高顿CFA押题密卷-Level2
密卷直播解析

道德+经济+权益+另类

Ethical and Professional Standards

上午卷-Case 1(1-6)

The Pension Fund Case Scenario

Jason Zhang, CFA, has recently been hired as the Chief Investment Officer of the Regional Government Employees' Pension Fund. Currently, he is conducting evaluations of all external managers employed by the Pension Fund to ensure that they are acting their best to pursue excellent returns according to their mandates while complying with all applicable laws and regulations.

Alpha Investment is a local asset management firm with a relatively large AUM. 10% of the pension fund assets were allocated to Alpha Investment to manage due to its good tracks of performance for the past five years. To better understand the investment activities of this firm, Zhang arranged a formal meeting with the representative fund manager, Emma Wen.

Zhang required Wen to explain the heavy positions on commodities in the portfolio since the trades did not consistent with the written IPS of the pension fund. Wen replied that there's a lot of trading opportunities in commodity markets since the upward trends became more obvious, contrarily the stock market was stagnant. Though being a green hand, she was ready to grab these profits to furtherly push up the returns of the fund.

Zhang then had a thorough check on Alpha Investment's compliance policy statements：

(1) Performance Presentation

Performance data must be documented for each of Alpha's active accounts, be disclosed upon request, and be compared with the firm's composite, which is composed of active accounts only. Performance data must be presented on a before-tax basis to all clients, with the disclosure that all performance data are computed before fees.

(2) Disclosure of Conflicts

The employees are not prohibited from being managers or trustees of the not-for-profit funds in their spare time. The employees can voluntarily disclose their positions in the not-for-profit funds to the firm.

(3) Violations

Supervisors are responsible for detecting violations by the employees who are directly under their supervision. Once a violation detected, the supervisor must promptly conduct a thorough investigation.

(4) Compensation

All the employees may accept gifts or compensation from clients to appreciate their excellent working performance after getting written consent from their supervisors.

(5) Record Retention

Alpha maintains only hard-copy records for the Pension Fund for the five years required by regulators.

(6) Personal Securities Trading Policy

Policy 1: If investment personnel plans to trade stocks in clients' accounts on day T, they could not trade those same stocks in personal accounts on day T-3, T-2, and T-1.

Policy 2: Each month a randomly selected group of investment personnel must provide duplicate trade confirmations to the Alpha compliance officer.

Policy 3: Investment personnel must receive prior approval for personal trades only for those trades greater than $10,000.

1 Regarding the commodity positions, does Wen's trade comply with the CFA Institute Code and Standards?

A Yes, because it is a good opportunity to earn returns.

B No, because investing in the commodity does not follow the related IPS.

C No, because she has not enough related experience to trade commodities.

1.Answer: B

在任何情况下，基金经理投资产品要符合IPS的投资范围和规定，Wen投资大宗商品并不符合养老金的IPS要求，所以她违反了Standard III(C) Suitability。因此正确选项为B。

对于选项A，无论大宗商品的投资是否为养老金获得盈利，该投资都超出了IPS要求的投资范围，Wen违反了Standard III(C) Suitability。因此，该选项错误。

对于选项C，Wen违反Standard III(C) Suitability是因为大宗商品投资超出了养老金IPS的投资范围，而不是因为她的大宗商品投资经验不足。因此，该选项错误。

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2 Does Alpha's compliance policy statement conform with the CFA Institute Code and Standards with respect to Performance Presentation?

A No, because terminated accounts are excluded.

B No, because performance is reported to all clients gross of fees.

C No, because performance data are presented on a before-tax basis.

2.Answer: A

Standard III(D) Performance Presentation要求无论是终止账户还是正常账户都需要保留在业绩展示中，Alpha公司只展示了active账户业绩，而没有包含终止账户的业绩，违反了Standard III(D) Performance Presentation。因此正确选项为A。

对于选项B，Standard III(D) Performance Presentation推荐遵守GIPS要求，但不是强制要求，所以向客户披露的业绩是gross of fees或者net of fees都可以，并不违反该准则。因此，该选项错误。

对于选项C，Standard III(D) Performance Presentation并未强制要求披露的业绩必须是税后的。因此，该选项错误。

3 Does Alpha's compliance policy statement conform with the CFA Institute Code and

Standards with respect to Disclosure of Conflicts?

A Yes.

B No, because the employees should be prohibited from being managers or trustees of any

outside funds.

C No, because the employees should disclose the positions and get written consent before

accepting the positions.

3.Answer: C

Alpha的员工利用业余时间在非盈利基金任职，属于independent practice，是利益冲突的一种。根据Standard VI(A) Disclosure of Conflicts的要求，Alpha员工应该向雇主披露在非盈利基金的任职，并且获得雇主书面同意后才能任职。因此正确选项为C。

对于选项A，对于任职非盈利基金的利益冲突，员工可以自愿披露，这个政策不符合Standard VI(A) Disclosure of Conflicts的要求。因此，该选项错误。

对于选项B，Standard VI(A) Disclosure of Conflicts并没有禁止员工兼职，只要员工充分披露兼职的情况，并事先获得雇主的同意，员工是可以兼职的。因此，该选项错误。

4 Which of the Alpha's compliance policy statements is consistent with the CFA Institute Code and Standards with respect to Violations and Compensation?

A The statement related to Violations

B The statement related to Compensation

C Neither of the two statements

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4.Answer: B

对于客户为了奖励员工出色的工作表现而赠送的礼物或好处，员工是可以收取的，只要事前向雇主披露并获得书面同意，Compensation部分的陈述符合CFA职业准则的要求。因此正确选项为B。

对于选项A，Violations部分规定管理者监管和侦察违规的职责只涉及管理者和他们直接监督的员工。而Standard IV(C) Responsibilities of Supervisors规定，管理者需对任何受其控制或影响的雇员行使监督责任。因此，该陈述不符合CFA职业准则的要求。因此，该选项错误。

对于选项C，Compensation部分的陈述符合CFA职业准则的要求。因此，该选项错误。

5 Does Alpha's compliance policy statement conform with the CFA Institute Code and Standards with respect to Record Retention?

A No, because the CFA Institute requires maintaining records in electronic form.

B No, because the CFA Institute requires maintaining records at least 7 years.

C Yes.

5.Answer: C

根据Standard V(C) Record Retention，公司可以选择保存电子文档或者纸质文档，无论那种形式的存档都是符合该细则的。当地如果没有监管要求，该细则推荐文档保存7年，如果有监管要求就按监管要求执行，文中提到根据当地监管要求保存5年，所以并不违反Standard V(C) Record Retention。因此正确选项为C。

对于选项A，企业可以选择保存电子文档或者纸质文档，都符合Standard V(C) Record Retention的要求。因此，该选项错误。

对于选项B，当地监管有要求保存时间，则根据当地监管要求保存5年即可。因此，该选项错误。

6 Which of Alpha's Personal Securities Trading Policies is most likely consistent with the CFA Institute Code and Standards?

A Personal Securities Trading Policy 1

B Personal Securities Trading Policy 2

C Personal Securities Trading Policy 3

6.Answer: A

Standard VI(B) Priority of Transactions要求CFA会员或者考生不能抢在客户之前做交易，该细则对于员工具体的限制买卖期并没有具体要求，只要不在客户之前做交易就符合该条款，所以Alpha公司Policy 1的描述是正确的。因此，正确选项为A。

对于选项B，每月随机挑选一组投资部门员工，向合规部提供交易副本确认信息。根据Standard VI(B) Priority of Transactions，所有投资部门员工都应被要求定期提供个人交易的副本，Policy 2的描述不符合该细则的要求。因此，该选项错误。

对于选项C，投资部门员工对于超过10,000美元的交易必须事先获得批准。根据Standard VI(B) Priority of Transactions，在执行交易前，应检查所有计划中的个人交易，以确定可能的利益冲突，Policy 3的描述不符合该细则的要求。因此，该选项错误。

Economics

上午卷-Case 2(7-12)

Alba Case Scenario

Alba is a developing country. The government has adopted open policies for international trade and the flow of capital. Business is now substantially run with European countries and is often denominated in euros (€). During the early 2000s, with the privatization of some publicly owned industries, a new free-floating currency has been launched called the Alba Dollar (ALD). At the same time, sound policies implemented at the central bank lead to the economy on a track for steady growth and stability.

Minister of Finance Andrew Bubs is preparing his annual report on the state of the economy and currency markets for the legislative branch of government. He will examine the long-term and short-term trends in GDP growth, per capita income, inflation, and exchange rates. He is also responsible for recommending policy initiatives for the legislature about promoting overall economic prosperity for Alba's citizens.

To estimate long-term GDP growth, Bubs examines the data in Exhibit 1 and intends to use Solow's growth accounting equation.

Exhibit 1 Long-Term Trends of Alba's Economy

Labor force growth	2.9%
Growth rate of total factor productivity	0.2%
Growth in capital	5.3%
Share of GDP paid to labor	60%

Bubs consults his colleague Larry Smith on the policy choices for the government and the possible effects on economic growth and per capita income.

Smith states: Alba's politicians are debating the effects of growth rate policies focused on three outcomes:

- higher rates of saving and investment,

- importing more technological innovations, and

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Smith states: Alba's politicians are debating the effects of growth rate policies focused on three outcomes:

- higher rates of saving and investment,
- importing more technological innovations, and
- greater investment in research and development (R&D).

