



Commercial Mortgage Math, Ratios, Worksheets & Analysis

Quest Funding Services does not expect our Regional Affiliates to be loan processors or underwriters, or to spend their time "shopping" loans. They are too valuable to us "on the street". However, we do expect affiliates to be competent at analyzing borrowers and properties/businesses. An "order-taker" mentality will not work in commercial funding. Unfortunately, it is our experience that there are relatively few qualified companies who actually know how to pre-qualify commercial borrowers or properties for funding. Similarly, commercial funding training programs tend to be either expensive, available only to employees of the largest firms or woefully inadequate in content and/or scope.

But banks, commercial property brokers or asset managers and your prospective clientele expect to work with an experienced originator, rather than one of the "refugees" who have flocked to commercial funding when their residential originating job vanished.

We have tried to provide the most comprehensive training possible, but we have not tried to "reinvent the wheel". Whether created by us, or not, the training materials we provide are state-of-the art and contain more than you need to assure that funding requests that you originate have a reasonable chance of approval. The information below, the worksheets, tutorials & guides available at Quest Academy and the Quest Affiliate section of questfundingservices.us, provides information worth thousands of dollars...information that you need to stand out from the crowd.

1. Balance Sheet

A balance sheet is a statement of the assets, liabilities, and equity of a business organization or person on a particular date. It is called a balance sheet because the components of the balance sheet must by definition be equal and therefore balance. Assets must equal liabilities plus equity. A spreadsheet template has been provided to be used when financial statements are required for loan submission.

2. Income Statement

The income statement, also known as a profit and lost statement (P&L) indicates how total revenue translates into net income. The purpose of the income statement is to show managers and investors whether the company made or lost money during the time period being reported. The typical income statement shows the total sources of revenue minus regular expenses, minus non-regular expenses to determine net income, or the "bottom line". An income statement template has been provided to be used when financial statements are required for loan submission.

3. Net Worth Calculator

The net worth of a business or a person is the total assets minus the total liabilities.

A net worth calculator is available if you need it, but calculating net worth is truly just a matter of deducting liabilities from assets. Caution should be used, however, in filtering out assets that are not verifiable, such as the value of stock in one's own company, or the value of fine art, etc.

4. Quick Qualifier

This software has many of the powerful and secret techniques utilized by most of the premier banks and lenders. The power of this template is its ease of use and time saving ability. This template should be utilized to determine a commercial properties value, maximum loan amount, and debt service coverage requirements. For a full explanation of all the components please see Quick Qualifier Explainer.

5. Operating Statement Builder (OpStatement Builder)

An operating statement is an income statement or profit and loss statement for a specific **income property or business**. **The OpStatement Builder can be used**

to build a operating statement when the figures supplied to you are not in a format that is appropriate for submission to an investor.

You will find that the power of this spreadsheet is its simplicity & ability to break down key underwriting ratios and figures. This spreadsheet template also can give you historical estimates, and Performa estimates of trends. For a more detailed explanation in how to use this critical tool please see Opstatement Builder.

6. Rate Sheet

The sample rate sheet gives the range and general terms for loans that would be considered "good" and eligible for "conventional" commercial loans. Accept that these generalizations could vary by +/- 15% & are much more lenient than hard money, alternative or mezzanine funding.

7. Underwriting Matrix

The underwriting matrix is only a general guide... It is important to remember that all underwriting guidelines are regionally dependent. Therefore this guideline should be updated according to property type and property characteristics **as well as for lender-specific preferences. All guidelines are just that: guides.**

(Math and Formulas)

8. **Loan To Value** = Requested Loan Amount / Value of Commercial Property

LTV = Req. Loan Amt. / Value

Example:

8. Loan to Value = Requested Loan Amount / Value of Commercial Property

LTV is an underwriting guideline based on property type, and loan risk. CLTV includes all liens on the property (i.e. first, second, and third mortgages). Typical LTV's will range from 50% - 80% and special cases may reach 90%.

9. Potential Gross Income = All available square footage at market rate.

$$\text{PGI} = \text{Total Sq. Ft. (or total units)} * \text{Market Rate}$$

Potential Gross Income is maximum potential revenue regardless of actual vacancies. Potential gross income is calculated as if commercial property had full occupancy at market rent/leasing rate.

10. Effective Gross Income = Potential Gross Income – Vacancies and Collection Losses

$$\text{EGI} = \text{PGI} - \text{Vacancy and Collection}$$

Example:

Lenders always insist on some sort of vacancy factor regardless of the actual vacancy rate in an area. This covers any potential vacancies and future collection losses. Vacancy factors are based on property type and subject to lenders underwriting guidelines.

