Student Notes

Module B (June 2012)

Workshop Outline and Learning Methodologies

Session	Methodologies	Chapters covered	Student Notes
Workshop 1			
1. Introduction	• Presentation • Group discussion		
2. Ethics in business	• Case study • Group discussion	Ch. 1	P. 1-16
3. Executive management	• Case study • Formal presentations	Ch. 2	P. 17-31
4. Management reporting	• Case study • Formal presentations	Ch. 4 *(incl. paragraph 2.7)*, 5 & 6	P. 32-46
Workshop 2			
5. Reboot	• Presentation • Group discussion		
6. Treasury operations	• Case study • Formal presentations	Ch. 8, 9, 10 & 11	P. 47-64
7. Corporate finance	• Case study • Formal presentations	Ch. 12, 16, 17 & 18	P. 65-82
8. Conclusion	• Presentation • Group discussion		

Treasury Operations: Pre-workshop exercise

LP reference

LP Chapter 8, Sections 3, 9 and 11 and LP Chapter 9, Section 6.

Key learning points

The pre-workshop exercise introduces the company's problem with shortage of cash to fund day-to-day operations. This will lead on to the workshop exercise, but it also requires students to think about how short-term cash requirements are funded and what these funds may cost.

Students should also demonstrate an awareness of the cash cycle and how the cash position can be improved by speeding up the cash cycle. How this may be possible will be considered in the workshop. Students should be able to comment briefly however that reducing working capital requirements will also reduce the need for cash for day-to-day operations.

The pre-workshop exercise also requires students to think about sources and the cost of short-term borrowing.

Although borrowing in PRC is much more difficult than in the past, it should be possible for a well-established corporate borrower to obtain money from a bank.

However, since GLDC has its headquarters in Hong Kong where borrowing is cheaper, it would be better if possible to borrow in Hong Kong and use the money to finance working capital for operations in the PRC.

Hong Kong interest rates have been kept low because of low interest rates on the US dollar and the fixed exchange rate between HKD and USD. This gives GLDC an opportunity to borrow at attractive rates of interest in Hong Kong, provided that a bank can be found that is willing to lend.

Borrowing in US dollars will not be available to the company, but if it had plans to develop its business in other countries, it may face competition from global companies that are able to benefit from low-cost borrowing in US dollars.

Discussion Points

Requirement (a)

If GLDC needs to borrow more next year to finance its day-to-day operations, or to repay existing bank loans, the availability and cost of credit from banks will be very important.

GLDC is a large company with a listing in Hong Kong. Although profits fell in 2011, it is a profitable company.

The company should therefore avoid the private lending market in PRC, which may be subject to government action, because the interest cost would be much too high, the lenders may not be trustworthy and they may demand an excessive amount of collateral for any lending.

If GLDC needs to borrow short-term it should seek finance from a bank.

For bank loans that are due to mature in the next 12 months, the company should seek to negotiate a renewal (or 'rollover') of the loan from the same banks, since the company will have demonstrated its ability to make the scheduled interest payments on the current loans. This should strengthen the credit status of the company with the bank(s).

Since interest rates are lower in Hong Kong, the company should discuss with its bank(s) in Hong Kong the possibility of borrowing from them to finance its working capital requirements in PRC. The listed company status of GLDC may persuade a Hong Kong bank to do this, and interest costs would presumably be lower on this borrowing than the interest would be on a loan from a bank in the PRC.

The cost of borrowing in US dollars is not immediately relevant to GLDC. Even if it could obtain a loan in US dollars from a Hong Kong bank, it would be exposed to currency risk on its borrowing. The low interest rates on US dollars would be relevant if GLDC had to compete with a rival company that is financed by cheap dollars, for example a US multinational competing in a global market or a foreign market, in the event that GLDC decided to expand its business into other countries.

Requirement (b)

Workings

End-of-year figures in the statement of financial position are used here to calculate average working capital turnover periods for the year. This assumes that the end-of-year figures are typical for the year as a whole. End-of-year figures are used because this is the only way, with the figures available, to compare working capital turnover ratios and changes in those ratios between 2010 and 2011.

Inventory turnover period = [Inventory at end of year/Cost of sales] × 365 days

Accounts receivable settlement period = [Accounts receivable and prepayments at end of year/Total sales] × 365 days

Accounts payable payment period = [Accounts payable and accruals at end of year/Cost of sales] × 365 days

Prepayments and accruals are included in these ratios because information about the amount of prepayments and accruals are not available, so they cannot be taken out of the figures.

		2011		**2010**
		days		days
Inventory: average turnover period	(710/13,500) × 365	19	(618/11,730) × 365	19
Receivables: average collection period	(3,892/17,700) × 365	80	(3,058/15,500) × 365	72
		99		91
Payables: average payment period	(2,200/13,500) × 365	(59)	(1,807/11,730) × 365)	(56)
Average cash cycle		40		35

The cash cycle 'deteriorated' by 5 days in 2011, compared with 2010.

Working capital, measured as inventory + receivables – trade payables, at 31 December 2011 was (710 + 3,892 – 2,200) = RMB 2,402 million. Reducing this from 40 days back to the 2011 average of 35 days would reduce the capital requirement by (5/40) RMB 300 million.

This would be sufficient to pay back almost one half of the RMB 650 million in bank loans maturing during the next 12 months.

Requirement (c)

The recommendations to the CFO might be as follows:

(1) The cash flow position of the company will require careful management in the next year or longer.

(2) Management should continually monitor its need for cash, by budgeting cash requirements.

(3) Short-term cash budgets should be prepared regularly, perhaps monthly, and there should also be longer-term budgets, perhaps for each three-month period.

(4) These budgets should help management to control its cash position, for example by deferring payments if it does not expect to have the cash to pay for them, and to seek additional borrowing if a facility has not already been obtained from the company's bank.

(5) Cash budgets will also help the company to demonstrate its cash flow requirements to a lending bank, which may want to monitor the company's position.

(6) The requirement for cash should be reduced as much as reasonably possible. One way to do this is to reduce the amount of working capital by shortening the cash cycle.

(7) If the company does need to borrow, it should discuss its requirements with banks well in advance of the actual need for the cash. The company should seek the best terms available, for example the lowest interest rates, or a suitable borrowing period, or reasonable levels of collateral.

Treasury Operations: Case 1

David Chan, the CFO of GLDC, has asked for a review of working capital management. He would also like some advice about dividend policy, which will be discussed at the next meeting of the GLDC board of directors.

He is planning a formal presentation to the board of directors on four separate issues, and would like you to make the presentation.

You should divide into four groups to discuss each of the following four requirements. You should refer to the information in the case study and the pre-workshop exercise as well as the additional information provided below.

Case A (Inventory Management)

Initial investigation has shown that the average inventory turnover period for the company's operations is less than 20 days, but David Chan is puzzled. He does not understand why the turnover period should be so high, because milk should be processed quickly after it has been received from the dairy farmers, and it should be sold as quickly as possible after production, to avoid the risk of deterioration in quality. He thought that milk had to be drunk within a limited time after its production.

He presents your group with the following additional information for 2011 about inventory for the three product divisions of the company.

All figures in RMB million	**Liquid milk and yoghurt**	**Ice cream**	**Milk powder**	**Total**
Sales	15,770	1,752	178	17,700
Cost of sales	12,193	1,158	149	13,500
Gross operating profit	3,577	594	29	4,200
Inventory at 31 December 2011	465	194	51	710

Required

You should prepare a presentation for David Chan which deals with the following issues:

(a) The consequences for GLDC of holding high inventory levels and the possible reasons for any inventory levels that may seem high.

(b) Measures that might be taken to reduce inventory levels below their current level, and to maintain them at lower levels in the future.

(c) The financial benefits that GLDC might expect to obtain from reductions in inventory. The financing cost is currently 9% p.a.

Case B (Receivables Management)

The rate of growth in receivables in 2011 exceeded the rate of growth in sales turnover. David Chan is aware that the consumer market in PRC remains volatile as the economy continues to grow at a fast pace. He is also aware that with the high rate of inflation in PRC, giving customers too much time to pay what they owe is costing the company in terms of 'real' income. Although the auditors raised some questions about bad debts in the year to 31 December 2011, the allowance for bad debts is small. The auditors were willing to accept the argument that economic conditions in PRC meant that business customers were taking longer to pay because they were finding it difficult to borrow to finance their own business operations.

The board of directors will want an explanation for the increase in receivables, and will want to hear the measures that David Chan intends to take to improve the situation.

