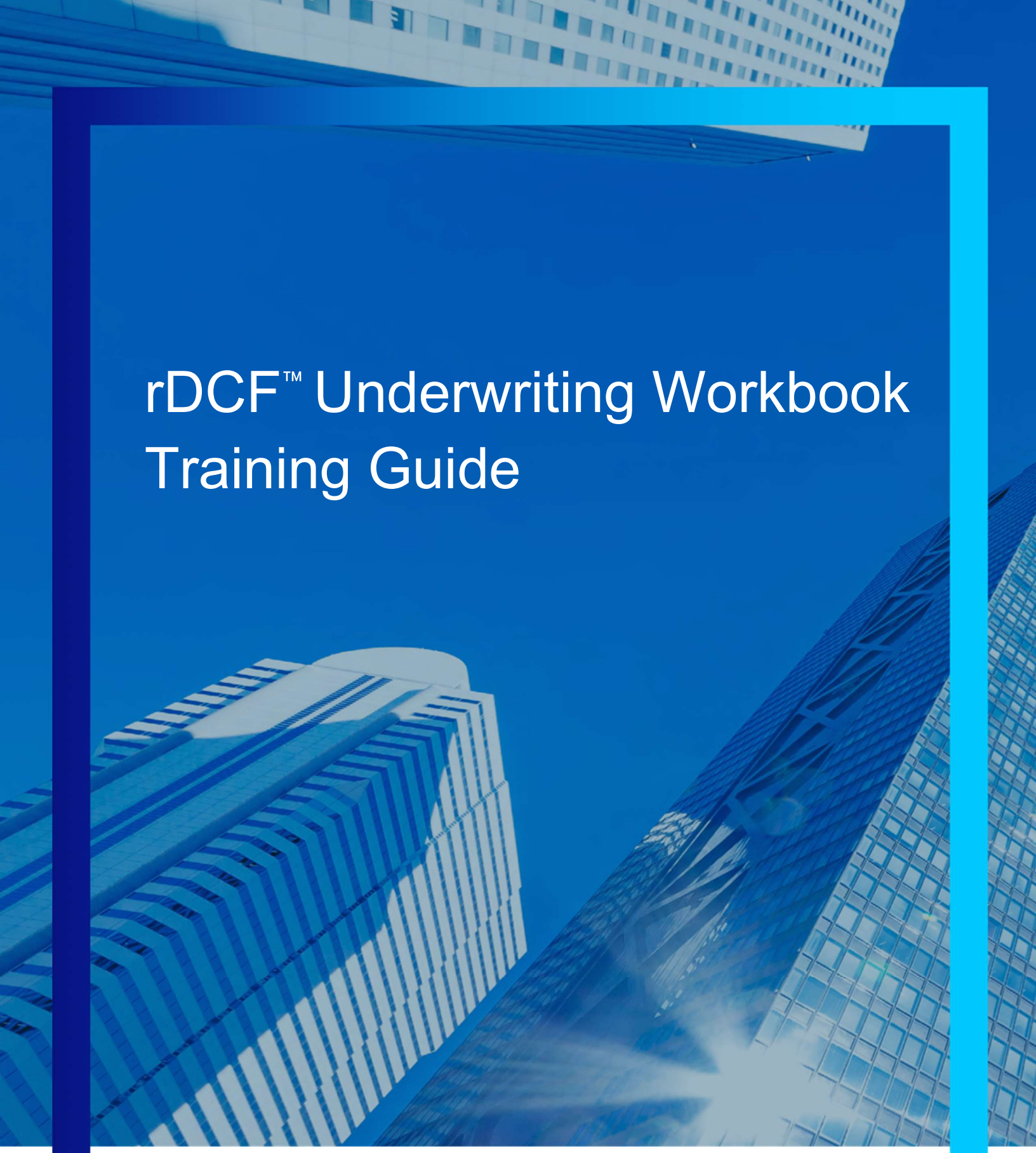

rDCF™ Underwriting Workbook Training Guide

rDCF™

rSquared CRE, LLC

rDCF™ Underwriting Workbook Training Guide

V2024.1.0

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rDCF™ Underwriting Workbook

Contents

Introduction

The rDCF Underwriting Workbook ("UW") is a suite of reports generated from rDCF into a single Microsoft Excel file. Unlike individually generated rDCF reports these reports work in concert with each other and additional tabs in the Underwriting Workbook to provide the user with a fully functional underwriting tool that can be used to model property and portfolio valuations, debt financing and waterfall scenarios. The Underwriting Workbook enhances productivity for buyers, lenders, and asset managers, while evaluating deals faster and producing company-wide valuation and underwriting standards, and high-level metrics at the push of a button.

Powerful, innovative, and versatile, the underwriting workbook enables rDCF users to:

- Conduct advanced, sophisticated analyses of their data to uncover value and opportunities
- Generate and analyze essential property or portfolio-level data, including in-place revenue and occupancy costs, contractual and market rents, and key market assumptions
- Quickly and easily produce professional, presentation-ready reports

rDCF's Underwriting Workbook can also be used to:

- Build and review multiple debt tranches for either leveraged or unleveraged returns
- Model sophisticated equity structures, including multi-tiered waterfalls and fees

In conjunction with rDCF, you can rely on the rDCF Underwriting Workbook to leverage internal resources, increase overall efficiency, and manage production volume to meet tight deadlines.

In this guide, we introduce you to the Commercial Underwriting Workbook model and each of its 20 tabs. The guide focuses on tabs with input fields, explaining how to use the inputs and the impact they have on the model.

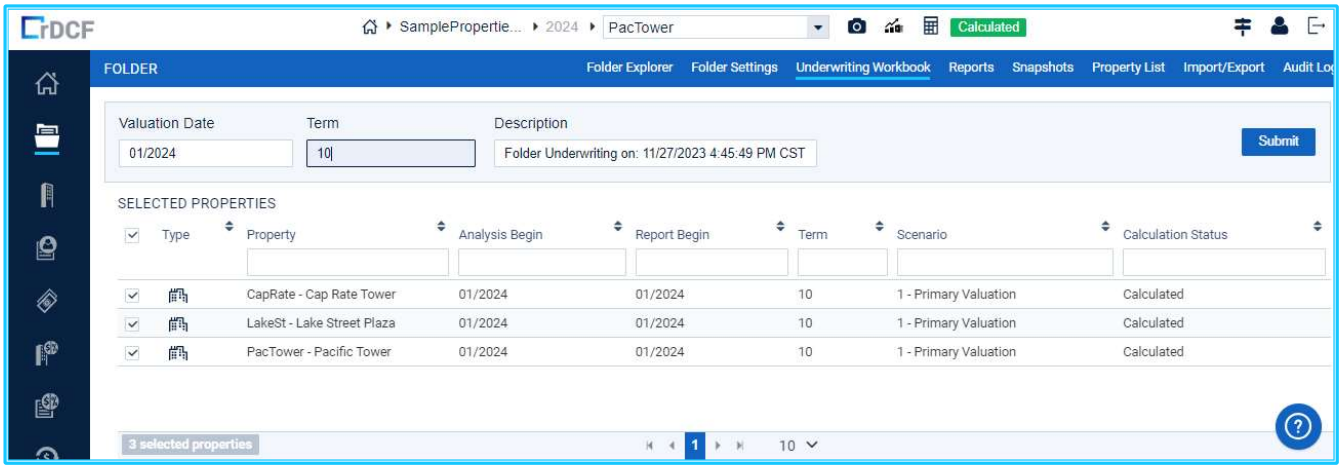
Please note that this guide assumes the user has a fundamental understanding of real estate valuation and transaction modeling principles. It is not intended to teach the user how to value a property.

How to Generate the Underwriting Workbook from rDCF

The Underwriting Workbook can be generated from the Header Menu, Folder Section (Underwriting Workbook tab), and the Property Section (Property Settings tab) after calculating the properties. When run from the Folder section, the user can select to include all properties in the Folder or select properties. The selected properties will be treated as a consolidated portfolio within the one Folder Underwriting Workbook.

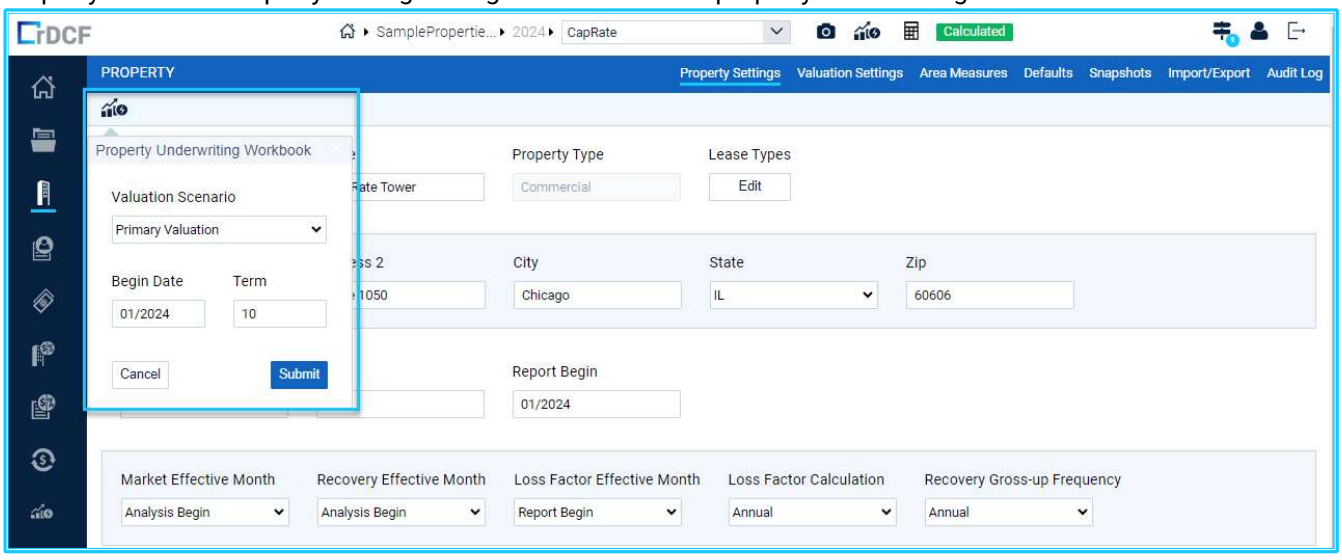
Look for the reporting icon to identify where you can run the Underwriting workbook. Note that on the Navigation Panel this icon represents the Reports section.

Folder Section > Underwriting Workbook tab: generate one underwriting workbook for multiple properties

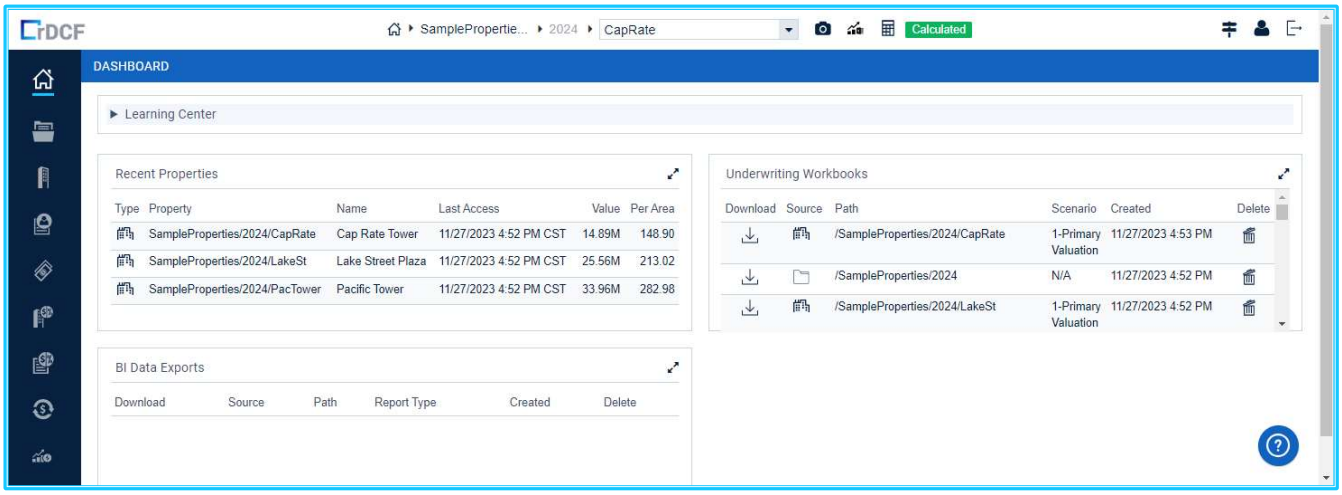


Note: all selected properties must be calculated in order to run the Underwriting Workbook.

