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## FINANCIAL ANALYSIS

### A. Property Analysis

Assessing a borrower’s ability to repay the loan is critical to income property lending. Because cash flow from the property is generally the primary source of repayment of the loan, the lender will generally use debt service coverage and cash flow analyses to make this assessment.

#### Debt Service Coverage Ratio

The debt service coverage ratio (DSCR) is a reliable tool for determining whether income from the property is sufficient to service the loan. DSCR is net operating income (NOI) divided by total debt service.

NOI is the total income of the property net of operating expenses. For example, assume we have a rental property being sold for \$9 million with a \$6.3 million loan request. The property generates the following rental income:

Gross Scheduled Rent	\$1,000,000
Less 5% vacancy & collection loss	\$50,000
<b>Effective gross income:</b>	<b>\$950,000</b>
<i>Less operating expenses:</i>	
Real estate taxes	63,000
Insurance	18,000
Repairs & maintenance	45,000
Utilities	Net
Management	50,000
Replacement reserves	80,000
Total operating expenses:	\$256,000
<b>Net operating income</b>	<b>\$694,000</b>

Lenders should first verify that the stated income and expense data are accurate, supported and reasonable. When actual vacancy numbers are atypically low, lenders should factor in higher “market” vacancy and collection rates. Similarly, even if the owner manages the property, the lender should include typical property management fees in the analysis. This is because the institution will have to pay for property management and vacancy rates could increase if the lender had to foreclose on the property.

Total debt service includes the principal and interest payments of all outstanding or proposed loans on the property. To calculate the debt service coverage ratio, divide the NOI by the total mortgage payment(s). For the sake of simplicity, let us assume that there is only one mortgage on the property:

\$6,300,000 (70% LTV) first mortgage  
 7.5% Interest, 30 years amortized  
 Annual Payment (Debt Service) = \$528,606  
 NOI: \$694,000  
 DSCR = NOI/Total Debt Service = 1.31

A 1.31 DSCR is considered good and acceptable to most lenders, provided the borrower and property meet the lender's other underwriting requirements. These include credit history, net worth, business experience, and property appraisal requirements, and verification that the income and expenses for the property are stabilized. In a declining economy, vacancy and collections could easily go from a typical 3 percent to 5 percent to 10 percent or higher.

Breakeven analysis:

The breakeven ratio is operating expenses plus debt service (before vacancy) divided by gross income. A low breakeven ratio means a cushion and lower risk for the lender and a greater likelihood the borrower will perform as agreed on the loan. For the above project, the breakeven ratio is calculated as:

$$\$256,000 + \$528,606 / \$1,000,000 = \$784,606 / \$1,000,000 = 78.46\%$$

That means that vacancy can increase from 5 percent to 22 percent before the project experiences a loss. Alternatively, expenses could increase by \$50,000 and vacancy could increase to 15 percent before the project would experience a loss.

Loan size:

The borrower typically seeks as large a loan as possible, but the higher payment will decrease the DSCR. If the net operating income and expenses remain the same, and the loan size and loan payments increase, then the DSCR will decrease. For example, if the borrower requested an 85 percent LTV loan of \$7,650,000, the payment would be \$641,879 and the DSCR would be 1.08. This is less than the typically required 1.2, and would place the borrower at greater risk of default should income drop or expenses increase.

Savings associations generally require a stabilized DSCR of 1.20 or higher, depending on the type of property and the stability of income, but may accept a stabilized DSCR as low as 1.10 for properties with long-term contracts, such as a government building or post offices, where vacancy is not a risk factor.

For example, a lender may establish a minimum DSCR at origination of 1.2 in its underwriting standards and allow DSCR as low as 1.1 when other credit strengths mitigate the higher risks presented by the low DSCR. Often, such exceptions must go to the full board or a designated committee for approval.

### Stress testing

Raising interest rates or reducing NOI will also lower the DSCR. If the loan in our 85 percent LTV example were an adjustable rate loan that started out at 6.5 percent then adjusted to 9.5 percent after two years, the initial payment would be \$580,238 and the DSCR would be 1.20. After two years, however, the payment would increase to \$771,904, and the DSCR would drop to 90 percent, indicating a negative cash flow.

In our example, if NOI drops by 10 percent down to \$624,600, the DSCR will drop to 1.19 in the first, 70 percent LTV example. Lenders should establish a minimum DSCR at origination based on the contractual rate. If the rate increases, the minimum acceptable DSCR should be prudent under the planned higher rate scenario. Moreover, lenders should also consider setting minimum DSCR under stressed conditions.

Should a lender allow a DSCR below 1.10 on a property without stable income and expenses, a drop in net income could result in a negative cash flow. That would require the borrower to make payments from other sources to keep the project afloat. This might be acceptable from an underwriting standpoint under stressed scenarios if the borrower has sufficient net worth, income, and cash flows to support the loan. However, a negative DSCR is unacceptable at origination. Should the lender have to foreclose on and operate the property, it will experience the same negative cash flows, once it factors in the opportunity costs from the lost interest income. Therefore, lenders should avoid making negative cash flow income property loans unless they have additional collateral or a reliable guarantee from a financially responsible principal or third party.