Smith concludes: The impact of these policies will cause a long-term increase in the economy's growth rate and the standard of living. Furthermore, if we emphasize R&D spending, then higher rates of saving and investment are unlikely to encounter diminishing marginal returns.

Even though Alba experiences a high growth of the economy, price level and exchange rate issues still need to be concerned for a developing country. Increasing inflation and appreciation in the exchange rate will be the potential obstacles to further development. To analyze these issues, Bubs and Smith have the further discussion as follows.

Bubs states: "Alba's government has adopted open policies for international trade and the flow of capital. In the short run, the best way is to implement expansionary monetary policies or contractionary fiscal policies, which cause Alba's currency to depreciate."

Smith replies: "In the long run, expansionary fiscal policies may also stop the appreciation of the currency. Expansionary fiscal policies may lead to a high debt burden on Alba and lead the central bank to monetize the debt. Finally, Alba's currency depreciates."

Bubs also concerns the importance of GDP growth to investors and the convergence of living standards between countries. Smith explains:

Statement 1   When we consider our stock markets over the long term, the primary focus should be on the rate of GDP growth. For longer time horizons, changes in earnings and the price/earnings multiple are relatively less important in determining appreciation in the stock market. We should keep in mind that higher rates of potential GDP growth will translate into lower real interest rates and lower expected real asset returns.

Statement 2   Many countries that have the same population growth rate, saving rate, and production function will have steady state growth rates and per capita output that converge over time.

Statement 3   Poor countries will only converge to the income levels of the richest countries if they make appropriate institutional changes.

Mike, CFA, is a portfolio manager for AC Investment Management Company from Europe. In examining the global capital markets, Mike notices potential arbitraging opportunists in Alba's foreign exchange market. Without capital restriction, he analyzes the rate quotes in Exhibit 2 for evidence of triangular arbitrage and carry trade opportunities by his portfolio.

Exhibit 2 Interbank and Dealer Currency Quotes and Rates				
	Bid (spot)	Offer (spot)	Projected Spot in One Year	One-Year LIBOR Rates
Interbank Market:				
EUR/USD	0.7625	0.7640	0.7280	
ALD/USD	1.1130	1.1200	1.1360	
Alba's Dealer:				
ALD/EUR	1.6160	1.6190		
EUR				0.7%
USD				0.8%
ALD				2.0%

7 Using the specified growth accounting equation, which is the most appropriate conclusion Bubs can make from his data on trends in the economy?

A GDP growth is primarily driven by labor.
B Alba's economy is performing at a steady state rate of growth.
C GDP growth is primarily driven by capital.

7. **Answer: C**

根据科布道格拉斯生产函数可得: $\frac{\Delta Y}{Y} = \frac{\Delta A}{A} + \alpha \times \frac{\Delta K}{K} + (1 - \alpha) \times \frac{\Delta L}{L}$, 其中:

$\frac{\Delta Y}{Y}$ = GDP 增长率(GDP percentage growth)

$\frac{\Delta A}{A}$ = 总生产因子增长率(percentage growth from total factor productivity, TFP)

$\frac{\Delta K}{K}$ = 资本增长率(percentage growth in capital)

$\frac{\Delta L}{L}$ = 劳动增长率(percentage growth in labor)

α = 归属于资本方的收入比例(share of income paid to capital factor)

$1 - \alpha$ = 归熟于劳工方的收入比例(share of income paid to labor factor)

已知 $1 - \alpha = 0.60$ 且 $\alpha = 0.40$

$\frac{\Delta A}{A}$	0.2%
$\alpha \times \frac{\Delta K}{K}$	+ 2.12% = (0.40) × 5.3%
$(1 - \alpha) \times \frac{\Delta L}{L}$	+ 1.74% = (0.60) × 2.9%
$\frac{\Delta Y}{Y}$	4.06%
资本的增长率(2.12%)比其他两个因素的增长都大。	

因此正确选项为 C。

对于选项 B，无法判断是否是稳定增长。因此，该选项错误。

8 Smith's conclusion regarding the growth policy debate is most consistent with which model of economic growth?

A Endogenous
B Classical
C Neoclassical

8.Answer: A

Smith提到的观点是不存在边际回报递减，这是典型的内生增长理论(endogenous)观点，因为如果把资本扩展到人力资本、研发等方面就不存在边际回报递减了，故此本题选A。

对于选项B说的古典主义，这是人口爆炸学说，和本题的观点无关。因此，该选项描述正确，不符合题意，为错误选项。

对于选项C，说的是新古典，认为存在边际回报递减。因此，该选项描述正确，不符合题意，为错误选项。

9 Which models may be used to support the statements of Bubs and Smith in response to Alba's inflation and exchange rate issues?

A Smith's statement is supported by Dornbusch modified monetary model and Bubs' statement is supported by the Mundell–Fleming model.

B Smith's statement is supported by the portfolio balance approach and Bubs' statement is supported by the Mundell–Fleming model.

C Smith's statement is supported by the Mundell–Fleming model and Bubs' statement is supported by Dornbusch modified monetary model.

9.Answer: B

关于Smith的论点是组合平衡法所支持的，一个国家一旦长期处于负债并上升到不可持续水平，人们将认为央行会货币化债务，即通过发行货币买入政府债务，最终本国货币也将贬值。而关于Bubs的论点是蒙代尔弗莱明模型所支持的，因为在资本可以自由流动同时在浮动汇率制的情况下，宽松的货币政策或紧缩的财政政策都使得本币贬值。因此正确选项为B。

对于选项A，Smith的论点是组合平衡法所支持的而非多恩布什模型所支持。因此，该选项错误。

对于选项C，Smith的论点是组合平衡法所支持的而非蒙代尔弗莱明模型所支持。Bubs的论点是蒙代尔弗莱明模型所支持的而非多恩布什模型所支持。因此，该选项错误。

10 In reviewing the three statements to address the importance of GDP growth to investors and the concept of convergence, which of Bubs' colleagues' statements is most inaccurate?

A Statement 2
B Statement 3
C Statement 1

10.Answer: C

对于固定收益市场来说，潜在GDP的高增长将会导致较高实际利率和较高预期资产回报率，而题目刚好讲反 。选项C描述错误，符合题意，为正确选项。

对于选项A，当人口增长率、储蓄率、生产函数相同的时候即可趋同。因此，该选项描述正确，不符合题意，为错误选项。

对于选项B，说的是俱乐部趋同，当发展中国家适当的修改相应的制度就可以和发达国家趋同。因此，该选项描述正确，不符合题意，为错误选项。

11 According to the foreign currency quotes in Exhibit 2, a possible triangular arbitrage profit based on a transaction of USD1,000,000 will most likely to be:

A USD0.

B USD100,179.

C USD120,244.

11. Answer: B

该题主要考点为要求计算 USD 的套利利润，我们要计算银行间市场(interbank market)的交叉汇率 (ALD/EUR)来跟做市商(dealer)的报价进行比较。首先要先判断该买哪种货币，根据交叉汇率我们得知银行间市场的报价应该是 1.4568-1.4689 (ALD/EUR)

$$\text{Bid:} \ \frac{ALD}{USD} \div \frac{EUR}{USD} = 1.1130 \div 0.7640 = 1.4568$$

$$\text{Offer:} \ \frac{ALD}{USD} \div \frac{EUR}{USD} = 1.1200 \div 0.7625 = 1.4689$$

该报价比做市商的报价 1.6160-1.6190 (ALD/EUR)更低，说明在银行间市场中 EUR 卖得更便宜，因此应该在银行间市场中用手上的 USD 买进 EUR

$$1,000,000 \times 0.7625 = 762,500$$

再将手上的 EUR 在做市商市场卖掉转换成 ALD

$$762,500 \times 1.6160 = 1,232,200$$

最后回到银行间市场再将 ALD 转换成 USD

$$1,232,200 \div 1.1200 = 1,100,178.57$$

赚取套利利润，最终获利 USD100,178.57

$$1,100,178.57 - 1,000,000 = 100,178.57$$

因此正确选项为 B。

12 Using information only of the interbank quote provided from Exhibit 2, an investor who borrows EUR200,000 for a year then invests in Alba will obtain a net profit closet to:

A EUR9,543.
B EUR10,948.
C EUR8,934.

12. **Answer: B**

套期交易(carry trade)的思路是从低利率国借钱,到高利率国投资，故此借 EUR(利率 0.7%)，投 ALI 率 2.0%)，具体步骤如下：

卖出 EUR

$$\frac{200,000}{0.7640} = USD261,780.10$$

卖出 USD

$$261,780.10 \times 1.1130 = ALD291,361.14$$

投资在 2.0% ALD LIBOR

$$291,361.14 \times (1 + 2\%) = ALD297,188.22$$

转换成 EUR 依据预期的即期汇率

$$297,188.22 \times 0.7280 \div 1.1360 = EUR190,451.61$$

扣除融资成本

$$200,000 \times 0.7\% = EUR1,400$$

终值

$$190,451.61 - 1,400 = EUR189,051.61$$

扣除期初投资 EUR200,000

$$189,051.61 - 200,000 = -EUR10,948.39$$

总利润为− EUR10,948.39，因此正确选项为B。

Equity Investments

上午卷-Case 6(31-36)

The Singbo Case

Alan Hull, CFA, an analyst in Capital investment firm, is valuing common shares of Singbo Co. with free cash flow method.