11. Net Cash Flow = Effective Gross Income – Expenses, Reserves, and Fees

$$\text{NCF} = \text{EGI} - (\text{Exp.} + \text{Reserves} + \text{Fees})$$

Example:

Net Cash Flow equals effective gross income minus all reoccurring and periodic expenses. Expenses don't include mortgage payments. Note: we do not include mortgage loan payments in operating expenses. Please see operating statement.

12. Debt Service Coverage Ratio = Net Cash Flow / Total Debt Service

$$\text{DSCR} = \text{NCF} / \text{Total Debt Service}$$

Example:

Debt Service Coverage Ratio is the most important formula in commercial lending. This ratio is Property Income minus all expenses, reserves, and fees (excluding mortgage payments), divided by total annual mortgage payments. In other words, referring to the formula above, Net Cash Flow is 125% of annual mortgage payments, leaving a 25% cushion to service all debt. A DSCR that is less than one means negative cash flow. Lenders seldom accept negative cash

flow unless LTV is 60% or lower. Please note that when submitting a loan request Debt Service Coverage Ratio assumes a known rate and term for the requested loan. DSCR is an underwriting guideline based on property type.

13. Max Loan Amount (Method 1) = (Net Cash Flow / Capitalization Rate) * Max LTV

$$\text{Max Loan Amt.} = (\text{NCF} / \text{Cap. Rate}) * \text{Max LTV}$$

Example:

The second most important calculation in commercial underwriting is the calculation to determine the maximum loan the commercial property can support. Most commercial borrowers want maximum loan amount of lesser priority are rate and terms. LTV or DSCR controls the deal, but usually max dollars wins, not best rate and term.

14. Max Loan Amount (Method 2) = Unknown

Interest Rate = Lowest Available Interest Rate

Term = Longest Available Term

Payment = Maximum Annual Debt Service (Minimum DSCR / NCF)

This is a Plug-and-Chug calculation, solve for Unknown.

Example:

Step 1

Minimum DSCR / NCF = Maximum Debt Service (Annual Mortgage Payments)

Example: $\$70,000 / 1.25 = \$56,000$ (Maximum Annual Debt Service)

Step 2

Max Term = 20 Years

Minimum Interest Rate = 6.5% (Based on current Pricing Matrix)

Step 3

Interest Rate = 6.5%

Term = 20 Years

Payment = 56,000

Max Loan Amount = Unknown

With three known variables solve to unknown = \$625,916

Max Loan May still be constricted by LTV regardless of ability to carry debt service.

When interest rates are high DSCR will limit maximum loan amount. When interest rates are low LTV will limit max loan amount.

(Note: Your answers maybe vary slightly from above example due to monthly payment calculations versus annual debt service and amortization.)

15. Operating Expense Ratio = Total Operating Expenses / Effective Gross Income

Op. Exp. Ratio = TOE / EGI

Example: $38.5\% = \$40,100 / \$98,000$

Since DSCR and indirectly Net Cash Flow determine loan size the operating expense ratio is used to determine the accuracy of stated expenses. Typical operating expense ratios are: hotels 50%, mini warehouses 25%, assisted living and multifamily 75-80%. Consult your Underwriting Matrix for detailed operating ratios based on property type. Operating expense ratios are used more for multifamily lending due to disparities in different types of commercial leases such as full service leases vs. triple net leases.

16. Gross Rent Multiplier

The Gross Rent Multiplier (GRM) is another way to value and compare properties. Used mostly in the apartment industry, the GRM is much like the Capitalization Rate except the gross rental income rather than the net operating income (NOI) is used to determine the value of a property. The GRM is calculated by dividing the fair market value of the property by the monthly gross rental income.

Example:

If the sales price for a property is \$200,000 and the annual gross rental income for a property is \$25,000, the GRM is equal to 80 ($\$200,000 \div \$25,000$).

17. Internal Rate of Return

When an investment creates differing amounts of annual cash flow, a rate of return can be determined by calculating the Internal Rate of Return (IRR). The formula for computing the IRR is very complicated but essentially an IRR is the rate needed to convert (or discount) the future uneven cash flow to equal your initial investment or down payment.

Example:

Assume a cash flow of \$100 in the second year. Also, assume that in order to generate that \$100, you had to invest \$500. In this example, you have an outflow of \$500 the first year and an inflow of \$600 in the second year (\$100 earnings plus the \$500 return of your initial investment). To convert or discount the \$600 back to today's dollars to equal your initial investment of \$500, a discount rate of 20% is required. Thus, your IRR is 20%. In other words, IRR is the discount rate at which the "net" present value of all future cash flow is zero (discounted future cash flows = starting investment amount). The "net" meaning you subtract your initial investment.

1. **Reserves for Replacement** = % of Effective Gross Income

Traditionally replacement reserves range from 6% to 10% of effective gross income and are based on property types. Please consult your underwriting matrix for details. Typically in hotels and motels it includes FF&E's (furniture, fixtures, and equipment). Usually there are no reserves for replacements for multifamily property types as all reserves for replacements are utilized under repairs and maintenance.