### Cash flow analysis

DSCR analysis focuses on income from the property to repay the loan. However, income property borrowers may generate other income from businesses that do not directly generate real estate income. For example, office buildings, shopping centers, apartment complexes, and government buildings generate income directly from the rental or leasing of the income properties. Other businesses, such as auto dealerships, restaurants, convenience store/gas stations, manufacturers, may be leased or they may be owned directly by the business and financed with mortgages. In such cases, a lender must evaluate the cash flows from the business to determine if the business has sufficient cash flow to repay a proposed loan. The following credit analysis discussion focuses on other ratios that are important in evaluating credit quality.

## B. Financial Statement Ratio Analysis

Financial statement ratio analysis helps lenders analyze the financial health of their loan applicants, when the borrower is a corporation or other business entity, and when business income in addition to property income is used to repay the loan.

The following ratios, derived from a company's financial statements, are widely used for analysis of various aspects related to financial health of a business. Financial statement ratios are best used when comparing the company's ratios in prior years and with companies in similar industries.

Liquidity ratios:

Liquidity ratios measure the ability to turn assets into cash and meet current obligations.

**Current ratio = current assets / current liabilities**

Current assets are cash and cash equivalents, accounts receivable, inventory, and prepaid items. Current liabilities are short-term notes and parts of long term notes due within a year, accounts payable, and accrued expenses. The ratio shows a company's ability to turn assets into cash and pay its obligations with a margin of safety. A current ratio of 2 to 1 is considered acceptable.

**Quick (acid test) ratio = cash and equivalents / current liabilities**

The quick ratio shows a company's ability to quickly pay its obligations from cash and cash equivalents. By excluding inventories, it concentrates on liquid assets, so if sales were to fall off, the company would still be able to pay its bills. Typically a ratio of 1 to 1 is considered acceptable and a ratio of less than 1 means the company does not have sufficient cash and cash equivalent assets to repay its current obligations without selling inventory.

Profitability ratios:**Net income / gross revenues**

This ratio measures how profitable an enterprise is and should be measured against industry averages.

Risk ratios:**Financial Risk = percent change in net income / percent change in operating income**

The higher the ratio is, the greater the volatility of income and risk to the business.

**Operating leverage = percent change in operating income / percent change in sales****Business risk = standard deviation of operating income / mean operating income**

The smaller the variance in income, the lower the business risk will be. For example, if operating income were \$100,000, and the standard deviation around the mean over a five-year period was \$12,000; the business risk would be a very low 12 percent. However, if the income fluctuates widely, and the standard deviation was \$62,000, the business risk would be a very high 62 percent.

Debt Utilization Ratios:**Leverage ratio = total liabilities / equity**

Indicates the extent the business relies on debt to finance its operations. The higher the ratio is, the greater the risk. Typically banks prefer ratios of 100 percent or less, but that will depend on the business. Companies that require a large investment in capital equipment, such as a real estate or heavy

machinery, will typically be more highly leveraged than other businesses. In such cases, where asset values and property income are stable, a ratio of up to 200 percent would be desirable and ratios up to 300 percent are usually acceptable.

**Total debt to assets = total debt / total assets**

This ratio is similar to the leverage ratio but a desirable ratio would be 50 percent or less, meaning that 50 percent of the company's assets are financed by equity and 50 percent are financed by debt. Ratios of 67 percent and 75 percent would equate to leverage ratios of 200 percent and 300 percent, respectively, as discussed above.

Income Analysis

The following ratios are used to measure profitability:

**Gross Margin Ratio = Gross Profit / Net Sales = (Net Sales - Cost of Goods Sold) / Net Sales**

This ratio measures the percentage of sales dollars remaining (after obtaining or manufacturing the goods sold) available to pay the overhead expenses of the company.

**Net Profit Margin Ratio = Net Profit Before Tax / Net Sales**

This ratio is the percentage of sales dollars remaining after subtracting the cost of goods sold and all expenses, except income taxes. It is calculated before income tax because tax rates and tax liabilities vary from company to company for a wide variety of reasons making comparisons after taxes much more difficult.

Management Ratios:

Other important ratios, often referred to as management ratios, are also derived from Balance Sheet and Statement of Income information.

**Inventory Turnover Ratio = Net Sales / Average Inventory at Cost**

This ratio shows how efficient management uses inventory. The more often a business can turn over inventory, the more profitable the business.

**Accounts Receivable Turnover (in days) = Accounts Receivable / Daily Credit Sales**

$$\text{Daily Credit Sales} = \text{Net Credit Sales Per Year} / 365 \text{ (Days)}$$

This ratio indicates how well accounts receivable are being collected. If a business's customers pay their receivables slowly, there may be potential credit losses and the company's liquidity could be impaired.

**Return on Assets = Net Profit Before Tax / Total Assets**

This measures how efficiently a company uses its assets in generating profits. The ratio will vary greatly between industries so it is most useful when it is compared with the ratios of firms in a similar business. A ratio of less than 1 percent is generally considered poor.

**Return on Investment (Equity) = Net Profit before Tax / Total Equity**

The Return on Investment (ROI) is the percentage return on a company's equity capital. This ratio is important because it shows how profitable the business is in relation to the funds invested. This ratio can easily be compared to other investment alternatives, such as bonds or stock in other companies. If a business' ROI is less than the return on an alternative, lower-risk, investment, there are inherent problems with the business, which should be a red flag to the lender.

