



**@Value Software, LLC**

Software for the narrative appraiser

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# 1 Overview

The **@Value Discounted Cash Flow Analysis** allows for a comprehensive and graphic expression of an investment from initial purchase to future resale. This analysis tool can handle both simple and complex cash flows.

Features of the DCF include specific lease or income projections by tenant or unit type, specific expense projections and reimbursements, before and after debt service cash flow detail, and various investment measures, including the internal rate of return (IRR).

Additional information can be entered for mortgage debt, and rates of return calculated (Equity Dividends and Internal Rate of Return). If a specific price is known, rates of return can be measured against the price, rather than value.

Discounted Cash Flow Analysis									
Unit	Mar-2006	Mar-2007	Mar-2008	Mar-2009	Mar-2010	Mar-2011	Mar-2012	Reversion	
Income 1	220,000	231,000	242,550	254,678	267,411	280,782	294,821	309,562	
<b>Potential Gross Income:</b>									
	\$220,000	\$231,000	\$242,550	\$254,678	\$267,411	\$280,782	\$294,821	\$309,562	
<b>Vacancy &amp; Collection Loss:</b>									
	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	
<b>Other Income:</b>									
<b>Effective Gross Income (EGI):</b>	<b>\$209,000</b>	<b>\$219,450</b>	<b>\$230,423</b>	<b>\$241,944</b>	<b>\$254,041</b>	<b>\$266,743</b>	<b>\$280,080</b>	<b>\$294,084</b>	
<b>Expenses</b>									
Exp 1	60,000	63,000	66,150	69,458	72,930	76,577	80,406	84,426	
<b>Total Expenses:</b>									
	<b>\$60,000</b>	<b>\$63,000</b>	<b>\$66,150</b>	<b>\$69,458</b>	<b>\$72,930</b>	<b>\$76,577</b>	<b>\$80,406</b>	<b>\$84,426</b>	
<b>Expense Ratio:</b>									
	29%	29%	29%	29%	29%	29%	29%	29%	
<b>Reimbursable Expenses:</b>									
<b>Net Operating Income (NOI):</b>	<b>\$149,000</b>	<b>\$156,450</b>	<b>\$164,273</b>	<b>\$172,486</b>	<b>\$181,110</b>	<b>\$190,166</b>	<b>\$199,674</b>	<b>\$209,658</b>	
<b>Discount Rate @ 10.00%:</b>	0.90909	0.82645	0.75131	0.68301	0.62092	0.56447	0.51316		
<b>Present Value:</b>	\$135,455	\$129,298	\$123,420	\$117,810	\$112,455	\$107,344	\$102,464		
<b>Present Value of Cash Flows:</b>	\$828,246	Cash Flows Contribute: 45%						Resale Cap Rate	10.00%
<b>Present Value of Reversion:</b>	\$1,011,324	Reversion Contributes: 55%						Expenses	6.00%
<b>Market Value:</b>	<b>\$1,839,571</b>							Net Resale	<b>\$1,970,785</b>
<b>Rounded:</b>								Present Value	<b>\$1,011,324</b>

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For a breakdown of the DCF process, go to [The Six Steps](#).

[Click here to order on-line](#).

For support, go to [@Value Support](#).

To buy this software, [click here](#).

## 2 The Six Steps

The @Value DCF develops an estimate of value and/or analyzes a specific price by projecting income and expenses for a 5 to 10 year period, and a resale value. The net cash flows from annual operations and the net proceeds from resale are converted to an estimate of market value through a discount rate.

There are six basic steps to preparing a discounted cash flow analysis:

1. Enter the subject [property address and building size](#) and set the analysis date and length of the investment holding period.
2. Enter [Income](#) data for each unit, or group of similar units. Additionally, one may enter miscellaneous income, such as parking, laundry, etc.
3. Enter [Expenses](#). The software allows you to allocate expenses that are passed through to the tenant, if applicable.
4. Estimate a [Resale Value](#) for the property at the end of the holding period. This is done by capitalizing the net operating income (NOI) at the end of the holding period.
5. Using an appropriate [Discount Rate](#), convert the NOI from the cash flow projections to a present value.
6. Optional: [Add Mortgage Debt](#)

## 3 Registration/Purchase Info

License: \$495 (unlimited users). [Click here to order on-line \(security is guaranteed\)](#). On-line orders are usually processed within the hour. Or call 1-800-990-7011 to order by phone (9-5 EST). After we receive payment, a Registration Number will be emailed to you.

To enter a Registration Number, click on Document Map tab, then click Registration button, lower left.

To order by fax or mail, print this page and fill out the form below.