Property Section > Property Settings tab: generate individual property underwriting workbook



When you initiate the workbook, the file will appear on your rDCF Dashboard and be available for download. The Dashboard will contain your recently generated Underwriting Workbooks, available for download. You will also receive an email to your registered email address with an attachment.


rDCF
SampleProperties... 2024 CapRate
Calculated
DASHBOARD
Learning Center
Recent Properties
Type Property Name Last Access Value Per Area
SampleProperties/2024/CapRate Cap Rate Tower 11/27/2023 4:52 PM CST 14.89M 148.90
SampleProperties/2024/LakeSt Lake Street Plaza 11/27/2023 4:52 PM CST 25.56M 213.02
SampleProperties/2024/PacTower Pacific Tower 11/27/2023 4:52 PM CST 33.96M 282.98
Underwriting Workbooks
Download Source Path Scenario Created Delete
/SampleProperties/2024/CapRate 1-Primary Valuation 11/27/2023 4:53 PM
/SampleProperties/2024 N/A 11/27/2023 4:52 PM
/SampleProperties/2024/LakeSt 1-Primary Valuation 11/27/2023 4:52 PM
BI Data Exports
Download Source Path Report Type Created Delete

Valuation Settings in rDCF

When you generate the Underwriting Workbook from rDCF, the workbook default settings are based on user-defined inputs in the Property Section on the Valuation Settings tab.

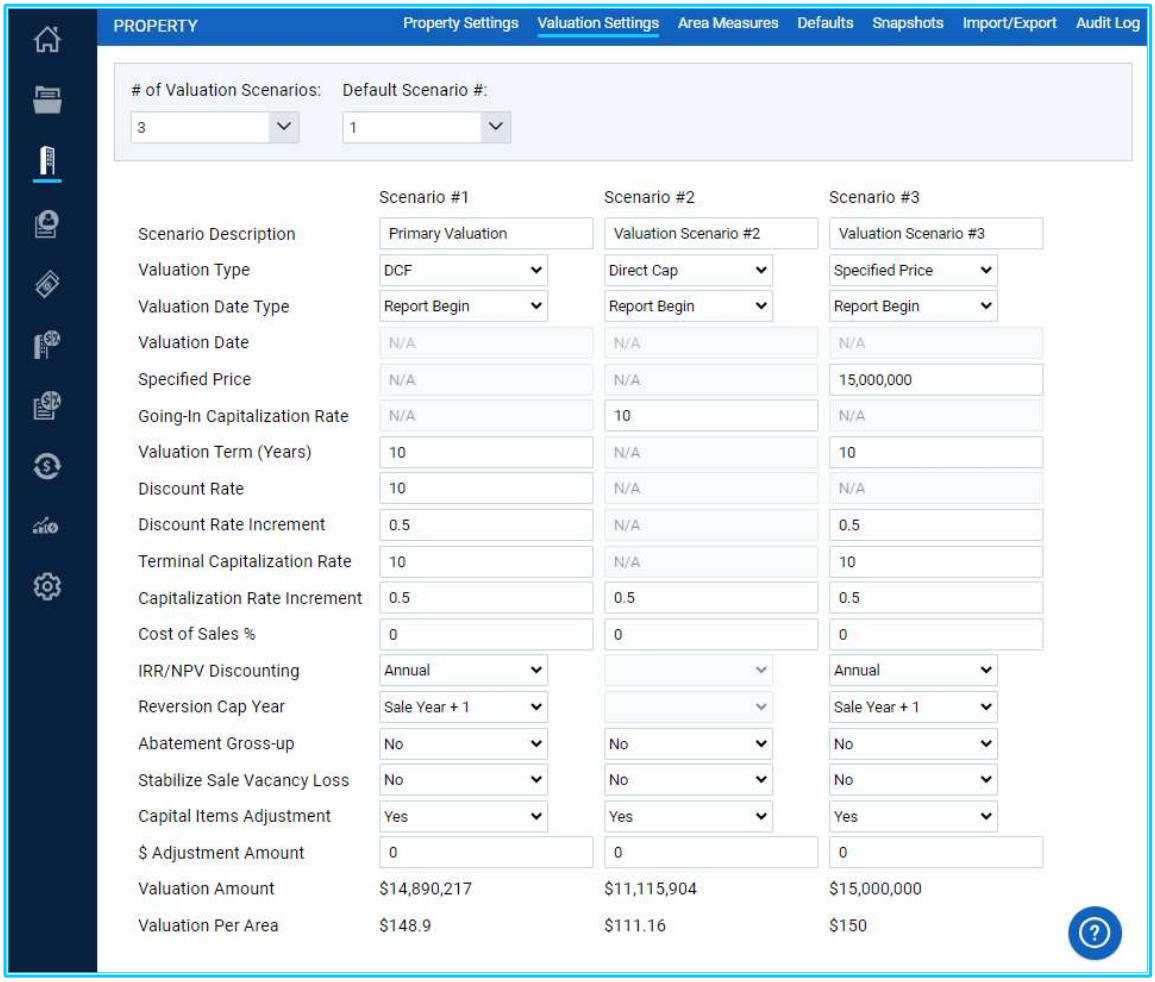
The Valuation Settings tab allows the user to define the property's valuation parameters for up to five (5) scenarios simultaneously. If more than one (1) valuation scenario exists, the user selects one scenario to be the "default" scenario. The default scenario is used in the Underwriting Workbook when run from the Header Menu or the Folder Underwriting Workbook tab. When running the Underwriting Workbook from the Property Settings tab using the icon, you have the option to select any scenario.

By default, the Valuation Settings tab has one valuation scenario ("Scenario #1"). Scenario #1 is also the Default Scenario when there are two or more scenarios. These two fields function as follows:

# of Valuation Scenarios defines the number of scenarios for which unique valuation parameters may be entered and property valuations calculated. You can select between one (1) and five (5) scenarios.

When you add a scenario, the new scenario(s) will duplicate the one immediately before it. For example, if the # of Valuation Scenarios is initially set to "2" and then subsequently changed to "4", the initial settings for Scenario #3 and Scenario #4 will match Scenario #2. You may edit any of the scenarios as desired.

Default Scenario # reflects which of the available scenarios will be the "default" scenario. The default scenario defines the valuation parameters that will be used when a Property Underwriting Workbook is generated.



Valuation Settings Scenario Fields

Valuation Scenario Fields	Default Value	Description
Scenario Description	Primary Valuation	Descriptive name for the Valuation Scenario (i.e., "As-Is", "As-Built", "As-Stabilized"). The default scenario description will appear in the Folder Section Underwriting Workbook tab in the Scenario column. It will also appear as the Scenario Name in the Underwriting Workbook when generated.
Valuation Type	DCF	Three Valuation Types: **DCF** – discounted cash flow **Direct Cap** – direct cap of Year 1 NOI – Note: you cannot generate an Underwriting Workbook for a Direct Cap Valuation Scenario. **Specified Price** – enter Year 1 Purchase Price. Used in conjunction with the Underwriting Workbook For DCF and Specified Price, the parameters entered on the Valuation Settings tab will be passed to the Underwriting Workbook for the Default Scenario. If the Default Scenario is a Direct Cap, no Underwriting workbook will be generated.
Valuation Date Type	Report Begin	Defines the date of valuation (i.e., time period "0" for IRR calculation purposes). **Analysis Begin Date =** defined on the Property Settings tab **Report Begin Date** = defined on the Property Settings tab **Specified Date =** Allows user to enter a date in the Valuation Date field.
Valuation Date	N/A	User-defined Valuation begin date when "Specified Date" is selected as the Valuation Date Type. The date entered must be equal to or after the Analysis Begin Date. *Note: this field is only editable when the Valuation Date Type = "Specified Date"*
Specified Price	Blank	User-defined value, typically an agreed-upon purchase price. *Note: this field is only editable when the Valuation Type = "Specified Price"*
Going-In Capitalization Rate	10	Also known as the direct capitalization rate, this is the cap rate that is applied to the year 1 Net Operating Income (after the defined valuation date) to determine a Direct Cap value. *Note: this field is only editable when the Valuation Type = "Direct Cap"*

Valuation Scenario Fields	Default Value	Description
Valuation Term (Years)	10	Defines the hold period for which property cash flows will be discounted in the calculation of the property's value. The Valuation Term cannot be longer than the rDCF term entered on the Property Settings tab in the Property section. *Note: Not available when Valuation Type = "Direct Cap"*
Discount Rate	10	Rate of return used to determine the present value of future cash flows *Note: Not available when Valuation Type = "Direct Cap" or "Specified Price"*
Discount Rate Increment	0.5	Establishes the percentage increments used in the Underwriting Workbook's Valuation Matrix for the selected Discount Rate. *Note: Not available when Valuation Type = "Direct Cap" or "Specified Price"*
Terminal Capitalization Rate	10	Known also as the Resale, Reversionary or Residual cap rate, this rate is used to estimate the resale value (or Sale Price) at the end of the valuation term/hold period. Formula: Sale Price = Reversion Cap Year NOI / Terminal Cap Rate *Note: Not available when Valuation Type = "Direct Cap"*
Capitalization Rate Increment	0.5	Establishes the increments used in the Underwriting Workbook's Valuation Matrix for the selected Terminal Cap Rate. *Note: Not available when Valuation Type = "Direct Cap"*
Cost of Sale %	0	Defines the percentage by which the sale price of the property at the end of the Valuation Term will be reduced to reflect sale costs (i.e., broker fees, closing costs, etc.)
IRR/NPV Discounting	Annual	Indicates calculation method to be used for IRR / present value calculation. Choose from Monthly or Annual *Note: Monthly discounting will typically generate a higher property value as cash flows are assumed to be received throughout each year rather than at the end of each year.* *Note: Not available when Valuation Type = "Direct Cap"*
Reversion Cap Year	Sale Year+1	**Sale Year+1** caps NOI for the year immediately following the Sale year to determine sale price. *Helpful Hint: "Sale Year + 1" is the default because when a property is sold, the price paid by the next investor is based upon an assessment of income for his/her expected period of*

Valuation Scenario Fields	Default Value	Description
		ownership. Therefore, for the next investor, or potential buyer, the net operating income for his/her first year of ownership will be the year after we sell the property. This will be the first year of his/her investment. **Sale Year** caps NOI for the Sale year to determine the sale price. *Helpful Hint: "Sale Year" should only be used if the net operating income for "Sale Year + 1" does not reflect stabilized occupancy and you either (i) don't want to use the "Stabilize Reversion Vacancy Loss" option (see below) in the Valuation Settings; or (ii) don't want to change your Valuation Term such that "Sale Year + 1" will reflect a stabilized net operating income.* *Note: Not available when Valuation Type = "Direct Cap"*
Abatement Gross-up	No	Provides an option to add abatements (i.e., free rent) back into net operating income for the Reversion Cap Year. **No**: No adjustment is made to net operating income for the Reversion Cap Year. **Yes**: Abatements are added back to net operating income for the Reversion Cap Year. After capitalizing the adjusted net operating income, the resulting sale price is then reduced by the abatements that were added back to net operating income. The theory is that the seller is offering the buyer a sale price reduction (i.e., credit) for abatements during the buyer's first year of ownership.
Stabilize Sale Vacancy Loss	No	Provides an option to add back a portion of the vacancy allowance for a property (reflecting a combination of both General Vacancy Loss and Absorption & Downtime Vacancy) in order to reflect a stabilized vacancy loss in net operating income for the Reversion Cap Year. **No**: No adjustment is made to net operating income for the Reversion Cap Year. **Yes**: If necessary, an adjustment is made to net operating income for the Reversion Cap Year to reflect a stabilized vacancy loss. The difference between (i) General Vacancy Loss plus Absorption and Downtime Vacancy; and (ii) Stabilized Vacancy Loss is added back to net operating income for the Reversion Cap Year. If the General Vacancy Loss plus Absorption & Downtime Vacancy is equal to the Stabilized Vacancy Loss, then no adjustment is made. *Helpful Hint: When running the Valuation report, there is a supporting tab entitled "Vacancy Loss Schedule" that provides*

