

考試科目	財務管理	系所別	財務管理研究所	考試時間	2月2日(五) 第二節
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Part I. Multiple Choice Questions (40 pts, 4 pts each):

- The dividend yield based on year-ahead aggregate forecasted dividends is 2.1%, and the consensus on long-term earnings growth rate is 4%. Currently the 20-year U.S. government bond yield is 3%. The equity risk premium of this market is closest to
 - 3.1%
 - 5.1%
 - 6.1%
 - 7.0%
- Assume that both X and Y are risky assets and the risk-free rate is 2%. X has a return of 14% and a beta of 1.5. Y has a return of 9.5% and a beta of 0.75. If X is on the security market line, then Y
 - is also on the security market line.
 - is underpriced.
 - is overpriced.
 - is uncertain because we don't have enough information.
- Below is the income statement of the network company you are analyzing. Which of the following provides the strongest evidence that this company shows economies of scale?

	2010	2011	2012
Net sales	56.7	60.6	64.1
Cost of sales	22.3	22.5	22.7
Gross profit	34.4	38.1	41.4
Selling, general, and administrative expenses	21.6	24.7	27.4
Operating income	12.8	13.4	14.0
Interest expense	0.6	0.7	0.6
Income before provision for income tax	12.2	12.7	13.4
Provision for income taxes	2.8	3.0	3.2
Net income	9.4	9.7	10.2

- Increasing net sales
- Profit margins increases as net sales increase
- Gross profit margins that are increasing with net sales
- Interest expense goes up in a slower pace than net sales

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- 作答於試題上者，不予計分。
- 試題請隨卷繳交。

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4. Five years ago, Corsola Inc. invested \$38 million - \$30 million in fixed capital and another \$8 million in working capital. Corsola Inc. decides to sell the fixed assets for \$5 million today and liquidate the investment in working capital as well. The fixed capital falls in the 5-year MACRS depreciation class, and the depreciation rates are as following:

Year	Depreciation Rate
1	20.00%
2	32.00%
3	19.20%
4	11.52%
5	11.52%
6	5.76%

The marginal tax rate for the company is 40%. The fifth year's after-tax non-operating cash flow from these activities is *closest to* (note: the numbers are all rounded to millions):

- A. \$5 million
 B. \$8 million
 C. \$12 million
 D. \$13 million
5. Which of the following regarding fixed-income valuation is correct?
 I. A bond price moves inversely with its yield-to-maturity.
 II. The price of a lower-coupon bond is more volatile than the price of a higher-coupon bond, other things being equal.
 III. A floating-rate note maintains a more volatile price than a fixed-rate note because its coupon rate varies.
 IV. A more convex bond depreciates less when yields rise.
 A. I and II only
 B. II and III only
 C. I, II and IV only
 D. All of the above
6. Assume the probability of the underlying asset going bankruptcy is very high. Compared to the price of an American put option on the same underlying asset, the price of an equivalent European put option will most likely be:
 A. lower.
 B. higher.
 C. the same because the probability of bankruptcy does not affect pricing.
 D. uncertain.

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7. We have two assets with betas of 1.5 and 1.2 from the market model. The residual standard deviation from the market model is 2 for the first asset and 8 for the second. The market standard deviation is 6.
- I. The correlation between these two assets is 0.65.
 - II. The first asset has a higher systematic risk
 - III. The second asset has a higher total risk
 - IV. The correlation is too high to have any portfolio with these two assets that can have a lower total risk than both assets.
 - A. Only II and III are correct.
 - B. Only I, II, and III are correct.
 - C. Only I and IV are correct.
 - D. All of them are correct.
8. Assume a firm has positive net earnings. The operating cash flow of this firm:
- A. ignores both depreciation and taxes.
 - B. is unaffected by the depreciation expense.
 - C. increases when tax rates decrease.
 - D. is equal to net income minus depreciation.
9. According to efficient market hypothesis, which of the following statements are correct?
- I. Professional investors will earn no profits in the long-run.
 - II. We can find a resistance level and a support level for each stock in equilibrium
 - III. Fundamental analysis is often doomed to fail if we only use already filed financial reports to make stock forecast.
 - IV. A passive investment strategy often prevails because most actively managed funds cannot beat the market.
 - A. I and III
 - B. II and IV
 - C. III and IV
 - D. I and IV
10. Which one of the following will increase the value of a firm's net working capital?
- A. using cash to pay a supplier
 - B. collecting an accounts receivable
 - C. purchasing inventory on credit
 - D. selling inventory at a profit