Fax Number: 603-968-2277

Name:

Name & Title to Appear on Reports:

Name on Credit Card:

Credit Card Number:

Expiration Date:

Address:

City:

State:

Zip Code:

Day Phone:

Email Address (Required):

If paying by check, make payable to:

@Value Software, LLC, PO Box 308, Holderness, NH 03245

## 4 @Value Support & Contact Info

**Email:** support@atvalue.com

**Phone:** 1-603-968-7462 (9-5 Eastern Standard Time)

**Web:** www.atvalue.com

**Fax:** 603-968-2277

**Address:**

@Value Software

Curry Place on Squam Lake

PO Box 308

Route 3, Holderness, NH 03245

## 5 About @Value

@Value ("at value") Software has been written, developed and marketed by Thomas W. Armstrong, MAI, an initiative (obsession) that began in 1995.

Our goals are simple: provide user-friendly, fully featured valuation tools at a great price.

Offices located at Curry Place on Squam Lake, PO Box 308, Holderness, NH 03245

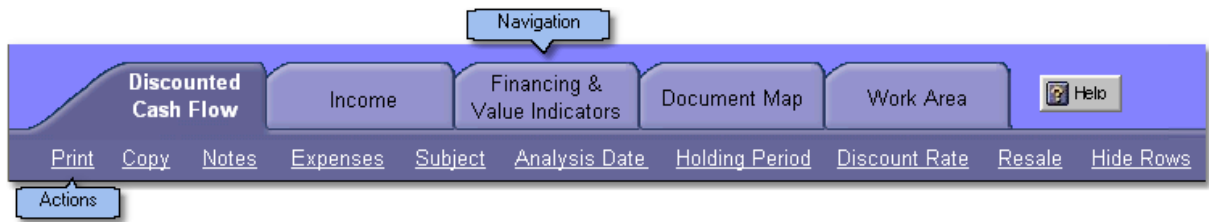
Your feedback counts! Email us at support@atvalue.com

## 6 Navigate

### DCF Navigation

#### Tabs

The tabs at the top of the sheet serve as the primary navigation method. The tabs will take you to each major section of the analysis. Under each tab, in white text, are sub-sections or tools for the specific sections. Thus, all navigation and tools are accessed by clicking the tabs, then clicking the white links located directly under the tabs.



**Important:** See Sheet Navigation, below.

### Document Map

The Document Map tab will access the Document Map sheet. This section provides a graphic layout of the DCF and links to each major section.

### Sheet Tabs

You can also access any of the sheets by clicking on the sheet tabs at the bottom of the window.

### Sheet Navigation

Most of the sheets are designed to be navigated with the **scroll bars** at the right and bottom of the screen. **Important:** Individual Income sheets and Expense Reimbursements must be accessed by the navigation tools on those sheets. If you navigate with scroll bars, the settings for the Individual Income sheets and Expense Reimbursements will not load. For example, if you were to go to the income sheet then scroll down to the third cash flow, then edit the cash flow, the edits would be applied to the first cash flow, not the one being viewed.

## 7 Enter Property Info

**Subject Info:** This option is a sub-section item on the Discounted Cash Flow tab, in white text.

Address	Building Size (Square Feet)
1 Income Place	79000
City, State Zip	Building Size (# of Units)
MyCity, MyState, 12345	21
Apply and Close	

**Address & City, State Zip:** These fields are for the subject's address. A common name may precede the street address.

**Building Size, Square Feet:** This can be entered as net leasable area or gross building area, depending on your preference. This is the figure is used to calculate the value per square foot under the Value Indicators section, and reimbursed expenses allocated on a per square foot basis.

**Building Size, # of Units:** This is the total number of rental units. This is the figure is used to calculate the value per unit under the Value Indicators section.

## 8 Enter Analysis Date and Investment Holding Period

**Investment Holding Period:** This option is a sub-section item on the Discounted Cash Flow tab, in white text.

The analysis holding period can range from 5 years to 10 years. The software will automatically add an additional year for the purpose of calculating the resale value at the end of the holding period. For example, if you choose a holding period of 7 years, the software will add an 8th year to the analysis. The premise is that the future buyer will base the price on the next's years anticipated income. Note that while the resale price is based on the next year's income, it is added to the net income from the last year of the holding period and considered part of the cash flow for that year.

**Note:** If you shorten the holding period, cash flow projections for unused years will be set to zero.

**Effective Date of Analysis:** This field sets the effective date of the analysis and the starting point of the cash flow projections.

## 9 Entering Income

There are three steps to entering income.

[Step 1: Unit Information:](#) Tenant name, or unit type (such as a class of apartments), unit size, number of units, type of income measure, etc.

[Step 2: Market Income:](#) Market Income and Vacancy.

[Step 3: Effective Income:](#) Effective Income and Vacancy.