Valuation Scenario Fields	Default Value	Description
		a detailed calculation of the amount of vacancy loss added back to Reversion Cap Year net operating income in order to reflect a stabilized vacancy loss.
Capital Items Adjustment	No	**Yes:** Reversion sale price at the end of the Hold Period is reduced by Capital Expenses for the year following the Sale Date. **No**: No Capital Adjustment Example: In a 10-year Cash Flow with a sale in Year 10, including capital items reduces the Sale Price by Year 11 Capital. This reflects costs that the next buyer will pay if they purchase the building.
$ Adjustment Amount	0	Provides an option to adjust the calculated direct cap value or the reversion sale price upward or downward in an amount specified by the user. For example, if a parcel of land is to be valued or sold as part of the valuation of an income producing property, enter the value of the land parcel in this field and it will be added to the direct cap value or the reversion sale price of the entire property.
Valuation Amt	N/A	Non-editable field that displays the last calculated value for each Valuation Scenario
Valuation Per Area	N/A	Non-editable field that displays the last calculated value per area for each Valuation Scenario

As noted, the default scenario settings will be used to generate the Underwriting Workbook and subsequent calculations; however, once in the Underwriting Workbook, these fields can be modified.

Note: in a Single Property Underwriting Workbook, the valuation calculation uses the default scenario from the Property Section>Valuation Settings tab and, therefore, will yield the same Valuation Amount as is displayed on that tab and in the rDCF Valuation Report.

In a Folder Underwriting Workbook, the valuation amounts could differ from the Property Section valuations due to the standardization of certain settings required by a Folder Underwriting Workbook (such as Begin Date, Hold Period, Adjustment for Capital Items, etc.).

On the following pages, we will review the Underwriting Workbook tabs and the functionality contained on each tab.

Overview of Tabs

The rDCF Underwriting Workbook has 16 tabs for a single property and 19 tabs for a folder UW. The workbook has no hidden fields or formulas to provide absolute transparency into the calculations. The modeling capability of the UW allows for user data input on several tabs in various fields. The workbook tabs and fields that are designed for user input are displayed in blue.

Data that is output from the calculated rDCF model can be directly tied back to rDCF reports and screens. Be cautious – because the workbook does not contain locked fields, output from the rDCF model can be overwritten and cause errors in the workbook. See the section titled *Excel® Model Design Assumptions* for workbook design assumptions and tips.

Remember that you can return to the rDCF Dashboard to download a clean copy of your UW or to rerun the Underwriting Workbook to capture any recent changes to the model. However, you cannot import the UW into rDCF.

In the table below, we summarize each tab in the UW noting which tab has data inputs that can be used for enhanced modeling and scenario planning. Tabs with inputs will be discussed in greater detail in the subsequent sections of the guide.

#	Name	Description	Data Inputs?
1	Unleveraged Cash Flow	Presents (i) a detailed cash flow report beginning on the Report Date for the defined Report Term; (ii) calculation of economic occupancy for each year of the Report Term; and (iii) calculation of unleveraged NPV and IRR every year of the Report Term. The user may specify a "Metric Year" which will present the cash flow on a per square foot basis. The Valuation Matrix is presented at the top of the Unleveraged Cash Flow tab. There, a user chooses different parameters (cap rate, discount rate, hold period, etc.) and the valuation matrix changes on the fly. For a Folder UW, the data on this tab is consolidated for all properties that are included on the Portfolio Valuation Tab.	Yes
2	Executive Summary	Presents a presentation-quality overview of the property or portfolio's valuation, levered and unlevered returns and other key metrics.	No
3	Monthly CF (Unlv)	Presents (i) a detailed monthly cash flow report beginning on the Report Date for the defined Report Term; (ii) calculation of economic occupancy for each month of the Report Term; and (iii) stabilization adjustments to NOI. For a Folder UW, the data on this tab is consolidated for all properties that are included on the Portfolio Valuation Tab.	No
4	Portfolio Valuation *Folder UW only*	Console for entry of valuation assumptions for each property to be fed to the DCF Detail tab. Calculated valuations from the DCF Detail tab are displayed here. On this tab, the user can also designate which properties to include in the portfolio valuation and cash flow.	Yes

#	Name	Description	Data Inputs?
5	DCF Detail *Folder UW only*	Using inputs from the Portfolio Valuation tab, performs step-by-step calculation of portfolio valuation detailing each step by property. Determines blended portfolio assumptions at each step to be used on the Unleveraged Cash Flow tab.	No
6	In Place	Provides (i) a snapshot glance of the suites and the leasing terms for all tenant records from rDCF; and (ii) calculations of base rent, recoveries, and other income components as of the Underwriting Workbook "Report Begin Date". On this suite-centric tab you can select which version of the lease you would like to include on your Unleveraged Cash Flow tab as "In-place". The default is the "Base" or beginning lease for the suite. For a Folder UW, property totals are displayed at the bottom of the worksheet.	Yes
7	Lease Detail	Provides (i) A snapshot glance of the suites and the leasing terms for all tenant records from rDCF; and (ii) calculations of base rent, recoveries, and other income components as of the Underwriting Workbook "Report Begin Date".	No
8	Debt Inputs	Allows for detailed loan inputs and calculation of Amortization Schedules. The Debt Input tab can analyze up to 3 pieces of debt (including a refinance) with various Loan Types, varying rate calculations, and funding for CapEx. See the Debt Inputs section of this guide (page 26).	Yes
9	Leveraged Cash Flow	Presents (i) annual leveraged cash flows over the analysis period; and (ii) an annual Debt Summary. For a Folder UW, the data on this tab is consolidated for all properties that are included on the Portfolio Valuation Tab.	No
10	Monthly CF (Lev)	Presents (i) monthly leveraged cash flows over the analysis period; and (ii) a monthly Balance Summary. For a Folder UW, the data on this tab is consolidated for all properties that are included on the Portfolio Valuation Tab.	No
11	Waterfall	Allows for division of leveraged returns between multiple partners in an equity transaction where the distribution of profits is uneven. See the Waterfall section of this guide (page 42).	Yes
12	Rent Roll	Provides a list of current and future tenants as of the model begin date with their corresponding lease terms, rent schedules, market comparisons and expiration assumptions.	No

#	Name	Description	Data Inputs?
13	Occupancy	Presents monthly occupied square footage over the model term as well as annual average square footage occupied and annual average occupancy percentage. For a Folder UW, the data on this tab is consolidated for all properties that are included on the Portfolio Valuation Tab.	No
14	Expirations	Provides a schedule of first term lease expirations subject to user's inclusion selections on the In-Place Tab. Unincluded leases appear but are greyed out.	No
15	Rollover	Compares gross contractual rent vs. gross market rent on a tenant-by-tenant basis upon lease expiration, with a weighted average summary by year. This tab provides a valuable lens into income spikes in a property when a lease rolls over.	Yes
16	Market Assumption Detail	Summarizes the annual market assumptions assigned to each rDCF Market Leasing Assumption category.	No
17	Market Summary *Single Property UW only*	Summarizes (i) inflation assumptions for each year of the analysis period; (ii) Market Leasing Assumptions for year 1 of the analysis period; and (iii) all future leasing activity commencing after the Analysis Begin Date.	No
18	Exceptions	Flags issues within rDCF that may produce unexpected results at the property level, tenant level, and market leasing assumptions. These issues require individual examination by the user.	No
19	Line Item Detail *Folder UW only*	Displays the cash flow line item detail for each property. Includes Building subtotals for key metrics and line items.	No
20	Portfolio Info *Folder UW only*	Provides property information from rDCF's Property Settings tab.	No

Input Tabs Overview

As noted in the table above, there are six blue tabs that allow data input in the Underwriting Workbook. Below we provide an overview of four of the tabs, describing the input fields and their impact on the model. The Debt Inputs and Waterfall tabs are described in later sections of this guide.

Unleveraged Cash Flow Tab

For a single property Underwriting Workbook, the Unleveraged Cash Flow tab includes all of the inputs to generate the Valuation Matrix and other key valuation metrics, in addition to presenting a detailed cash flow, economic occupancy and unleveraged NPV and IRR for each year of the Report Term.

For a Folder Underwriting Workbook, this tab mirrors the single property Unleveraged Cash Flow tab, however, many of the valuation inputs are found on the Portfolio Valuation tab allowing for property specific assumptions. When property specific assumptions are entered on the Portfolio Valuation tab, the corresponding field on the Unleveraged Cash Flow tab will display "Varies."

Screenshot Example of the Unleveraged Cash Flow Tab for a single property:

Unleveraged Cash Flow

Model Summary	
Deal Name:	Cap Rate Tower
Scenario:	Primary Valuation
Analysis Start:	1/1/2024
Report Date:	1/1/2024
Report Term:	10 Years

Valuation Assumptions	
IRR/NPV Discounting:	Annual
Hold Period:	10 Years
Discount Rate:	10.00%
Terminal Cap Rate:	10.00%
Cost of Sale:	0.00%
Purchase Price (Optional):	
Closing Costs (Optional):	

Reversion Sale Price Options	
Sale NOI Cap Year:	Sale Year + 1
Adjust Sale for Capital Items:	Yes
Gross-up Reversion Abatement:	No
Reversion Adjustment:	$0
Stabilize Reversion Vacancy Loss:	No
Minimum Sale Price:	

Metrics		
Building Area:	Month 1	100,000
Going In NOI:	In-Place	$1,303,243
$/SF Calcs:	In-Place	

Purchase Summary		
Purchase Date:	1/1/2024	
Y1 NOI:	$1,271,723	12.72
Y1 Capital:	$1,601,328	16.01
Purchase Price:	$14,890,217	148.90
In-Place Cap Rate:	8.75%	
Closing Costs:	$0	0.00

Sale Summary		
Sale Date:	12/31/2033	10 yrs
Reversion NOI:	$1,923,115	19.23
Sale Price:	$18,697,995	186.98
Sale Adjustments:	($533,159)	No Adj
Cost of Sale:	$0	-
Sale Proceeds:	$18,697,995	186.98
IRR:	10.00%	

Valuation Matrix

Discount Rate		Terminal Cap Rate Increment: 0.50%				
Increment: 0.50%		9.00%	9.50%	10.00%	10.50%	11.00%
9.00%	Purchase Price:	16,880,576	16,405,520	15,977,971	15,591,140	15,239,475
	Price / SF:	168.81	164.06	159.78	155.91	152.39
	In-Place Cap Rate:	7.72%	7.94%	8.16%	8.36%	8.55%
9.50%	Purchase Price:	16,284,208	15,830,404	15,421,981	15,052,455	14,716,522
	Price / SF:	162.84	158.30	154.22	150.52	147.17
	In-Place Cap Rate:	8.00%	8.23%	8.45%	8.66%	8.86%
10.00%	Purchase Price:	15,714,044	15,280,451	14,890,217	14,537,148	14,216,177
	Price / SF:	157.14	152.80	148.90	145.37	142.16
	In-Place Cap Rate:	8.29%	8.53%	8.75%	8.96%	9.17%
10.50%	Purchase Price:	15,168,769	14,754,401	14,381,469	14,044,055	13,737,315
	Price / SF:	151.69	147.54	143.81	140.44	137.37
	In-Place Cap Rate:	8.59%	8.83%	9.06%	9.28%	9.49%
11.00%	Purchase Price:	14,647,140	14,251,063	13,894,594	13,572,074	13,278,875
	Price / SF:	146.47	142.51	138.95	135.72	132.79
	In-Place Cap Rate:	8.90%	9.14%	9.38%	9.60%	9.81%

