# Answers

**DO NOT TURN THIS PAGE UNTIL YOU HAVE COMPLETED THE MOCK EXAM**

# A PLAN OF ATTACK

We've already established that you've been told to do it 103 times, so it is of course superfluous to tell you for the 104th time to **Take a good look at the paper before diving in to answer questions.**

## Which order to do the questions

Having **looked through** the **paper in detail,** you need to have worked out the **order** in which to attempt the questions. You will probably have decided which question looks the easiest and started with that one. Answer plans will help you to decide how to approach each question.

## The next step

You're probably thinking that you don't know where to begin or you could answer all of the questions in two hours!

## Option 1 (Oh dear)

If you are challenged by this paper, do the **questions in the order of how well you think you can answer them.**

- **Question 1** has some straightforward calculations if you have practised them, and you can answer parts (c) and (d) even if you haven't completed the calculations.
- You may not like this part of the syllabus but there are easy marks available in each part of **Question 2.**
- **Question 3** does cover a number of areas of the syllabus in an unusual way, but there are easy marks available in each part.
- **Question 4** may look tricky with forecast financial statements but there are plenty of marks available for straightforward discussions.

## Option 2 (This one's definitely easier)

Are you **sure** it is? If you are then that's encouraging but don't forget to do answer plans to make sure you don't miss the point of the questions.

- Don't just concentrate on the calculations in **Question 1.** Make sure you also write full answers to the discussion and comment parts.
- **Question 2** requires good knowledge of these financial management techniques. Make sure your explanations are sufficiently detailed and not just a list of points.
- **Question 3** needs a clear layout and workings to make life easier for the marker.
- Again, don't just concentrate on the calculations in **Question 4,** there are more marks available for the written sections which will need to be carefully planned.

## Once more for the road

You must **allocate your time** according to the marks for the question in total, and for the parts of the questions. And you must also **follow the requirements exactly.**

## Finished with fifteen minutes to spare?

Looks like you slipped up on the time allocation. However if you have, make sure you don't waste the last few minutes; go back to **any parts of questions that you didn't finish** because you ran out of time.

## Forget about it!

Forget about what? Excellent, you already have.

# Question 1

**Text references.** The lease v buy decision, equivalent annual cost and capital rationing are covered in Chapter 11, investment appraisal in Chapters 8 and 9.

**Top tips.** You need to be very careful with which information belongs to which part of this question. Part (a) concerns a lease v buy decision and is therefore concerned only with financing cashflows. The question of whether the investment is worthwhile is in part (b). The reduction in operating costs must therefore go in part (b) not part (a), as these will happen irrespective of whether the technology is bought or leased. You also need to be careful with the discount rates.

Be careful with time management in this question and make sure you have enough time to gain the easy marks available in parts (c) and (d).

**Easy marks.** There are easy marks available throughout this question, in the calculations in parts (a) and (b) and in the straightforward textbook explanations in parts (c) and (d).

## Marking scheme

| | | | Marks |
|---|---|---|---|
| (a) | Present value of lease rentals | | 2 |
| | Present value of lease rental tax benefits | | 1 |
| | Present value of cost of leasing | | 1 |
| | Investment and scrap values | | 1 |
| | Licence fee | | 1 |
| | Capital allowance tax benefits | | 2 |
| | Licence fee tax benefits | | 1 |
| | Present value of cost of borrowing to buy | | 1 |
| | Appropriate decision on leasing versus buying | | 1 |
| | | | 11 |
| (b) | Inflated cost savings | | 2 |
| | Tax liabilities | | 1 |
| | Present values of net cash flows | | 1 |
| | Net present value | | 1 |
| | Advice on acceptability of investment | | 1 |
| | | | 6 |
| (c) | Definition of equivalent cost or benefit | | 1 |
| | Relevant discussion | | 1 |
| | Appropriate illustration | | 1 |
| | | | 3 |
| (d) | Capital rationing | 1-2 | |
| | Divisible projects and profitability index | 2-3 | |
| | Indivisible projects and combinations | 1-2 | |
| | | Maximum | 5 |
| | | | 25 |