**Important:** Individual Income sheets must be accessed by the navigation buttons at the top of the Income sheet. On the top-right of the Income sheet are "<< Previous" and "Next >>" buttons which will cycle through the sheets. To the left of these buttons is the "Navigate Income Streams" button. This will activate a drop-down list of the 30 income sheets - simply click the name of an income stream to access and view it.

If you navigate with scroll bars, the settings for the Individual Income sheets will not load. For example, if you were to go to the income sheet then scroll down to the third cash flow, then edit the cash flow, the edits would be applied to the first cash flow, not the one being viewed.

## 10 Step 1: Unit Information

**Unit Information:** This dialog is activated from the Income tab by clicking the "Step 1: Unit Info" button.

The screenshot shows a software window titled "Income Projection" with a sub-tab "Unit Information". The form contains the following fields and instructions:

- Tenant or Unit Type:** Text box containing "Income 1". Instruction: "Enter the tenant name or type of unit if multiple units apply. Then add the SF size of the unit(s)." (indicated by a red arrow)
- Size:** Text box containing "22,000". Instruction: "Enter the tenant name or type of unit if multiple units apply. Then add the SF size of the unit(s)." (indicated by a red arrow)
- Number of Units:** Text box containing "1". Instruction: "Enter the number of units and type of income for the income forecast." (indicated by a red arrow)
- Income Measure:** Dropdown menu set to "Per SF". Instruction: "Enter the number of units and type of income for the income forecast." (indicated by a red arrow)
- Contract Ends:** Text box containing "NA". Instruction: "Enter the end date of the income contract, if applicable. This is for the reader's benefit and is not tied to the income projection. Same for Renewal Options." (indicated by a red arrow)
- Renewal Options:** Dropdown menu set to "No". Instruction: "Enter the end date of the income contract, if applicable. This is for the reader's benefit and is not tied to the income projection. Same for Renewal Options." (indicated by a red arrow)
- Notes:** A large empty text area. Instruction: "Use this space for notes and miscellaneous tenant, contract or unit info. It is a good place to tell readers about lease roll-overs to market, etc." (indicated by a red arrow)

A "Close" button is located at the bottom of the window.

**Tenant or Unit Type:** Enter the tenant name and or unit ID, or type of unit if the income projection reflects a group. For example, 30 two-bedroom apartments might be identified as "2-BR Apartments, Units 1-30", or a retail space might be identified as "Unit 3, Sports Word".

**Size:** Enter the square footage of the unit. If the income measure is based on square footage, the income rate will be multiplied by the square footage entered here. If the income measure is per month or annual, the square footage is not used. It is necessary if reimbursed expenses are allocated on a per square foot basis. Further, it should be entered as it is important information for the reader.

**Number of Units:** Enter the number of units for this income stream. Typically retail and office and other spaces with unique size and income characteristics are listed separately, while apartments are grouped.

**Income Measure:** Income may be projected on a per square foot, monthly or annual basis.

**Contract Ends:** This is for the reader's benefit only and does not effect the income stream used in the analysis. The date entered should coincide with end of the lease term, or if the tenant has a renewal option and is expected to exercise the option, the date entered should coincide with the end of the option term.

If there is no contract, select "NA".

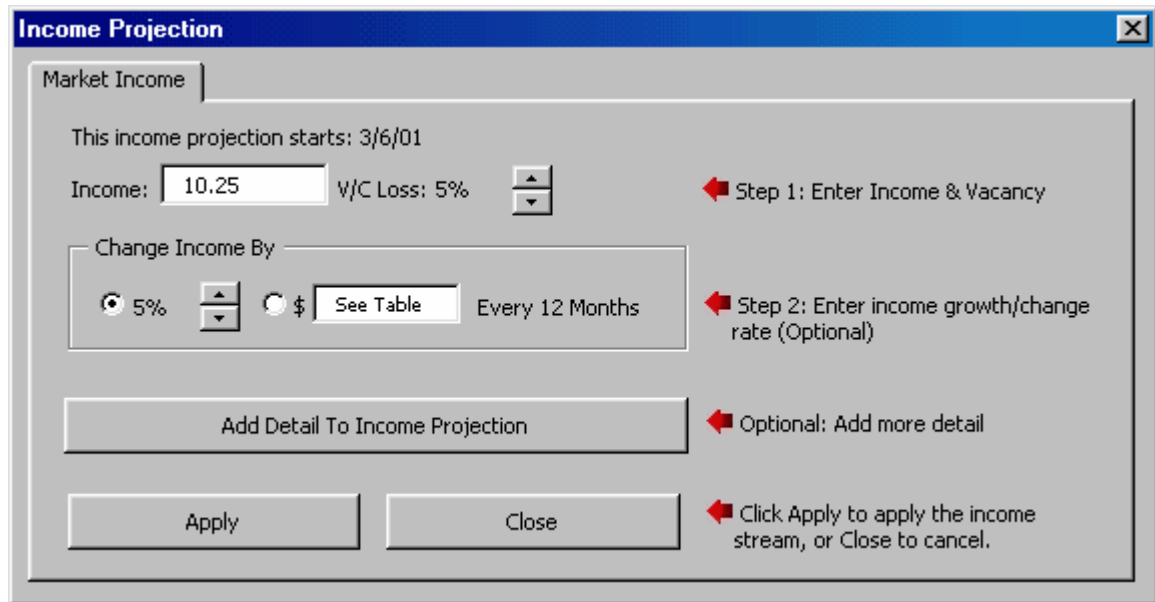
**Renewal Options:** Again, this is for the readers benefit. Use the notes section to explain if the renewal option is expected to be exercised.

