

**11.437 Financing Economic Development Fall 2016
Business Financial Analysis Worksheet**

Pine Tree Lumber (“PTL”) is a small family owned lumber business with almost 10,000 acres of timber holdings and logging and mill facilities to cut and dry raw timber to sell as finished board lumber. The financial statements for PTL are shown in Figures 1 and 2. Figure 1 presents the firm’s balance sheet for December 31, 2011 and 2012. Figure 2 is the profit and loss statement (also referred to as an income statement) for the 12 months ending December 31, 2012.

Figure 1. Pine Tree Lumber Balance Sheet, December 31, 2011 and 2012

	12/31/2011	12/31/2012
Assets		
Current Assets		
Cash	104,000	115,000
Accounts Receivable	117,000	129,000
Inventory	209,000	216,000
Other current assets	9,000	11,000
Total Current Assets	439,000	471,000
Fixed Assets		
Land, Buildings & Equipment	572,000	579,000
Less accumulated depreciation	-395,000	-428,000
Land, buildings, equipment , net of depreciation	177,000	151,000
Timber and timber lands	360,000	360,000
Other	19,000	19,000
Total Fixed Assets	556,000	530,000
Total Assets	995,000	1,001,000
Liabilities and Shareholder's Equity		
Current Liabilities		
Accounts Payable	196,000	180,000
Accrued Income Taxes	0	3,000
Total current liabilities	196,000	183,000
Long-term liabilities		
Deferred Income Taxes	47,000	49,000
Shareholder’s Equity		
Common Stock	250,000	250,000
Accumulated retained earnings	502,000	519,000
Total Shareholders’ equity	752,000	769,000
Total Liabilities and Shareholders' Equity	995,000	1,001,000

Figure 2. Pine Tree Lumber Profit and Loss Statement, 12 months ending 12/31/2012

Net sales	2,669,484
Cost of goods sold	(2,520,131)
Gross Profit	149,353
Selling, general and admin. expense	(126,129)
Profit before taxes	23,224
Income taxes	(6,224)
Net profit	17,000

PTL is seeking a loan to purchase \$100,000 in new equipment that will allow it to produce wood chips in addition to board lumber to reduce its waste products and generate additional revenue from its wood lot resource. This worksheet analyzes PTL's financial position from a lender's perspective to determine if the company is a good credit risk and is likely to be able to repay a loan. The analysis also helps to size and structure an appropriate loan, if you conclude that PTL represents a good credit risk.

Liquidity Analysis

Our first concern as a lender is PTL's liquidity position. Does it have sufficient cash and short-term assets to cover short term liabilities and be solvent over the near term? Does it manage its short term assets and liabilities in a sound way to avoid risks of not meeting its short-term obligations and running out of cash? To aid in answering these questions, calculate the following figures and ratios:

1. Net working capital amount _____
2. Current ratio _____
3. Quick ratio _____
4. Days receivable _____
5. Inventory turnover _____

Question 1. What do these ratios indicate about PTL's ability to meet its short term obligations (current liabilities)? How large a cushion does PTL have? Does a large investment in inventory increase the risk of not meeting short term liabilities?

Question 2. How well is PTL managing its working capital? Do the days receivable and/or inventory turnover indicate problems with its collections policies and systems for inventory managements?

Profitability and Performance Analysis

Our second concern is whether PTL is profitable and generates positive cash flow. We also want to know if the profit rates and levels generate a good return and provide a cushion for unexpected changes in costs or revenue. The next set of ratios address these questions: Is PTL profitable on an accrual basis? Does it have sufficient gross and net profit margins to absorb unexpected cost increases or price fluctuations? Is it earning a reasonable return for its owners and for the overall level of capital investments? To help answer these questions, calculate the following ratios:

1. Net profit amount _____
2. Gross margin percentage _____
3. Net profit on sales percentage _____
4. Return on assets _____
5. Return on equity _____

Question 1. Is PTL profitable? How large are its profit and return margins and what do they suggest about PTL's capacity to absorb shocks? Its potential to attract new equity investment from its owners (i.e, equity investors)?

Question 2. Is PTL generating positive cash flow from operations? Is cash flow positive after adjusting for investment activity? (PTL has no financing activities in 2012 so there is no need to calculate this part of the cash flow statement.)

To answer Question 2, use the cash flow statement format below to calculate PTL's cash flow for 12 months ending 12/31/2012. **Note that the depreciation expense is not itemized on the Profit and Loss Statement. Another way to obtain the 2012 depreciation expense is from the change in accumulated depreciation on the balance sheet—the amount by which accumulated depreciation increases from one year-end to the next equals the depreciation expense for the year period between the two balance sheets.**

Cash Flow Statement

Net income after taxes	
Depreciation (add back)	
<i>Adjustments for changes in BS items other than cash</i>	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
<i>Current Assets (increases are negative as they are a use of cash)</i>	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
Accounts receivable	
Inventory	
Other current assets	
<i>Current Liabilities (increases are positive as they are a source of cash)</i>	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
Accounts Payable	
Accrued Income Taxes	
Deferred Income Tax	
Net Cash Flow from operations	
Land, Blds, Equip, gross	
Timber and timber lands	
Other	
Net Cash Flow After Investing Activities	

A business' cash flow provides the basis for repaying debt. Consequently, we start with cash flow to determine a firm's ability to take on and repay debt. Use PTL's net cash flow after investing activities to calculate the loan amount that it can repay with this cash flow. Use the following loan terms to calculate the supportable loan amount: Debt service coverage ratio = 1.30, interest rate = 6%, a 5-year amortization period with monthly payments. Since loan payments are monthly, be sure to calculate the loan amount based on monthly cash flow, interest rates and amortization period.