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Part II. Short Essay Questions (60 pts, 15 pts each):

- Apple (AAPL) issued \$17 billion corporate bonds in 2013 as part of the effort to finance its \$100 billion payout to shareholders, which includes shares buyback and cash dividends. At the same time, Apple also had \$145 billion cash on hand.
 - (6 pts) The reason of the \$100 billion payout program was to boost Apple's share price. Please explain why giving away money to shareholders can boost the stock prices.
 - (6 pts) While this bond issuance and its usage are lauded by investors, this practice is at odds with one or some of the capital structure theories. Please name the theory and explain what Apple was supposed to do according to that theory.
 - (3 pts) Can you explain the rationale that Apple chose to violate the theory you stated in B?
- You are an assistant stock analyst and you want to determine whether you should give NVIDIA (NASDAQ: NVDA) a buy/hold/sell recommendation right now. NVIDIA is a technology company that designs graphics processing units (GPU) for gaming, artificial intelligence computing and cryptocurrency markets. Below is some of its current information pulled from NASDAQ website:

Data as of January 9th, 2018 (TTM means trailing twelve months)

Price Close	\$221.94	P/E Ratio	55.07
52 Week High/Low	\$225/\$95.17	Earnings Per Share (TTM)	\$4.03
Market Cap	134,495,640,000	Annualized Dividend (TTM)	\$0.60
Average Volume	13,559,535	Ex Dividend Date	11/22/2017
Beta	2.4	Dividend Payment Date	12/15/2017
		Current Yield	0.28%

Analysts following this company are expecting it to grow earnings at an average annual rate of 10.25% over the next 5 years. The earnings growth next year is expected to be 11.41%. The current long-term Treasury Bond rate is 2.87%, and the market premium is 5.5%. Please also see the EPS forecasts below.

Fiscal Year End	Consensus EPS Forecast	High EPS Forecast	Low EPS Forecast
Jan 2018	4.19	4.30	4.14
Jan 2019	4.67	5.01	4.29
Jan 2020	5.72	6.46	5.01

Of course these information is enough. If there is anything you can reasonably access, you can include it in your analysis and state clearly how you are going to use it. Make assumptions if you need, but do so with good reasons. There is no "correct" answer to this question, only the thought process matters.

Please tell me what your recommendation is.

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3. Roselia Inc. is considering a two-year project to improve its production efficiency. Buying a new machine for \$300,000 will result in \$100,000 in annual pretax cost savings. The machine applies a straight-line depreciation in five years, and Roselia Inc. will be able to resell it for \$200,000 in the end of the project. The machine also requires an extra initial investment in net working capital of \$30,000 and it remains the same amount over the life of the project. This extra net working capital can be liquidated after the two-year project is done. The marginal tax rate is 40% and the discount rate is 10%.
- (7 pts) Do you think this company should pursue this project?
 - (8 pts) If the firm's marginal tax rate drops from 40% to 30% because of the new tax reform. Would Roselia Inc. change its mind about the project? In which areas can Roselia save/make more money by the tax break?

4. Ledian, a manufacturer of consumer cleaning products, is evaluating its capital structure. The current balance sheet of the company is (in millions):

Assets		Liabilities	
Current assets	\$1,000	Debt	\$2,000
Fixed assets	\$3,000	Equity	\$2,000

The debt is in the form of 3% coupon rate long-term bonds currently rated AA and the YTM is 6%, the market value is 80% of the face value.

Ledian has 50 million shares outstanding and its shares sell at \$60. The stock has a beta of 1.2 and the market risk premium is 5.5%.

The risk-free rate at this moment is 3%. The marginal tax rate for the firm is 40%.

They are pondering two possible approaches to change the capital structure:

Option I. Issue \$800 million new stocks and repurchase half of its outstanding debt. This makes it an AAA-rated firm that would have 5% YTM.

Option II. Issue \$800 million in new debt and buy back shares. The rating would drop to A- and have 7% YTM afterwards.

Note: Since the full terms of the corporate bonds are not given, please consider the price of bonds unchanged when calculating D/E and their relative weights.

- (5 pts) What is the cost of equity under each option?
- (5 pts) What is the after-tax cost of debt under each option?
- (5 pts) Which option will you choose and why?

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