PROPERTY CASH FLOW

	In-Place $ / SF	In Place @ 1-1-24	Year 1 Dec-2024	Year 2 Dec-2025	Year 3 Dec-2026	Year 4 Dec-2027	Year 5 Dec-2028	Year 6 Dec-2029	Year 7 Dec-2030	Year 8 Dec-2031	Year 9 Dec-2032	Year 10 Dec-2033	Year 11 Dec-2034
REVENUE													
Potential Base Rent			$2,496,000	$2,553,800	$2,669,046	$2,689,107	$2,771,369	$2,829,435	$2,869,124	$2,911,117	$2,956,379	$3,117,662	$3,208,556
Loss From Absorption & Downtime			(390,000)	(31,500)	0	0	0	(143,191)	(226,146)	0	0	(128,930)	(152,164)
Abatement			(120,000)	(94,000)	0	0	0	(161,090)	(300,582)	0	0	(161,163)	(165,998)
Scheduled Base Rent	20.16	2,016,000	1,986,000	2,428,300	2,669,046	2,689,107	2,771,369	2,525,154	2,342,396	2,911,117	2,956,379	2,827,569	2,890,394
Recoveries	0.75	75,428	75,428	99,681	122,782	141,215	161,735	121,271	55,372	91,520	116,430	73,411	77,043
Recoveries - Abatement	0.00		(1,520)	0	0	0	0	0	0	0	0	0	0
Gross Rental Revenue	20.91	2,091,428	2,059,908	2,527,981	2,791,828	2,830,322	2,933,104	2,646,425	2,397,768	3,002,637	3,072,809	2,900,980	2,967,437
Storage Rent	0.15	15,000	15,000	15,300	15,606	15,918	16,236	16,561	16,892	17,230	17,575	17,926	18,285
Potential Gross Revenue	21.06	2,106,428	2,074,908	2,543,281	2,807,434	2,846,240	2,949,341	2,662,987	2,414,660	3,019,867	3,090,383	2,918,907	2,985,722
Vacancy Loss	0.00		0	(97,239)	(140,372)	(142,312)	(147,467)	0	0	(150,993)	(154,519)	(23,462)	(4,730)
Credit Loss	0.00		0	0	0	0	0	0	0	0	0	0	0
EFFECTIVE GROSS REVENUE	21.06	2,106,428	2,074,908	2,446,042	2,667,062	2,703,928	2,801,874	2,662,987	2,414,660	2,868,874	2,935,864	2,895,445	2,980,992
OPERATING EXPENSES													
Property Taxes	2.50	250,000	250,000	255,000	260,100	265,302	270,608	276,020	281,540	287,171	292,915	298,773	304,748
Insurance	0.40	40,000	40,000	41,200	42,436	43,709	45,020	46,371	47,762	49,195	50,671	52,191	53,757
Management Fee	0.62	62,247	62,247	73,381	80,012	81,118	84,056	79,890	72,440	86,066	88,076	86,863	89,430
Operating Expense	4.00	400,000	400,000	412,000	424,360	437,091	450,204	463,710	477,621	491,950	506,708	521,909	537,566
Janitorial	0.21	20,937	20,937	25,428	26,522	27,318	28,137	27,532	27,562	30,746	31,669	31,314	32,057
General & Administrative	0.15	15,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
Marketing	0.15	15,000	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159
TOTAL OPERATING EXPENSES	8.03	803,184	803,184	837,909	865,257	887,319	911,791	928,301	942,747	982,025	1,008,041	1,030,194	1,057,876
NET OPERATING INCOME	**$13.03**	**$1,303,243**	**$1,271,723**	**$1,608,133**	**$1,801,805**	**$1,816,609**	**$1,890,083**	**$1,734,686**	**$1,471,913**	**$1,886,849**	**$1,927,823**	**$1,865,251**	**$1,923,115**

Note: The initial/default inputs for the Underwriting Workbook are set in rDCF in the Property Section > Valuation Settings tab. The inputs in blue can be overwritten in the UW.

Unleveraged Cash Flow Tab Input Fields

Fields with an asterisk (*) indicate that the field must be edited on the Portfolio Valuation tab for a Folder UW.

Input Field Category / Name	Input Options	Description	Impact on Model
Model Summary			
Deal Name	Text field	Initially populated with the Property Name from the rDCF model. Can be overwritten in UW.	Appears in top left corner of all tabs.
Scenario	Text field	Defaults to rDCF selected scenario name. Can be edited.	Appears in top left corner of all tabs.
Valuation Assumptions			
IRR/NPV Discounting	Monthly or Annual	Indicates calculation method to be used for IRR / present value calculation. Choose from Monthly or Annual *Note: Monthly discounting will typically generate a higher property value as cash flows are assumed to be received throughout each year rather than at the end of each year.*	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Hold Period	Integer	Defines the hold period for which property cash flows will be discounted in the calculation of the property's value. The Hold Period determines the Sale Year.	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Discount Rate	% Entered as xx.xx	Rate of return used to determine the present value of future cash flows	All valuation calculations (specifically, in the Valuation Matrix, Hold Period Valuation, and Year over Year DCF Value sections)
Terminal Cap Rate	% Entered as xx.xx	Known also as the Resale, Reversionary or Residual cap rate, this rate is used to estimate the resale value (or Sale Price) at the end of the valuation term/hold period. Formula: Sale Price = NOI/Terminal Cap Rate	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Cost of Sale	% Entered as xx.xx	Allows the user to reduce the Sale Proceeds based on a defined percentage.	Reduces Sale Proceeds in the Hold Period Valuation; in turn, reduces Sale Price
Purchase Price (Optional)	$ Amount	Enter an alternative to the calculated NPV to be used as the Purchase Price in the transaction.	Affects IRR for the transaction; flows to the Debt Input and Waterfall tabs

Input Field Category / Name	Input Options	Description	Impact on Model
Closing Costs (Optional)	$ Amount	Enter fixed amount for the closing costs	Affects IRR for the transaction; flows to Debt Input and Waterfall tabs
Reversion Sale Price Options			
Sale NOI Cap Year	Sale Year or Sale Year + 1	**Sale Year+1** caps NOI for the year immediately following the Sale year to determine sale price. *Helpful Hint: "Sale Year + 1" is the default because when a property is sold, the price paid by the next investor is based upon an assessment of income for his/her expected period of ownership. Therefore, for the next investor, or potential buyer, the net operating income for his/her first year of ownership will be the year after we sell the property. This will be the first year of his/her investment.* **Sale Year** caps NOI for the Sale year to determine the sale price. *Helpful Hint: "Sale Year" should only be used if the net operating income for "Sale Year + 1" does not reflect stabilized occupancy and you either (i) don't want to use the "Stabilize Reversion Vacancy Loss" option (see below) in the Valuation Settings; or (ii) don't want to change your Valuation Term such that "Sale Year + 1" will reflect a stabilized net operating income.*	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Adjust Sale for Capital Items	Yes or No	**Yes:** Reversion Sale Price at the end of the Hold Period is reduced by Capital Expenses for the year following the Sale Date. **No**: No Capital Adjustment Example: In a 10-year Cash Flow with a sale in Year 10, including capital items reduces the Sale Price by Year 11 Capital. This reflects costs that the next buyer will pay if they purchase the building.	Adds a capital expense adjustment to the Sale Proceeds section of the Hold Period Valuation on the Unleveraged Cash Flow tab; Adds capital adjustment ("Capital Adj") to the Sale Summary on the Unleveraged Cash Flow tab.
Gross-up Reversion Abatement	Yes or No	Provides an option to add abatements (i.e., free rent) back into net operating income for the Reversion Cap Year.	Adds a Gross-up Adjustment for Abatement to the Sale Proceeds section of the Hold Period Valuation on

Input Field Category / Name	Input Options	Description	Impact on Model
		No: No adjustment is made to net operating income for Reversion Cap Year. **Yes:** Abatements are added back to net operating income for Reversion Cap Year. After capitalizing the adjusted net operating income, the resulting sale price is then reduced by the abatements that were added back to net operating income. The theory is that the seller is offering the buyer a sale price reduction (i.e., credit) for abatements during the buyer's first year of ownership.	the Unleveraged Cash Flow tab; Adds Abatement adjustment ("Abatement Adj") to the Sale Summary on the Unleveraged Cash Flow tab.
Reversion Adjustment	$ Amount	Provides an option to adjust the calculated direct cap value or the reversion sale price upward or downward in an amount specified by the user. For example, if a parcel of land is to be valued or sold as part of the valuation of an income producing property, enter the value of the land parcel in this field and it will be added to the direct cap value or the reversion sale price of the entire property.	Increases or decreases the calculated reversionary Sale Price and the total Sale Adjustments in the Sale Summary Section.
Stabilize Reversion Vacancy Loss	Yes or No	Provides an option to add back a portion of the vacancy allowance for a property (reflecting a combination of both General Vacancy Loss and Absorption & Downtime Vacancy) in order to reflect a stabilized vacancy loss in net operating income for the Reversion Cap Year. **No:** No adjustment is made to net operating income for Reversion Cap Year. **Yes:** If necessary, an adjustment is made to net operating income for the Reversion Cap Year to reflect a stabilized vacancy loss. The difference between (i) General Vacancy Loss plus Absorption and Downtime Vacancy; and (ii) Stabilized Vacancy Loss is added back to net operating income for the Reversion Cap Year. If the General Vacancy Loss plus Absorption & Downtime Vacancy is equal to the Stabilized Vacancy Loss, then no adjustment is made.	Adds a Stabilization Adjustment for Vacancy Loss to the Sale Proceeds section of the Hold Period Valuation on the Unleveraged Cash Flow tab.

