) | 10 |
| Net Income | 10 |

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**14.** Valyrian Inc.'s Balance Sheet and Income Statement as of Dec 31st 2018 are given below. Company has a dividend payout ratio of 0.5 and has no plans of issuing new stock or repurchasing its existing stock in the near future.

*Please choose one of the scenarios below to produce the pro-forma statements of Valyrian for 2019. Scenario A is easier. Scenario B has bonus points. Please do not answer both questions. If you answer both, we will grade only scenario B.*

*Scenario A* (25 points) Sales grow at 20%. Assets, accounts payable, NWC, COGS, SG&A costs grow at the same rate as sales. Annual depreciation cost stays the same. The conditions in the capital markets are such that short term borrowing is possible for any company but long term borrowing is available at a cost of 5% per year for those companies with a D/E less than 2 and at a cost of 10% for those with a D/E greater than 2. Produce the pro-forma income statement and balance sheet of Valyrian for Dec 31, 2019.

*Scenario B* (25 points plus 6 bonus points) Company uses only its internal funds to grow, no new long term debt will be obtained. That is, long term debt will stay the same. Assets, accounts payable, NWC, COGS, SG&A costs grow at the same rate as sales. Annual depreciation cost stays the same. The conditions in the capital markets are such that short term borrowing is possible for any company. Any existing long term debt has a cost of 5% interest per year for those companies with a D/E less than 2 and a cost of 10% interest for those with a D/E greater than 2. Produce the pro-forma income statement and balance sheet of Valyrian for Dec 31, 2019. What is the maximum rate Valyrian can grow at using only its internal sources?

| **Balance Sheet** | | | |
|---|---|---|---|
| All numbers in thousands | | | |
| **Period Ending** | 12/31/18 | Scenario A | Scenario B |
| **Current Assets** | | | |
| Cash And Cash Equivalents | 12,000 | 14,400 | |
| Account Receivables | 1,400 | 1,680 | |
| Inventory | 3,600 | 4,320 | |
| **Total Current Assets** | **17,000** | 20,400 | |
| Long Term Investments | 326,000 | 391,200 | |
| Net Property Plant and Equipment | 278,000 | 309,600 ~~333,600~~ | 33,600 IS correct |
| Net Goodwill | 151,000 | 181,200 | |
| Net Intangible Assets | 57,000 | 88,400 | |
| **Total Fixed Assets** | **812,000** | 450,400 | |
| **Total Assets** | **829,000** | 970,800 | |
| **Current Liabilities** | | | |
| Accounts Payable | 10,000 | 12,000 | |
| Notes Payable | 2,000 | 3,400 | 2,400 −1 |
| **Total Current Liabilities** | **12,000** | 15,400 | |
| Long Term Debt | 526,000 | 659,083 | |
| **Total Liabilities** | **538,000** | 674,483 | |
| **Stockholders' Equity** | | | |
| Common Stock | 26,000 | 26,000 | |
| Capital Surplus | 196,000 | 196,000 | |
| Treasury Stock | -4,500 | -4,500 | |
| Accumulated Retained Earnings | 73,500 | 78,817 | |
| | | | |
| Total Stockholder Equity | 291,000 | 296317 | |
| Total Liabilites and Stockholders Equity | **829,000** | 970,800 | |

−1

| Income Statement<br>All numbers in thousands | | | |
| --- | --- | --- | --- |
| **Revenue** | 12/31/18 | Scenario A | Scenario B |
| Total Revenue | 200,000 | 240,000 | |
| COGS | 80,000 | 96,000 | |
| Selling,Gen&Adm Costs | 34,000 | 40,800 | |
| Depreciation | 20,000 | 24,000 | |
| Earnings Before Interest and Taxes | 66,000 | 79,200 | |
| Interest Expense | 26,300 | 65,908 | |
| Income Before Tax | 39,700 | 13,292 | |
| Tax Expense(20%) | 7,940 | 2,658 | |
| **Net Income** | 31,760 | 10,634 | |

Net Property Plant & Equipment = (1.2×278000) − 24000 (New depreciation)
= 309600

Since assets grew at same rate as sales,
I took 1.2x All ~~assets~~ assets.

Let interest expense be $x$.

Income before tax = $79200 - x$

Tax expense = $0.2(79200 - x)$

Net income = $0.8(79200 - x)$

Accumulated retained earnings = $73500 + 0.5 \times 0.8(79200 - x)$
$= 73500 + 0.4(79200 - x)$ ✓

Total stockholder equity = $26000 + 196000 - 4500 + 73500 + 0.4(79200 - x)$
$= 322680 - 0.4x$

Total liabilities = $970800 - (322680 - 0.4x)$
$= 0.4x + 648120$

Long-term debt = $0.4x + 648120 - 15400$
$= 0.4x + 632720$

$$D/E = \frac{0.4x + 648120}{322680 - 0.4x}$$

Even if $x = 0$, $D/E > 2$ so ✓ Good!

$x = 10\% \times$ Long-term Debt

$x = 0.1(0.4x + 632720)$

$0.96x = 63272$

$x = 65908$

| | |
|---|---|
| Market Value Measures | Market Capitalization = Price per share * # Shares Outstanding<br>P/E Ratio = Price Per Share / Earnings Per Share<br>Market to Book Ratio = Market Value per Share / Book Value per Share |
| External Financing Formulas | $EFN = \left(\frac{\text{Assets}}{\text{Sales}}\right) \times \Delta\text{Sales} - \frac{\text{Spon Liab}}{\text{Sales}} \times \Delta\text{Sales} - (PM \times \text{Projected Sales}) \times (1-d)$ |
| Accounting Ratios | Current Ratio = Current Assets/ Current Liabilities<br>Quick Ratio = (Current Assets – Inventory) / Current Liabilities<br>Cash Ratio = Cash / Current Liabilities<br>Total Debt Ratio = (Total Assets – Total Equity ) / Total Assets<br>Debt/Equity = Total Debt / Total Equities<br>Equity Multiplier = Total Assets / Total Equity<br>Times Interest Earned = (Earnings Before Interest And Taxes) / Interest<br>Cash Coverage = (EBIT + Depreciation + Amortization) / Interest<br>Inventory Turnover = Cost of Goods Sold / Inventory<br>Days' Sales in Inventory = 365 / (Inventory Turnover)<br>Receivables Turnover = Sales / Accounts Receivable<br>Days' Sales in Receivables = 365 / Receivables Turnover<br>Total Asset Turnover = Sales /Total Assets<br>Profit Margin = Net Income / Sales<br>Return on Assets = Net Income / Total Assets<br>Return on Equity = Net Income / Total Equity |
| Financial Cash Flow | C(A)=C(B)+C(S)<br>C(A) =OCF- Change in NWC – Cash Flow to Fixed Assets<br>OCF=EBIT+Depreciation-Tax<br>Change in NWC = Ending NWC – Beginning NWC<br>Cash Flow to Fixed Assets = Ending NFA-Beginning NFA+Depreciation (if we use the gross fixed assets, then = Ending Gross Fixed Assets – Beginning Gross Fixed Assets)<br>C(B) = Interest-(Ending Long Term Debt – Beginning Long Term Debt)<br>C(S) = Dividends – (Stocks sold- Stocks purchased) |