You are given the following information about receivables for each of the product divisions at 31 December 2011.

All figures in RMB million	**Liquid milk and yoghurt**	**Ice cream**	**Milk powder**	**Total**
Sales	15,770	1,752	178	17,700
Cost of sales	12,193	1,158	149	13,500
Gross operating profit	3,577	594	29	4,200
Receivables at 31 December 2011	3,249	371	24	3,644

Note: The difference between the total of receivables and the figure in the statement of financial position at 31 December is attributable to prepayments.

Required

You should prepare a presentation for David Chan which deals with the following issues:

(a) Possible reasons for the increase in the time taken to receive payment from customers but for the low level of receivables written off as 'bad' or uncollectible.

(b) Measures that might be taken to reduce accounts receivable to a more efficient and acceptable level, and your views about which of these measures should be recommended to the board of GLDC.

(c) An estimate of the possible savings that might be obtained from more efficient receivables management. The financing cost is currently 9% p.a.

Case C (Accounts Payable Management)

David Chan is aware that a substantial number of the dairy farmers that supply GLDC are in financial difficulty. Many of them have had to improve the health standards of their farming and production methods, following the melamine scandal a few years ago, and they are facing higher operating costs. David Chan is concerned that a large number of these farmers may go out of business in the next year or two, although he expects that in time a number of much larger dairy farm companies will eventually take their place. Some farmers are complaining that their financial difficulties are made worse by the slow payments by GLDC, and they are threatening to move their business and start supplying rival dairy produce companies which promise to pay within 30 days of receiving the milk.

You are given the following information about trade payables for each of the product divisions at 31 December 2011.

All figures in RMB million	**Liquid milk and yoghurt**	**Ice cream**	**Milk powder**	**Total**
Sales	15,770	1,752	178	17,700
Cost of sales	12,193	1,158	149	13,500
Gross operating profit	3,577	594	29	4,200
Trade payables at 31 December 2011	1,656	358	27	2,041

Note: The difference between the total of trade payables and the figure in the statement of financial position at 31 December is attributable to accruals.

Required

You should prepare a presentation for David Chan which deals with the following issues:

(a) The effect on GLDC of a financial collapse of several dairy farmers that supply the company.

(b) Ways in which management of accounts payable might reduce the risk of dairy farmers going out of business.

Case D (Dividend Policy)

David Chan tells you that the company's major shareholders have been very supportive of the company's plans for growth, and have been willing to accept low dividend payments in the short term, expecting higher dividends when profit eventually begin to increase in the future.

The company policy has been to pay one final dividend each year and no mid-year interim dividend. The dividend decision for 2011 has been deferred by a few weeks, to give the board time to review the situation. However a decision about the dividend for 2011 must be made soon.

The company has so far made three dividend payments since it obtained its Hong Kong listing. These have been as follows:

Year	**Dividends HKD million**
2008	85
2009	90
2010	95

The current exchange rate is RMB 0.82 = HKD 1.

The board is aware that in order to grow the business, there will probably be a strategic initiative next year, that will involve substantial additional investment.

Required

You should prepare a presentation for the board of GLDC which deals with the following issues:

(a) The arguments in favour of increasing the annual dividend payment in 2011.
(b) The arguments against increasing the annual dividend payment in 2011.
(c) A recommendation, with reasons, about what the dividend should be.

Treasury Operations: Case 1

This exercise requires students to look at a number of different aspects of treasury management: **inventory management, accounts receivable management, accounts payable management and dividend policy**. The answers provided by students will indicate their understanding of these different issues.

There are four different exercises or Cases.

Some of the exercises combine a small amount of computational work with a discussion of the financial, management and strategic issues. The focus, however, is on an understanding of the issues involved in working capital management and dividend policy.

Case A Discussion Points

LP reference

Inventory ratios and inventory management are covered by LP references Chapter 8 Section 5 and Section 6.

Key learning points

Students need to recognise that there are **costs associated with high levels of inventory**, particularly in an industry such as dairy products where unsold inventory may deteriorate if it is held for too long. Students may also mention other costs, such as the finance costs of holding and insuring inventory, and costs of operating warehouses. The exercise also requires students to suggest why inventory levels may be high and how they may be reduced: **the need to ensure that the process from acquiring milk to delivering the finished dairy products and receiving payment needs to be made as efficient as possible.**

Although there is no 'correct' answer to any of the Cases, students should be expected to produce estimates of the possible benefits of improvements in inventory management.

Workings

Inventory turnover periods can be calculated for each of the three product divisions:

Liquid milk and yoghurt: (465/12,193) × 365 = 14 days

Ice cream: (194/1,158) × 365 = 61 days

Milk powder: (51/149) × 365 = 125 days

It is not known what the expected inventory turnover periods should be for dairy products, but these possibly seem high. For example, after delivery to shop owners, milk drinks and ice cream may remain unsold for more days, and there is a risk that the product will deteriorate in quality before it is purchased and consumed by the end customer.

A presentation to David Chan may cover the following points.

(a) Dairy products deteriorate in quality over time and it is therefore desirable that they should be consumed fairly quickly after they have been produced. For this to happen, GLDC must get its products to its own customers as quickly as possible.

(b) It is possible that some of the inventory reported in the statement of financial position at 31 December 2011 will be written off as obsolete or unwanted inventory. However if this had happened, we should expect the financial statements for the year to have been adjusted for this event after the statement of financial position date.

(c) The average turnover periods for ice cream and milk powder seem to be extremely long for dairy products, and an investigation should be conducted into why the turnover periods are so long. Milk powder is currently being sold at very low prices, and it is very surprising that inventory levels should therefore be about four months. It is possible that GLDC is currently producing more milk powder than it needs and is able to sell. The same problem may apply to ice cream. The turnover period for liquid milk may also be longer than it should be, and this too should be investigated to check for any possible inefficiencies in the production and delivery processes.

(d) There is also a finance cost in holding excessive amounts of inventory. The financing cost for the company is currently 9%. If average inventory is similar to the figure at 31 December 2011 (RMB 710 million), the finance cost of inventory to GLDC is about RMB 64 million each year.

Initial recommendation

The recommendation is that an urgent investigation should be made into the long production and delivery cycle, between buying milk from dairy farmers and delivering the finished dairy products to GLDC customers.

Measures to reduce inventory levels:

Measures that may be taken to reduce inventory levels cannot be determined without proper investigation of the production process. We do not know for example, whether the inventory consists of fresh milk waiting to be processed, finished dairy products waiting to be sold, or work in progress. The aims of efficient operations management should be to minimise the cycle time.

(1) Fresh milk should be processed as soon as possible after it has been purchased. If milk is held without being processed, the company may be purchasing milk ahead of requirement. Just-in-time purchasing should operate, whereby milk is not acquired until it is needed. If the company is buying its milk too soon, discussions should take place with our milk suppliers to find a way of dealing with this problem without putting our suppliers under intolerable financial pressure themselves.

(2) The production process should be as short as possible, consistent with safe and efficient processing methods. The purchase of more up-to-date technology may help to reduce processing times, for example by having machines with greater processing capacity.

(3) Finished dairy products should be sold as quickly as possible after production. The sales team may not be as effective as we should like and a greater effort may be required to increase sales demand. We are aware of the possibility that ice cream products are highly priced, and a reduction in selling prices for ice cream products may help the sales team to sell more units and so reduce inventories.

(4) Another possible approach to reducing inventory is to delay production of some dairy products until there are firm orders from customers.

Concluding recommendations

Without further investigation, the reasons for the high inventory levels cannot be identified, but for a dairy products company, GLDC appears to have excessive inventories. The solution may be to delay milk purchases, speed up the production and delivery process for dairy products or improve the efficiency and effectiveness of selling.

Reducing inventory levels by, say, one-third would improve cash flows in the first year by about RMB 237 million (710 million/3) as well as reducing inventory holding costs.

Case B Discussion Points

LP reference

The receivables turnover ratio and receivables management are covered by LP references Chapter 8 Section 5 and Section 7.

Key learning points

This exercise requires students to identify the **reasons why accounts receivable might be high**, the possible consequences of a high level of receivables and measures that might be taken to improve the efficiency of receivables management. The answers will probably follow 'text book' guidance.

Students need to remember that during periods of economic difficulty, a company may try to protect its business, and the businesses of its customers, by allowing customers a longer time to pay what they owe. However, by giving too much credit to customers, the risk increases of incurring losses from uncollectable debts.

Workings

Average payment collection periods can be calculated for each product group separately.