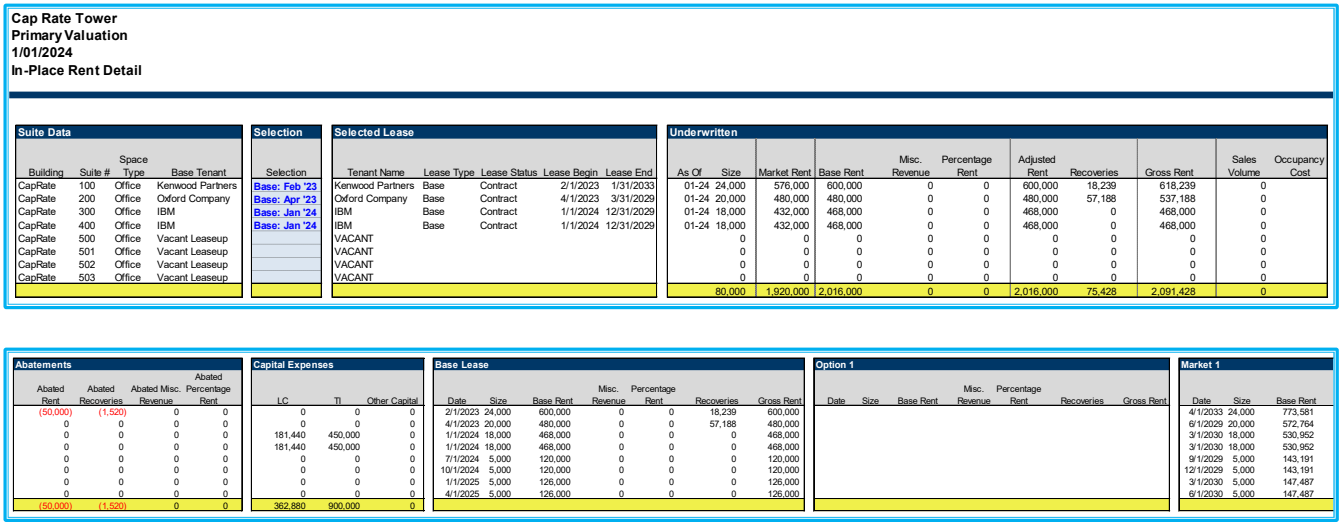
Input Field Category / Name	Input Options	Description	Impact on Model
Minimum Sale Price	$ Amount	Sets a minimum sale price at the end of the hold period.	Overrides the calculated valuation sale price, if higher, in all valuation calculations
Metrics			
Building Area	Month 1 or Year 1, Year 2, etc.	Building area is imported from rDCF. The user can select, in this field, which area to use for the valuation. Typically, you want to select a year that contains the stabilized Net Rentable Area.	Affects per square foot values in the Valuation Matrix and throughout the UW
Going in NOI	In Place or a specific Year	Use either the property's "In-Place" income (as determined on the "In-Place" tab) or a specific year's income to calculate the property's going-in cap rate. The In-Place income may be preferred depending on year-end vacant lease-up.	Valuation Matrix and Purchase / Sale Summary
$/SF Calcs	In Place or a specific Year	Use either the property's "In-Place" cash flow (as determined on the "In-Place" tab) or a specific year's cash flow to calculate the property's per square foot values for display in the first column of the Property Cash Flow	Valuation Matrix and Purchase / Sale Summary
Valuation Matrix			
Discount Rate Increment	% Entered as xx.xx	Establishes the increments used in the Valuation Matrix for the selected Discount Rate. For example, if you enter a 10.00% Discount Rate in the Model Assumptions, and 0.50% increments, the matrix will display results for the Discount Rate at 9.00%, 9.50%, 10.00%, 10.50% and 11.00%.	Valuation Matrix
Terminal Cap Rate Increment	% Entered as xx.xx	Establishes the increments used in the Valuation Matrix for the selected Terminal Cap Rate. For example, if you enter a 10.00% Terminal Cap Rate in the Model Assumptions, and 0.50% increments, the matrix will display results for the Terminal Cap Rate at 9.00%, 9.50%, 10.00%, 10.50% and 11.00%.	Valuation Matrix

**In a Folder UW, field should be edited on the Portfolio Valuation tab, not the Unleveraged Cash Flow tab.*

In Place Tab

The In Place tab provides (i) a snapshot glance of the suites and the leasing terms for all tenant records from rDCF; and (ii) calculations of base rent, recoveries, and other income components as of the Underwriting Workbook "Report Begin Date". On this suite-centric tab you can select which version of the lease you would like to include in your unleveraged cash flow as "In-place". The default is the "Base" or beginning lease for the suite.

For a Folder UW, property totals are displayed at the bottom of the worksheet.



Cap Rate Tower
Primary Valuation
1/01/2024
In-Place Rent Detail

Suite Data

Building	Suite #	Space Type	Base Tenant
CapRate	100	Office	Kenwood Partners
CapRate	200	Office	Oxford Company
CapRate	300	Office	IBM
CapRate	400	Office	IBM
CapRate	500	Office	Vacant Leaseup
CapRate	501	Office	Vacant Leaseup
CapRate	502	Office	Vacant Leaseup
CapRate	503	Office	Vacant Leaseup

Selection

Selection
Base: Feb '23
Base: Apr '23
Base: Jan '24
Base: Jan '24

Selected Lease

Tenant Name	Lease Type	Lease Status	Lease Begin	Lease End
Kenwood Partners	Base	Contract	2/1/2023	1/31/2033
Oxford Company	Base	Contract	4/1/2023	3/31/2029
IBM	Base	Contract	1/1/2024	12/31/2029
IBM	Base	Contract	1/1/2024	12/31/2029
VACANT				
VACANT				
VACANT				
VACANT				

Underwritten

As Of	Size	Market Rent	Base Rent	Misc. Revenue	Percentage Rent	Adjusted Rent	Recoveries	Gross Rent	Sales Volume	Occupancy Cost
01-24	24,000	576,000	600,000	0	0	600,000	18,239	618,239	0	
01-24	20,000	480,000	480,000	0	0	480,000	57,188	537,188	0	
01-24	18,000	432,000	468,000	0	0	468,000	0	468,000	0	
01-24	18,000	432,000	468,000	0	0	468,000	0	468,000	0	
	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	
	0	0	0	0	0	0	0	0	0	
	80,000	1,920,000	2,016,000	0	0	2,016,000	75,428	2,091,428	0	

Abatements

Abated Rent	Abated Recoveries	Abated Misc. Revenue	Abated Percentage Rent
(50,000)	(1,520)	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
(50,000)	(1,520)	0	0

Capital Expenses

LC	TI	Other Capital
0	0	0
0	0	0
181,440	450,000	0
181,440	450,000	0
0	0	0
0	0	0
0	0	0
0	0	0
362,880	900,000	0

Base Lease

Date	Size	Base Rent	Misc. Revenue	Percentage Rent	Recoveries	Gross Rent
2/1/2023	24,000	600,000	0	0	18,239	600,000
4/1/2023	20,000	480,000	0	0	57,188	480,000
1/1/2024	18,000	468,000	0	0	0	468,000
1/1/2024	18,000	468,000	0	0	0	468,000
7/1/2024	5,000	120,000	0	0	0	120,000
10/1/2024	5,000	120,000	0	0	0	120,000
1/1/2025	5,000	126,000	0	0	0	126,000
4/1/2025	5,000	126,000	0	0	0	126,000

Option 1

Date	Size	Base Rent	Misc. Revenue	Percentage Rent	Recoveries	Gross Rent

Market 1

Date	Size	Base Rent
4/1/2033	24,000	773,581
6/1/2029	20,000	572,764
3/1/2030	18,000	530,952
3/1/2030	18,000	530,952
9/1/2029	5,000	143,191
12/1/2029	5,000	143,191
3/1/2030	5,000	147,487
6/1/2030	5,000	147,487

Note: Screenshot is for illustrative purposes. Not all columns and fields are shown above.

In Place Tab Input Fields

Input Field Category / Name	Input Options	Description	Impact on Model
Selection	Drop Down	Select which tenant records to include/exclude from the In Place calculation (shown on Unleveraged Cash Flow). For each suite select from the initial lease ("Base") or subsequent modeled leases to be used for the In-Place cash flow on the Unleveraged Cash Flow tab. The square footage and rental calculation will change accordingly. This interaction provides a quick method of identifying current and future rental for loan sizing purposes.	The selections made on this tab will be identified on the Lease Detail tab. Cash Flow for the selected leases will be displayed in the In Place column for the Property Cash Flow on the Unleveraged Cash Flow tab.

Rollover Tab

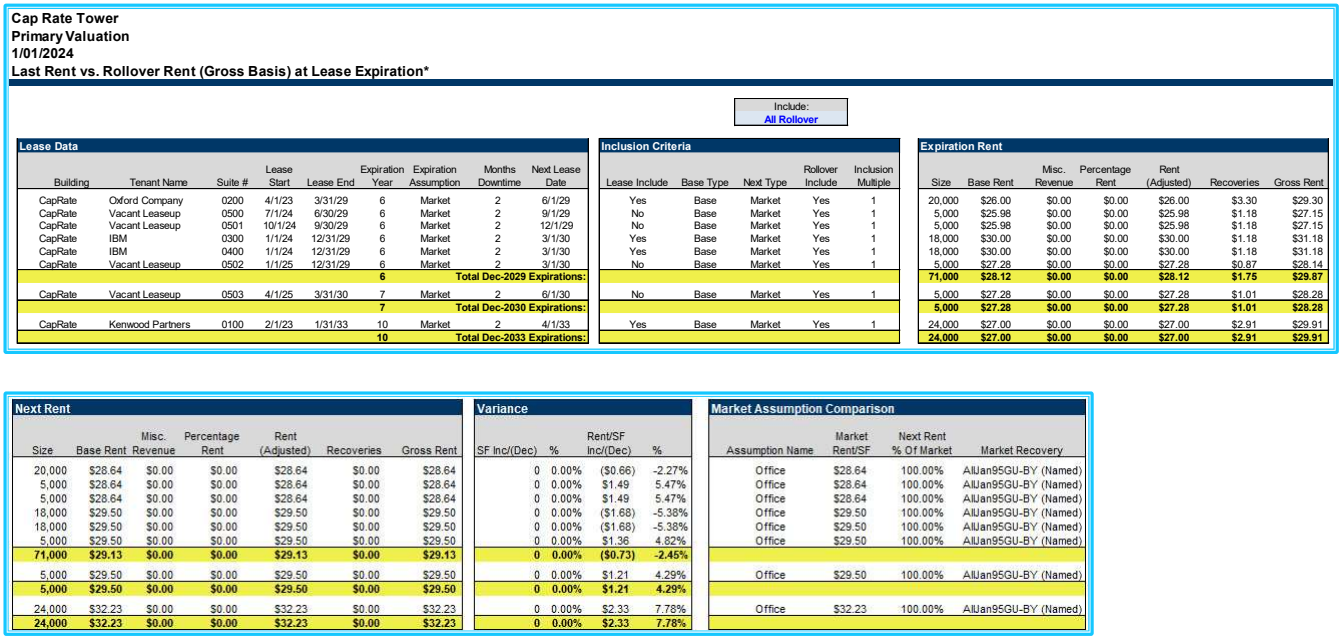
The Rollover tab displays all leasing from the rDCF model comparing gross contractual rent to gross market rent on a tenant-by-tenant basis upon lease expiration, with a weighted average summary by expiration year.

This tab includes a variance section comparing expiring rent to the next rent. Reviewing the summary variance by year on a PSF and % basis allows a quick analysis of the magnitude of potential upside or downside in rents for a building or portfolio.

Notes:

1) The Rollover report should not be used as a lease expiration summary. It does not account for all renewal types. Leases with Renewal Type = None in rDCF will not be displayed. See the Expirations tab for complete expiration information.

2) Expiration and Next Rent boxes show unabated amounts for Rent & Recoveries regardless of leasing assumptions (i.e., free rent and recoveries are not included in the amounts)



Cap Rate Tower
Primary Valuation
1/01/2024
Last Rent vs. Rollover Rent (Gross Basis) at Lease Expiration*

Include: All Rollover

Lease Data

Building	Tenant Name	Suite #	Lease Start	Lease End	Expiration Year	Expiration Assumption	Months Downtime	Next Lease Date
CapRate	Oxford Company	0200	4/1/23	3/31/29	6	Market	2	6/1/29
CapRate	Vacant Leaseup	0500	7/1/24	6/30/29	6	Market	2	9/1/29
CapRate	Vacant Leaseup	0501	10/1/24	9/30/29	6	Market	2	12/1/29
CapRate	IBM	0300	1/1/24	12/31/29	6	Market	2	3/1/30
CapRate	IBM	0400	1/1/24	12/31/29	6	Market	2	3/1/30
CapRate	Vacant Leaseup	0502	1/1/25	12/31/29	6	Market	2	3/1/30
					6	**Total Dec-2029 Expirations:**		
CapRate	Vacant Leaseup	0503	4/1/25	3/31/30	7	Market	2	6/1/30
					7	**Total Dec-2030 Expirations:**		
CapRate	Kenwood Partners	0100	2/1/23	1/31/33	10	Market	2	4/1/33
					10	**Total Dec-2033 Expirations:**		

Inclusion Criteria

Lease Include	Base Type	Next Type	Rollover Include	Inclusion Multiple
Yes	Base	Market	Yes	1
No	Base	Market	Yes	1
No	Base	Market	Yes	1
Yes	Base	Market	Yes	1
Yes	Base	Market	Yes	1
No	Base	Market	Yes	1
No	Base	Market	Yes	1
Yes	Base	Market	Yes	1