(a) **Net present value of purchasing new technology**

Discount rate = 8.6% × (1 - 30%) = 6%

| | *Year 0* | *Year 1* | *Year 2* | *Year 3* | *Year 4* | *Year 5* |
|---|---|---|---|---|---|---|
| | $'000 | $'000 | $'000 | $'000 | $'000 | $'000 |
| Capital costs | (1,000) | | | | | |
| Licence fee | | (104) | (108) | (112) | (116) | |
| Disposal proceeds | | | | | 100 | |
| Tax deduction @30% for licence payments | | | 31 | 32 | 34 | 35 |
| Writing down allowances (W) | | | 75 | 56 | 42 | 96 |
| Net cash flows | (1,000) | (104) | (2) | (24) | 60 | 131 |
| Discount at 6% | 1.000 | 0.943 | 0.890 | 0.840 | 0.792 | 0.747 |
| PV of cash flow | (1,000) | (98) | (2) | (20) | 48 | 98 |
| NPV of cash flow | **$(974)** | | | | | |

*Working*

*Writing down allowances*

| | $'000 | *Capital allowance* $'000 | *Tax benefit* $'000 | *Year of cash flow* |
|---|---|---|---|---|
| Initial investment | 1,000 | | | |
| Allowances at 25% pa on a reducing balance basis over 4 years | | | | |
| Year 1 | (250) | (250) | 75 | Y2 |
| | 750 | | | |
| Year 2 | (188) | (188) | 56 | Y3 |
| | 562 | | | |
| Year 3 | (141) | (141) | 42 | Y4 |
| | 421 | | | |
| Year 4 | | | | |
| Proceeds on sale | (100) | | | |
| Balancing allowance | 321 | | 96 | Y5 |

**Net present value of leasing new technology**

| | *Year 0* | *Year 1* | *Year 2* | *Year 3* | *Year 4* | *Year 5* |
|---|---|---|---|---|---|---|
| | $'000 | $'000 | $'000 | $'000 | $'000 | $'000 |
| Annual lease rentals | (380) | (380) | (380) | (380) | | |
| Taxation deduction @ 30% for lease rentals | | | 114 | 114 | 114 | 114 |
| Net cash flows | (380) | (380) | (266) | (266) | 114 | 114 |
| Discount at 6% | 1.000 | 0.943 | 0.890 | 0.840 | 0.792 | 0.747 |
| PV of cash flow | (380) | (358) | (237) | (223) | 90 | 85 |
| NPV of cash flow | **$(1,023)** | | | | | |

Therefore the new technology should be **purchased** rather than leased.

(b) **Net present value of buying the new technology**

| | *Year 0* | *Year 1* | *Year 2* | *Year 3* | *Year 4* | *Year 5* |
|---|---|---|---|---|---|---|
| | $'000 | $'000 | $'000 | $'000 | $'000 | $'000 |
| Saving in operating costs (W) | | 365 | 480 | 638 | 564 | |
| Licence fee | | (104) | (108) | (112) | (116) | |
| Net additional cash flow | | 261 | 372 | 526 | 448 | |
| Tax @ 30% | | | (78) | (112) | (158) | (134) |
| Capital costs | (1,000) | | | | | |
| Disposal proceeds | | | | | 100 | |
| Writing down allowances | | | 75 | 56 | 42 | 96 |
| Net cash flows | (1,000) | 261 | 369 | 470 | 432 | (38) |
| Discount at 11% | 1.000 | 0.901 | 0.812 | 0.731 | 0.659 | 0.593 |
| PV of cash flow | (1,000) | 235 | 300 | 344 | 285 | (23) |
| NPV of cash flow | **$141** | | | | | |

*Working*

*Operating costs*

| | *Year 1* | *Year 2* | *Year 3* | *Year 4* |
|---|---|---|---|---|
| Production units | 60 | 75 | 95 | 80 |
| Cost saving @ $5.80 | 348 | 435 | 551 | 464 |
| Inflation | × 1.05 | × $1.05^2$ | × $1.05^3$ | × $1.05^4$ |
| Saving in operating costs cashflow | 365 | 480 | 638 | 564 |

**Advice on proposed investment**

The net present value of the investment proposal is **positive** and is $141,000. According to this criteria, ASOP Co should therefore undertake the proposed investment.