2. **Property Class**

Class – Class is usually used in conjunction with an office property and refers to the quality of property. Class definition the following guidelines. Class A+: Landmark quality, high-rise building with prime central business district location. Class A: Generally 100,000 SF or larger (five or more floors), concrete and steel construction, 1980, business/support amenities, strong identifiable location/access. Class B: Renovated and in good locations. Newer are small in size, wood frame construction, and/or in non-prime location. Class C: Older, unrenovated of any size in fair condition.

3. **Cash on Cash Return**

Cash on Cash Return is probably the most important ratio needed when evaluating the long-term performance of a rental property. Cash on Cash Return is the property's annual net cash flow divided by the net investment, expressed as a percentage.

Example:

If the net cash flow from a property is \$40,000 and the cash invest in the property is \$200,000, the Cash on Cash return is calculated to be 20% ($\$40,000 / \$200,000$). The net investment in the property is the cost of the property minus the amount borrowed. One way to understand the ratio is to compare it to a return on a certificate of deposit. If the bank pays you an annual return of say 5%, the 5% is the Cash on Cash return on the deposit.

However, unless the property is owned free and clear, this is not a totally true comparison. The return you get is AFTER the mortgage and all other expenses have been paid. It can therefore fluctuate wildly. Whereas, if you put \$200,000 in the bank in a CD you can be certain that you will get the return you expected.

Please note that Cash on Cash return does not include property appreciation, which is non-cash flow item until the year of sale. Therefore, if you are evaluating a property on a long-term basis, you need to focus more on the annual cash flows it relates to your investment and focus less in property appreciation.

4. Capitalization Rate (Cap Rate)

Cap rate is nothing more than an investor's return on their money if they bought the property for all cash. The Cap Rate is a ratio that places a value on a property based on the net operating income (NOI) it generates which allows for a comparison of properties with different Fair Market Values (FMV). The Cap Rate is computed by taking the rental NOI and dividing it by the property's FMV. The higher the Cap Rate, the better the property is said to be performing. Note that the Cap Rate is not a computation of an investment return but rather a way of understanding how a property will generate NOI so it can be compared to other properties.

Cap Rate – Practical Use #1

You can use the Cap Rate to Value your property. Let's say that your property generates \$30,000 of annual net operating income. Your real estate agent tells you that the Capitalization Rate in your area are approximately 10%. That would mean that the approximate fair market value of your property is \$300,000 ($\$30,000 / .10$).

Cap Rate – Practical Use #2

Assume that you are comparing two properties. The first property has a projected NOI of \$20,000 and an asking price of \$500,000. The second property has an NOI of only \$10,000 with an asking price of \$110,000. Which one would the Cap Rate suggest is a better investment? The Cap Rate would suggest that the second property is a better investment since the Cap Rate is 9% ($\$10,000 / \$110,000$) versus 4% ($\$20,000 / \$500,000$).

Additional Note –

Extremely low cap rates on office and industrial condos and small free standing commercial building and house converted to commercial use along with a smaller multifamily apartment complexes are typical. Typically these are purchased by owner users, and not as investments. It is often difficult to finance small income

producing properties because the seldom cash flow greater than 60% loan to value. The purchases of office and industrial condos are usually financed by SBA.

5. **Net Worth to Loan Size** = Combined Net Worth of All Borrowers / Loan Amount

Example:

If you have a requested loan amount for \$800,000 and the borrowers net worth is \$500,000 you most likely will not be able to complete the transaction. Not a bankable loan.

Traditionally the borrowers net worth must at least over the requested loan amount, and depending on perceived lender risk maybe as high as 2 to 1.

6. **Construction Loan to Cost Ratio**

Loan to Cost = Construction Loan / (Land Costs + Hard Costs + Soft Costs + Contingency Reserve)

The construction loan to cost ratio is defined as the ratio of the construction loan to the total cost of a construction project. Lenders typically look for a large LTV vs. LTC in construction projects. Otherwise commercial property developers with small to medium cost overruns may just abandon the construction project. Normally total project costs should be 20% – 25% less than final property value upon completion.

7. **Management Fees** = % of Effective Gross Income

Management Fees are an underwriting guideline based on property type, please consult your underwriting matrix for details. Management fees may also vary based on geographic location of the property, as well as the size of the commercial property. They vary anywhere 3% - 7%.

8. **Yield Spread Premium = YSP**

There are no yield-spread premiums through traditional commercial lending institutions. Yield Spread Premiums may be available through non-depository lenders when funding non-bankable loans.

9. **Expense Growth Rate**

Expense Growth Rate is normally a regional inflation rate used by lenders to estimate the growth of commercial property expenses over time. It ranges from 2% - 5%.