Net Cash Flow After Investing Activities Before New Equipment Investment	
Divide by DSCR to get cash flow available for debt service (CFDS)	
Calculate loan amount (present value of CFDS per loan terms)	

1. Is this loan amount sufficient to cover the \$100,000 cost of the new equipment? _____
2. How much cash does PTL need to fill the gap between the equipment cost and the loan amount?
 _____ Does PTL have enough cash at 12/31/2012 to cover this gap? _____
3. One option for PTL to reduce its required cash investment is to request a loan with a longer repayment period. What loan amount does the CFDS above support if the amortization period is increased to 10 years and the loan interest rate increases to 7%? _____

What is the amount of cash PTL needs with this new loan amount? _____

Financial Position and Collateral

Although cash flow is the most important consideration for loan repayment, lenders also look at a company's financial position and collateral to assess risk and ensure that there is a second source of repayment if the firm is unable to repay the loan from cash flow. The firm's existing debt obligations, debt to equity ratio and the loan to value ratio for collateral pledged to repay the loan are considerations in this analysis. PTL does not have any existing loans or debt obligations. It's only liabilities beyond current liabilities are a deferred tax liability of \$49,000. Since taxes have to be paid, this is an important financial obligation and should be considered like outstanding debt.

Treating deferred income taxes as debt, what is PTL's debt to equity ratio: _____.

1. What does this ratio tell us about PTL's financial risk from a lender's perspective?
2. For PTL, what are the benefits of not using debt to finance its activities?
3. Are there any disadvantages for the firm of not using debt?

Collateral and Loan to Value Ratio. PTL is committed to not using its timber holdings as collateral for any loan but is willing to pledge its existing land, buildings and equipment to secure the new loan along with the new equipment that it acquires. To calculate a loan to value ratio of this collateral, we need to estimate the sale value (i.e., what the lender might receive selling these assets at an auction) for both the existing buildings & equipment and new equipment. PTL's balance sheet has a book value for this collateral, which represents the original cost less accumulated depreciation. However, book value is not a good indicator of actual sale value and since these assets show a lot of depreciation, they are probably fairly old. They also may sell at a discount to market value at an auction sale. For a first cut analysis before commissioning an appraisal, a lender might apply a steep discount rate to the book value to estimate a potential sale value; in this case, assume the sale value of existing land, buildings and equipment is 33% of its book value on 12/31/12. The new equipment is initially worth \$100,000—the amount PTL is paying but would sell for less than that at an auction, so assume that its sale value is 75% of its cost. Calculate the loan to value ratio for the PTL loan amount with a ten year amortization period, using these estimated collateral sale values:

Sale Value of Existing Land Buildings, & Equipment @ .33	
Sale of New Equipment @ .75	
Total Collateral Value	
Loan to Value Ratio	

With a ten-year loan, if PTL defaults on its loan repayment and the collateral has to be sold after several years, the lender faces the risk that the collateral value may be much lower at this future date. To estimate this risk, calculate a new LTV for the end of year 5 of the loan when half of the loan payments have been made. This requires estimating the value of the collateral in five years and determining the loan principal outstanding after five years.

For the collateral sale value, assume that the sale value of the existing Land Buildings, & Equipment drops to 20% of the 12/31/2012 book value and the value of the new equipment (acquired with the loan) declines to 25% of its original cost.

The outstanding principal of a loan is equal to the present value of the remaining loan payments discounted at the loan's interest rate. At the end of year five, PTL will have made half of its monthly payments on the ten year loan and have another 60 monthly payments remaining. Thus, the outstanding loan principal is determined by calculating the present value of the monthly loan payment at 7% over 60 months. Use the following table to calculate the LTV at the end of year five.

Year Five Loan to Value Ratio

Sale Value of Existing Land Buildings, & Equipment @ .20	
Sale of New Equipment @ .25	
Total Collateral Value	
Loan principal (pv of 60 monthly loan payments at 7%)	
Loan to Value Ratio	

Based on these loan to value ratios, is the collateral provided by the prior fixed assets and new equipment sufficient to provide for repayment of the loan?

Final loan recommendation

Based on the ratio analysis, firm cash flow and collateral, would you recommend a loan for PTL to acquire the new equipment? Why or why not?

If you recommend a loan, what principal amount, amortization period and term do you propose?

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