Expiration Rent

Size	Base Rent	Misc. Revenue	Percentage Rent	Rent (Adjusted)	Recoveries	Gross Rent
20,000	$26.00	$0.00	$0.00	$26.00	$3.30	$29.30
5,000	$25.98	$0.00	$0.00	$25.98	$1.18	$27.15
5,000	$25.98	$0.00	$0.00	$25.98	$1.18	$27.15
18,000	$30.00	$0.00	$0.00	$30.00	$1.18	$31.18
18,000	$30.00	$0.00	$0.00	$30.00	$1.18	$31.18
5,000	$27.28	$0.00	$0.00	$27.28	$0.87	$28.14
71,000	**$28.12**	**$0.00**	**$0.00**	**$28.12**	**$1.75**	**$29.87**
5,000	$27.28	$0.00	$0.00	$27.28	$1.01	$28.28
5,000	**$27.28**	**$0.00**	**$0.00**	**$27.28**	**$1.01**	**$28.28**
24,000	$27.00	$0.00	$0.00	$27.00	$2.91	$29.91
24,000	**$27.00**	**$0.00**	**$0.00**	**$27.00**	**$2.91**	**$29.91**

Next Rent

Size	Base Rent	Misc. Revenue	Percentage Rent	Rent (Adjusted)	Recoveries	Gross Rent
20,000	$28.64	$0.00	$0.00	$28.64	$0.00	$28.64
5,000	$28.64	$0.00	$0.00	$28.64	$0.00	$28.64
5,000	$28.64	$0.00	$0.00	$28.64	$0.00	$28.64
18,000	$29.50	$0.00	$0.00	$29.50	$0.00	$29.50
18,000	$29.50	$0.00	$0.00	$29.50	$0.00	$29.50
5,000	$29.50	$0.00	$0.00	$29.50	$0.00	$29.50
71,000	**$29.13**	**$0.00**	**$0.00**	**$29.13**	**$0.00**	**$29.13**
5,000	$29.50	$0.00	$0.00	$29.50	$0.00	$29.50
5,000	**$29.50**	**$0.00**	**$0.00**	**$29.50**	**$0.00**	**$29.50**
24,000	$32.23	$0.00	$0.00	$32.23	$0.00	$32.23
24,000	**$32.23**	**$0.00**	**$0.00**	**$32.23**	**$0.00**	**$32.23**

Variance

SF Inc/(Dec)	%	Rent/SF Inc/(Dec)	%
0	0.00%	($0.66)	-2.27%
0	0.00%	$1.49	5.47%
0	0.00%	$1.49	5.47%
0	0.00%	($1.68)	-5.38%
0	0.00%	($1.68)	-5.38%
0	0.00%	$1.36	4.82%
0	**0.00%**	**($0.73)**	**-2.45%**
0	0.00%	$1.21	4.29%
0	**0.00%**	**$1.21**	**4.29%**
0	0.00%	$2.33	7.78%
0	**0.00%**	**$2.33**	**7.78%**

Market Assumption Comparison

Assumption Name	Market Rent/SF	Next Rent % Of Market	Market Recovery
Office	$28.64	100.00%	AllJan95GU-BY (Named)
Office	$28.64	100.00%	AllJan95GU-BY (Named)
Office	$28.64	100.00%	AllJan95GU-BY (Named)
Office	$29.50	100.00%	AllJan95GU-BY (Named)
Office	$29.50	100.00%	AllJan95GU-BY (Named)
Office	$29.50	100.00%	AllJan95GU-BY (Named)
Office	$29.50	100.00%	AllJan95GU-BY (Named)
Office	$32.23	100.00%	AllJan95GU-BY (Named)

Rollover Tab Input Fields

Input Field Category / Name	Input Options	Description	Impact on Model
Include	Drop Down	Select categories of leases to include in the totals. Lease selections include Base leases, In-Place Leases, Roll To Market, and All Rollover.	Changes on this tab do not impact other tabs, the cash flow, or valuation.

Portfolio Valuation Tab

The Portfolio Valuation tab is used in conjunction with the Unleveraged Cash Flow tab to calculate the contribution of each building within a Folder UW to overall value in the valuation matrix. This tab allows greater flexibility for scenario planning at a portfolio level. Here, you can elect to model the portfolio value using a set of assumptions for the portfolio or individual valuation assumptions for each property.

Valuation Assumptions box:
By default, the tab will display one set of assumptions for the portfolio in the Portfolio row. To change this and set individual property assumptions, you should delete the data on the Portfolio row for Discount Rate, Cost of Sale % and Ext Cap Rate. This will change the property cells for those columns from gray to blue opening the cells for data entry.

Default Input Screen

Valuation Assumptions

	Include in Cash Flow	Purchase Price	Closing Costs	Discount Rate	Cost of Sale	Exit Cap Rate	Min Sale Price
CapRate	Yes						
LakeSt	Yes						
PacTower	Yes						
Portfolio:	3 Properties			10.00%	0.00%	10.00%	

Upon deleting the 8.00% from each column on the Portfolios row, the property detail cells turn blue and are available for editing:

Valuation Assumptions

	Include in Cash Flow	Purchase Price	Closing Costs	Discount Rate	Cost of Sale	Exit Cap Rate	Min Sale Price
CapRate	Yes			8.00%	1.00%	8.00%	
LakeSt	Yes			9.00%	1.00%	9.00%	
PacTower	Yes			10.00%	1.00%	9.00%	
Portfolio:	3 Properties						

Note that Discount Rate, Cost of Sale %, Exit Cap Rate and Min Sale Price must be entered using the same methodology –all are either (1) entered with a Portfolio-level value or (2) with a property-level value. You cannot mix and match the data entry formats for these 4 columns.

The Purchase Price and Closing Costs columns must be entered either by property or by Portfolio; alternatively, these fields can be left blank. Purchase Price will default from the NPV calculation.

In addition to the Valuation Assumptions discussed above, the Portfolio Valuation tab has a box for Model Assumptions which feeds the Unleveraged Cash Flow tab:

Model Assumptions

Adjust Sale for Capital Items:	Yes
Gross-up Reversion Abatement:	No
Stabilize Reversion Vacancy Loss:	No
IRR/NPV Discounting:	Annual
Reversion NOI:	Sale Year + 1
Hold Period:	10 Years

Portfolio Valuation Tab Input Fields

Input Field Category / Name	Input Options	Description	Impact on Model
Model Assumptions			
Adjust Sale for Capital items	Yes or No	**Yes:** Reversion sale price at the end of the Hold Period is reduced by Capital Expenses for the year following the Sale Date. **No**: No Capital Adjustment Example: In a 10-year Cash Flow with a sale in Year 10, including capital items reduces the Sale Price by Year 11 Capital. This reflects costs that the next buyer will pay if they purchase the building.	Adds a capital expense adjustment to the Sale Proceeds section of the Hold Period Valuation on the Unleveraged Cash Flow tab; Adds capital adjustment ("Capital Adj") to the Sale Summary on the Unleveraged Cash Flow tab.
Gross-up Reversion Abatement	Yes or No	Provides an option to add abatements (i.e., free rent) back into net operating income for the Reversion Cap Year. **No:** No adjustment is made to net operating income for Reversion Cap Year. **Yes:** Abatements are added back to net operating income for Reversion Cap Year. After capitalizing the adjusted net operating income, the resulting sale price is then reduced by the abatements that were added back to net operating income. The theory is that the seller is offering the buyer a sale price reduction (i.e., credit) for abatements during the buyer's first year of ownership.	Adds a Gross-up Adjustment for Abatement to the Sale Proceeds section of the Hold Period Valuation on the Unleveraged Cash Flow tab; Adds Abatement adjustment ("Abatement Adj") to the Sale Summary on the Unleveraged Cash Flow tab.
Stabilize Reversion Vacancy Loss	Yes or No	Provides an option to add back a portion of the vacancy allowance for a property (reflecting a combination of both General Vacancy Loss and Absorption & Downtime Vacancy) in order to reflect a stabilized vacancy loss in net operating income for the Reversion Cap Year. **No:** No adjustment is made to net operating income for Reversion Cap Year. **Yes:** If necessary, an adjustment is made to net operating income for the Reversion Cap Year to reflect a stabilized vacancy loss. The difference between (i) General Vacancy Loss plus Absorption and Downtime Vacancy; and (ii) Stabilized Vacancy Loss is added back to net operating income for the Reversion Cap	Adjustment for Vacancy Loss to the Sale Proceeds section of the Hold Period Valuation on the Unleveraged Cash Flow tab

Input Field Category / Name	Input Options	Description	Impact on Model
		Year. If the General Vacancy Loss plus Absorption & Downtime Vacancy is equal to the Stabilized Vacancy Loss, then no adjustment is made.	
IRR/NPV Discounting	Annual or Monthly	Indicates calculation method to be used for IRR / present value calculation. Choose from Monthly or Annual *Note: Monthly discounting will typically generate a higher property value as cash flows are assumed to be received throughout each year rather than at the end of each year.*	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Reversion NOI	Sale Year or Sale Year + 1	**Sale Year+1** caps NOI for the year immediately following the Sale year to determine sale price. *Helpful Hint: "Sale Year + 1" is the default because when a property is sold, the price paid by the next investor is based upon an assessment of income for his/her expected period of ownership. Therefore, for the next investor, or potential buyer, the net operating income for his/her first year of ownership will be the year after we sell the property. This will be the first year of his/her investment.* **Sale Year** caps NOI for the Sale year to determine the sale price. *Helpful Hint: "Sale Year" should only be used if the net operating income for "Sale Year + 1" does not reflect stabilized occupancy and you either (i) don't want to use the "Stabilize Reversion Vacancy Loss" option (see below) in the Valuation Settings; or (ii) don't want to change your Valuation Term such that "Sale Year + 1" will reflect a stabilized net operating income.*	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)
Hold Period	Integer	Defines the hold period for which property cash flows will be discounted in the calculation of the property's value. The Hold Period determines the Sale Year.	All valuation calculations (found in the Valuation Matrix, Hold Period Valuation section, and Year over Year DCF Value section)

Input Field Category / Name	Input Options	Description	Impact on Model
Valuation Assumptions			
Include in Cash Flow	Yes or No	Choose which properties to include or exclude from the cash flow analysis.	Setting a property to "No, removes its cash flow from all cash flow tabs. The leasing tabs will still present the excluded property's information, but it will not be aggregated with other properties. Exception: Occupancy completely excludes excluded buildings. NRA totals will exclude as well.
Purchase price	$ Amount	Enter either one portfolio Purchase Price on the Portfolio row or enter a Purchase Price for each property in the portfolio.	Unleveraged Cash Flow & Valuation Matrix
Closing Costs	$ Amount	Enter either one portfolio Closing Cost amount on the Portfolio row or enter a Closing Cost amount for each property in the portfolio.	Unleveraged Cash Flow & Valuation Matrix
Discount Rate	% Entered as xx.xx	Enter either one portfolio Discount Rate on the Portfolio row or enter a Discount Rate for each property in the portfolio. See note below	Unleveraged Cash Flow & Valuation Matrix
Cost of Sale %	% Entered as xx.xx	Enter either one portfolio Cost of Sale % on the Portfolio row or enter a Cost of Sale % for each property in the portfolio. See note below	Unleveraged Cash Flow & Valuation Matrix
Exit Cap Rate	% Entered as xx.xx	Enter either one portfolio Exit Cap Rate on the Portfolio row or enter an Exit Cap Rate for each property in the portfolio. See note below	Unleveraged Cash Flow & Valuation Matrix
Reversion Adjustment	$ Amount	Enter either one portfolio Reversion Adjustment on the Portfolio row or enter a Reversion Adjustment for each property in the portfolio, as needed.	Unleveraged Cash Flow & Valuation Matrix
Min Sale Price	$ Amount	Enter either one portfolio Min Sale Price on the Portfolio row or enter a Min Sale Price for each property in the portfolio. See note below	Unleveraged Cash Flow & Valuation Matrix