He gathered accounting information about Singbo in 20X6 and 20X7 in Exhibit 1 and Exhibit 2.

考前密训资料加V：zyz786468331

Exhibit 1 Selected Balance Sheet Statement Information of Singbo($ millions)		
	as of 31 December	
	20X7	20X6
Cash and cash equivalents	13	11
Total current assets	56	48
Gross fixed assets	232	143
Accumulated depreciation	73	42
Current liabilities (exclude interest bearing debt)	14	10

Exhibit 2 Selected Income Statement Information of Singbo($ millions)

For Year Ending 31 December	20X7
Revenues	1334
Earnings before interest, taxes, depreciation, and amortization (EBITDA)	328
Depreciation expense	54
Operating income	274
Interest expense	24
Pretax income	250
Income tax (32%)	80
Net income	170

In addition, some equipment with gross value of $67million were sold for 50 $million in the fiscal year of 20X7. The company did not issue or repurchase any debt during 20X7.

According to consensus analyst expectations of the company, Hull projected the cost of equity of Singbo were 10%. Based on his valuation model, he expected that FCFE would grow at 6% for the next 2 years and the growth rate will keep constant at 3% thereafter.

Jack Smith, Hull's direct reporting manager, asked him to explain the reason that he chose free cash flow over net income and EBIDTA as proxy. Hull made the following statements:

Statement 1: Net income does not take into account depreciation and amortization charges.
Statement 2: EBITDA counts depreciation tax shield twice.
Statement 3: EBITDA does not consider the effects of investments in working capital and net fixed assets.

31 Using the data in Exhibit 1, Singbo's fixed capital investment in 20X7 is closest to:

A $89 million.
B $106 million.
C $39 million.

The Singbo Case

31. Answer: B

该题主要考点为固定资产有处置情况下，fixed capital investment 的计算，计算公式为：

$$FCinv = CAPEX - Proceeds$$

第一步，先判断是否有固定资产处置，由于题目已经告知有固定资产处置，所以可以直接用计算公式计算；

第二步，先计算 CAPEX，由于题目已知 gross value，所以用 gross value 的公式计算，具体如下：

$$CAPEX = Gross\ value_{20X7} - Gross\ value_{20X6} + Gross\ value\ disposal$$
$$= 232 - 143 + 67 = 156;$$

第三步，计算被处置固定资产的 Proceeds，题目已经给出，Proceeds = 50；

第四步，代入公式计算出

$$FCinv = CAPEX - Proceeds = 156 - 50 = 106$$

因此正确选项为 B。A，C 选项错误。

32 Based on Exhibit 1, Singbo's working capital investment in 20X7 is closest to:

A $2 million.
B -$1 million.
C $8 million.

32. Answer: A

该题主要考点为 working capital investment 的理解及计算。

第一步，先明确 working capital investment 是一个 delta 项，不能从 balance sheet 里直接抓，而应该用期末数据减期初数据；

第二步，再明确 working capital 的计算不能直接用 current asset – current liability，而应该先在 current asset 上扣除 cash 及 cash equivalent, current liability 上扣除和 debt 有关的项目。题目只给了 current liability 的数据，且 current liability 中不包含带息负债，具体公式如下：

$$\text{Working capital} = (\text{current asset} - \text{cash and cash equivalent})$$
$$- (\text{current liability} - \text{notes payable} - \text{current portion of long} - \text{term debt})$$
$$\text{Working capital in 20X6} = (48 - 11) - (10 - 0 - 0) = 27$$
$$\text{Working capital in 20X7} = (56 - 13) - (14 - 0 - 0) = 29$$

第三步，计算出 working capital investment，

$$\text{Working capital investment in 20X7} = \text{working capital 20X7} - \text{working capital 20X6} = 29 - 27 = 2$$

所以答案选 A。B，C 选项错误。

33 Based on Exhibit 1 and Exhibit 2, the free cash flow for the firm (FCFF) of Singbo in 20X7 is closest to:

A $126.32 million.
B $132.32 million.
C $134.00 million.

33. Answer: A

该题主要考点为 FCFF 的计算公式。

第一步，写出公式：$FCFF = NI + NCC + Int \times (1-t) - WCinv - FCinv$；

第二步，计算公式中的各个项目，其中已知 $NI = 170$；

第三步，计算 NCC，除了折旧费用，由于题目中有固定资产项目处置，而固定资产处置的 gain 应该在 NCC 里扣除。因此先计算处置固定资产的损益，具体如下：

$$Gain\ from\ disposing\ fixed\ asset = Proceeds - book\ value$$
$$= Proceeds - (gross\ value - accumulative\ depreciation)$$
$$= 50 - [67 - (42 + 54 - 73)] = 6$$

然后再将这部分损益与折旧费用一起考虑，计算 NCC，具体如下

$$NCC = \ + depreciation - gain = 54 - 6 = 48;$$

第四步，计算 $Int \times (1-t)$，具体如下：

$$Int \times (1-t) = 24 \times (1 - 32\%) = 16.32;$$

第五步，计算 WCinv 和 FCinv。已知 $WCinv = 2$，而 FCinv 在第一题中已经计算出来 $FCinv = 106$；

第六步，代入 FCFF 公式计算，

$$FCFF = NI + NCC + Int \times (1-t) - WCinv - FCinv = 170 + 48 + 16.32 - 2 - 106 = 126.32;$$

所以答案选 A。B，C 不正确。

34 Based on Exhibit 1 and Exhibit 2, the free cash flow for the equity (FCFE) of Singbo in 20X7 is closest to:

A $232.31 million.
B $128.32 million.
C $110.00 million.

34. **Answer: C**

该题主要考点为 FCFE 的计算公式 FCFE ＝ FCFF－Int × (1－t) ＋ Net borrowing。

将题目 3 中的 FCFF，Int × (1－t)代入公式计算即可。20X7 年没有新增 Net borrowing，所以为 0。

$$FCFE ＝ FCFF－Int × (1－t) ＋ Net\ borrowing ＝ 126.32 － 16.32 ＋ 0 ＝ 110$$

所以答案选 C。A，B 选项错误。

35 Based on Hull's projection, the equity value of Singbo is closest to:

A $1,697.88 million.
B $1,711.14 million.
C $1,831.23 million.

35. **Answer: B**

该题主要考点为两阶段 FCFE 模型的计算。

Equity value

$$= \frac{FCFE \times (1 + g_h)}{(1 + r)} + \frac{FCFE \times (1 + g_h)^2}{(1 + r)^2} + \frac{FCFE \times (1 + g_h)^2 \times (1 + g_l)}{(1 + r)^2 \times (r - g)}$$

$$= \frac{110 \times (1 + 6\%)}{(1 + 10\%)} + \frac{110 \times (1 + 6\%)^2}{(1 + 10\%)^2} + \frac{110 \times (1 + 6\%)^2 \times (1 + 3\%)}{(1 + 10\%)^2 \times (10\% - 3\%)}$$

$= 1,711.14$

因此 B 选项正确。A，C 选项错误。

36 Which statements made by Hull on reasons to use free cash flow is most likely correct?

A Statement 1
B Statement 2
C Statement 3

36.Answer: C

该题主要考点为FCF与NI，EBIDTA之前的比较。

EBITDA为息税折旧摊销前利润，并没有考虑运营资本和固定资产方面的投资，而这两部分的投资却占用了企业的现金流，所以在计算时选取FCF可以更准确的反应企业或者股东可以自由支配的现金流，因此正确选项为C。

对于选项A，净利润考虑了折旧与摊销，一般情况下这两部分的费用会归在管理费用或者制造费用中，在计算净利润的时候已经考虑在内。因此，该选项错误。

对于选项B，EBITDA并没有考虑税盾效应，而不是计算了两次。因此，该选项错误。

Equity Investments

上午卷-Case 7(37-42)

The XRail Case

Richard Alfred is a new employee of Mayflower, a leading asset management agency in Hong Kong. Ellen Chau, his supervisor asked Alfred to assist him in evaluating XRail Company. Chau provided Alfred some detailed information about XRail and asked him to finish several tasks in spreadsheet model.

First, Chau asked Alfred to build up a PRAT model to calculate the sustainable growth rate of XRail. The leverage ratio of the company is 171.45%, and other information is presented in Exhibit1 and Exhibit 2.

Exhibit 1 Selected Income Statement Information of XRail

(HK$ millions, except shares outstanding)	20X7
Sales	5,798
Earnings before tax	835
Income taxes	236
Net income	599
Dividends	173
Common shares outstanding	140

Exhibit 2 Selected Balance Sheet Information of XRail

(HK$ millions)	20X7
Cash	892
Total assets	7,892
Total debt	1,833
Common shareholders' equity	3,762
Non-controlling interest	841

The common shares price of XRail is HK$45.23 per share, and the cost of equity of XRail is 11%. Chau requested Alfred to separate present value of growth opportunity (PVGO) from the market price under the assumption that next year's earnings of XRail would grow at the estimated sustainable growth rate.

Alfred accomplished his tasks quickly and Chau was satisfied with his efficiency. He instructed Alfred to value XRail based on the growth rate estimation presented in Exhibit 3. Alfred decided to use H-model for valuation and finished his work ahead of schedule.