(c) **Equivalent annual cost or benefit**

When a choice has to be made between projects with **different expected lives**, the NPVs are **not directly comparable** because they refer to different time periods. The NPV for each project must therefore be divided by the **cumulative present value factor** for the number of years of the project.

For example, for the new technology project, the NPV of $141,000 would be divided by the cumulative present value factor for a discount rate of 11% and four years, which is 3.102. The result could then be compared with an equivalent value from an alternative project and the project with the **highest equivalent annual benefit** chosen.

(d) **Capital rationing**

Capital rationing occurs when a company has **a limited amount of capital** to invest in potential projects, such that the different possible investments need to be **compared** with one another in order to allocate the capital available most effectively.

(i) **Divisible projects**

Projects are divisible, so that it is possible to undertake, say, half of Project X in order to earn half of the net present value (NPV) of the whole project.

The basic approach is to **rank** all investment opportunities so that the NPVs can be maximised from the use of the available funds.

Ranking is done in terms of the **profitability index**. This profitability index is a ratio that measures the PV of future cash flows per $1 of investment, and so indicates which investments make the best use of the limited resources available.

(ii) **Non-divisible projects**

If the projects are **not divisible** then the profitability index method may not result in the optimal solution. Another complication which arises is that there is likely to be a small amount of **unused capital** with each combination of projects. The best way to deal with this situation is to use **trial and error** and test the NPV available from different combinations of projects. This can be a laborious process if there are a large number of projects available.

# Question 2

**Text references.** Cost of debt and cost of capital are covered in Chapter 15 and dividend policy in Chapter 13.

**Top tips.** This question has a number of quite small parts so plenty of straightforward marks are available, even if you get stuck on one part. Use your knowledge of interest rate theory in part (b), the question is asking why interest rates differ on the bonds.

You will need to calculate the dividend growth rate in part (c) (ii) but this is just a simple percentage change calculation. If you get stuck on any part of part (c), make an assumption and move on.

**Easy marks.** The calculations are mostly straightforward and logical and should provide easy marks if you have practised these techniques.

## Marking scheme

| | | | Marks |
|---|---|---|---|
| (a) | Calculation of cost of debt of Bond A | | 3 |
| (b) | Term structure of interest rates | 1-2 | |
| | Liquidity preference theory | 1-2 | |
| | Expectations theory | 1-2 | |
| | Market segmentation theory | 1-2 | |
| | Other relevant discussion | 1-2 | |
| | | Maximum | 6 |
| (c) | Cost of equity | | 2 |
| | Dividend growth rate | | 1 |
| | Share price using dividend growth model | | 2 |
| | Capital gearing | | 2 |
| | Weighted average cost of capital | | 2 |
| | | | 9 |
| (d) | Dividend irrelevance | 3-4 | |
| | Dividend relevance | 3-4 | |
| | | Maximum | 7 |
| | | | 25 |

(a) **Cost of debt of bond A**

The cash flows will be as follows:

| *Year* | | *Cash flow* | *10% discount factors* | *PV* | *8% discount factors* | *PV* |
|---|---|---|---|---|---|---|
| | | $ | | $ | | $ |
| 0 | Market value | (95.08) | 1.000 | (95.08) | 1.000 | (95.08) |
| 1-10 | Interest | 9.00 | 6.145 | 55.31 | 6.710 | 60.39 |
| 10 | Capital repayment | 100.00 | 0.386 | 38.60 | 0.463 | 46.30 |
| | | | | (1.17) | | 11.61 |