### [Step 2: Market Income](#)

## 11 Step 2: Market Income

The Market Income projection dialog has two modes: Basic and Detail.

**Market Income - Basic Mode:** This dialog is activated from the Income tab by clicking the "Step 2: Market Income" button.



**Income Projection**

Market Income

This income projection starts: 3/6/01

Income: 10.25 V/C Loss: 5%

Change Income By

5%  \$ See Table Every 12 Months

Add Detail To Income Projection

Apply Close

Step 1: Enter Income & Vacancy

Step 2: Enter income growth/change rate (Optional)

Optional: Add more detail

Click Apply to apply the income stream, or Close to cancel.

**Income:** Enter the income applicable for this income stream. This income will be applied according to the income measure established under [Step 1: Unit Information](#). For example, if you selected the "Per SF" income measure, the income will be multiplied by the square footage of the unit. Likewise, if you entered "Monthly" or "Annual", the income will be multiplied by 12 months or applied as a lump sum for the year.

**Vacancy/Collection Loss:** Simply click on the spinner to set the vacancy/collection loss rate.

**Change Income:** Income may be entered as a flat rate, with no changes, or it may increase annually by a percentage or dollar amount.

**Market Income - Detail Mode:**

See [Market Income - Detail Mode](#)

## 12 Step 2: Market Income - Detail Mode

**Detail Mode is activated in one of two ways:** You can click the "Add Detail To Income Projection" from the Market Income dialog (see [Step 2: Market Income](#)), or by clicking any cell from the market income table. The Market Income table is click-sensitive after the "Step 2:Market Income" button has been clicked. The concept here is to first project a basic income stream, then if necessary, refine and edit the projection.

Market	Income	Year 1	Year 2	Year 3
	Date		Mar-01	Mar-02
Income		\$10.25	\$10.76	\$11.30
PGI		\$12,300	\$12,912	\$13,560
V&C		5.00%	5.00%	5.00%
EGI		\$11,685	\$12,266	\$12,882

To edit the cash flow, click any cell under the time period to activate the projection window.

Clicking a cell under a given year will activate the income projection tool in Detail mode. This allows you to edit the income/vacancy for any year, or series of years, in the projection period. Using the above table as an example, when a cell under Year 3 is clicked, the detail for Year 3 is displayed in the projection tool (shown below). Note the projection bar shows the relative position within the holding period for the income selected.

**Income Projection**

Market Income

This income projection starts: Mar 2003

Income:  V/C Loss: 5%

Change Income By

5%  \$  Every 12 Months

Apply these terms for 1 year      Years Remaining: 8

Starting: Mar 2003

**Projection Bar** - Red Marks Position Within Projection Period

Step 1: Enter Income & Vacancy

Step 2: Enter income growth/change rate (Optional)

Step 3: Drag the slider to the right for the period of time you wish to apply the income. To project income for another point in time, close this window and click on a new date on the table to start your projection.

Click Apply to apply the income stream, or Close to cancel.

At this point, one may edit and project the modified income for just Year 3, or for any number of years remaining in the holding period. To change the income for just Year 3, one would simply click "Apply". To project the modified income/vacancy terms forward, drag the projection bar to the right for the desired number of years, then click "Apply". To apply still different income and vacancy terms for a future date, click a cell under the future year to reactivate the projection tool.

## 13 Step 3: Effective Income

**Effective Income:** This dialog (shown below) is activated from the Income tab by clicking the "Step 3: Effective Income" button.

Effective Income is the income that is used in the analysis. It may be the same as market income and not require a separate specific projection, or it may be an income stream that is defined by specific lease terms. In that case, it may similar to, above or below market income. **Market income reflects the going rate, effective income is the income the unit is expected to produce.**

This process is very similar to projecting market income in detail mode.

### Important Points

1. When the market income stream ([Steps 1 and 2](#)) is created, the effective income is automatically projected under identical terms. There are now two identical income streams, with the effective income stream reading the market income stream. The analysis is based on the effective income.

Until the effective income stream is specifically defined with new terms, any changes made to the market income stream will be automatically made to the effective income stream.