Liquid milk and yoghurt: (3,249/15,770) × 365 = 75 days

Ice cream: (371/1,752) × 365 = 77 days

Milk powder: (24/178) × 365 = 49 days

It may be possible to compare these collection periods with those of rival dairy companies. It should be noted that the collection period for milk drinks and yoghurts is longer than for the other products, although it is not clear why this should be so.

Discussion Points

A presentation to David Chan may cover the following points. (**Note**: Comparisons between 2011 and the previous year are obtained from the solution to the pre-workshop exercise.)

(a) The average collection period for all three products increased in 2011 by 8 days compared with 2010. (Collection periods for each product division cannot be compared directly, because the total average collection period is based on figures for amounts receivable that include prepayments.)

(b) The average collection period for the main product group, milk drinks, was about 75 days in 2011 and for ice cream it was 77 days. This indicates that a long credit period is allowed to GLDC customers.

(c) We are aware that borrowing conditions for small businesses are difficult in PRC, and many small businesses may rely on their suppliers for finance. For example, GLDC's customers who own shops may not want to pay GLDC for their dairy products until after they have sold the products to their own customers.

(d) GLDC's management may be aware of the financial difficulties of some of its customers, and may have agreed to allow them a long time to pay, in order to prevent them from going out of business. David Chan should investigate the discussions and negotiations about credit that have been made by the sales team or accounts department with GLDC customers.

(e) Following on from this, if GLDC management have been allowing customers more time to pay in order to preserve business, the costs and benefits of this policy should be reviewed. The total receivables of GLDC at 31 December 2011 were RMB 3,644 million. The cost of finance for the company is 9%. This means that the finance cost to the company of its receivables is about RMB 328 million per year. This is a larger amount than the total profit earned by the company in a year.

The possible benefits from reducing receivables if possible should therefore be apparent.

Even so, for an industry in which the main products should have a fairly short 'shelf life', and should be purchased and consumed as early as possible, the average credit period is very long.

(f) It is also possible that the company is inefficient in its collection of payments from customers and average payment periods may exceed the credit period/payment terms that have been negotiated with the customer. The efficiency of the collections process should be investigated.

(g) The level of 'bad debts' is low. This may be correct, but it is recommended that an investigation should be made of the amounts receivable that are overdue by a long period of time, to assess whether GLDC has a potential problem with bad debts that it has not yet properly recognised.

Measures to improve the accounts receivable settlement period should include more efficient receivables collection procedures and management.

- Better credit checking procedures
- Strict policies on agreeing credit terms with customers
- Monitoring overdue payments, through aged receivables analysis
- Procedures for chasing overdue payments (reminder letters, telephone calls)
- Making the credit control manager accountable for poor performance

Final recommendation

It is important to remember that rival companies may be offering generous credit terms to their customers, and if GLDC tries to introduce payment terms that are more strict than those of its competitors, it risks losing business.

It is recommended that management should consider its credit policy and agree a policy for the normal credit terms that should be offered to customers for its products. The credit terms should be realistic and consistent with credit terms that are commonly applied in the industry.

Management should then take measures to monitor the efficiency of credit arrangements – both agreeing credit terms with new customers and collecting payments.

Management should review the amounts receivable that are overdue by a long time, and consider whether it is making sufficient allowances for 'bad debts'.

For milk drinks and yoghurts, receivables at 31 December were RMB 3,249 million. If the average collection period had been 67 days rather than 75 days (8 days less, the same as in 2010), receivables would be reduced to RMB 2,895, a reduction of RMB 354 million.

This would improve cash flows by this amount due to the reduction in working capital, and at a financing cost of 9% there would also be a reduction in finance costs of about RMB 32 million per year.

Case C Discussion Points

LP reference

The LP reference is Chapter 8 Section 8 for payables management.

Key learning points

Students need to recognise that GLDC should be an ethical business, and suggestions that payments to suppliers should be delayed as long as possible would be inappropriate. The key issue is that if important suppliers are in financial difficulty, GLDC must either find alternative suppliers as quickly as possible, or should consider supporting some suppliers financially, at least temporarily until their position improves.

Part (a)

It is not clear why the trade payables have been allocated between the three product groups, since it is to be expected that most amounts payable to suppliers are payments for milk. Milk should be purchased through the milk products division, not the ice cream and milk powder divisions.

Workings for the average time taken to pay suppliers for each product group are shown below, but the average payment period for all the products taken together is probably a better indicator to use.

Liquid milk and yoghurt: (1,656/12,193) × 365 = 50 days

Ice cream: (358/1,158) × 365 = 113 days

Milk powder: (27/149) × 365 = 66 days

A presentation to David Chan might cover the following points. (**Note**: Comparisons between 2011 and the previous year are obtained from the solution to the pre-workshop exercise.)

(1) The average payment period for trade payables (mainly amounts owed to dairy farmers) was about 59 days in 2011, three days longer than in 2010. We are informed that GLDC is not paying its suppliers within the agreed credit period.

(2) The increase in the average time to pay between 2010 and 2011 suggests that the situation for suppliers is getting worse, and some suppliers have threatened to take their business to other manufacturers of dairy products.

(3) Some dairy farmers are in financial difficulty. There is no information about which farmers may be in difficulty, or how important they are for GLDC. Failure by GLDC to pay promptly, according to the credit terms of their agreements with dairy farmers, will put the cash flows and so the financial situation of the suppliers into further difficulty.

(4) If some dairy farmers are unable to continue in business, GLDC will lose sources of milk supply. If the farmers affected are those for which GLDC has spent time and resources on

training and education to improve the quality of their farming and milk, this would be a very disappointing loss.

(5) There is also a risk that if GLDC loses reliable sources of supply, it may be forced to turn to less reliable dairy farmers, whose milk may not be as ‘safe’ or whose farms may not be as ‘hygienic’ and properly operated.

(6) GLDC relies on the quality of the milk from its suppliers for the quality of its own dairy products. The supply chain is critically important, and GLDC should protect it.

(7) It may be expected that larger dairy farms will eventually be established, but this has not yet occurred, and GLDC needs to operate with the supply chain that it has until better options become available.

Part (b)

GLDC should first of all establish which suppliers (dairy farmers) may be in difficulty, and should discuss the problem with those suppliers that it considers to be important for GLDC’s business. There is no reason why the same approach should be taken with all suppliers, including those who are not in difficulty or those who are not important for GLDC’s business.

GLDC could **pay suppliers more quickly**. In some cases, it might agree to **pay for orders in advance**. This would improve cash flows for the suppliers, and would therefore provide some **short-term benefits**.

GLDC should certainly act ethically in its dealing with suppliers, and pay them according to the terms of their credit agreement.

GLDC should consider as a matter of urgency whether to stop buying from some suppliers and switch to buying more from suppliers who are in a more secure financial position. Normal credit terms could be agreed with these suppliers.

Suppliers are complaining that GLDC takes longer to pay than competitor companies. GLDC should try to establish what payment terms are used by rival companies, and should consider offering the same to its own suppliers (if it does not do so already).

If there is a risk of collapse of some key suppliers, GLDC might consider more urgent **longer-term measures**. One measure would be to lend money to suppliers for a longer term, and act as a ‘banker’ to those suppliers. Terms for the repayment of the debt over time would have to be agreed.

By making payments to some (or all) trade suppliers sooner, the amount of trade payables will be reduced and working capital will increase. This will have an adverse effect on cash flow and the financing cost of working capital. It is therefore important that the company should try to offset a reduction in trade payables by a reduction in either inventory or receivables.

(**Note**: Students may disagree with these conclusions, but should be able to present good arguments.)

Case D Discussion Points

LP reference

Dividend policy is covered in Chapter 10. LP references are all sections of Chapter 10.

Key learning points

This case considers dividend policy. GLDC's board faces a difficult decision. Profits after taxation in 2011 were RMB 102 million. Payment of the same dividend as in 2010 (HKD 95 million) would cost RMB 78 million at the current exchange rate (RMB 0.82 = 1 HKD). The company does not have much cash – only RMB 23 million at 31 December 2011. There is strong evidence to show that GLDC cannot pay a dividend as high as or higher than the dividend in 2010.

The problem is that even though the shareholders are supportive, they may expect some annual growth in dividends. Dividends have risen by HKD 5 million each year since the company acquired its Hong Kong listing. If dividends are reduced, shareholders may react by selling their shares, and confidence in the company's management may be lost.

The GLDC board probably intends to develop the business strategically in 2012, and to do this it will need finance. Continuing shareholder support is essential if management are to grow the business strategically next year.