Calculate the cost of debt using an IRR calculation.

$$\text{IRR} = a\% + \left[\frac{NPV_a}{NPV_a - NPV_b} \times (b - a)\right]\%$$

$$= 8\% + \frac{11.61}{11.61 + 1.17} \times (10 - 8) = 9.82\%$$

The **cost of debt** is therefore **9.82%**

(b) **Different bonds and different costs of debt**

**Risk**

In general, the cost of a source of finance is related to its level of risk. The **higher** the risk, the **greater** the return expected by investors and therefore the higher the cost to the company. In this case, the bonds were issued at the same time by the company so business risk will not be a reason for the difference in cost of debt.

**Security**

Connected with the concept of risk and return is the amount of security offered. For example, a bond may be secured on a specific asset or group of assets. An unsecured bond will generally have a **higher** interest rate than a secured one. A lack of security therefore raises the cost of debt. There is no information to suggest a difference in security for Bond A and Bond B.

**Time**

The **yield curve** is normally upward sloping which means that long-term financial assets offer a higher yield than short-term assets. This is due to **liquidity preference** theory which states that investors prefer cash now to later and want **compensation** in the form of a **higher return** for being unable to use their cash now.

Longer dated bonds can therefore be expected to have a higher cost of debt than shorter dated bonds. Bond A has a greater time to maturity than Bond B so would therefore be expected to have a higher interest rate and cost of debt.

**Size of debt**

The amount of finance raised by Bond A is twice that of Bond B and that may have contributed to the higher cost of debt.

(c) (i) **Cost of equity**

$$E(r_i) = R_f + \beta_i (E(r_m) - R_f)$$

$$E(r_i) = 4\% + 1.2(11\% - 4\%)$$

$$= \mathbf{12.4\%}$$

(ii) **Ex-dividend share price**

Dividend growth rate (g) = (52 – 50)/50 × 100% = 4%

$$P_0 = \frac{d_0(1+g)}{(k_e - g)}$$

$$P_0 = \frac{50 \times 1.04}{0.124 - 0.04}$$

= 52/0.084

= 619c or **$6.19**

(iii) **Capital gearing**

| | |
|---|---|
| Market value of Bond A | = (20m × 0.9508)<br>= $19.016m |
| Market value of Bond B | = 10m × 1.0201<br>= $10.201m |
| Market value of debt | = 19.016 + 10.201<br>= $29.217m |
| Market value of equity | = 25m × 6.19<br>= $154.75m |
| Market value of capital employed | = 154.75 + 29.217<br>= $183.967m |
| **Capital gearing** | = 29.217/183.967 × 100%<br>= **15.9%** |

(iv) **Weighted average cost of capital**

$$WACC = k_e \left[\frac{V_E}{V_E + V_{DA} + V_{DB}}\right] + k_{dA}\left[\frac{V_P}{V_E + V_{DA} + V_{DB}}\right] + k_{dB}\left[\frac{V_D}{V_E + V_{DA} + V_{DB}}\right]$$

$$= 12.4\left[\frac{154.75}{183.967}\right] + 9.82\left[\frac{19.016}{183.967}\right] + 7.82\left[\frac{10.201}{183.967}\right]$$

= 10.43 + 1.02 + 0.43

= 11.88%

(d) **Dividend policy and the share price**

**Dividends as a signal to investors**

The ultimate objective in any financial management decisions is to **maximise shareholders' wealth**. If shareholder wealth is increased, it can be expected that the share price will rise. Shareholder wealth and therefore the share price should largely be determined by the **cash flows arising from the investment decisions** taken by management

Shareholders will look at a number of factors when analysing investments and not just dividends. They will be particularly interested in the **business** and **financial risk** of the company and will not necessarily be impressed with a large increase in dividends.

The dividend declared can be interpreted as a **signal** from directors to shareholders about the strength of underlying project cash flows. Investors usually expect a **consistent dividend policy** from the company, with stable dividends each year or, even better, **steady dividend growth**.