Exhibit 3 Other Estimates of XRail	
Expected growth rate in the next 5 years	Declines linearly
Expected growth rate afterwards	5%

Chau was impressed by Alfred's performance and decided to assign him more tasks related to private equity valuation. Since XRail is interested in acquiring YStar, a private company, Chau asked Alfred to analyze YStar and told him, "YStar has a large portion of tangible assets mainly classified as heavy equipment. Ranked as top 1 company in the industry, YStar has a strong revenue generating ability in the foreseeable future with high growth rate. Besides, leverage ratio for the company is relatively low compared to its peers and therefore the risk level is moderate."

Chau asked Alfred to use guideline transaction method for YStar. Alfred collected three available guideline transactions in Exhibit 4.

Exhibit 4 Information on Three Recent Guideline Transactions

Target firm	Target's risk	Target's growth	Market conditions at the time of transactions	Consideration
A	High	**Slow**	**Declining trend**	**Cash**
B	Moderate	Fast	Overvalued prices	Stock
C	Moderate	Fast	Rising trend	Cash

XRail is considering whether it should acquire all of the stock of YStar. Chau reminded the CEO of XRail that if XRail acquires small equity interests of YStar, proper adjustments about control and marketability should be considered. Chau estimated that the discount for lack of control is at 30% and discount for lack of marketability is at 20% for similar guideline firms.

37 Based on Alfred 's PRAT model, the estimate sustainable growth rate of XRail is closest to:

A 3.75%.

B 9.25%.

C 13.01%.

The XRail Case

37. **Answer: B**

此题考的是计算 sustainable growth rate 的方法。

第一步，明确 PRAT model 的公式：

g = Profit margin × retention rate × asset turnover × leverage

第二步，计算公式中的各项，其中

$$\text{Profit margin} = \frac{599}{5,798}$$

$$\text{Retention rate} = \frac{599-173}{599}$$

$$\text{Asset turnover} = \frac{5,798}{7,892}$$

Leverage = 171.45%

这里要注意，Leverage 不能用报表里给出的 Asset/common equity，而应该用 Asset/total equity，而题目中给出的 leverage 171.45%才是应该使用的数字。

第三步，将相关数据代入公式计算。

g = Profit margin × retention rate × asset turnover × leverage

$$= \frac{599}{5,798} \times \frac{599-173}{599} \times \frac{5,798}{7,892} \times 171.45\% = 9.25\%$$

所以选 B。A，C 选项错误。

38 The most appropriate answer to Chau's question about PVGO is:

A PVGO = $6.33 per share.
B PVGO = $2.74 per share.
C PVGO = $38.89 per share.

38. Answer: B

此题考的是 PVGO 的计算公式，$PVGO = P - \dfrac{E_1}{r}$，这里注意，应该使用 E_1 而非 E_0，代入公式：

$$E_1 = 599 \times \frac{（1+9.25\%）}{140} = 4.6743$$

$$PVGO = P - \frac{E_1}{r} = 45.23 - \frac{4.6743}{11\%} = 2.74$$

所以选 B。A，C 选项错误。

39 Using the H-model and the new estimation in Exhibit 3, the intrinsic value of XRail is closest to:

A $23.90 per share.

B $26.09 per share.

C $24.01 per share.

39. Answer: A

此题考的是 H-model 的计算，特别注意的是，公式中的 $H = \dfrac{T}{2}$ 不能搞错。具体计算如下：

$$V_0 = \left[\frac{D_0 \times (1 + g_L)}{r - g_L}\right] + \frac{D_0 \times H \times (g_S - g_L)}{r - g_L}$$

$g_s = 9.25\%$

$g_l = 5\%$

$H = \dfrac{5}{2} = 2.5$

$D_0 = \dfrac{173}{140} = 1.24$

$$V = 1.24 \times \frac{1 + 5\%}{11\% - 5\%} + 1.24 \times 2.5 \times \frac{9.25\% - 5\%}{11\% - 5\%} = 23.90$$

所以选 A。B，C 选项错误。

40 Given Chau's description of YStar, if Alfred wants to value YStar using income approaches, which of the following methods is most appropriate?

A Discounted free cash flow approach.
B Excess earnings approach.
C Asset-based approach.

40.Answer: A

该题主要考点为private company估值方法的选择。

YStar公司盈利能力很强，因此未来产生强劲现金流的可能性较大，适用于自由现金流折现模型，因此正确选项为A。

对于选项B，公司的资产中大部分是有形资产，不适合excess earnings approach。因此，该选项错误。

对于选项C，公司在行业中排名第一，盈利能力很强，符合永续经营的假设，Asset-based approach不适用于此种情形。因此，该选项错误。

41 Which of the following guideline transactions is most appropriate for YStar?

A Firm A
B Firm B
C Firm C

41.Answer: C

该题主要考点为guideline transaction的适用情形。

C公司在一个上升趋势的行业，与YStar高增速相符合；同时，C公司风险适中，也与YStar相似。并且，C公司是被现金收购，因此，正确选项为C。

对于选项A，A公司的高风险和低增长均与YStar不相符。因此，该选项错误。

对于选项B，B公司股价被高估的时候通过股权被收购，此时的股价失真，收购对价过高，并不能准确反映出公司真实的增长和风险水平。因此，该选项错误。

42 Total discount for both control and marketability is closest to:

A 40%.

B 44%.

C 50%.

42. Answer: B

该题主要考点为 total discount for both control and marketability 的计算。

$$\text{Total discount} = 1 - [(1 - \text{DLOC}) \times (1 - \text{DLOM})]$$
$$= 1 - [(1 - 30\%) \times (1 - 20\%)] = 44\%$$

所以选 B。A，C 选项错误。

Alternative Investments

上午卷-Case 10(55–60)

Superman Case

Michael Johnson, CFA, is making a marketing brochure for Superman Capital, a private equity fund with a vintage year of 2014. The corporate governance and economic term of the fund states that the general partner can charge limited partner 2% management fee based on paid-in capital and 20% carried interest under total return waterfalls. The committed capital from the limited partner is $125 million. Michael has finished collecting the performance data of the fund in Exhibit 1. The next step is to calculate the fund performance in 2017.

Exhibit 1 Superman Fund Cash Flows and Distributions ($ millions)

Year	Called Down	PIC	Mgt fee	Operating results	NAV before dist.	Carried interest	Dist.	NAV after dist.
2014	30	30	0.6	-6	23.4			23.4
2015	17	47	0.94	-10	29.5			29.5
2016	33	80	1.6	23	83.9			83.9
2017	24			45			32	

The brochure also discusses the private equity fund's method to align its interests with the managers of subject companies.

Alan Hull, one of Superman's LP, has received $10million distribution from the fund in 2017. He wants to take the proceeds he has just received to invest in real estate field. He goes to Birdhome Inc., a famous property broker for advice. Jenifer Brown, the top property advisor of the company serves him. After a thorough conversation, Brown recommends Hull to consider a 10-year-old commercial building with an effective age of 15 years. The information from the appraisal states that the building has a 75-year economic life. The roof of the property needs to be repaired with a cost of $2,300,000 which will increase the building's value by at least the cost amount. The appraisal also provides some other detailed information in Exhibit 2. Brown recommends that the cost approach is suitable to value the target and Hull agrees.

Exhibit 2 Target Building's Details

Value for the land	$13,500,000
Replacement cost	$10,200,000
Functional obsolescence	$500,000
Locational obsolescence	$100,000
Economic obsolescence	$0

The next day, Brown submits the evaluating report to Hull. The property is expected to have NOI of $700,000 in the first year. Hull told Brown, "I am willing to make an interest-only loan at a 6% interest rate as long as the LTV ratio does not exceed 70% and DSCR is at least 1.4. Please let me know how much of a loan can be obtained."

Tomas Martin, Hull's brother in law, is the owner of Martin Hedge fund Management Inc. He advices Hull to consider commodities rather than real estates. Since Hull is not familiar with commodity goods, Martin explains the difference between commodities and real estates to him with the following statement:

Statement 1: Real estate and commodities are both financial assets.

Statement 2: It is very important that commodities could contribute significant cash flows.

Statement 3: You should pay more attention to the demand and supply relation when you evaluate commodities' valuation.

Martin recommends Hull to concentrate his position in energy sector. He explains to Hull, "Energy sector including crude oil, gasoline, nature gas, has nature advantages versus livestock, because they are not perishable, not affected by weather, and can be stored for long duration. These characteristics make the sector more attractive than other commodity sectors.

55 In 2017, the total value to paid in(TVPI) of Superman Capital is closest to:

A 1.37.
B 1.40.
C 1.45.

