

## Case Questions: Clarkson Lumber Company

1. Use the income statements for 1993, 1994, 1995, and 1996Q1 given in Exhibit 1 to construct common-size income statements, i.e., express all income statement items as a percentage of net sales in that fiscal period. Similarly, use the balance sheets given in Exhibit 2 to construct common-size balance sheets, i.e., express all balance sheet items as a percentage of net sales in the corresponding fiscal period. For the three year period 1993-1995, calculate the average percentages for each item in the income statement and the balance sheet.
2. Why has Clarkson Lumber borrowed increasing amounts in the past few years despite its consistent profitability? In particular, what has been driving the Clarkson Lumber Company's Cash Burn during 1993-1995 and therefore its urgent need for funds as of early 1996?

**Hint:** To address the above question, you need to summarize what has happened to the financial position of the company during the past several years, and analyze the company's historical financial performance, based on conducting the following analysis:

- a) First, construct statements of cash flows for 1994 and 1995, respectively. Then, use these two statements of cash flows to draw up a condensed statement of cash flows for the period December 31, 1993 through December 31, 1995.
  - i. The section on "Cash Flows from Financing Activities" should have the following items: Proceeds from bank loan (see changes in Notes payable, bank), Buy-out of partner's (Mr. Holtz) equity interest, Proceeds from buy-out financing, Payment of long-term debt (term loan), and Payment of buy-out debt.
  - ii. Note that there is an absence of information on depreciation expenses in the income statements given in Exhibit 1. Therefore, use "increase in net property, plant, and equipment" rather than "purchase of property, plant, and equipment" in the section on "Cash Flows from Investing Activities." This also results in the omission of depreciation expense in the section on "Cash Flows from Operating Activities." These two adjustments are off-setting.
  - iii. In the section on "Cash Flows from Operating Activities", you can combine the "increase in notes payable, trade" with the "increase in accounts payable."

- b) Use the above condensed statement of cash flows to explain what has been responsible for the Clarkson Lumber Company's cash burn and therefore, its urgent need for funds.
3. Analyze the relation between Clarkson Lumber's historical sales growth and the growth in its net working capital and fixed assets. To understand the cash flow impact of the efficiency of its net working capital management, operating and customer relations policies, analyze the company's conversion period ratios (**Hint:** See Chapter 6.6 in Leach and Melicher).
- i. What is the main determinant of the change in accounts receivable and inventories since 1993?
  - ii. In each of the years 1993, 1994, and 1995, what was the company's collection period (sale-to-cash conversion period)? To calculate these collection periods, use end-of-year level of the receivables (rather than the average level of the receivables over the year). What was the ratio of end-of-year receivables to sales in each year? Explain if there is an improvement or a deterioration over time. What would have been the level of receivables at the end of 1995 if the ratio of receivables to sales had been at the same level as at the end of 1993?
  - iii. In each of the years 1993, 1994, and 1995, what was Clarkson Lumber's inventory turnover? Calculate inventory turnover based on the average level of inventory during each year. Also calculate the three-year average of the inventory turnover, which will be useful later in your construction of projected financial statements below. What was the inventory-to-sale conversion period (days in inventory) in each year?
  - iv. In each of the years 1993, 1994, and 1995, what was Clarkson Lumber's ratio of net property, plant, and equipment (end-of-year) to net sales? What does this ratio tell you about the relation between sales growth and changes in the fixed assets of the firm?
  - v. Given your answers to ii) and iii) above, what was the length Clarkson Lumber's operating cycle during 1993, 1994, and 1995?
4. Evaluate Clarkson Lumber's financial liquidity and leverage by calculating the following leverage, liquidity, and conversion period ratios during 1993, 1994, and 1995: total liabilities to total assets, current ratio, the purchase-to-payment conversion period (use the formula given in Chapter 6.6 in

Leach and Melicher), days payables, and cash conversion cycle.<sup>1</sup> Estimate days payable in a given year as follows:

$$\text{Days payables} = \frac{\text{Accounts Payable} + \text{Notes Payable, trade}}{\left(\frac{\text{Purchases in the year}}{365}\right)}$$

Did the company's financial condition improve or deteriorate over the last three years?

5. Evaluate Clarkson Lumber's historical profitability by calculating the following profitability ratios in 1993, 1994, and 1995: Gross profit margin, Operating profit margin (EBIT margin), Net profit margin, and NOPAT (net operating profit after taxes) margin (where NOPAT is equal to EBIT minus Provision for taxes).<sup>2</sup>

Please also calculate the following return ratios for the years 1993, 1994, and 1995: Operating ROA (basic earning power ratio), ROA, ROE, ROIC (return on invested capital which is equal to NOPAT divided by Total Capital, where Total Capital is defined as the sum of total loans and net worth (total shareholders' equity)). When calculating these return ratios, you can use end-of-year values in the denominators (rather than average values as in Chapter 5 of Leach and Melicher).

How does Clarkson Lumber's three-year average ROIC compare to the firm's average interest rate on its debt? Given your analysis above, do you think Clarkson Lumber has generated and retained sufficient earnings from its operations to finance its expansion in the last three years?

6. How attractive is it for Clarkson Lumber Company to take the trade discounts offered by suppliers?

**Hint:** To hold his bank borrowing within the \$400,000 ceiling imposed by the Suburban National Bank, Clarkson Lumber has heavily relied on trade credit (accounts payable and notes payable, trade) as a source of funds in the recent past. This means that the company has not been able to take advantage of the usual 2% discount offered by suppliers for payments made within 10 days of the

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<sup>1</sup> Note that when calculating "days payables" for 1995, you need to combine "notes payable, trade" with "accounts payable" in the above formula.