**Modigliani and Miller**

Modigliani and Miller (MM) proposed that in a tax-free world, shareholders are indifferent between dividends and capital gains, and the value of a company is determined solely by the 'earning power' of its assets and investments.

MM argued that if a company with investment opportunities decides to pay a dividend, so that **retained earnings** are **insufficient** to finance all its investments, the shortfall in funds will be made up by **obtaining additional funds** from outside sources. If a company pursues a consistent dividend policy, 'each corporation would tend to attract to itself a **clientele** consisting of those preferring its particular payout ratio, but one clientele would be entirely as good as another in terms of the valuation it would imply for the firm'.

**Conclusion**

Capital markets are only **semi-strong efficient**, not perfect, so the signalling power of a dividend and the existence of clienteles can be important. This implies that a change in dividend policy could affect DD Co's share price.

# Question 3

**Text references.** Rights issues are covered in Chapter 12 and exchange rates in Chapter 19.

**Top tips.** This is a time pressured question covering a wide range of topics on the syllabus. The combination of a rights issue calculation and exchange rates may be initially confusing but in part (a) you just need to first convert the € cost of investment to $s and then carry on as normal with the TERP calculation.

In part (b), you need to be happy working with EPS and P/E ratios in order to derive profit figures and show the effect of the investment.

Part (c) should be a straightforward textbook explanation but make sure you apply your explanations to NG Co.

Part (d) gives you forward exchange rates and interest rate information so is strongly hinting that you need to illustrate your answer with a forward exchange contract and money market hedging. Explain these methods and then use the information to illustrate how they work.

**Easy marks.** The first half of this question is quite tricky but there are easy marks in there once you understand the scenario. Part (c) has an easy 4 marks and part (d) is straightforward if you are happy with these techniques.

## Marking scheme

| | | | Marks |
|---|---|---|---|
| (a) | Amount of equity finance to be raised in dollars | | 1 |
| | Rights issue price | | 1 |
| | Theoretical ex rights price | | 2 |
| | | | 4 |
| (b) | Current EPS | 1 | |
| | Increase in PBIT from investment | 1 | |
| | Interest on bond issue | 1 | |
| | Revised dollar profit after tax | 2 | |
| | Revised EPS | 1 | |
| | Revised share price using PER method | 1 | |
| | Comment on effect on shareholder wealth | 1-3 | |
| | | Maximum | 9 |

| | | | |
|---|---|---|---|
| (c) | Transaction risk | 1-2 | |
| | Translation risk | 1-2 | |
| | Link to question | 1-2 | |
| | | Maximum | 4 |
| (d) | Euro account | 1 | |
| | Forward market hedge | 1 | |
| | Illustration of forward market hedge | 1-2 | |
| | Money-market hedge | 1 | |
| | Illustration of money-market hedge | 1-2 | |
| | Other hedging strategies, including derivatives | 1-2 | |
| | | Maximum | 8 |
| | | | 25 |

(a) **Theoretical ex-rights price**

Amount of equity finance to be invested in €s = 13m/2 = €6·5 million

Amount of equity to be invested in $s = 6·5m/1·3 = $5 million

Issue costs = $0.312m

Amount of equity finance to be raised in $s = 5m + 0·312m = $5·312m

Rights issue price = $4·00 × (1 – 17%) = $3·32 per share

Number of new shares issued = 5·312m/3·32 = 1·6m shares

Current number of ordinary shares in issue = 100m/4·00 = 25m shares

Total number of shares after the rights issue = 25m + 1·6m = 26·6m shares

Theoretical ex rights price = ((25m x 4) + (1·6m x 3·32))/26·6

= 105·312/26·6

= **$3·96** per share

(b) (i) **EPS**

Current P/E ratio = 10

P/E ratio = Market price of share/EPS

10 = 4.00/EPS

Current EPS = 4·00/10 = 40 cents per share

Current profit after tax = 100m/10 = $10m

After the European investment, the increase in profit before interest and tax = €13m x 20% = €2.6m