Superman Case

55. Answer: B

此题考的是 PE 的 performance measure。表格里除了 called down, operating result, distribution 三列以外的每一个空格都要求掌握计算。题目中 2017 年这一行的空格都要通过计算得出结果。然后根据结果来衡量 PE 的表现。而衡量 PE 表现又会用到 DPI, RVPI, TVPI 三个指标，这三个指标也都要求掌握计算。

第一步，先将表格中空白的有关 2017 年的所有数据计算出来：

$$Management\ fee\ in\ 2017 = (80 + 24) \times 2\% = 2.08$$

$$NAV\ before\ distribution\ in\ 2017 = 83.9 + 24 - 2.08 + 45 = 150.82$$

$$Carried\ interest\ in\ 2017 = (150.82 - 125) * 20\% = 5.16$$

$$NAV\ after\ distribution\ in\ 2017 = 150.82 - 5.16 - 32 = 113.66$$

第二步，计算 DPI：

$$Paid\ in\ capital\ in\ 2017 = 80 + 24 = 104$$

$$Distributed = 32$$

$$DPI = Distributed\ to\ PIC = Distributed/PIC = 32/104 = 0.308$$

第三步，计算 RVPI：

$$Residual\ value\ in\ 2017 = 113.66$$

$$RVPI = Residual\ value/PIC = 113.66/104 = 1.093$$

第四步，计算 TVPI：

$$TVPI = DPI + RVPI = 0.308 + 1.093 = 1.401$$

所以选项 B 正确。

56 Which of the following clauses should be discussed in the brochure regarding the private equity fund's method to align its interests with the managers of subject companies?

A Liquidation preference
B Vintage year
C No-fault divorce

56.Answer: A

此题考的是PE与subject company之间的条款，要与LP与GP之间的约定条款区别清楚。

PE与subject company的条款包括：Compensation，Tag Along Clause，Corporate board seats，Non-compete clause，Preferred dividends and liquidation preference，Reserved matters，Earn-outs (mostly in venture capital)，

LP与GP之间的约定条款包括两种：

1.Economic terms：Management fees, Carried interest, Ratchet, Hurdle rate, Target fund size, Vintage year

2.Corporate Governance Terms：Key man clause，Disclosure and confidentiality, Clawback provision, Distribution waterfall, Tag-along, drag along rights, No-fault divorce, Removal for "cause", Investment restrictions, Co-investment

因此选项A正确。

57 Based on the collected data and information provided in Exhibit 2, the target commercial building's value under cost approach method is closest to:

A $18,760,000.
B $19,746,667.
C $19,220,000.

57. Answer: C

此题考 cost approach 估值的方法：

第一步，先找 replacement cost = 10,200,000

第二步，在 replacement cost 基础上扣除 curable deterioration：

$$10,200,000 - 2,300,000 = 7,900,000$$

第三步，在第二步基础上扣除 incurable deterioration，主要计算折旧率

其中重点注意折旧率的计算应该用 effective age/economic life = 15/75 = 20%，不能使用 building 的 actual age。

扣除完折旧还剩 $7,900,000 \times (1 - 20\%) = 6,320,000$

第四步，扣除 Functional obsolescence，Locational obsolescence，Economic obsolescence

$$6,320,000 - 500,000 - 100,000 = 5,720,000$$

第五步，将 land value 加上，计算出总价值

$$\text{Total value} = 5,720,000 + 13,500,000 = 19,220,000$$

所以选项 C 正确

58 Based on Brown's statement about the loan, how much loan can be obtained?

A $8,333,333.
B $11,666,667.
C $13,454,000.

58. Answer: A

此题考点是计算 DSCR，LTV 两个 ratio 来决定借款人的最大贷款金额。

第一步，计算 LTV ratio 条件下可以借到的 loan.

$$Appraisal\ value = 19,220,000$$

代入 Loan/Value ≤ 70%可得

Loan ≤ 70% × 19,220,000，即 loan ≤ 13,454,000

第二步，计算 DSCR 条件下,DSCR = NOI/interest

代入已知条件可得 700,000/interest ≥ 1.4，即 Interest ≤ 500,000

由于 Hull 可以接受的 Interest rate 是 6%,所以对应的 loan ≤ 500,000/6%,即 loan ≤ 8,333,333

第三步，根据 LTV 和 DSCR 计算出的结果,取小的那个判断出能借到的 loan 的金额。即最大可以借到 $8,333,333

所以选项 A 正确。

59 Which of the following statements about the differences between real estate and
  commodities is most accurate ?

A Statement 1
B Statement 2
C Statement 3

59.Answer: C

此题考commodity的特征。

Statement 1错误，这两者都是physical asset而不是financial assets。

Statement 2错误，commodities没有cash flow。

Statement 3正确，因为commodities未来不能贡献现金流，因此在估值的时候更重视对于commodity的供需层面的影响因素。

所以选项C正确。

60 Which one of the energy sector's advantage Martin mentioned is least likely accurate?

A Not perishable
B Not affected by weather
C Can be stored for long duration

60.Answer: B

此题考commodity sector分类中energy的特点。

能源类产品是会受到季节因素的影响的，因为季节因素会影响能源供给和需求。因此选项B表述错误，为正确选项。

选项A和C的说法是正确的，能源类产品可以长期储存，不容易变质，因此不符合题意，为错误选项。

Ethical and Professional Standards

下午卷-Case 1(1-6)

Westland Investment Case Scenario

Conrad Wilson, CFA, is an equity analyst specializing in the coffee industry, for Westland Investment, a portfolio management company based in New York. Wilson is planning a trip to Brazil to research the coffee industry. Cosmo Rodriguez, CFA, is a research analyst for a stock broking company, Silver Brokers, headquartered in Sao Paulo, Brazil. Wilson contacts Rodriguez to help arrange visits to specifically identified coffee estates of publicly-traded companies in the Brazilian coffee plantations.

Rodriguez, who wants to enhance the business relationship with Westland, arranges for all of Wilson's Sao Paulo expenses to be paid for by Silver. These costs include food, hotel, and transport. This arrangement is based on the understanding that all security transactions resulting from Wilson's trip to Brazil will be executed through Silver. Silver's commissions are typically similar to its competitors but it can take a few extra days to execute larger volumes of trades because Silver is new to the brokerage business. Rodriguez sets the itinerary, with plans to visit a minimum of six Brazilian coffee companies in the three coffee-growing regions. Wilson agrees on the visits and asks Rodriguez to create a list of questions to ask the management of each company to which he will add his own questions.

Wilson proposes that they can have a conference call with some VIP clients to discuss the research of the six coffee companies in detail after the release of the research reports to all clients. Rodriguez disagrees with this unfair arrangement.

In a meeting with a publicly listed coffee company, Blue Bird Coffee, information that neither Wilson nor Rodriguez believes is public is shown to them. The information is about the restructuring of the factory layout that makes the coffee bean roasting process marginally more efficient with a 1% reduced loss of coffee beans. The new layout does not require any additional machinery or personnel. Rodriguez and Wilson see the increased efficiencies during their factory tour.

After the meeting, Rodriguez prepares an investment research report with the excerpt as shown below:

Blue Bird Coffee

Date: December 2019

Analyst: Cosmo Rodriguez, as a Chartered Financial Analyst

Recommendation: Long-term buy with associated high commodity risk supported by large growth prospects for Brazil as well as liquidity risk because it is a thinly traded company in a frontier market.

Exhibit 1 Coffee Productivity (Million Kg)

	2008	2009	2010	CAGR (2008-2010)
Global	4124.3	4389.2	4430.1	3.64%
Brazil	1650.3	1690.2	1820.4	5.03%

Source: Brazil Coffee Academy

Wilson is impressed with Rodriguez's work ethic and research abilities. Knowing Westland wants to hire analysts for its new Rio de Janeiro office, Wilson asks Rodriguez if he would be interested in changing employers and building a research team. Rodriguez is excited about the prospect and to show his worth to Westland, Rodriguez undertakes the following actions at his office after normal working hours:

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Action 1: Copy a stock valuation model created by his colleague with the colleague's consent.

Action 2: Duplicate his clients' names, phone numbers, e-mail addresses, and transaction records from the Silver trading system.

Action 3: Make a presentation to show his working experience and professional knowledge learned at Silver.

Upon Wilson's return to New York, he delivers to his clients his investment report with a buy recommendation for Blue Bird Coffee, along with coffee samples he collected while in Brazil. When buying Blue Bird shares for his clients, Wilson also buys the same shares for his personal account. He had disclosed his plan to purchase the shares for his portfolio to his clients before he bought the shares. However, Wilson is forced to sell the same shares two weeks later to pay for a medical emergency. Wilson received permission from Westland's compliance officer for both transactions.

1 Is Rodriguez's arrangement to enhance business relations consistent with the CFA Institute Code of Ethics and Standards of Professional Conduct?

A Yes.

B No, with regard to best execution.

C No, with regard to independence and objectivity of making investment recommendations.

1.Answer: B

Silver和其他竞争对手相比，收取相似的佣金，但是在执行大宗交易的时候，需要更长的时间才能成交，没有达到best execution的要求。Wilson违反了Standard III(A) Loyalty, Prudence, and Care。因此正确选项为B。

对于选项A，Rodriguez的行程安排影响了Wilson对经纪商的选择，没有按照best execution的要求选择经纪商，违反了CFA的职业准则。因此，该选项错误。

对于选项C，Wilson投资推荐的独立性和客观性不太可能因为Rodriguez的行程安排而受到影响，因为Wilson已经明确指出了他想要访问的公司。Wilson还在Rodriguez的问题列表中添加了一些问题，以便在他们的访谈中与管理层讨论。Silver支付旅行费用的目的是为了获得股票的经纪业务，不是为了影响Wilson投资推荐的独立性和客观性。因此，该选项错误。

2 Does Wilson violate the CFA Institute Code and Standards regarding the suggestion of conference call?

A Yes, because the conference call should be held before the release of the research reports.