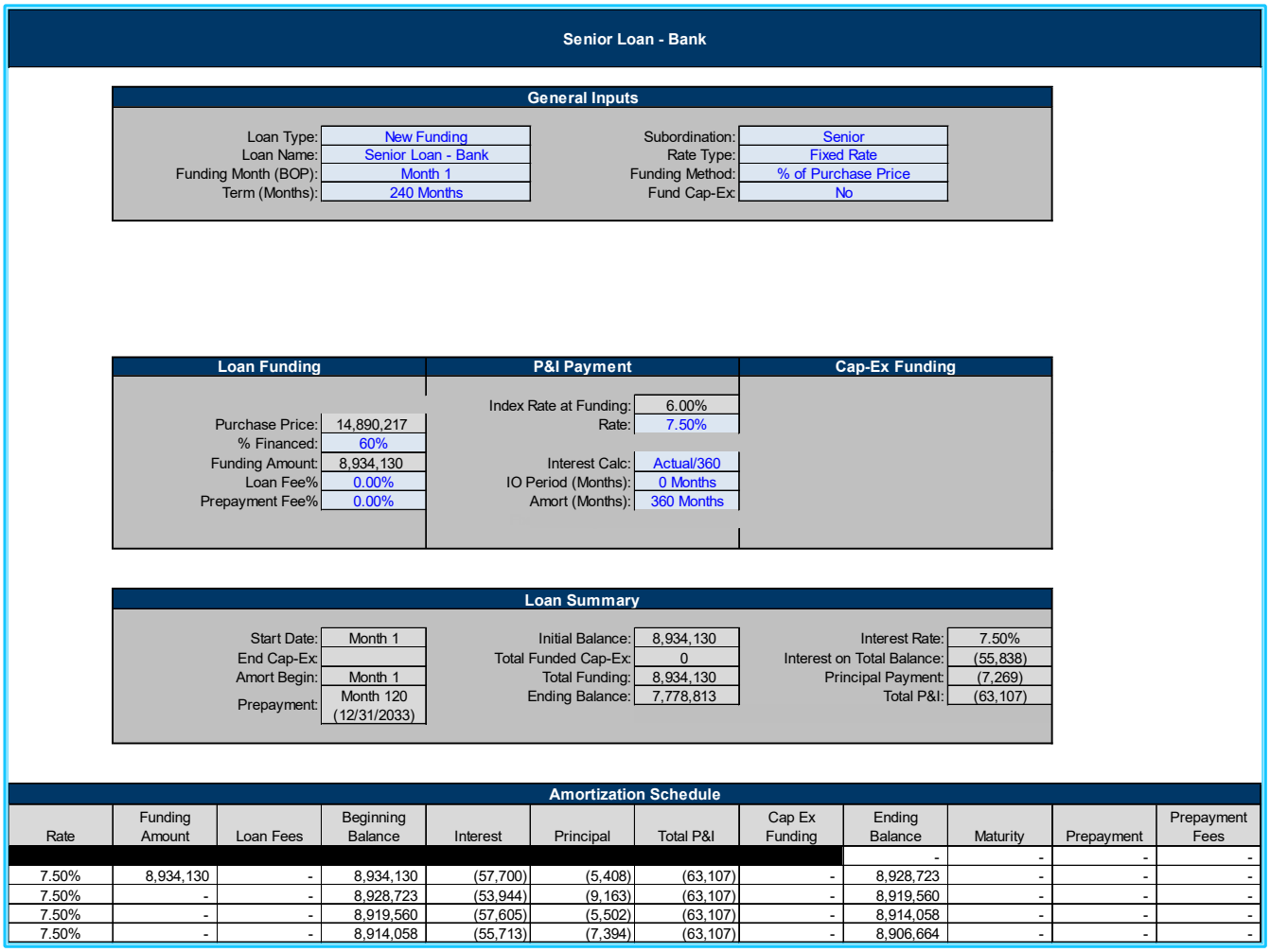
Note: Discount Rate, Cost of Sale %, Exit Cap Rate, Reversion Adjustment, and Min Sale Price must be entered using the same methodology – all are either (1) entered with a Portfolio-level value or (2) with a property-level value. You cannot mix and match the data entry formats for these 5 columns.

Debt Inputs Tab

The Debt Inputs tab allows the user to enter a total of three loans: Loan 1, Loan 2, and Loan 3 (Refinance). Loan 3 may be treated as a third loan or as a refinance of Loan 1 and/or Loan 2. Each loan has four sections that require user inputs: “General Inputs”, “Loan Funding”, “P&I Payment”, and “Cap-Ex Funding.” The Loan 3 (Refinance) has an additional section, entitled “Refinance Inputs” that is discussed in greater detail below in the Refinance section.

Data Flow

The Debt Inputs tab receives cash flow and valuation data from the Unleveraged Cash Flow tab. The input fields on the Debt Inputs tab are inputs to the Debt Input tab’s Amortization Schedule. The Amortization Schedule feeds into the Monthly CF (Lev) tab. The Monthly CF (Lev) tab feeds the Leveraged Cash Flow tab.



Senior Loan - Bank

General Inputs

Loan Type:	New Funding	Subordination:	Senior
Loan Name:	Senior Loan - Bank	Rate Type:	Fixed Rate
Funding Month (BOP):	Month 1	Funding Method:	% of Purchase Price
Term (Months):	240 Months	Fund Cap-Ex:	No

Loan Funding		P&I Payment		Cap-Ex Funding
		Index Rate at Funding:	6.00%	
Purchase Price:	14,890,217	Rate:	7.50%	
% Financed:	60%			
Funding Amount:	8,934,130	Interest Calc:	Actual/360	
Loan Fee%	0.00%	IO Period (Months):	0 Months	
Prepayment Fee%	0.00%	Amort (Months):	360 Months	

Loan Summary

Start Date:	Month 1	Initial Balance:	8,934,130	Interest Rate:	7.50%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	(55,838)
Amort Begin:	Month 1	Total Funding:	8,934,130	Principal Payment:	(7,269)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	7,778,813	Total P&I:	(63,107)

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								-	-	-	-
7.50%	8,934,130	-	8,934,130	(57,700)	(5,408)	(63,107)	-	8,928,723	-	-	-
7.50%	-	-	8,928,723	(53,944)	(9,163)	(63,107)	-	8,919,560	-	-	-
7.50%	-	-	8,919,560	(57,605)	(5,502)	(63,107)	-	8,914,058	-	-	-
7.50%	-	-	8,914,058	(55,713)	(7,394)	(63,107)	-	8,906,664	-	-	-

General Inputs

Input Field Category / Name	Input Options	Description	Impact on Model
Loan Type	Drop-down	**None** **Existing Note –** assumes loan existed prior to model begin. User enters all assumptions (e.g., balance, term) as of model begin date. **New Funding** – New loan that is assumed to fund either on or after the model begin date. Allows for the loan to be funded at a % of Purchase Price or a defined amount.	The selection drives which subsequent fields are available for input on the Debt Inputs tab.
Loan Name	Text	User-defined Loan Name. Can be left blank	Appears on Loan 1 header and on Loan 3 as a drop-down selection for Refinance
Funding Month (BOP)	Integer	Only available when Loan Type = New Funding. Enter the month of the analysis term in which the loan will be funded. Example: enter "13" for Month 13 of the loan. Specific dates are not permitted.	Establishes the start period for the Amortization Schedule
Remaining Term (Months) / Term (Months)	Integer	If Loan Type = Existing Note, enter # months remaining in the Existing Note's term If Loan Type = New Funding, enter # months in the loan term. If left blank, the default value is 240 months.	Establishes the end period for the Amortization Schedule box (Funding Month + Term defines Amortization Schedule)
Subordination	Drop Down	**Senior –** Debt service coverage for Senior debt is broken out on the Leveraged Cash Flow tab. **Subordinated** – an additional debt service coverage ratio for all debt (senior and subordinated) is also calculated on the Leveraged Cash Flow tab.	Both Senior and Subordinated Debt flow to the "Debt Summary" on the Annual Leveraged Cash Flow.

Input Field Category / Name	Input Options	Description	Impact on Model
Rate Type	Drop Down	**Fixed Rate** – Loan payments based on a fixed interest rate **Floating Rate** – Loan payments based on a fixed spread over a floating index rate *Note: The Spread and Index Rate inputs are discussed in more detail in the "P&I Payment" section below.*	Affects fields available in P&I Payment section and impacts the Amortization Schedule
Funding Method	Drop Down	Funding Method can be Amount or % of Purchase Price. Only available when Loan Type = New Funding.	Effects fields available in the Loan Funding section.
Fund Cap-Ex	Drop Down	Determine whether or not to fund capital expenditures as part of the loan draw.	Cap Ex will be funded on a monthly basis. Effects fields available in the Cap Ex Funding section.

Loan Funding

In the Loan Funding box, you enter basic loan information for either a new or an existing loan. The fields may vary in name or be inactive depending upon the Funding Method used in the General Inputs box as noted in blue under the Input Field column.

Input Field Category / Name	Input Options	Description	Impact on Model
Current Balance / Funding Amount *Active when Funding Method = Amount*	$ Amount	If Loan Type = Existing Note, field is labeled "Current Balance" and holds the balance as of the model begin date. If Loan Type = New Funding, field is labeled "Funding Amount" and holds the new loan amount.	Defines the beginning balance for the Amortization Schedule
Purchase Price *Active when Funding Method = % of Purchase Price*	n/a	Equal to the Purchase Price on the Annual Leveraged Summary worksheet. No user input is allowed.	
% Financed *Active when Funding Method = % of Purchase Price*	% Entered as xx	The percentage of the Purchase Price that the loan will fund. Displays no decimals but will accept decimal entry.	Used to calculate Funding Amount
Funding Amount *Active when Funding Method = % of Purchase Price*	n/a	Equal to the Purchase Price x % Financed. No user input is allowed.	
Loan Fee %	% Entered as xx.xx	This fee is calculated as a percent of the initial loan balance and paid in the initial month.	Adds Loan Fee amount to Amortization Schedule

Input Field Category / Name	Input Options	Description	Impact on Model
Prepayment Fee %	% Entered as xx.xx	This fee is paid in the month that the loan is either a) refinanced or b) retired due to a sale of the asset and calculated as a percent of the loan balance at that time.	Adds Prepayment amount to Amortization Schedule

Index Rate

To the left of the Amortization Schedule, there is a box labelled "Index Rate." The Index Rate box is used for entering a base index interest rate. For loans that use a "Floating" rate type, the interest rate applied to the loan will be a function of the rates that are modeled in this box.

An Index Rate may be entered for up to 360 months of the analysis period and must be entered as an annual percentage rate. In the Update Index column, enter an initial index interest rate in the month that New Funding begins. For Existing Notes, enter the initial index rate in Month 1. If future index rates are projected to rise or fall, enter the adjusted interest rate in the month of the adjustments.

Index Rate			
Date	Month	Update Index	Index Rate
Prior	0		
Jan-22	1	6.00%	6.00%
Feb-22	2		6.00%
Mar-22	3		6.00%
Apr-22	4		6.00%
May-22	5		6.00%
Jun-22	6		6.00%
Jul-22	7		6.00%
Aug-22	8		6.00%
Sep-22	9		6.00%

P&I Payment

In the P&I Payment section you define the interest rate, interest calculation methodology, and amortization period. The fields vary depending upon the Rate Type used in the General Inputs box.