The board has a difficult decision to make about the dividend for 2011.

(a) There are some reasons in favour of increasing the dividend above the 2010 level, or at least paying the same dividend as in 2010.

(1) The company has increased the annual dividend each year by HKD 5 million since it became a listed company. Shareholders may be expecting another dividend increase in 2011.

(2) The profit is lower in 2011 than in 2010, but shareholders may still expect dividends to be held at the same level as in 2010.

(3) The dividend announced by the board often acts as a signal by the board to the shareholders about their belief in the future of the company.

(4) Reducing the dividend, or paying no dividend at all, may be a signal that the directors are concerned about the financial position of GLDC and its ability to succeed in the future.

(5) If the company loses the support of its shareholders, there will be some selling of the company's shares on HKEx, and the share price will fall.

(6) If the share price falls and the valuation of the company's equity capital is therefore reduced, it will be very difficult for the company to raise new capital to finance growth in 2012.

(b) There are some reasons in favour of reducing the dividend below the 2010 level.

(1) Unless the dividend is reduced, the dividend payment for 2011 will exceed 75% of the profit after taxation in 2011. At the current exchange rate, a dividend of HKD 95 million would cost RMB 78 million, and the profit after taxation was RMB 102 million.
The company would be using most of its earnings to pay dividends, and retained earnings would be low.

(2) The company does not have large amounts of cash and unless it can reduce its investment in working capital, it will have to borrow to make a dividend payment.

(3) If the company needs additional finance to invest in growth of the business in 2012, it makes sense to retain as much profit as possible to reinvest. Retained profits do not have an issue cost, and if earnings are paid as dividends, more new capital will have to be raised in 2012 to finance the growth.

(4) Keeping dividend payments below the amount of profit for the year may be seen by investors as an indication of sensible management by the board of GLDC.

Recommendation

Senior members of the board should hold urgent discussions with major shareholders before reaching a dividend decision, to obtain their views about the dividend they would expect GLDC to pay.

The views of the major shareholders may be a decisive influence on the dividend decision.

It is probable that shareholders will expect to receive some dividends, and they may be disappointed if GLDC reduces the dividend below the 2011 level.

In view of the need to raise capital next year to finance further growth, it is recommended that the company should declare a dividend of HKD 95 million, with an accompanying announcement that it is the intention of the board of directors to resume growth in dividend payments in 2012.

The company should seek to borrow cash (HKD) to make the dividend payment.

There is no 'correct' recommendation. The recommendation of the student group may differ from the one shown here, but their case must be well presented and well argued.

Treasury Operations: Case 2

The board of GLDC has asked for advice about its purchases of equipment from suppliers in Australia. The company expects to make a large quantity of equipment purchases from Australia in 2012 and the board is concerned about the possible foreign exchange risks that will arise.

You have been given the following information.

(1) Purchases of equipment from Australian suppliers are denominated in Australian dollars (AUD).

(2) The Hong Kong dollar (HKD) is at a fixed rate against the US dollar (USD), but not against the renminbi (RMB). The current exchange rate is 7.9 HKD to 1 AUD (or 0.1266 AUD to 1 HKD).

(3) Interest rates on the US dollar are very low, and this is keeping Hong Kong interest rates fairly low too.

(4) The rate of inflation in the USA is low. It is higher in Australia (currently 3.5%), even higher in Hong Kong (currently about 6%) and higher still in the PRC. Recently, although the exchange rate fluctuates up and down from day to day, the AUD has been falling in value against the USD.

(5) Purchases from Australian suppliers are expected to exceed AUD15 million in the next 18 months.

(6) Most contracts to purchase equipment allow for a credit period of six months, to allow for shipment and installation before the customer is required to pay. The time between placing an order and delivery and installation can be up to 10 or 11 months.

(7) Some contracts allow the buyer to cancel the order after it has been placed, provided that cancellation occurs at least one month before shipment from Australia.

(8) A unique feature of some contracts with Australian companies is that the contract may include a provision that allows the buyer and the seller to share financial risk. Some Australian suppliers are prepared to arrange contracts with GLDC in which the two parties share the cost of any movement in the AUD/HKD exchange rate between the time that the order is placed and the time that payment is due.

David Chan has asked you to make a presentation to him, so that he can prepare his own recommendations to the board. Your presentation should cover the following issues.

Required

(a) The financial risks that GLDC faces with buying equipment from Australian suppliers.

(b) Measures that companies can take to manage their exchange risk.

(c) A recommendation about which of these risk management methods may be appropriate for GLDC giving your reasons.

Treasury Operations: Case 2

This exercise is about foreign exchange risk and the management of this risk. The problem is slightly complicated because four currencies are mentioned in the case study: HKD, RMB, AUD and USD. The HKD/USD exchange rate is fixed, but the others are variable. Students may be aware that the US government has been pressing the Chinese government to allow the RMB to increase in value, but although economic growth in the PRC is strong, inflation and interest rates are lower in the USA than in the PRC. Students need to work out which currencies are relevant to the analysis.

Students are required to identify how losses arise from adverse exchange rate movements. They should also recognise that profits can arise from favourable exchange rate movements. However, unless the risk is kept within limits, the company may find that its profits or losses each year depend more on exchange losses or gains than on the profitability of its underlying business.

The exercise also requires students to suggest which methods of hedging the foreign exchange risk, if any, are recommended. Their views may differ on this issue. A significant reason for differences of opinion is that if inflation in Australia is higher than in the USA, it is possible that the AUD is more likely to fall in value against the USD than rise in value. GLDC may benefit from a fall in value of the Australian dollar against the US dollar, in view of the fixed HKD/USD exchange rate and the likely strength of the RMB.

The situation is not simple!

The unusual terms in contracts suggested by Australian suppliers provide opportunities for students to discuss the possible benefits of currency options to hedge foreign exchange risk, or what might be done if agreements are made with a supplier to share the foreign exchange risk.

Discussion Points

LP reference

The LP reference is Chapter 11 Section 8.

Key learning points

Exchange losses can arise because of economic risk, translation risk or transaction risk. The immediate concern for GLDC is with transaction risk and a rise in the exchange value of the AUD and the HKD or RMB between the time of placing an order for equipment and fixing the price in AUD, and the time of making the payment.

It is more likely that the AUD will fall in value over the next year rather than increase in value, but this is not certain. GLDC would benefit from any fall in the value of the AUD. However, it is possible that the AUD will rise in value.

GLDC may choose to take the risk and do nothing to hedge the foreign exchange risk. It is expecting to make purchases next year of about AUD15 million, or about HKD120 million. The company may decide that it can accept some losses on adverse exchange rate movements because the risk is tolerable. However opinions on this point may differ, according to the risk tolerance of the individuals (students).

There are various ways of managing exposures to risk, but many are not always relevant to a company's circumstances.

The relevant methods of hedging risk are:

- forward exchange contracts
- possibly currency options, where the contract allows for cancellation before shipment
- agreeing to share the risk with the Australian supplier, and using a forward exchange contract to fix only a proportion of the full amount of the AUD payment.

Your presentation should cover the following points.

Foreign exchange risks: payments in AUD

GLDC will be exposed to risk from a rise in the exchange value of the AUD against the HKD or the RMB, depending on which currency will be used to buy the AUD to pay the Australian suppliers.

The risk is greater when the Australian dollar is expected to be strong and rise in value over time.

However, inflation in Australia has been higher than in the USA; therefore there is a greater probability of a fall in value of the AUD against the USD in 2012 – but this is not certain. If the AUD falls in value against the USD, it will also fall in value against HKD, which has a fixed exchange rate with USD. RMB is also likely to increase in value. The probability is therefore that the AUD will fall in value against HKD and RMB, and GLDC may therefore choose to accept the risk of foreign exchange transaction exposures by not hedging risks.

This policy can be reviewed urgently if the AUD increases in value, or if the exchange rate for AUD becomes **volatile** and unpredictable. Hedging risk is more likely to be recommended when exchange rates move up and down by large amounts within fairly short periods of time. So even if the AUD falls in value over a period of time such as one year, if the exchange rate is volatile during that period, it is probably wise to hedge foreign exchange transaction exposures to avoid the risk of unexpected losses from adverse short-term currency movements.

Recommended methods of hedging exposures to FX risk

If the board decides that it wishes to hedge its exposures to the risks of short-term increases in the value of AUD, the following methods of hedging the risk may be considered.