2. When a new effective income is defined (as opposed to market income), the effective income stream will no longer read from the market income stream, for the period of time covered by the effective income stream. Most projections of effective income include a mix of lease and market income terms.

For example, If the effective income projection covers a three-year time frame, the balance of the income stream will remain at market. Any changes made to the market income stream will automatically be made to the portion of the effective income stream that is not subject to specific lease terms. However, if effective income projection covers the full projection period, the new income stream will not be tied to the market income stream.

### Activate The Projection Tool

To activate the projection tool, click a cell under a date in the Effective Income - Detail table. When a cell is clicked, the detail for that month displayed in the projection tool. The income projection tool allows you to edit the income/vacancy for any month, or series of months, up to length of the projection period.

The following image shows the top-left section of the Effective Income - Detail table. The full table includes income and vacancy for each month of the projection period. Unless you are using a large monitor, you may not see all of the table. Use the scroll bars at the bottom and right side of the screen to view more of the table. You can also set the view (top-right section of income sheet) to 90% or 85% to increase the viewable area.

Year 1	Month	Mar-01	Apr-01	May-01	To edit the cash flow, click any cell under the time period to activate the projection window.
	Income	\$11.50	\$11.50	\$11.50	
	Vacancy	5.00%	5.00%	5.00%	
Year 2	Month	Mar-02	Apr-02	May-02	
	Income	\$12.08	\$12.08	\$12.08	
	Vacancy	5.00%	5.00%	5.00%	

### The Income Projection Tool

**Income:** Enter the income applicable for this income stream. This income will be applied according to the income measure established under [Step 1: Unit Information](#). For example, if you selected the "Per SF" income measure, the income will be applied by the square footage of the unit. Likewise, if you entered "Monthly" or "Annual", the income will be multiplied by 12 months or applied as a lump sum for the year.

**Vacancy/Collection Loss:** Simply click on the spinner to set the vacancy/collection loss rate.

**Change Income:** Income can be entered as a flat rate, with no changes, or it may increase annually by a percentage or dollar amount. The change increment is set for every 12 months, but by clicking on the spinner you can change the frequency.

#### Project Income and Vacancy Forward

To project the new income/vacancy terms forward in time, drag the projection bar to the right for the desired number of months, then click "Apply". Note the red and white projection bar shows the relative position of the cash flow.

To apply different income and vacancy terms for a future date, click a cell under the future year to reactivate the projection tool.

#### Examples

Some examples:

1. If the lease is already in place as of the appraisal date, click the first month (top left) of table. Enter the current lease terms in the projection tool. Some leases will require entering different terms at different periods (see example 3 below).
2. If a vacant unit was expected to lease-up in six months, click on the first month and project \$0 income and 0% vacancy for six months. Next, click on the seventh month and project the expected terms, or they are unknown, leave the balance of the cash flow at market.
3. A lease is expected to run at a flat rate for 3 years, then increase 10% and run flat for another 3

years. This can be done as a one or two step projection. To do it as a one step projection: Set the income amount, then using the spinner under the "Change Income By" box, set the increase to 10%. Next, set the frequency of change to 36 months using the spinner on the right side. The final step is drag the slider to the right for 72 months and click "Apply".

What Happens: The income is applied at a flat rate for 36 months. On the 37th month it is increased by 10%, then applied at this rate for the balance of the lease. Note that if the term had exceeded 72 months, another 10% increase would have been applied on the 73 month.

To project the lease in two steps, one would apply the initial income for 3 years with no increases. Next, click on the 37th month and project the new rate flat for three years.

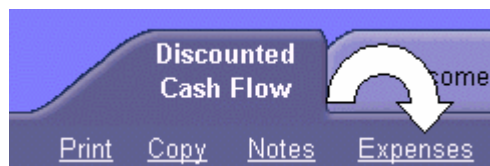
## 14 Other Income

**Other Income:** This dialog is activated from the Income tab by clicking the "Step 1: Unit Info" button.

Other income, such as laundry, storage, parking, etc., can be added to the income stream. It displays only on the main DCF sheet, under Vacancy & Collection Loss.

## 15 Expenses

**Expenses:** Expenses are activated from the Discounted Cash Flow tab by clicking the Expense link, in white text.



This will move you to the Expense section, which is located on the bottom half of the main DCF sheet. A message will display indicating the Expense section is now activated - at this point if any expense label (including blank or unused expense labels) or any expense amount is clicked, the Expense projection dialog will display. The Expense projection dialog has two modes: Basic and Detail.

### Basic Mode:

This mode is activated when an expense label, or blank cell in the expense label column, is clicked. From here, an expense amount with annual growth rates (optional) may be entered. Alternatively, expenses may be projected as a percent of effective gross income.