B Yes, because the conference call is unfair and disadvantages the clients who do not participate.

C No.

2.Answer: C

Wilson提出在研究报告发布给所有客户之后，和VIP客户开电话会议讨论报告的具体细节，并没有违反Standard III(B) Fair Dealing。因为他在与VIP客户讨论之前，已经向所有客户发布了报告。VIP客户可以获得额外的服务，是因为他们支付了更高的费用，或者因为有大量资产需要管理。Standard III(B) Fair Dealing并不禁止向客户提供不同等级的服务，只要能够披露服务安排，且该服务不对其他客户产生负面影响。因此正确选项为C。

对于选项A，向所有客户发布报告前，与VIP客户电话会议讨论报告的细节，损害了其他客户的利益，违反了Standard III(B) Fair Dealing。因此，该选项错误。

对于选项B，在电话会议前，报告已经发布给所有客户，且VIP客户可以获得额外的服务。电话会议没有对其他客户有负面影响，因此，该选项错误。

3 Is any further action most likely required of Rodriguez and Wilson before publishing an investment report using the information received in their meeting with Blue Bird Coffee?

A No.

B Yes, convince the company to make a public disclosure.

C Yes, independently verify the information provided by the company.

3.Answer: A

虽然新工厂布局的信息是非公开的，但该信息不属于重大信息。因为新工厂的布局只能略微提高生产效率，减少1%的咖啡豆损耗，且不需要新投入机器或人员。因此，该信息不属于重大非公开信息，可以在研究报告中使用，不违反Standard II(A) Material Nonpublic Information。因此正确选项为A。

对于选项B，因为消息不属于重大信息，因此不需要公司公开披露。因此，该选项错误。

对于选项C，因为Rodriguez和Wilson在参观工厂的过程中，看到了提高的效率，则不需要再进行独立验证。因此，该选项错误。

4 Rodriguez's research report least likely violates the CFA Institute Code and Standards with respect to:

A plagiarism.

B the use of CFA designation.

C communication with clients.

4.Answer: A

Rodriguez的报告引用了来自巴西咖啡研究会的数据，并且标明了数据来源，不构成抄袭，不违反Standard I(C) Misrepresentation。因此正确选项为A。

对于选项B，Rodriguez在使用CFA头衔时，不能将"Chartered Financial Analyst"作为名词使用。例如声称自己是一个CFA或Chartered Financial Analyst，是不恰当的表述。在使用CFA称号时，必须放在持证人姓名后面，例如Cosmo Rodriguez, Chartered Financial Analyst或者Cosmo Rodriguez, CFA。Rodriguez违反了Standard VII(B) Reference to CFA Institute, the CFA Designation, and the CFA Program。因此，该选项错误。

对于选项C，Rodriguez违反了Standard V(B) Communication with Clients and Prospective Clients，在报告中使用了距离报告时间久远的过期的咖啡生产信息，导致客户不太可能了解他推荐Blue Bird公司背后的原因。因此，该选项错误。

5 How many actions undertook by Rodriguez to show his worth to Westland violate the CFA

Institute Code and Standards?

A 1

B 2

C 3

5.Answer: B

对于行为1，同事创建的股票估值模型，属于雇主的资产，未经雇主同意不可以带走。
因此行为1违反了Standard IV(A) Loyalty。

对于行为2，从Silver交易系统中，复制客户的姓名、电话、邮箱和交易记录，违反了Standard IV(A) Loyalty。客户清单，包括客户的具体信息、交易情况等属于雇主的资产，未经雇主同意不能带走。

对于行为3，制作介绍展示自己在Silver获得的工作经验和知识，不违反Standard IV(A) Loyalty。

综上，一共有2个行为违反了CFA职业准则。因此，正确选项为B。选项A和选项C为错误选项。

6 Wilson's investment actions upon his return to New York violate the CFA Institute Code

and Standards with regards to his:

A disclosure to clients.

B personal coffee investments.

C gifts of coffee samples to clients.

6.Answer: B

Wilson在为客户购买Blue Bird股票的同时，给自己账户买入相同数量的股票，违反了Standard VI(B) Priority of Transactions。根据该细则，个人股票交易应在客户及雇主交易之后。因此正确选项为B。

对于选项A，Wilson在购买股票之前，向客户进行了披露，符合Standard VI(A) Disclosure of Conflicts的要求。因此，该选项错误。

对于选项C，Wilson送给客户的咖啡样品并不贵重，也不太可能影响客户的决定，目的也不是为了影响客户的独立性和客观性，Wilson没有违反Standard I (B) Independence and Objectivity。因此，该选项错误。

Economics

下午卷-Case 5(19-24)

Suzuki Case Scenario

Tanaka Suzuki is a high net worth investor in Japan. He has been hiring Wilson Macharia as his private investment adviser for five years. When Suzuki contacts with Macharia, Macharia talks about FX markets opinions and expects larger volatility in that market soon, and prepares the list about the spot exchange rate offered by a dealer presented in Exhibit 1:

Exhibit 1 Currency Data for INR and JPY		
Spot (INR/JPY)	1.5036	
Annual (360-day) Libor (INR)	6.85%	
Annual (360-day) Libor (JPY)	0.72%	
Annual (360-day) Libor (USD)	1.53%	

Macharia tells Suzuki a way to make money on the foreign exchange market.

Statement 1: "If the uncovered interest parity does not hold, then you could exploit profit by the carry trade."

Statement 2: "However over time, the return distribution of the carry trades is mostly showing a distribution with thin tail and positive skew."

Macharia is worried about a currency crisis, in terms of a currency crisis, he says:

Statement 3: "Official foreign exchange reserves dramatically decline."

Statement 4: "Broad money growth and the ratio of M2 to bank reserve rise historically."

Statement 5: "The ratio of exports to imports improves a lot."

When referring to economic regulation, Macharia adds:

Statement 6: "Self-regulating bodies are set up to be independent of governments and not be influenced by its pressure."

Statement 7: "Self-regulating organizations are funded by governments just as other government agencies."

Statement 8: "Self-regulating organizations could apply regulatory tools, such as restrictions on behaviors."

19 Using Exhibit 1, the forward premium (discount) for a 360-day INR/JPY forward contract is closest to:

A 0.0915.

B 0.0879.

C 0.1073.

19. Answer: A

根据抛补利率平价，得到计算远期升水或贴水的公式：

$$F_{f/d} - S_{f/d} = S_{f/d}\left(\frac{\left[\frac{Actutal}{360}\right]}{1 + i_d\left[\frac{Actual}{360}\right]}\right)(i_f - i_d)$$

其中$S_{f/d}$表示 INR/JPY 的即期利率i_f是印度的一年期利率，i_d为日本的一年期利率，因此可以计算出

$$F_{f/d} - S_{f/d} = 1.5036 \times \left(\frac{(6.85\% - 0.72\%)}{(1 + 0.72\%)}\right) = 0.0915$$

表示远期汇率升水为 0.0915，因此正确选项为 A。

20 If covered interest rate parity holds, the all-in return for Suzuki whose currency exposure to USD is fully hedged is closest to:

A 1.53%.

B 0.72%.

C 0.81%.

20.Answer: B

如果抛补利率平价理论(covered interest rate parity)成立，且投资者的美元头寸可以通过远期合约得到了充分的对冲(fully hedged)，那么投资者就相当于持有日元头寸，投资者的收益率就是日元的12个月Libor利率水平，即0.72%。因此正确选型为B。

21 Which of Macharia's statements about the carry trade is most likely to be correct?

A Statement 1

B Statement 2

C Statement 1 and 2

21.Answer: A

套息交易(carry trade)交易策略是从低利率国家借钱，到高利率国家投资，如果能够赚取到利润，这就是无抛补利率平价(uncovered interested rate parity)不成立的情况，故描述一(statement 1)正确。并且长期而言，由于失事风险(crash risk)的存在，套息交易分布的形态通常为左偏肥尾(a fat-tailed distribution skewed toward a higher probability of large losses)，故描述二(statement 2)不正确。因此正确选项为A。

22 Based on the data in Exhibit 1 and Statement 1, if the expected spot rate in one year is 1.4451, the all-in-profit is closest to:

A 3.54%.

B 10.46%.

C 4.51%.

22. Answer: B

Statement 1 提到的赚取收益的方式为利差交易(carry trade)。若非抛补利率平价不成立，则获得利润货(币标价方式为 X/Y)为：

$$\frac{S_0}{S_1} \times (1 + r_x) - (1 + r_y) = \frac{1.5036}{1.4451} \times (1 + 6.85\%) - (1 + 0.72\%) = 10.46\%$$

对于本题 INR/JPY 的利差交易，得到利润为 10.46%。因此正确选项为 B。

23 Prior to a currency crisis, which of the following is least likely to happen?

A Statement 3

B Statement 4

C Statement 5

23.Answer: C

贸易比价(export to import)恶化是发生货币危机的信号，故此C的表述错误，是正确选项，因此正确选项为C。

对于选项A，当外汇储备急剧下降时，可能会出现外汇危机。因此，该选项描述正确，不符合题意，为错误选项。

对于选项B，当名义货币增长过高，可能会导致外汇危机。因此，该选项描述正确，不符合题意，为错误选项。

24 Which of Macharia's statements is least likely to be accurate?

A Statement 6

B Statement 7

C Statement 8

24.Answer: B

因为独立监管者的经费是自己负责，不会依靠政府。选项B描述错误，符合题意，为正确选项。

对于选项A，独立监管者本身不是政府机构，能够保持政治独立性，不守政治影响或施压。因此，该选项描述正确，不符合题意，为错误选项。

对于选项C，监管常用到的工具包括了价格机制。因此，该选项描述正确，不符合题意，为错误选项。

Equity Investments

下午卷-Case 7(31-36)

The Alphavalue Case

Gosling Jordan, CFA, works as the financial analyst in Alphavalue asset management firm. His supervisor has just asked him to find out some subject companies in growth style field. Jordan decides to use top down analysis method to finish the task. Soon, he discovers that semi-conductor industry is experiencing fast growing and Gintel is the leading company in this field. Jordan sets Gintel as his target and prepares to use residual income model to project the economic profit of Gintel with information presented in Exhibit 1.