Converted to $s = 2.6m/1·3 = $2 million

| | $m |
|---|---|
| Increase in profit before interest and tax | 2.00 |
| Increase in interest (6·5m x 8%/1·3) | 0.40 |
| Increase in profit before tax | 1.60 |
| Taxation @ 30% | 0.48 |
| Increase in profit after tax | 1.12 |
| Current profit after tax | 10.00 |
| Revised profit after tax | 11.12 |

**Revised EPS** = $11·12m/26·6m = **41·8** cents per share

EPS is therefore expected to **increase** by 4.5% (1.8/40 × 100%) as a result of the investment.

(ii) **Shareholder wealth**

**Expected share price** = Revised EPS × P/E ratio

= 0.418 x 10

= **$4·18** per share

The theoretical ex-rights price per share was calculated as $3.96. There is therefore a capital gain for shareholders of 22 cents per share ($4·18 – $3·96).

In the absence of any information about dividend payments, it appears that the investment will **increase the wealth** of shareholders.

(c) **Transaction risk**

This is the risk of adverse exchange rate movements occurring in the course of **normal international trading transactions**. This arises when the prices of imports or exports are fixed in foreign currency terms and there is movement in the exchange rate between the date when the price is agreed and the date when the cash is paid or received in settlement.

NG Co is exposed to transaction risk on its euro-denominated **European sales** and **interest payments**. The dollar value of its euro-denominated sales, for example, would decrease if the dollar appreciated against the euro.

**Translation risk**

This is the risk that the organisation will make exchange losses when the accounting results of its foreign branches or subsidiaries are **translated** into the home currency. Translation losses can result, for example, from restating the book value of a foreign subsidiary's assets at the exchange rate on the statement of financial position date.

NG Co is exposed to translation risk on its **euro-denominated non-current assets**. The dollar value of the non-current assets acquired by investing in the storage, packing and distribution network, for example, will change as the euro/dollar exchange rate changes.

(d) **Matching receipts and payments**

A company can reduce or eliminate its foreign exchange transaction exposure by **matching** receipts and payments. Wherever possible, a company that expects to make payments and have receipts in the same foreign currency should plan to **offset its payments against its receipts in the currency.**

NG Co will receive euro-denominated income and will incur euro-denominated expenses as a result of its European operations. It could therefore have a euro-denominated bank account for all euro-denominated transactions.

**Forward exchange contracts**

A forward contract specifies in advance the rate at which a specified quantity of currency will be bought and sold.

The six-monthly interest payment of €260,000 can be used to illustrate this. The current cost of the interest payment is $200,000. In six months and twelve months, as the euro is expected to **strengthen** against the dollar, the **dollar cost** of the interest payment is expected to **rise**. In order to protect against unexpected adverse exchange rate movements, NG Co can lock into the six-month and twelve-month forward rates of 1·2876 €/$ and 1·2752 €/$ using forward exchange contracts. This **guarantees** the dollar cost of its euro-denominated interest payments. The dollar cost of the six-month interest payment would be $201,926 (€260,000/1·2876) and the dollar cost of the twelve-month interest payment would be $203,890 (€260,000/1·2752).

**Money market hedging**

Money market hedging involves borrowing in one currency, converting the money borrowed into another currency and putting the money on deposit until the time the transaction is completed, hoping to take advantage of favourable exchange rate movements.

NG Co could borrow now in dollars in order to make a euro deposit which, with accrued interest, will be enough to pay the euro-denominated interest in six months' time.

The six-month euro deposit rate available to NG Co is 1·39% (($\sqrt{1+0.028}$ – 1) × 100%) and the six-month dollar borrowing rate available to NG Co is 2·62% (($\sqrt{1+0.053}$ – 1) × 100%).The amount of dollars to deposit now would be €256,436 (260,000/1·0139) and to make this payment NG Co would need to borrow $197,259 (256,436/1·3000). The six-month dollar cost of this debt would be $202,427 (197,259 × 1·0262). This is more expensive than using the six-month forward exchange contract.