### Detail Mode:

See [Expenses - Detail Mode](#)

## 16 Expense - Detail Mode

### Detail Mode:

This mode is activated when an expense amount, or blank cell in any of the expense amount columns, is clicked. This will activate the expense projection tool for that expense, for that period of time. For example, the image below shows the expense projection tool after clicking the Utilities Expense for Year 3.

Note that the red portion of the Analysis Timeline shows the relative position of the expense selected. To further refine the expense projection, one can change the expense amount and growth rate, or change the method of expense calculation to a percent of EGI. These changes can then be projected for the current year by pressing the Apply button, or they can be projected forward for any series of years by moving the slider to the right (each click extends the projection one year), then clicking the Apply button. Note the red portion of the projection bar moves incrementally as the projection period is extended along the timeline.

To add more detail for another point in time for the expense, simply, close the dialog, then click on the expense amount where you want to edit the expense.

**Note:** The expense table will remain active until you move to a different sheet. This means that if you inadvertently click on the expense table, the projection tool will display.

## 17 Reimbursable Expenses

**Reimbursable Expenses:** This option is a sub-section item on the Income tab, in white text. These are expense items passed through to or reimbursed to the property owner(s) by the tenants.

Expenses may be reimbursed according to the tenant's proportional square foot area or proportional income contribution, or user-defined.

**Navigation:** The drop-down menus and arrows at the top left corner of sheet are used to select the tenant/income stream, for years 1-11

**Important:** You must use the Navigation Tools (top left) to make access the various sections of the reimbursement schedule before you edit reimbursements. The navigation tools also load the settings for the individual tenants for year year of the holding period.

With 30 tenants and 11 years of income projection, there is a maximum of 330 reimbursement schedules. Of course, the vertical and horizontal scroll bars can also be used to navigate the sheet, but this will not load the settings for the portion of the reimbursement schedule being viewed.

**Printing:** As noted above, the expense reimbursement sheet is large, with detail for each tenant, expense amount, stop amount and reimbursement amount for each year. For 30 tenants the print-out is over 100 pages. For this reason ranges to print are user-defined. Click the print button (left) to activate the print dialog, then click the print range button. This will minimize the print dialog so you can select the range on the sheet to print. Click and drag to define the range, then click the print dialog to expand it back to normal size. Then click the "Print Selected Range" button.

### Expense Reimbursement Options

Most of the options are selected with drop-down menus, as shown in the image above. Cells with drop-down menus have dark red text.

**Tenant:** This option is for descriptive purposes, and does not effect calculations. There are three options: Tenant, Unit Type and Unit Group. These are descriptive entries for the reader's benefit.

**Calculation Method:** There are four options.

1. "% of Area" will calculate the proportional share of each expense, based on the tenant's proportion of building area. To set the building area, click the Property Info button on the main menu.
2. "% of Income" will calculate the proportional share of the expense, based on the tenant's share of the the income stream. This is based on potential gross income.
3. "User-Defined" unlocks the Tenant column (this column is for the Tenant's share of the expense), and allows the user to enter amounts directly in this column. Note that the Reimbursement column reads from the Tenant column and subtracts and Stop amounts, if any. **Note:** This will over-write the formulas in the cells, and they cannot be restored.
4. "None" will set the reimbursements to zero.

**Expense Stops:** Enter the amount of the expense not reimbursed by the tenant. This amount is deducted from the reimbursement amount allocated to the tenant.

### Other Notes

Each expense has a Yes/No option to activate or deactivate reimbursement calculations. You can toggle between Yes and No by double-clicking on the cell. All reimbursements are automatically adjusted for vacancy. For example, if an income stream has a 5% vacancy assigned, 5% will be deducted from the reimbursement amount.

To save data entry time, you can set the reimbursement variables for future years equal to the settings for current year. Subsequent years can be further edited, if desired. To activate this option, click the "Project Fwd." button (left). The "Project Fwd." function is not available for user-defined expense reimbursements.

**Note:** This option will over-write any previous edits.

## 18 Leasing Commissions & Tenant Improvements

Because these expenses are usually tied to specific leases, they are calculated when the income stream is projected.

To calculate and project leasing commissions or tenant improvements, do the following:

1. Go to the income sheet for the tenant or unit group and click on the Effective Income button.
2. Activate the Income Projection panel by clicking on any cell (Income, Vacancy, Effective Gross Income), from the year you want to edit, then click the Leasing Commissions and Unit Improvements tab.

**Income Projection**

Contract/Effective Income    Commissions & Unit Improvements

Unit Info  
 Tenant Name or Unit Type: Income 1  
 Unit Size: 22,000    Number of Units: 1

Commissions  
 Next 12 Months Income: \$265,650  
 Commission at 8.5%   

Unit Improvements  
 Current Cost Per SF: \$18.00      
 Inflation: 4.00%    Year 2 Cost:   
   

← This is the tenant/unit group you are currently working with.