Exhibit 1 Selected Information for Valuation of Gintel, 31 December 20X7

Net income	$573 million
Paid-in capital	$1,328 million
Retained earnings	$1,532 million
Cost of equity capital	13%
Expected growth rate 20X8-20X9	10%
Dividend payout ratio	30%
Shares outstanding	120 million

Jordan also knows the fast growth of 10% of Gintel could not be perpetually maintained, and would fade over time. To make his valuation more realistic, he sets a persistence factor of 0.7 after 20X9 in his assumption. Under this assumption, he would use the residual income model to calculate the intrinsic value of Gintel.

Armishaw Wagner, Jordan's colleague, notices him to consider the factors that influence persistence factor:

"Persistence factor could be affected by many factors. Low dividend payout ratio, extremely high ROE, large portion of accounting accrual in net income will all lead to a lower persistence factor."

Then, Jordan and Wagner make a discussion about the cost of equity in the model. Jordan tells Wagner the cost of equity in the report is calculated under the Fama–French model (FFM). Wagner says, "There must be something wrong with the calculation, because the FFM's result is not 13%." Jordan accepts and corrects the cost of equity with the following input data in Exhibit 2.

Exhibit 2 Selected Information about FFM Model

Debt beta	0
RMRF beta	0.82
SMB beta	0.75
HML beta	0.15
LIQ beta	-0.4
US T-bill rate	1%
Equity risk premium	8%
Market capitalization factor	2%
Book-to-market factor	4%
Liquidity factor	3%

Wagner also reminds Jordan to classify Gintel's stock style first, so that it could meet with the company's growth-oriented target. Jordan replies with confidence that he could judge the style through the sensitivities factors from different resources from exhibit 2.

Further, Wagner asked Jordan to compare alternative models for required return calculation: "If a company is closely held and prefers a straight-forward method to calculate required return, which model is most appropriate?"

Jordan answers Wagner's question by writing a short report and prepares to submit his report next morning.

31 Based on Exhibit 1, Jordan forecasts residual income in 20X9, the closest number would be:

A $201.11million.

B $258.50 million.

C $264.17 million.

31. Answer: C

此题考 residual income 的计算方法及公式。

计算 20X9 年 RI 需要计算每年末的 equity book value，并计算每一年的 cost of equity，然后再根据 residual income ＝ net income － equity book value × cost of equity 计算每年的 residual income。注意计算 equity book value × cost of equity 时使用的 equity book value 是上年年末或本年年初的 book value，而非本年年末的 book value。

第一步，计算每年的 equity book value：

其中 20X7 年末及 20X8 年初的 $B_0 = 1,328.00 + 1,532.00 = 2,860.00$

其中 20X8 年末及 20X9 年初的 $B_1 = 2,860.00 + 630.30 - 189.09 = 3,301.21$

20X9 年末的 B_1 依次类推得到 3,786.54

第二步计算出最终 residual income

$RI = NI - B_0 \times cost\ of\ equity$

其中 20X8 年 $RI = 630.30 - 2,860 \times 13\% = 258.50$

其中 20X9 年 $RI = 693.33 - 3,301 \times 13\% = 264.17$

最后注意，计算每年的 residual income 最佳方案是列出表格计算，具体如下：

	B_0	NI	Div	B_1	$B_0 \times r$	Residual income
20X7		573.00	172.00	2,860.00		
20X8	2,860	630.30	189.09	3,301.21	371.80	258.50
20X9	3,301	693.33	208.00	3,786.54	429.16	264.17

所以选 C。A，B 选项错误。

32 Based on Jordan's assumption about persistence factor, the estimated intrinsic value of Gintel's stock on 31 December 20X7 using residual income model is closest to:

A $28.55.

B $30.27.

C $31.05.

32. Answer: B

此题考核利用计算出来的每年的 residual income 以及对于未来 persistence factor 的假设计算 equity value。

其中需要注意计算 equity value 需要加三组数据，第一组是期初的 book value，第二组是在稳定增长阶段各期 residual income 的现值，第三组是在 persistence factor 阶段，terminal value 的现值。三组数据缺一不可，且 terminal value 计算出来以后一定记得折现，不要忘记。

第一步，计算 terminal value，要记住 persistence factor 的公式

$$\text{Terminal value}_{20X8} = \frac{RI_{20X9}}{1 + r - \omega} = \frac{264.17}{1 + 13\% - 0.7} = 614.35$$

第二步，计算 terminal value 的现值

$$PV(\text{terminal value}) = \frac{614.35}{1 + 13\%} = 543.67$$

第三步，计算稳定增长的 20X8 的 residual income 的现值

$$PV(\text{residual income}) = \frac{258.50}{(1 + 13\%)} = 228.76$$

第四步，将 20X7 年末的 book value 与前面两步计算的现值相加计算 equity value

$$\text{Intrinsic value} = BV_{20X7} + PV（\text{residual income}） + PV（\text{Terminal value}）$$
$$= 2,860.00 + 228.76 + 543.67$$
$$= 3,632.43$$

第五步，计算每股价值

$$\text{Intrinsic value per share} = \frac{3,632.43}{120} = 30.27$$

所以选 B。A，C 选项错误。

33 Which one of Wagner's opinion about the reasons resulting low persistence factor is least accurate?

A Low dividend

B Extremely high ROE

C Large portion of accounting accrual in net income

33.Answer: A

此题考影响persistence factor的因素，以及这些因素对persistence factor影响的方向。Persistence factor其实就是1 + g，只是这时的g < 0。因此会导致g变化的因素全部会影响1 + g，也会影响persistence factor。这些因素包括：

1．dividend：Low dividend低股利将导致retained earning增加，公司未来可投资的资金增加，从而提高未来公司发展的速度，最终导致persistence factor变大，因此A选项是错误的，应该选择。

2．特别高的ROE是无法长期持续的，因此当期ROE特别高只会导致未来的ROE下降，从而拖累persistence factor变小。所以B选项不选。

3．如果net income里accrual 的成分过高，预示着公司的利润中有一部分可能是会计政策所致，受到会计操纵的可能较高，并非公司的真实盈利能力，会拖累persistence factor 变小。因此这道题选A。B，C选项错误。

34 Using the information reported in Exhibit 2, the required return on equity of Gintel under Fama-French Model is closest to:

A 6.86%.

B 8.46%.

C 9.66%.

34. **Answer: C**

此题考 Fama–French 的公式，公式必须记住。

此外，还需注意，不要将 FFM 与 PSM 搞混了，PSM 的公式比 FFM 多了一个流动性因子。

根据 Fama–French 公式将数值代入计算：

$$r_i = R_F + \beta_i^{mkt}RMRF + \beta_i^{size}SMB + \beta_i^{value}HML$$

$$= 1\% + 0.82 \times 8\% + 0.75 \times 2\% + 0.15 \times 4\%$$

$$= 9.66\%$$

所以选 C。A，B 选项错误。

35 Based on the betas and the risk factors provided in Exhibit 2, which equity style does Gintel's stock fit?

A Small-cap value stock with high liquidity

B Small-cap growth stock with low liquidity

C Large-cap value stock with high liquidity

35.Answer: A

此题考如何根据beta的信息判断stock style，具体如下：

SMB beta大于0说明该股票是小盘股；

HML beta大于0说明该股票是价值股；

LIQ beta小于0说明该股票是高流动性股。

所以选A。B，C选项错误。

36 Which of the following models is most appropriate in order to answer Wagner's question?

A CAPM

B Multi-factor model

C Build-up model

36.Answer: C

该题主要考点为CAPM，Multi-factor model和Build-up model的优缺点比较。

题目中提到，如果目标公司只有少量股东且股票交易不频繁，适合用相对简单的模型来计算要求回报率，因此适合用Build-up model。因此，正确选项为C。

对于选项A，CAPM虽然计算上相对简单，但并不适用于少数股东控股的公司。因此，该选项错误。

对于选项B，multi-factor model虽然解释力度更大，但计算相对复杂，不符合题目要求。因此，该选项错误。

Alternative Investments

下午卷-Case 10(49–54)

Shopping Mall Case

Walter Real Estate Group is one of the largest property developers specified in residential apartments in the USA. The company is currently during a transition period of expanding the business to commercial property, such as hotels, shopping malls and offices. Recently, a shopping mall has been put up for sale, which is deemed to be a rare opportunity to enter a new market by the company management. Due to the company's lack of experience in this field, Chris Simkins, the chief investment officer, hires an independent real estate consulting firm, Harold Consulting, Inc., to perform a due diligence of the property.