Method of managing FX risk	Relevance to GLDC
Arranging with Australian suppliers for payment in US dollars rather than AUD.	US dollars are the most heavily-traded currency and Australian suppliers may be willing to accept payment in USD, even though they will then be exposed to the risk of a fall in the value of USD against AUD. Since the HKD/USD rate is fixed, GLDC will not have any exposure to exchange rate risk for payments made with HKD.
Forward exchange contracts, to fix the exchange rate for buying AUD with HKD or RMB, to make the payments to Australian suppliers.	Forward contracts are an important method of hedging exposures to transaction risk, and forward contracts can often be arranged for settlement dates six months or more in advance (which is the forward settlement period that GLDC will require).
Currency options.	These may be appropriate for contracts where GLDC has the option to cancel the purchase before shipment. By purchasing a call option on AUD (or a put option on HKD or RMB) GLDC will fix a 'worst possible' exchange rate for buying AUD. More importantly, it is not committed to buying AUD if it cancels the contract to buy equipment. If it cancels a purchase order, it can let the option lapse – or alternatively exercise the option to buy AUD at the option rate and re-sell them immediately at the spot rate if the AUD has risen sufficiently in value at the exercise date for the option.
Agreeing to share the risk with Australian suppliers.	By agreeing to share the foreign exchange risk with an Australian supplier GLDC will share the loss or the gain on the currency movement.

Corporate Finance: Pre-workshop exercise

LP reference

Chapter 12, various sections.

Key learning points

The pre-workshop exercise requires students to calculate the NPV of an investment in up to 15 new milk processing machines, analyse the uncertainty in the cash flows with sensitivity analysis and to make a recommendation that may be put to the board of GLDC. **Students are expected to have an understanding of the basic techniques of discounted cash flow and the net present value method.** The exercise is more challenging than a simple computational exercise, however, because students have to decide how to deal with the estimates of future inflation and about the cost of capital, as well as carrying out some sensitivity analysis. Finally, they should consider the real option in this situation: the NPV analysis can be applied to each machine individually, but the company may acquire up to 15 of them. If the machine appears to be financially viable, an option would be to purchase one or two 'now' and make a further decision at a later time about whether to purchase any more, after the success (or failure) of the first machines has been assessed ('audited').

The exercise also requires students to give some thought to the purpose of the screening test and post-completion audit or review in the investment appraisal cycle.

Discussion Points

Workings

The expected rate of inflation is 4%. The cost of capital is a money cost of capital, not a real cost of capital; therefore the cash flows for savings and additional profits will be increased by the annual rate of inflation.

A project is required to provide a positive NPV within five years; therefore the investment will be evaluated over a five-year period.

The new machines will result in a decrease in working capital in the first year, and will be permanent; therefore there is no increase in working capital at the end of year 5.

There is some uncertainty about the appropriate discount rate; therefore cash flows will be discounted at both 9% and 12%.

In order to prepare for sensitivity analysis, the individual cash flow items are discounted separately in the workings below.

The claim against taxation for the cost of a machine is RMB 120 million over four years. The amount that can be set off against tax is RMD 30 million each year. At a taxation rate of 25%, the cash saving will therefore be RMB 7.5 million each year for the first four years.

Year	Savings in milk (RMB millions) Increase by 4% per year	Discount factor at 9%	PV at 9%	Discount factor at 12%	PV at12%
1	10.40	0.917	9.54	0.893	9.29
2	10.82	0.842	9.11	0.797	8.62
3	11.25	0.772	8.69	0.712	8.01
4	11.70	0.708	8.28	0.636	7.44
5	12.17	0.650	7.91	0.567	6.90
Total PV			43.53		40.26

Year	Increased profit after taxation from extra sales (RMB millions) Increase by 4% per year	Discount factor at 9%	PV at 9%	Discount factor at 12%	PV at 12%
1	15.60	0.917	14.31	0.893	13.93
2	16.22	0.842	13.66	0.797	12.93
3	16.87	0.772	13.02	0.712	12.01
4	17.55	0.708	12.43	0.636	11.16
5	18.25	0.650	11.86	0.567	10.35
Total PV			65.28		60.38

Year	Reduction in taxation (RMB millions)	Discount factor at 9%	PV at 9%	Discount factor at 12%	PV at 12%
1	7.50	0.917	6.88	0.893	6.70
2	7.50	0.842	6.32	0.797	5.98
3	7.50	0.772	5.79	0.712	5.34
4	7.50	0.708	5.31	0.636	4.77
Total PV			24.30		22.79

Answer

Part (a)

Issues that should be considered in a screening test for choosing investment projects for evaluation	
Issue	**Comment**
The purpose of the investment and its strategic fit	The purpose of the investment would be to improve the quality of milk processing, saving costs and increasing revenues. This is consistent with the company's strategy
Is it a mandatory requirement?	No
Does GLDC have the expertise to use this equipment?	Yes, it should have
Is there a high risk with the investment?	There is some uncertainty about the increase in sales and profits from using the machine; however the investment risk would seem to be consistent with the main business of GLDC
Is the asset life realistic?	A shorter asset life (5 years) will be used than its expected life, 10 years.
Have all other alternative investments been considered?	No, but there may not be any

Summary: There is sufficient strategic fit between the new machines and the strategy of GLDC, and it is appropriate to consider the expected financial return from investing in the machines.

(b) NPV calculations

See workings

NPVs will be calculated at discount rates of both 9% and 12%. The calculations are for one machine.

Year	**Item**	**PV at 9%** RMB million	**PV at 12%** RMB million
0	Cost of machine	(120.00)	(120.00)
0	Reduction in working capital	5.00	5.00
1 – 5	PV of savings in milk	43.53	40.26
1 – 5	PV of increase in after-tax profit from higher sales	65.28	60.38
1 – 4	PV of tax benefits	24.30	22.79
NPV		18.11	8.43

Ignoring risk and uncertainty, a machine would provide a return in excess of 12% within five years, and so would appear to be an investment that should be undertaken.

(c) The PV of extra after-tax profits from higher sales is RMB 65.28 million at a discount rate of 9%, and the NPV is RMB 18.11 million. Assuming that other cash flow estimates are reliable, this means that for the investment to be rejected (at a 9% discount rate) the estimated increase in after-tax profits would have to be less than expected by more than 18.11/65.28 = 27.7%, say 28%.

The PV of extra after-tax profits from higher sales is RMB 60.36 million at a discount rate of 12%, and the NPV is RMB 8.43 million. Assuming that other cash flow estimates are reliable, this means that for the investment to be rejected (at a 12% discount rate) the estimated increase in after-tax profits would have to be less than expected by more than 8.43/60.38 = 14%.

Management should decide whether this level of risk is tolerable.

(d) **Recommendation**

Although there is some uncertainty about the possible increase in profits from higher sales, and some uncertainty about the appropriate discount rate, it is recommended that the company should purchase one or two of the machines.

If these machines provide satisfactory benefits and a suitable return, the company should then consider purchasing additional machines.

Note: This is the recommendation of the author. Your recommendation may differ.

(e) A post-completion audit is carried out after an investment to assess whether the actual costs and benefits of the investment were similar to the estimated costs and benefits that were used when making the investment decision. If costs were higher than expected or benefits were significantly lower, the reasons are investigated. Lessons can be learned from mistakes in the past and can be used to influence new investment decisions in the future.

If GLDC buys one or two machines initially, a post-completion audit into the first machines will help management to decide whether additional machines should be purchased, up to the expected total requirement of 15.

Corporate Finance: Case 1

The board of GLDC has been looking for acquisition targets, following its decision to develop its markets for dairy products in PRC. A possible target has been identified. This is Chee Dairy Company, a company that operates exclusively in PRC. It is a large private company, which specialises in the production of yoghurts and flavoured milk drinks, although it is only about one quarter of the size of GLDC in terms of turnover and assets. The board of GLDC consider that the acquisition of Chee Dairy would enable GLDC to gain a much larger share of the growing market for yoghurt.

The board of Chee Dairy has indicated its willingness to consider an offer from GLDC for all the equity shares, and they have provided GLDC with the following financial information for the past three years. The figures for 2009 and 2010 (which are in RMB millions) are audited by a firm of auditors in PRC. The figures for 2011 include estimates for the final few weeks but are considered to be reliable (and will also be subject to confirmation before any deal is eventually reached).