← Use the spin button to enter a commission as a percent of the next 12 months income, or click the radio button to enter a dollar amount.

← Use the spin button to enter a cost/SF, or click the radio button to enter a dollar amount. Costs are entered in current dollars, then adjusted for inflation.

**Commissions:** To enter a commission as a percent of the next 12 months of income (for this particular income stream), set the percentage rate with the spinner, then click "Apply". Otherwise, lick the radio button, enter a lump sum dollar amount and click Apply.

**Tenant Improvements:** This expense may be applied as cost per square foot or as a lump sum figure. The expense is first estimated in current dollars, then adjusted for inflation. The inflation rate may be changed with the spinner or reset to the original amount by clicking on the Inflation button.

**Entering Notes For The Reader:** To enter notes regarding commissions and unit improvements, on the main tool bar, click Expenses, then select Leasing Commissions or Unit/Tenant Improvements. This location also provides a graphic summary of the expense.

**Viewing Summary Pages of Commissions and Tenant Improvements:** This option is a sub-section item on the Income tab, in white text.

## 19 Resale Value

Resale calculations are located on the bottom-right corner of the main DCF sheet. There is a link to this section under the Discounted Cash Flow tab, in white text.

Resale value is estimated by capitalizing the 11th year NOI. The cap rate formula is:  $\text{Sale Price}/\text{NOI} = \text{Cap Rate}$ . In the case of value, it is  $\text{NOI}/\text{Cap Rate} = \text{Value}$ .

Capitalization rates are most reliable when extracted from the market from sales of similar properties. For market extracted cap rates, check out RealtyRates at [www.realtyrates.com](http://www.realtyrates.com).

Additionally, cap rates are often featured with listing and sale information. When analyzing rates from the market, care should be taken to review income, vacancy and expense data for reasonableness and consistency with the subject.

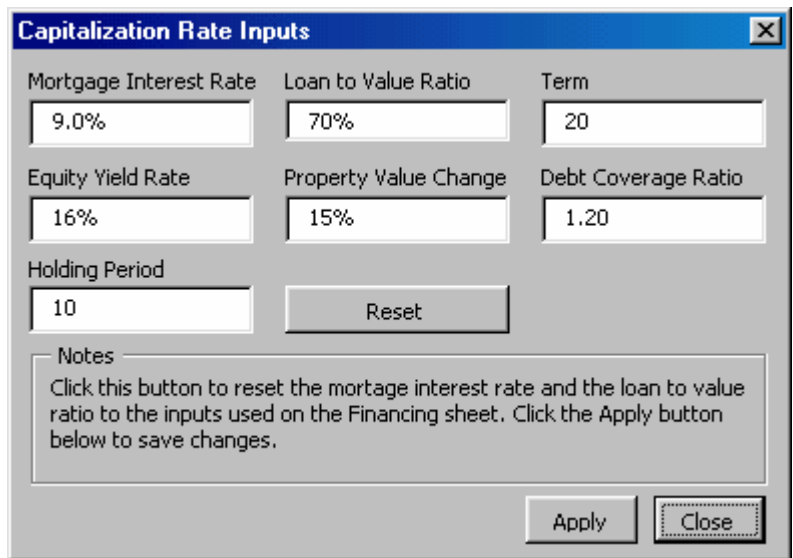
The cap rate is increased or decreased by .1%, .25%, .5% or 1%. Or, to enter a different rate, check the checkbox and enter a rate directly. Note the summary of values and rates of change. These indicators are helpful for keeping an eye on total value change over the holding period so one can assess the reasonableness of the estimated resale value.

The **resale expense** (commission, taxes, legal, etc.) is calculated as a percentage of the sale price.

## 20 Capitalization Rate Tools

**Capitalization Rate Tools:** This option is a sub-section item on the Financing & Value Indicators tab, in white text.

As an additional resource, the @Value DCF includes Mortgage Equity and Debt Coverage Ratio Analyses. These methods build up capitalization rates based on typical mortgage terms and investor requirements.



**Mortgage Equity Analysis**

Through a blend of mortgage and equity requirements, a capitalization rate may be synthesized. For market based loan terms, debt coverage ratios, cap rates, equity yields, and other financial benchmarks, check out RealtyRates at [www.realtyrates.com](http://www.realtyrates.com).

The required inputs are:

**Mortgage Interest Rate, Loan to Value and Term:** Enter the mortgage terms that are most typical (not necessary actual) for this property type. These variables are used to develop the mortgage constant, which is the annual amount of debt service as a percentage of the loan. For example, if the annual debt service is \$10,000 and the original loan was \$100,000, the mortgage constant would be 10%.