<sup>2</sup> When calculating provision for taxes here, use the firm's EBIT (operating income) as the taxable income and use the tax schedule information given in footnote c to Exhibit 1 in the case.

invoice date. Thus, by stretching his company's trade credit, Mr. Clarkson may have been paying a high cost for the funds acquired from suppliers by forgoing available discounts.

If Mr. Clarkson is offered a discount of 2% for a payment made in 10 days and does not in fact pay until, say, 50 days (check your answer from question 4 above for the company's precise days payables period in 1995), what implicit interest rate is he paying by forgoing his discount?

7. Assuming that there is no change in current financial policies (leverage), no external equity financing, no change in the ratio of assets to total assets (i.e., no change in asset turnover) in the immediate future, and an ROE going forward assumed to be at the average of 1994 and 1995 levels, and dividend (retention) policy maintained as currently, calculate Clarkson Lumber Company's long-run sustainable growth rate.
8. Do you agree with Mr. Clarkson's estimate of the company's loan requirements? Will a maximum line of bank credit of \$750,000 fully meet Mr. Clarkson's needs over the next year (1996) or so? How much additional financing will Mr. Clarkson need to finance the expected expansion in sales to \$5.5 million in 1996 and to take all trade discounts?

**Hint:** Answer the above question under the following scenario:

**Scenario:** Assume that, with the new bank credit, Mr. Clarkson will reduce his payables period to 10 days in order to take advantage of the cost savings implicit in the 2% purchase discount.

Under this scenario, **construct a projected income statement for 1996 and a projected balance sheet for the year ending December 31, 1996** consistent with the income statement. Use the following assumptions in your projections:

- a) The sales volume for 1996 will be \$5.5 million, as Mr. Clarkson anticipates.
- b) Under the scenario above, all purchase discounts will be taken for the period April 1 to December 31, 1996.
- c) For many projected items (except the ones given below) in the pro-forma income statement and the pro-forma balance sheet, the historical relations that prevailed in 1993-1995 will continue in 1996. This means that for the projections of these items, you can use the percentage-of-sales forecasting method you learned in class (see also Chapter 9.5 of Leach and Melicher). Use the

three-year (1993-1995) averages of the percentages that you calculated in question 1 above when you apply the percentage-of-sales forecasting method to forecast certain items.

- d) Forecast the following items to reflect the effect of the firm's purchase policy from suppliers under the above scenario.

To forecast the inventory at the end of 1996, use the following relationship:

$$\frac{\text{Cost of Goods Sold in 1996}}{(\text{Beginning Inventory} + \text{Ending Inventory})/2} = \text{Inventory turnover}$$

Here, first forecast cost of goods sold in 1996 using the percentage of sales method. The beginning inventory level in 1996 is \$587,000 (see Exhibit 2). For the inventory turnover, use the average inventory turnover over the last three years you calculated in Question 3 above. Thus, the ending inventory for 1996 can be estimated as<sup>3</sup>

$$\text{Ending Inventory} = 2 \times \left( \frac{\text{Cost of Goods Sold in 1996}}{\text{Inventory Turnover}} \right) - \text{Beginning Inventory}$$

To estimate the company's cost savings from purchase discounts, you first need to estimate the company's purchases for 1996 using the following relationship:

$$\text{Purchases for 1996} = \text{Cost of Goods Sold in 1996} + \text{Increase in Inventory}$$

Then, the amount of purchase discounts between April 1, 1996 and December 31, 1996 is given by

$$\text{Purchase discounts} = 2\% \times (\text{Purchases for 1996} - \text{Purchases in 1996Q1})$$

The amount of purchase discounts must be added to the projected operating income for 1996 (without purchase discounts) to calculate the projected operating income for 1996 (with purchase discounts), i.e., the firm's projected earnings before interest and taxes (EBIT) for 1996.

The projected interest expense for 1996 must be calculated on the average level of the bank loan throughout the year and the balance of the term loan (the current portion of which is \$20,000, and the long-term portion is \$100,000 at the end of 1995). Note that the in the first quarter of 1996, the bank debt is at its limit of \$400,000. In the remaining three quarters, the bank debt will be

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<sup>3</sup> Use this ending inventory estimate also in the projected balance sheet at the end of 1996.

equal to the firm's additional financing requirement raised from the new bank (the old bank debt will be replaced with the new bank debt).

To project the income tax provision for 1996, use the tax schedule information given in footnote c to Exhibit 1.

The right hand side of the projected balance sheet on December 31, 1996 should contain the following items: Notes payable, bank (plug) will be equal to the firm's additional financing requirement. The other items are Accounts payable, Accrued expenses, Term loan (current portion), Term loan (long-term portion), and Net Worth.

This means that the notes payable to the existing bank, notes payable to Mr. Holtz, and notes payable (trade) to suppliers will be completely paid out after the bank arranges its new line of credit from the new bank. Further, assume that Clarkson Lumber will also pay \$20,000 of the term loan due in 1996, i.e., at the end of 1996, term loan (current) will be \$20,000 and term loan (long-term) will be \$80,000.

Assume that Clarkson Lumber will pay no dividends in 1996. Thus, compared to the net worth at the end of 1995, the net worth at the end of 1996 will increase by the amount of the projected net income for 1996.

Importantly, the projected Accounts payable at the end of 1996 must also reflect the firm's purchase policy under the above two scenarios:

$$\text{Accounts payable at the end of 1996} = \text{Days payable} \times \left( \frac{\text{Purchases for 1996}}{365} \right)$$

Note that in the first (main) scenario above, days payable will be 10 when the firm takes advantage of its purchase discounts.

9. If you were in the position of the banker, Mr. Dodge, would you approve Mr. Clarkson's loan request, and, if so, what conditions would you put on the loan? **Hint:** A qualitative answer based on your answers to the previous questions, would be fine for this question.