Chee Dairy Company

For the year to 31 December	**2011**	**2010**	**2009**
Gross profit	1,100	1,018	943
Net profit after taxation	32	30	27
As at 31 December			
Intangible assets	180	180	180
Property, plant and equipment	1,000	950	967
Net current assets	435	470	440
Long-term loans	230	245	245

The dividend policy of Chee Dairy in recent years has been to pay about 50% of the profit after taxation as dividends and to retain the rest, but if the company is acquired by GLDC, the board of Chee Dairy has stated its intention to pay a dividend of RMB 50 million before the acquisition takes place.

The reason that the directors of Chee Dairy are willing to consider a takeover offer is that most of the shares in the company are owned by members of the board and their families, and although the company continues to grow, profits are much lower than they used to be several years ago.

After more investigation some additional information was discovered.

(1) The intangible assets relate to goodwill in another private company that Chee Dairy acquired five years ago. The goodwill has been maintained at its original value and has not been impaired.

(2) The board of Chee Dairy have agreed that the allowance for non-recoverable receivables may have to be increased this year, but they do not expect the increase to exceed RMB 2 million.

(3) The terms of the long-term borrowing are that if Chee Dairy is acquired by another company, the lenders will have the option to demand the immediate repayment of their loans.

Stanley Leung is considering how to make a valuation of the equity of Chee Dairy for the purpose of making a takeover bid. He considers that some information relating to GLDC may be useful:

(1) The cost of capital of the company is currently 9%, but with the increase in expected inflation rates, it is now possible that 12% may be a more appropriate cost of capital for the company.

(2) GLDC has 50 million shares in issue. These have a value on HKEx of HKD 38 per share, although the share price was HKD 43 per share a few weeks ago and HKD 55 per share one year ago. The fall in the share price is probably due to lower investor expectations of future profit growth for GLDC.

By merging the yoghurt businesses of Chee Dairy and GLDC it is expected that some savings will be achieved in selling and distribution costs for the combined operation. It is difficult to estimate what these might be, but an initial estimate is that annual savings would have been RMB 20 million before taxation in 2011. These savings may be expected to increase at 6% per year for the foreseeable future – 4% because of inflation and a further 2% in 'real' savings. The rate of taxation on corporate profits in PRC is 25%.

Members of the GLDC board have made the following comments:

(1) There is a possibility that if GLDC does not acquire Chee Dairy, GLDC's competitor Sun Milk Company might try to acquire it.

(2) A higher rate of growth in earnings and free cash flows would be achieved by investing heavily in new equipment after acquiring Chee Dairy. With substantial additional investment in the acquired company, annual growth in the free cash flows of Chee Dairy might be 20% or more after taxation for at least five years and probably longer. However, the additional investment required is likely to be about RMB 60 million over the next three or four years. Depreciation charges for Chee Dairy are currently about RMB 120 million per year.

(3) The current exchange rate is RMB 0.82 = HKD 1.

You have been asked to recommend a valuation, or a range of valuations for the equity capital of Chee Dairy, based on this available information. David Chan is aware that there are different ways of estimating the value of a private company, and he would like to see estimates based on asset values, dividends and earnings, as well as a valuation based on the present value of future expected cash flows. He has two important requirements:

(1) You should explain the justification for each method of valuation that you use and explain how it might be used to arrive at an offer price for the equity of Chee Dairy.

(2) Your valuation or range of valuations, for each valuation method that you use, must be realistic. He does not want you to provide any valuations that you cannot sensibly justify.

Required

(a) Prepare valuations for the equity of Chee Dairy using the information in this hand-out using each of the following methods of valuation:

(1) Assets basis
(2) Dividends basis
(3) Earnings basis
(4) Present value of future cash flows basis.

For each method of valuation that you use, state the assumptions and estimates on which your valuation is based.

(b) Use your various estimates to recommend the price that GLDC should offer to acquire 100 per cent of the equity shares of Chee Dairy, and explain the reasons for your recommendation.

(c) Indicate what action the company must take about the long-term debt of Chee Dairy in the event that its takeover offer is accepted and the bid is successful.

Corporate Finance: Case 1

This exercise looks at methods of valuation for **non-listed** companies for the purpose of making a takeover offer. Students are required to prepare several different valuations, each using a different basis of valuation. Some of the valuations should not take a long time to prepare, but the exercise should help to make clear that valuations are based on estimates and assumptions, and there is no 'exact' or 'correct' valuation. In fact, each student group may arrive at very different valuations, and an important objective of the exercise should be to demonstrate the extent to which valuations are based on judgment, opinion, and then negotiation and agreement.

The **FCFF valuation** is likely to take the most time to prepare, and the exercise invites students to make some assumptions about what future free cash flows will be, and what discount rate to use in order to reach a DCF valuation. Students should recognise the positives and negatives of each valuation method. An additional feature of this DCF-based approach to valuation is whether or not to consider the value of a possible investment of RMB 60 million in equipment after a takeover that would increase cash flows for at least five years.

There is uncertainty about what the cost of capital should be for a FCFF valuation, and even more uncertainty about the expected dividend yield for a dividend-based valuation. It is suggested in the answer that a dividend-based valuation is unreliable for a valuation of Chee Dairy because of the lack of reliable information.

LP reference

The LP reference is Chapter 17 Sections 2, 3, 4 and 5. Comparisons of valuation methods are discussed in Chapter 17 Section 8.

Part (a): Alternative valuations

To prepare an **assets-based valuation**, students need to consider that there is almost certainly a difference between the valuation of assets in the statement of financial position, and their market value or disposal value, which may be difficult to assess. They should also recognise that intangible assets, particularly goodwill, do not have value. Finally, they must remember to deduct the value of liabilities in order to reach an assets-based estimate of the value of the equity.

A **dividends-based valuation** is relevant because it may help to indicate an **offer price that shareholders in Chee Dairy would consider acceptable**. The exercise indicates that dividend payments in the past have been about 50% of earnings, which indicates that there has been some dividend growth in the past. If Chee Dairy remained independent, its shareholders are likely to expect some further dividend growth in the future. To prepare a dividends-based valuation, students have to make two estimates or assumptions. Students should reach a view about what the expected future rate of growth in dividends would be if there is no takeover by GLDC, and what is a suitable expected return on equity for the shareholders in Chee Dairy.

An **earnings-based valuation** involves multiplying annual earnings by a suitable P/E ratio multiple. Students are likely to choose the earnings figure for the most recent year, and the only guide to an appropriate P/E ratio multiple is the current P/E ratio for GLDC. A lower P/E ratio should be used for Chee Fashion, since GLDC is a listed company and Chee Dairy is a smaller private company.

To prepare a **FCFF valuation**, students need to decide:

- **How to produce a valuation**. The Discussion Points here suggests a valuation based on FCFF growth in **perpetuity**, but student groups may use a different approach. They might choose to prepare a valuation based on cash flows over a given period of time (say ten years), but a valuation based on cash flows in perpetuity is simpler.
- How to produce a sensible estimate of **free cash flow each year**.
- Whether to include the value of additional cash flows if the company invests another RMB 60 million in Chee Dairy after a takeover.
- What **discount rate** to apply to obtain a valuation. The exercise indicates that either 9%, 12% or possibly a discount rate in between 9% and 12% per cent would be appropriate. Students should justify their reasons for selecting their discount rate or rates.

The valuation depends on estimates of annual growth. The exercise indicates that has been growth in the past two years, but there is no indication about what may happen in the future. The rate of growth in the future will presumably depend on whether GLDC invests in new equipment after acquiring Chee Dairy. There will be some growth if there is no new investment in machines, but additional growth if there is new investment.

However, although new investment would presumably improve future growth in profits and cash flows, should GLDC increase its offer price for the equity of Chee Dairy by making some allowance for the benefits from future investment? Why should shareholders in Chee Dairy benefit from future investment plans of GLDC?

Valuations by the different student groups could vary widely, but the principles they apply must be sound and the methodology they use must be technically correct.

Discussion Points, part (a)

Four methods of valuation will be used, as set out in this Discussion Points. These valuations are based on estimates and assumptions, and so are not ‘exact’ or ‘correct’. Alternative valuations using different estimates and assumptions, if sensible and realistic, will be equally acceptable.

Assets-based valuation

The value of the total assets minus current liabilities in the forecast statement of financial position of Chee Dairy at 31 December 2011 is RMB 1,615 million. However this includes intangible assets which have no real value, and the board of the company will pay out RMB 50 million in dividends before an acquisition. Using the values in the statement of financial position, a valuation of the equity might be:

Figures in RMB millions	
Total assets less current liabilities	1,615
Less: Intangible assets	(180)
Special dividend (reducing cash assets)	(50)
Increase in allowance for non-recoverable receivables	(2)
Adjusted value of assets	1,383
Less: Long-term liabilities	(230)
Assets-based valuation of equity	1,153

Using an assets-based approach to valuation, the equity of Chee Dairy may be worth about RMB 1,153 million. This is based on the assumption that the value of the assets in the statement of financial position, with the exception of the intangible assets, is equal to their market value. This is unlikely, and an assets-based valuation is unreliable.