If the actual mortgage terms are not typical, do not use them as this will skew the cap rate and value estimate. For example, highly favorable mortgage terms that are not available to most buyers will tend to produce a lower cap rate and therefore a higher value estimate.

**Equity Yield Rate:** This is the overall yield to the investor. In addition to annual cash flows, the yield rate includes profits from appreciation and debt reduction.

**Property Value Change:** This is the total value change expected for the property over the holding period. The income for an extra year is developed only for estimating resale value. The actual resale theoretically occurs on the last day of the holding period.

**Holding Period:** This the length of time in years the investment is expected to held.

	<b>Mortgage Equity Analysis</b>					
	Constant*		Ratio	=		%
Rate	Equity Yield					
=	x	Ratio	=	$\frac{\%}{\text{Weighted Average}}$		
Buildup:	%					
	Less Equity					



The discount rate is increased or decreased by .1%, .25%, .5% or 1%. Or, to enter a different rate, check the check box and enter a rate directly. Note the summary of values and rates of change. These indicators are helpful for keeping an eye on total value change over the holding period so one can assess the reasonableness of the estimated resale value.

## 22 Financing

### Financing

Click the Financing & Value Indicators tab to access this section. Note that a value or price other than the DCF value can be analyzed. Simply check that option at the top-right section of the screen and enter a user-defined amount.

Financing terms are entered directly on the sheet. Cells that accept user-input have dark blue text. The following are user-defined inputs:

#### First Mortgage

- Interest Rate
- Mortgage Term (Minimum is length of the holding period)
- Points
- Closing Costs
- Loan to Value Ratio (This is used to calculate the first mortgage amount, it cannot be entered directly)

#### Second Mortgage

- Interest Rate
- Loan Amount (This differs from the first mortgage which can only be calculated by the loan to value ratio.)
- Mortgage Term (Minimum is length of the holding period)
- Points
- Closing Costs

For market based mortgage terms, check out RealtyRates at [www.realtyrates.com](http://www.realtyrates.com).

See [Value Indicators](#) for tests of reasonableness.

## 23 Value Indicators

Click the Financing & Value Indicators tab to access this section. Indicators are located below the mortgage input cells and the graph. You can access this area by clicking the Indicators link, in white text.

Several factors and indicators are listed in this section.

- Net Operating Income
- Debt Service
- Equity Dividend
- Equity Dividend Rate
- Debt Coverage Ratio
- Internal Rate of Return
- Capitalization Rates
- Value Per Unit
- Value Per Square Foot

**Overall Value & Unit Values:** Based on your market research, you should have a sense of whether the value and unit/SF values are in-line with the market. The value should withstand a common sense review, and be consistent with other properties.

While listings are not yet market transactions of record, they should establish the high end of the value range, as some discounting from list price to sale price is common. If the subject's estimated value is higher than one or more current listings, the analysis should re-visited to see if it is too high.

Be aware however, that every property has unique income/physical characteristics that can skew the value. For example, a particularly ornate structure may not generate any more income than a plain building, rendering the expensive construction obsolete in the investment market place. Further, sometimes plain buildings, by virtue of their simplicity, low maintenance, tax and insurance expenses, are more valuable from an investment standpoint than one might think initially.

**Capitalization Rates:** The capitalization rate ( $\text{Sale Price} / \text{NOI} = \text{Capitalization Rate}$ ) should be consistent with capitalization rate shown by sales and listings of similar and competitive properties. Properties with low risk and strong appreciation expectations will show lower capitalization rates, while higher risk properties will show higher capitalization rates.

Importantly, when analyzing capitalization rates from the market, care should be taken to ensure that the income and expense structure used to develop the NOI for the comparable is similar to that of the subject. For example, if structural reserves are included in the subject's expenses, but not in the comparable's expense figures, the comparable would show a (misleading) higher NOI and capitalization rate. Thus, in this case it would be appropriate to deduct an amount for structural reserves from the comparable's NOI prior to calculating the capitalization rate.

**Equity Dividends and Rates:** Equity dividends and rates reflect the annual return on the original amount invested. This is the amount of cash the investor keeps after all expenses and debt service (if any) are paid. This is an important figure and should pass a common sense test of whether it is enough to motivate the investor to undertake the investment.

The **debt coverage ratio** measures the amount by which net income exceeds annual debt service. Most lenders look for a minimum of 1.1 (rare) to 1.2 to 1.25 (typical). DCRs vary by property type, market conditions and lender practices.

**Internal Rate of Return (IRR):** This is the yield earned by the investor on the funds invested, including the initial down payment, closing costs and all subsequent cash flows, positive and negative. Because this rate is an all-inclusive indicator of the investment's performance, it is perhaps the MOST important

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indicator to analyze. It must be adequate to motivate most investors, in light of the risk characteristics of the property.

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