The shopping mall was built 8 years ago with the size of 550,000 square feet. It is located in a prime area and currently under good condition. The analysts estimate that the property will generate a first year net operating income of $23,000,000 with a growth rate of 3%. There are still 35 years left on the loan for the shopping mall with an interest rate of 5%. The current loan-to-value ratio is 30%, and the monthly loan payment is $166,667. The current owner has agreed to sell the property for $250,000,000.

The analysts forecast that the property could be sold for $600,000,000 in 10 years, and the loan balance will be $57,000,000 then. Simkins tells the analysts that, before taking any further actions, the company needs to confirm the property must meet the requirements as follows:

- Debt service coverage ratio: higher than 2.5X;

- Equity dividend rate: higher than 10%;

- Leveraged IRR: higher than 15%.

The analysts also collect the information of recent transactions of shopping malls around the target property area in Exhibit 1 as follows:

Exhibit 1 Recent Transactions of Comparable Shopping Malls

	Galaxy Plaza	New City World	AIC Mall
Size (square feet)	500,000	450,000	650,000
Age (years)	10	5	8
Condition	good	average	average
Location	secondary	secondary	prime
Date of sale (months ago)	10	12	8
Sale price	$210,000,000	$180,000,000	$270,000,000
Projected NOI	$17,850,000	$16,200,000	$25,650,000

Additional information includes:

- 1% depreciation per year;

- Condition adjustment is 6% per category: good, none; average, 6%; poor, 12%;

- Location adjustment is 8% per category: prime, none; secondary, 8%; tertiary, 16%;

- Market has been rising by 0.5% per month.

Then the analysts perform another analysis based on cost approach, and collect more data in Exhibit 2 as follows:

Exhibit 2 Target Shopping Mall Information	
Market value of land	$40,000,000
Replacement cost (per square foot)	$560
Developer's profit (per square foot)	$30
Curable deterioration	$30,000,000
Effective age	8 years
Total economic life	50 years
Functional obsolescence	$15,000,000
Locational obsolescence	$10,000,000
Economic obsolescence	$10,000,000

Next, the analysts focus on the economic trend of the real estate sector in the USA. One of the analysts, Dorian Tung, states that since both of property prices and interest rate are increasing, the company should offer short term leases to take advantage of the market conditions after buying the shopping mall. The other analyst, Alice Suwan, agrees with Tung and adds that the population growth is the only factor that will affect the price of retail property.

One of Simkins' friends, Alan Noth, is interested in public real estate investments, but has no idea how to do it. He turns to Simkins for help, and Simkins explains, "You may invest in either REITs or the stocks of Walter Real Estate Group. Although REITs offer taxation benefits, our stocks pay a much higher dividend than the yield of REITs."

49 If the cap rate is estimated from comparable shopping malls, the estimated value of the target shopping mall using the direct capitalization method is closest to:

A 270.59 million.

B 255.56 million.

C 242.11 million.

49. Answer: B

第一步：利用可比商场的资本化率（cap rate）求平均资本化率：

Galaxy Plaza 资本化率：

$$\frac{NOI_1}{Sale\ price} = \frac{\$17,850,000}{\$210,000,000} = 8.5\%$$

New City World 资本化率：

$$\frac{NOI_1}{Sale\ price} = \frac{\$16,200,000}{\$180,000,000} = 9\%$$

AIC Mall 资本化率：

$$\frac{NOI_1}{Sale\ price} = \frac{\$25,650,000}{\$270,000,000} = 9.5\%$$

平均资本化率：

$$\frac{(8.5\% + 9\% + 9.5\%)}{3} = 9\%$$

第二步：利用直接资本化法（direct capitalization method）求目标商场估值：

$$V = \frac{NOI_1}{Cap\ rate} = \frac{\$23,000,000}{9\%} = \$255.56\ million$$

所以，利用直接资本化法求得目标商场的估值为$255.56 million。

50 Based on the requirements of the company, which of the following statements is least accurate?

A The target shopping mall is worth buying because the debt service coverage ratio meets the requirement.

B The target shopping mall is worth buying because the leveraged IRR meets the requirement.

C The target shopping mall is not worth buying because the equity dividend rate does not meet the requirement.

50. Answer: C

第一步：求目标商场的权益股息率（equity dividend rate）：

目标商场估值中所含本金：

$$\text{Equity} = \text{Selling price} \times (1 - \text{LTV}) = \$250 \text{ million} \times (1 - 30\%) = \$175 \text{ million}$$

$$\text{Annul debt service} = 12 \times \$166{,}667 = \$2 \text{ million}$$

目标商场的权益股息率：

$$\text{Equity dividend rate} = \frac{(\text{NOI}_1 - \text{Debt service})}{\text{Equity}} = \frac{(\$23 \text{ million} - \$2\text{million})}{\$175 \text{ million}} = 12\%$$

所以，目标商场的权益股息率大于要求权益股息率，满足公司的要求。

第二步：求目标商场的偿债备付率（Debt service coverage ratio，DSCR）

$$\text{DSCR} = \frac{\text{NOI}_1}{\text{Debt service}} = \frac{\$23 \text{ million}}{\$2 \text{ million}} = 11.5\text{X}$$

所以，目标商场的偿债备付率大于要求偿债备付率，满足公司的要求。

第三步：求目标商场的杠杆内部收益率（Leveraged IRR）

N = 10, PV = -\$175 million, PMT = \$23 million - \$2 million = \$21 million, FV = \$600 million - \$57 million = \$543 million → 1/Y = 20.07%

所以，目标商场的杠杆内部收益率高于要求杠杆内部收益率，满足公司的要求。

51 The estimated value of the target shopping mall using the sales comparison approach is closest to:

A $260.73 million.

B $246.02 million.

C $258.12 million.

51. Answer: C

利用可比销售法 (sales comparison approach) 对三个可比商场进行调整:

	Galaxy Plaza	**New City World**	**AIC Mall**
Size price	$210,000,000	$180,000,000	$270,000,000
Size (square feet)	500,000	450,000	650,000
Sale price psf.	$420	$400	$415.3846
Age (years)	2%	-3%	0
Condition	0	6%	6%
Location	8%	8%	0
Date of sale (months ago)	5%	6%	4%
Total adjustments	15%	17%	10%
Adjusted sale price psf.	$483	$468	$456.9231

可比商场的每英尺平均价格为:

$$\frac{\$483 + \$468 + \$456.9231}{3} = \$469.3077$$

所以, 利用可比销售法求得目标商场的估值为:

$$\$469.3077 \times 550,000 = \$258,119,235$$

52 The estimated value of the target shopping mall using the cost approach is closest to:

A $252.38 million.

B $238.52 million.

C $299.50 million.

52. Answer: A

利用成本法（the cost approach）对目标商场进行估值：

Market value of land	$40,000,000
Replacement cost including developer's profit	($560 + $30) × 550,000 = $324,500,000
Reduction for curable deterioration	-$30,000,000
Reduction for incurable deterioration	-8/50 × $294,500,000 = -47,120,000
Reduction for functional obsolescence	-$15,000,000
Reduction for locational obsolescence	-$10,000,000
Reduction for economic obsolescence	-$10,000,000
Total building value	212,380,000
Total appraised value (building and land)	252,380,000

所以，利用成本法求得对目标商场进行估值为$252.38 million。

53 Which of the analysts' statements regarding the economic trend of the real estate sector

is most accurate?

A Tung's

B Suwan's

C Neither statement is correct.

53.Answer: A

该题主要考点为不动产投资的优势和影响不同类型房地产价值的因素。

不动产价格和贷款利率的上涨意味着产生了通货膨胀。在通货膨胀的经济环境中，不动产租金和价格都会随着整体物价的上涨而增加，因而具有抗通胀的效果。短期租约使得公司可以及时随着通货膨胀而向上调整租金，因此正确选项为A。

对于选项B，影响零售业不动产价格的因素除了人口增长之外，更重要的是整体宏观经济的发展和零售业的销售增长等因素。因此，该选项错误。

对于选项C，Tung的陈述是正确的，而Suwan的陈述是错误的。因此，该选项错误。

54 Which of the Simkins' comments on public real estate investments is most accurate?

A REITs

B Stocks of the company

C Neither comment is correct.

54.Answer: A

该题主要考点为公开不动产投资中不动产投资信托基金（real estate investment trusts，REITs）和不动产经营公司（real estate operating companies，REOCs）的优点和缺点。如果投资不动产运营公司的股票，投资者将面临双重税收（double taxation）的问题，即公司层面需要缴纳企业所得税（corporate income tax），投资者还需要缴纳个人所得税（personal income tax）。但是，通过REITs投资，在一定条件下可以减免企业所得税，投资者只需要缴纳个人所得税即可，因此正确选项为A。

对于选项B，由于REITs本身的风险分散特性和相关法规的规定，REITs的收入支付率一般较高，而REOCs的收入支付率较低，留存下来可用于再投资的收入较多。因此，该选项错误。

对于选项C，Simkins有关REITs的陈述是正确的，有关REOCs的陈述是错误的。因此，该选项错误。

Thanks.