Chee Dairy does not appear to have any assets that are under-valued in its accounts, and there is no reason why GLDC should pay more than RMB 1,153 million to acquire the assets of Chee Dairy.

Dividends-based valuation

A dividends-based valuation is useful because it may indicate a price that the shareholders in Chee Dairy might be prepared to accept for their shares. However there is no information about the dividend yield that shareholders in Chee Dairy might expect, and only limited information about expectations of future dividend growth.

It is assumed, from the information provided, that dividends are exactly 50% of after-tax profits (earnings). Earnings have increased from RMB 27 million to RMB 32 million in the past two years, an average growth rate of 9% per year. It is assumed that the shareholders of Chee Dairy would expect this growth rate in earnings to continue in the future 'in perpetuity'. It is assumed that 'norm' dividends would be 50% of earnings in 2011 – RMB 16 million, and that the expected growth in dividends will be the same as the expected future growth in earnings – 9% per year in perpetuity.

There is no indication of the dividend yield that might be applied to shares in Chee Dairy. The only indication of a suitable rate of return is the return of either 9% or 12% that GLDC may consider appropriate for the acquisition.

It is assumed that shareholders in a private company will expect a higher return than shareholders in a listed company, because of the additional investment risk for investors in a private company. There is no indication what this higher return might be, and an expected return of 15% is assumed here for the purpose of making a valuation based on dividend expectations. This estimate may be unreliable.

The required return of 15 per cent and future annual growth expectations of 9 per cent are applied to a 'normal' dividend payment of RMB 16 million by Chee Dairy in the year to 31 December 2011, a dividends-based valuation would be:

RMB 16 million (1.09)/(0.15 – 0.09) = RMB 291 million or about HKD355 million.

Earnings-based valuation

The earnings of Chee Dairy in 2011 are expected to be RMB 32 million (ignoring the possible adjustment in the allowance for non-recoverable receivables).

The shares of GLDC are currently valued at HKD38. At the current exchange rate of HKD1 = 0.82 RMB, this share price is the equivalent of RMB 31.16.

The expected earnings per share in 2011 are RMB 102 million/50 million shares = RMB2.04.

The P/E ratio of the company at the current exchange rate is 31.16/2.04 = 15.27.

To value the shares of Chee Dairy on a P/E ratio multiple, a lower P/E ratio should be used, since Chee Dairy is not a listed company and is smaller (and a higher investment risk) than GLDC.

A P/E ratio multiple of 11 might be considered appropriate, but this is a matter of debate and other P/E ratio multiples may be agreed.

Applying P/E ratio of 11 to the 2011 earnings, the value of Chee Dairy's equity would be RMB 32 million × 11 = RMB 352 million, or about HKD 430 million.

Free cash flow to the firm valuation

An issue is whether a company should be willing to pay for the value of its own future investments in an acquired company. In principle it should not. By investing in new plant and equipment after the acquisition, GLDC may be able to increase the value of its investment in Chee Dairy. However, these future increases in value are not directly relevant to the current value of Chee Dairy at the time of acquisition. New investments after the acquisition should be appraised separately, using normal DCF methods of appraisal.

However, GLDC may be prepared to pay the shareholders of Chee Dairy some of the expected future benefits from the takeover, and several valuations are made below as a guide to what an offer price may be for the equity of Chee Dairy.

Estimate 1

Ignoring the possible savings after a takeover of Chee Dairy, it is assumed that free cash flows would be equal to the earnings each year. This assumes that depreciation charges and the purchase of essential replacement plant and equipment would be equal amounts.

It is also assumed that the future growth in earnings will be the same as the average earnings growth in the previous two years. This is 9% (from 27 to 32 in two years), the same as for dividend growth.

It is assumed that the required return for GLDC will be 12%.

A FCFF valuation based on these assumptions would be RMB 32 million × (1.09)/(0.12 – 0.09) = RMB 1,163 million. This is much higher than the dividends-based valuation and P/E ratio earnings-based valuation.

However there is great uncertainty about both the future earnings growth and the cost of capital. If future earnings growth is 8%, not 9% (= the average growth in gross profit in the previous two years), a valuation would be RMB 32 million × (1.08)/(0.12 – 0.08) = RMB 864 million.

With such a high annual growth rate in earnings, the estimate of the annual rate of growth is critical to the valuation.

Estimate 2

Some savings in costs would be expected from the takeover. An initial estimate is that annual savings would have been RMB 20 million before taxation in 2011 and so RMB 15 million after tax. These savings may be expected to increase at 6% per year for the foreseeable future – 4% because of inflation and a further 2% in 'real' savings. If a cost of capital of 12% is assumed, the value of these savings in perpetuity would be:

RMB 15 million × (1.06)/(0.12 – 0.06) = RMB 265 million.

GLDC may be prepared to offer the shareholders in Chee Dairy some of the value of these savings if necessary to succeed with the takeover bid, but certainly not all of this value.

Estimate 3

GLDC should not include in the takeover offer the value of any new investment in Chee Dairy after a takeover. With additional investment in the acquired company, annual growth in the free cash flows of Chee Dairy might be 20% or more after taxation for at least five years and probably longer.

Depreciation charges for Chee Dairy are currently about RMB 120 million per year and earnings were about RMB 30 million after allowance for non-recoverable receivables (32m – 2m). Pre-tax earnings were therefore about RMB 30 million/(1 – 0.25) = RMB 40 million. Free cash flow before tax in 2011 is therefore expected to be RMB (120 + 40) million = RMB 160 million.

An increase of 20% would be RMB 32 million and after tax this would give an increase in cash flows of RMB 24 million in the first year.

Assuming 9% growth in earnings and a cost of capital of 12%, an estimate of the NPV of new investments over a five-year period would be as follows:

Year	Cash flow (9% annual growth)	DCF factor at 12%	PV of cash flow
1	26.2	0.893	23.4
2	28.5	0.797	22.7
3	31.1	0.712	22.1
4	33.9	0.636	21.6
5	36.9	0.567	20.9
			110.7
0	(60.0)	1.000	(60.0)
NPV			50.7

This estimate assumes that the entire investment of RMB 60 million would occur in the first year and that benefits do not extend beyond five years. This indicates that by investing in Chee Dairy, GLDC would succeed in increasing the value of its investment by at least RMB 50 million.

FCFF-based valuation

A valuation based on FCFF could produce widely differing valuations, depending mainly on estimates of annual growth in free cash flow and the cost of capital. GLDC would expect to benefit from annual savings through a takeover, as well as the opportunity to invest successfully in new plant and equipment.

In view of the P/E ratio of GLDC and the earnings based valuation, it would be unwise of GLDC to offer an excessive price based on estimated free cash flows.

Summary of valuations

The four valuations, using the assumptions and estimates stated, have produced the following valuations:

	RMB million
Assets basis	1,153
Dividend yield basis	291
Earnings basis	352
FCFF basis: possibly	864

It should be argued that a reason for making an acquisition, regardless of price, should not be for the purpose of preventing a competitor from making the acquisition. The offer price should be a price that GLDC considers reasonable and appropriate, based on the information and estimates that are available about the future prospects of Chee Dairy.

Discussion Points, part (b)

LP reference

In addition to the sections of the LP referred to above, students should refer briefly to Chapter 17 Section 8.

The shareholders of Chee Dairy may demand an offer price based on the value of the assets in the company, but an asset-based valuation should not be used to agree a takeover price. It may influence the takeover price, especially if the target company has assets whose value is not fully show in the statement of financial position. This situation does not apply here.

The dividend yield basis of valuation suggests an offer price of about RMB 300 million, but this estimate has been based on estimates that may be unreliable.

It is recommended that the offer price should ignore this valuation.

The earnings basis of valuation has been made on the assumption that Chee Dairy should be valued on a P/E ratio multiple that is lower than the P/E ratio that applies to GLDC. A P/E ratio of 11 was used to make a valuation of RMB 352 million, but a higher P/E ratio may be considered if this is necessary to negotiate an acceptable offer. The shareholders of GLDC may consider an offer price of about RMB 350 million or possibly a little more (perhaps 10% or even 20% more) might be acceptable

The FCFF valuation is much higher, although this is based on estimates of annual earnings in perpetuity. A valuation based on free cash flows over, say, 10 years would produce a lower valuation.