# Question 4

**Text references.** Financial intermediaries are covered in Chapter 3, forecasting and working capital financing in Chapter 6 and working capital management in Chapters 4 and 5.

**Top tips.** Part (a) requires a quick, relevant discussion of financial intermediaries which will be straightforward if you can remember the key terminology.

Part (b) may throw you as it requires a forecast income statement and statement of financial position rather than a cashflow forecast. However, the format for the statement of financial position is provided in the question and the workings involved require logical manipulation of the accounting ratios provided. Fill in as many figures as you can and you will gain a mark for each correct calculation.

In parts (c) and (d) plan your answers carefully and make sure you write about working capital financing in part (c) and working capital management ie ratio analysis in part (d). Calculate the ratios first in part (d) and then discuss the company's performance.

**Easy marks.** This question may look daunting initially but there are plenty of easy marks available if you tackle it logically and move on quickly if you get stuck.

## Marking scheme

| | | | Marks |
|---|---|---|---|
| (a) | Relevant discussion on financial intermediaries | 4 | |
| (b) | Gross profit | 1 | |
| | Net profit | 1 | |
| | Profit before tax | 1 | |
| | Retained profit | 1 | |
| | Inventory | 1 | |
| | Trade receivables | 1 | |
| | Trade payables | 1 | |
| | Reserves | 1 | |
| | Overdraft | 1 | |
| | Layout and format | 1 | |
| | | Maximum | 9 |
| (c) | Working capital financing policies | 2-3 | |
| | Financial analysis | 1-2 | |
| | Working capital financing policy of company | 2-3 | |
| | | Maximum | 6 |
| (d) | Discussion of working capital management | 3-4 | |
| | Financial analysis | 2-4 | |
| | | Maximum | 6 |
| | | | 25 |

(a) **Role of financial intermediaries**

Financial intermediaries provide a **link** between investors who have surplus cash and borrowers who have a need for finance.

Financial intermediaries **aggregate** invested funds. This means that they group together the small amounts of cash provided by individual investors, so that borrowers who need large amounts of cash have a convenient and readily accessible route to obtain necessary funds.

Financial intermediaries **reduce** the risk for individual lenders by **pooling.** They will assume the risk of loss on short-term funds borrowed by business organisations. Such losses are shared among lenders in general.

Financial intermediaries also offer **maturity transformation**, in that they bridge the gap between the wish of most lenders for **liquidity** and the desire of most borrowers for loans over longer periods.

(b) (i) **Forecast income statement**

| | $m |
|---|---|
| Turnover (16·00m × 1·084) | 17·344 |
| Cost of sales (17·344m – 5·203m) | 12·141 |
| Gross profit (17·344m × 30%) | 5·203 |
| Other expenses (5·203m – 3·469m) | 1·734 |
| Net profit (17·344m x 20%) | 3·469 |
| Interest (10m x 0·08) + 0·140m | 0·940 |
| Profit before tax | 2·529 |
| Tax (2·529m × 0·3) | 0·759 |
| Profit after tax | 1·770 |
| Dividends (1·770m × 50%) | 0·885 |
| Retained profit | 0·885 |

(ii) **Forecast statement of financial position**

| | $m | $m |
|---|---|---|
| Non-current assets | | 22·00 |
| *Current assets* | | |
| Inventory (12·141m × (110/365)) | 3·66 | |
| Trade receivables (17·344m × (65/365)) | 3·09 | |
| | | 6·75 |
| Total assets | | 28·75 |
| *Equity finance* | | |
| Ordinary shares | 5·00 | |
| Reserves (7·5m + 0·885m) | 8·39 | |
| | | 13·39 |
| Long-term bank loan | | 10·00 |
| | | 23·39 |
| *Current liabilities* | | |
| Trade payables(12·141m × (75/365)) | 2·49 | |
| Overdraft (28·75m – 23·39m – 2·49 balancing figure) | 2·87 | |
| | | 5·36 |
| Total liabilities | | 28·75 |

(c) **Working capital financing policy**

Working capital financing policies can be described as **conservative, moderate** or **aggressive**, depending on the extent to which fluctuating current assets and permanent current assets are financed by short-term sources of finance.