It is therefore recommended that the (initial) offer price for the shares of Chee Dairy should be RMB 352 million plus 20% = RMB 422.4 million, say RMB 420 million.

Some increase in the offer price may then be possible during negotiations with the board of directors of Chee Dairy.

(**Note**: Good students should be able to use relevant facts to back up their arguments. Most importantly, the acquired company should create value to the company.)

Discussion Points, part (c)

LP reference

In addition to the sections of the LP referred to above, students should refer briefly to Chapter 9 Section 7.

The terms of the long-term borrowing of Chee Dairy are that if the company is acquired by another company, the lenders will have the option to demand the immediate repayment of their loans. If this happens, GLDC will have to find money to repay the loans.

The long term loans are RMB 230 million at the end of 2011. This is RMB 15 million less than at the end of 2010, indicating that loans of RMB 15 million of loans may be repayable within the next 12 months (and are now included in current liabilities in the statement of financial position).

The board of GLDC should resolve the problem of the Chee Dairy loans BEFORE the takeover agreement is finalised, because it is essential to make whatever arrangements are necessary to deal with the debt.

The first step should be to identify the lenders to Chee Dairy. These may be banks. If the terms of lending to Chee Dairy appear reasonable, GLDC should ask the lenders whether they would be willing to allow the loans to continue after the takeover. GLDC is a listed company, and the lenders may be willing to accept the new ownership, especially if GLDC will provide its own guarantee for the indebtedness of Chee Dairy (as its new subsidiary company).

If the terms of the current loans are favourable to Chee Dairy, the lenders may have to be offered improved terms, but may be prepared to renew the loans.

The lenders have the right to demand immediate repayment of their loans, however. If this happens, the board of GLDC must be satisfied that finance is available to pay for this. The most appropriate measure would be to add the cost of the debt repayment to the total cost of the takeover, and this could make it much more difficult to obtain the finance that it needs.

Repayment of the loans of Chee Dairy would have an effect on the profitability of the company after acquisition, and GLDC should assess whether the change in interest cost may affect the price they are willing to offer for the Chee Dairy shares.

In summary, the aim of GLDCC should probably be to ask the lenders to continue with the loans. If they refuse, the takeover may not be financially justified and the necessary finance ay not be available. It is for this reason that this problem should be resolved before the takeover deal is finalised.

Corporate Finance: Case 2

GLDC has made an offer of RMB 420 million for 100 per cent of the equity shares of Chee Dairy, which has been accepted by all its shareholders. The board of GLDC considers that the offer price is a fair one, but is aware that the company must raise the finance to fund the acquisition.

Stanley Leung CEO of GLDC, and David Chan the CFO, are meeting soon to discuss how the acquisition should be financed. They have asked for your views and recommendations about the most suitable method or methods of financing.

Required

Identify the different ways on which GLDC might finance the acquisition of Chee Dairy.

(1) Explain with reasons which method of financing you would recommend.

(2) You should also explain, with reasons, which of the methods of financing you would not consider to be appropriate.

Corporate Finance: Case 2

The purpose of this exercise is to consider the alternative methods of financing an acquisition. In this case, it might be argued that GLDC has insufficient cash resources to pay for the acquisition in full in cash, although we do not know what cash resources will be required by the company in the future, for example to pay dividends, repay debts or invest further in the company's business after acquiring Chee Dairy.

In theory, there are several financing options: retained profits, new equity issue, a bond issue or even bank loans. A combination of these might be used, except that GLDC does not have the cash to finance the acquisition from its own resources.

LP reference

This exercise covers various aspects of the capital markets and LP references are Chapter 16 Section 3.3 and Chapter 18 Section 12.

Key learning points

Students should try to recognise different methods of financing the acquisition and eliminate those that are not possible or inappropriate. They should then consider the methods that would be possible and to reach a view about which method of financing would be best.

In this case, students must not suggest that the acquisition could be financed from existing cash resources. GLDC does not have enough cash (see the statement of financial position) to do this. Students may suggest however that cash resources may be improved by reducing working capital, but measures to reduce inventory or receivables will not be sufficient to raise the amount of cash required for a takeover.

Another possibility is to offer the shareholders in the target company new shares in GLDC for their shares in Chee Dairy. A **share exchange** may be an attractive proposition for shareholders in Chee Dairy who want to retain an investment in the industry, and who see strong growth prospects following the acquisition by GLDC. They may expect the GLDC share price to rise in the future, and they would benefit from this. However, shareholders in Chee Dairy may want to be paid in cash, and they may be suspicious of GLDC shares, since these have fallen in price by a large amount in the past year.

If the shareholders of Chee Dairy are not prepared to accept a share exchange offer, GLDC may consider a new share issue to raise the capital required. The current value of GLDC equity is HKD 38 × 50 million = HKD 1,900 million (= RMB 1,558 million). An acquisition valued at about RMB 420 million would be fairly large relative to the current value of GLDC. The share price has been falling, and this is not a good time to issue new shares, but it may be possible to persuade Hong Kong investors that the acquisition of Chee Dairy would add value, and should be supported.

Yet another possibility would be to finance the acquisition by means of a **bond issue**, but it is questionable whether the bond market would be accessible to GLDC. It is also questionable whether bond investors (and current GLDC shareholders) would agree to such a big increase in the gearing ratio of GLDC.

Another possibility would be to obtain money in the form of **one or more bank loans**, but the loan or loans would have to be negotiated with banks and the banks may want to impose demanding conditions. The term of any bank loan may be insufficiently long to give GLDC time to make a sufficient return from its investment in Chee Dairy to repay the loans at maturity.

Students may therefore suggest a combination of two or more financing methods, for example an acquisition financed partly by a new share issue or a part-share exchange and partly financed by new bank loans.

There are several ways in which GLDC might try to raise the finance that it needs.

Existing cash resources

GLDC does not have sufficient cash resources to pay for the takeover with its own existing cash. Efforts to reduce working capital would improve cash flows, but this would still be insufficient – and not sufficiently immediate – to meet the cash requirements for a takeover bid.

Share exchange

GLDC could offer shareholders in Chee Dairy new shares in GLDC in exchange for their shares in Chee Dairy. If the valuation of Chee Dairy's equity is RMB 420 million, the shares would be acquired at a lower P/E ratio multiple (possibly about 13) than the current P/E ratio of GLDC's shares (about 15.27). This method of financing would therefore not dilute earnings.

Shareholders in Chee Dairy may be attracted by the opportunity to hold an investment in GLDC, particularly if they believe that the acquisition will result in strong profits and dividend growth for GLDC.

A share exchange offer should be accompanied by a cash alternative as the purchase consideration. A part-cash, part-share exchange offer could be considered.

A share exchange offer would also be a realistic and attractive method of financing the acquisition, but only if a sufficient number of shareholders in Chee Dairy are attracted by this form of consideration.

New equity issue

GLDC might consider issuing new shares to raise cash to finance the acquisition. The amount of finance required is quite large relative to the current total value of GLDC's equity, and a rights issue may therefore be appropriate.

However, this method of financing the acquisition may be less attractive than a share exchange, because a new share issue would involve high share issue costs, and GLDC would have to persuade equity investors on HKEx to support the takeover bid. This is achievable.

A new share issue would almost certainly be essential to finance all or part of a takeover if the shareholders in Chee Dairy are not interested in a share exchange deal.

New bond issue

GLDC could possibly raise the required capital by issuing bonds. However GLDC already has a large amount of bank loans, and financing an acquisition by borrowing more may create an unacceptable level of credit risk for both bond investors as well as the shareholders in GLDC. GLDC has borrowed through bank loans, not bond issues, and it is doubtful whether it could succeed in issuing bonds for the first time to finance this takeover.

Bonds are unlikely to be a satisfactory method of financing this acquisition.

Bank loans

GLDC may be able to obtain one or more bank loans to raise cash to finance the acquisition. However, it already has a large amount of bank loans, and banks are unlikely to offer any further loan finance without some additional equity finance being raised by the company.

Recommendation

The recommendation (although you may disagree) is that the acquisition should be financed either:

(1) By a share exchange agreement with the shareholders of Chee dairy, or

(2) If the Chee Dairy shareholders do not agree to a share exchange, by a new share issue (rights issue) on HKEx.

It may be possible to raise some additional bank loans to part-finance the takeover.