**Permanent current assets** are the amount required to meet long-term minimum needs and sustain normal trading activity, for example inventory and the average level of accounts receivable.

**Fluctuating current assets** are the current assets which vary according to normal business activity, for example due to seasonal variations.

A **conservative** working capital financing policy uses **long-term funds** to finance non-current assets and permanent current assets, as well as a proportion of fluctuating current assets.

An **aggressive** working capital financing policy uses **short-term funds** to finance fluctuating current assets and a proportion of permanent current assets as well. This is riskier but potentially more profitable.

A **balance** between risk and return might be best achieved by a **moderate** policy, which uses long-term funds to finance long-term assets (non-current assets and permanent current assets) and short-term funds to finance short-term assets (fluctuating current assets).

The **current** statement of financial position shows that APX Co uses **trade payables** and an **overdraft** as sources of **short-term** finance. 89% (100 x 4·1/4·6) of current assets are financed from short-term sources and only 11% are financed from long-term sources. This appears to be a **very aggressive** working capital financing policy which carries significant risk. For example, if the bank called in the overdraft, APX Co might have to resort to more expensive short-term financing.

The **forecast** statement of financial position shows a **reduced** reliance on short-term finance. 79% (100 × 5·36/6·75) of current assets are now financed from short-term sources and 21% are financed from long-term sources. This reduces the risk of the working financing capital policy.

Further moves away from an aggressive policy would be hampered by a lack of ability to pay interest on more long-term debt. The forecast **interest coverage ratio** is only 3·7 times (3·469/0·94). Alternatively, APX Co could consider an **increase in equity funding** to decrease reliance on short-term finance.

(d) **Working capital management**

**Ratio calculations**

Extracts from current income statement:

| | $m |
|---|---|
| Turnover | 16·00 |
| Cost of sales | 10·88 |
| Gross profit | 5·12 |
| Other expenses | 1·44 |
| Net profit | 3·68 |

| | *Current* | *Forecast* |
|---|---|---|
| Gross profit margin (100 × 5·12/16·00) | 32% | 30% |
| Net profit margin (100 × 3·68/16·00) | 23% | 20% |
| ROCE (100 × 3·68/22·5) | 16·35% | 14·83% (100 × 3·469/23·39) |
| Inventory period (365 × 2·4/10·88) | 81 days | 110 days |
| Receivables period (365 × 2·2/16·00) | 50 days | 65 days |
| Payables period (365 × 1·9/10·88) | 64 days | 75 days |
| Current ratio (4·6/4·1) | 1·12 times | 1·26 times (6·75/5·36) |
| Quick ratio (2·2/4·1) | 0·54 times | 0·58 times (3·09/5·36) |

**Analysis**

All of the key working capital management ratios are expected to worsen. The **inventory turnover period** is expected to increase from 81 days to 110 days. The **trade receivables period** is expected to increase from 50 days to 65 days. The **trade payables period** is expected to increase from 64 days to 75 days.

Because current assets are expected to increase by more than current liabilities, the **current ratio** and the **quick ratio** are both expected to increase in the next year. he current ratio will increase from 1·12 times to 1·26 times and the quick ratio from 0·54 times to 0·58 times.

It would be useful to compare all of these values with **industry averages** to see if APX Co has a particular problem.

The deterioration in the working capital position may be linked to an expected deterioration in the **overall financial performance** of APX Co. For example, the forecast **gross profit margin** of 30% and net profit margin of 20%, are both less than the current values of these ratios. Despite the increase in turnover, **return on capital employed** is expected to fall from 16·35% to 14·83%.