Input Field Category / Name	Input Options	Description	Impact on Model
Index Rate at Funding [Information Field]	n/a	Equal to the Index Rate in the month that the loan funds as shown in the Index Rate box. No user input is allowed.	
Rate *Active when Rate Type = Fixed Rate*	% Entered as xx.xx	Enter the loan's interest rate	Amortization Schedule
Spread *Active when Rate Type = Floating Rate*	% Entered as xx.xx	Enter the interest rate spread. The total interest rate paid is equal to the sum of the Index Rate and the Spread.	Amortization Schedule

Input Field Category / Name	Input Options	Description	Impact on Model
Interest Calc	Drop Down	Five options for the monthly calculation of interest: 1) “30/360” (30 days/mo, 360 days/yr), 2) “Actual/360” (actual #days/mo, 360 days/yr), 3) “Actual/365” (actual #days/mo, 365 days/yr), 4) “Coupon (1 yr)” (compounds once a year), and 5) “Coupon (6 months)” (compounds every 6 months).	Amortization Schedule
IO Periods (Months)	Integer	Enter the number of interest-only months in this field. *Note: When Fund Cap-Ex = Yes, the IO Period should be used in conjunction with the Draw Period (it is assumed that amortization would not begin until after the Draw period). The IO Period should be greater than or equal to the Draw Period*.	Amortization Schedule
Remaining Amort (Months) / Amort (Months)	Integer	If Loan Type = Existing Note, field label = Remaining Amort. If Loan Type = New Funding, field label = Amort (Months). Enter the amortization period for a new loan or the remaining amortization period for an existing loan. The amortization period will begin on the first month after the IO Period ends.	Amortization Schedule
Fixed P&I Payment	$ Amount	Fixed P&I Payment is only available when the “IO Period” and “Amort” fields are not in use. Enter total principal (P) and interest (I) payment that will be automatically allocated in the Amortization Schedule based on the other debt assumptions.	Amortization Schedule

Cap Ex Funding

You may choose to fund capital expenditures as part of the loan draw. Please note that the input fields described below are available only if "Yes" is chosen for the Fund Cap-Ex field in the General Inputs section.

Input Field Category / Name	Input Options	Description	Impact on Model
TI%	% Entered as xx.xx	Enter % of tenant improvements to fund.	Amortization Schedule
LC%	% Entered as xx.xx	Enter % of leasing commissions to fund.	Amortization Schedule
CapEx%	% Entered as xx.xx	Enter % of capital expenditures to fund.	Amortization Schedule
Draw Period (Months)	Integer	Enter number of months to fund the selected tenant improvements, leasing commissions, and capital expenditures. Note: The Draw Period should be used in conjunction with the IO Period (it is assumed that amortization would not begin until after the Draw period). The IO Period should be greater than or equal to the Draw Period.	Amortization Schedule

NOTES:
If Fund Cap-Ex = "Yes" then the desired percentage of TIs, LCs, and CapEx to be funded will be added to the existing loan balance on a monthly basis throughout the Draw Period.

For floating rate loans, the interest rate used will be the sum of the Index Rate at Funding and the Spread found in the "Rate" box.

Loan Summary [Information Fields]

While none of the fields in this section require user input, they do provide valuable information about the loan.

Input Field Category / Name	Input Options	Description	Impact on Model
Start Date	n/a	Equal to "Month 1" for pre-existing loans or the Funding Month for new loans.	
End Cap-Ex	n/a	If Fund Cap Ex is set to "Yes", equal to the month Cap-Ex draws end.	
Amort Begin	n/a	Equal to the month that amortization begins. Dependent on the Funding Month and IO Period.	
Maturity/Prepayment	n/a	Equal to the earlier of the loan maturity date or the month the loan is prepaid. Aligns to hold period / sale date if loan extends beyond hold period.	

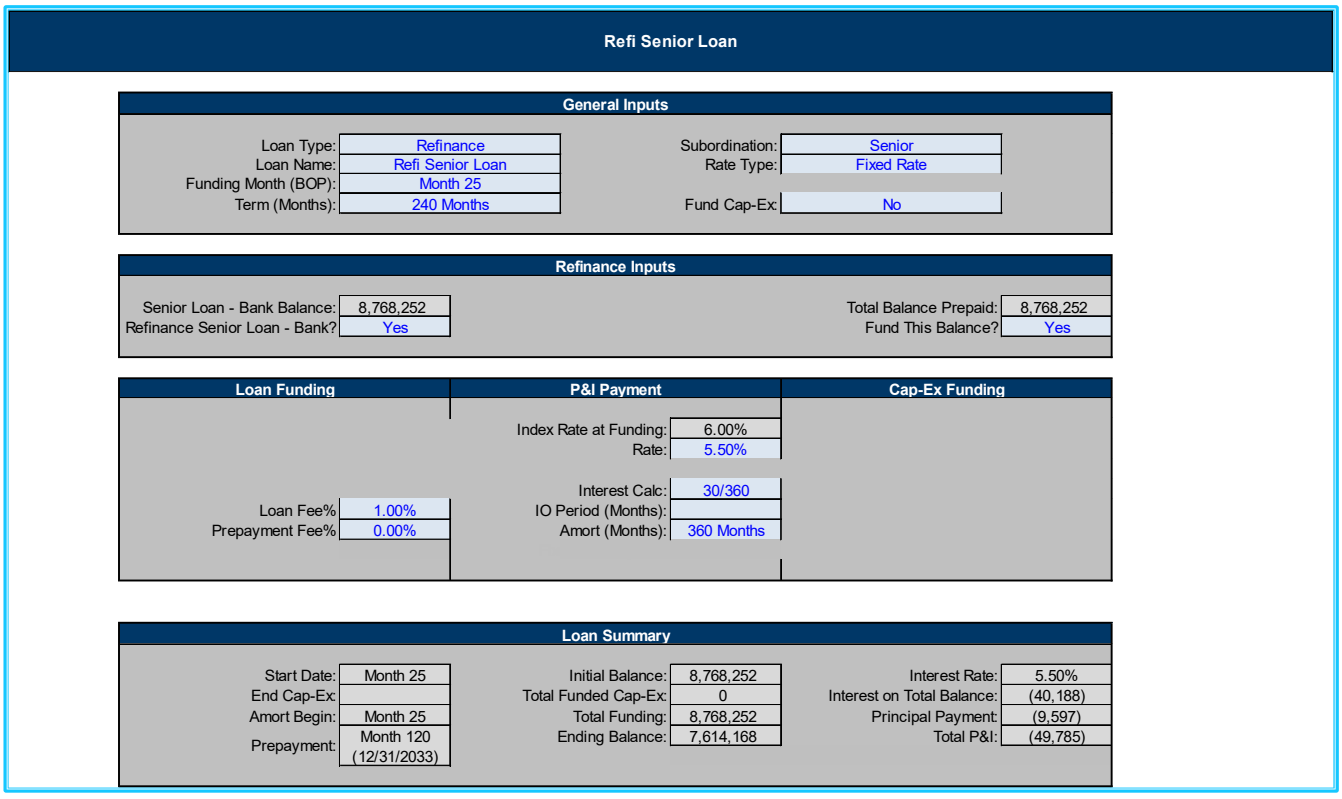
Input Field Category / Name	Input Options	Description	Impact on Model
Initial Balance	n/a	Equal to the Funding Amount for New Funding or the Current Balance for an Existing Note.	
Total Funded Cap-Ex	n/a	If Fund Cap-Ex is set to "Yes", equal to the total Cap-Ex funded, based on the Draw Period in the Cap-Ex Funding section.	
Total Funding	n/a	Equal to the Funding Amount for New Funding or the Current Balance for an Existing Note	
Ending Balance	n/a	Equal to the loan balance in the Maturity / Prepayment month.	
Interest Rate/ Initial Interest Rate	n/a	For Fixed Rate loans, equal to the Rate in the P & I Payment box. For Floating Rate loans, equal to the sum of the Index Rate at Funding and the Spread.	
Interest on Total Balance	n/a	For Fixed Rate loans only, equal to the interest payment in the month that amortization begins.	
Principal Payment	n/a	For Fixed Rate loans only, equal to the principal payment in the month that amortization begins	
Total P&!	n/a	Equal to the total interest and principal payment in the month that amortization begins.	

Amortization Schedule [Information Fields]

The Amortization Schedule shows calculated monthly loan data based on the input fields discussed in the prior section for the following categories:

Refinance (Loan 3)

In addition to the Loan Types available in Loans 1 and 2, Loan 3 contains an additional Loan Type called "Refinance." Loan 3 may be used as either a third loan or to refinance Loan 1 and/or Loan 2. The "Refinance" option is used to signal the refinancing of prior loans, and contains the following inputs:



Please note that the Refinance Inputs box is available only when "Refinance" is selected as the Loan Type for Loan 3. Loan 1 and Loan 2 inputs are available within the Refinance Inputs box only if loan terms were previously modeled at the base loan level and the Refinance "Funding Month" is at a date later than the funding month of the initial loan(s). All other boxes / fields for Loan 3 function as described previously.

Refinance Inputs

Input Field Category / Name	Input Options	Description	Impact on Model
LOAN 1 Balance / LOAN 2 Balance [Information Field]	n/a	Equal to the base loan's Ending Balance in the month prior to the Refinance loan's Funding Month. No user input is allowed.	
Refinance LOAN 1? / Refinance LOAN 2?	Drop down	**Yes:** Refinances the base loan. **No:** Leaves the base loan terms as-is.	"Yes" ends the base loan amortization schedule as of the Loan 3 Refinance funding month
Total Balance Prepaid	n/a	Sum of Loan 1 and Loan 2 balances to be refinanced. No user input is allowed.	

Input Field Category / Name	Input Options	Description	Impact on Model
Fund This Balance?	Drop down	**Yes:** Funds the Total Balance Prepaid – **No:** Allows user to enter a different amount into the Funding Amount field in Loan Funding box. See Note below.	Determines the beginning balance/Funding Amount for the loan.

Note: If the user chooses to fund a different loan amount, the Funding Amount field will appear in the Loan Funding box. The new Funding Amount should be entered here. If desired, enter a Loan Fee % and/or a Prepayment Fee % in the appropriate field.

Debt Examples

EXAMPLE 1: ONE LOAN

Loan 1 is a new 20-year senior amortizing loan with a 75% LTV, 30-year amortization period, and 6% interest.

Key Inputs	Loan 1
Loan Type	New
Funding Month (BOP)	Month 1
Term (Months)	240
% Financed	75
Interest Calc	Actual/360
Subordination	Senior
Rate Type	Fixed
Funding Method	% of Purchase Price
Fund Cap-Ex	No
Rate	6
Amort (Months)	360

Loan 1

General Inputs

Loan Type:	New Funding	Subordination:	Senior
Loan Name:	Loan 1	Rate Type:	Fixed Rate
Funding Month (BOP):	Month 1	Funding Method:	% of Purchase Price
Term (Months):	240 Months	Fund Cap-Ex:	No

Loan Funding

Purchase Price:	14,890,217
% Financed:	75%
Funding Amount:	11,167,663
Loan Fee%	0.00%
Prepayment Fee%	0.00%

P&I Payment

Index Rate at Funding:	6.00%
Rate:	6.00%
Interest Calc:	Actual/360
IO Period (Months):	0 Months
Amort (Months):	360 Months

Cap-Ex Funding

Loan Summary

Start Date:	Month 1	Initial Balance:	11,167,663	Interest Rate:	6.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	(55,838)
Amort Begin:	Month 1	Total Funding:	11,167,663	Principal Payment:	(11,717)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	9,372,685	Total P&I:	(67,555)

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								-	-	-	-
6.00%	11,167,663	-	11,167,663	(57,700)	(9,856)	(67,555)	-	11,157,807	-	-	-
6.00%	-	-	11,157,807	(53,929)	(13,626)	(67,555)	-	11,144,181	-	-	-
6.00%	-	-	11,144,181	(57,578)	(9,977)	(67,555)	-	11,134,204	-	-	-
6.00%	-	-	11,134,204	(55,671)	(11,884)	(67,555)	-	11,122,320	-	-	-
6.00%	-	-	11,122,320	(57,465)	(10,090)	(67,555)	-	11,112,230	-	-	-

Example 2: One Loan With Refinance

Loan 1 is an existing floating rate loan with a current balance of $6,000,000 and a 2% prepayment fee. Interest is based upon the index rate plus a 1% spread. The existing loan balance is refinanced after 12 months by a new 20-year senior amortizing loan with a 30-year amortization period, a 6% interest rate, and a 2% loan fee.

Key Inputs	Loan 1	Refinance
Loan Type	Existing Note (Balance: $6M)	Refinance
Funding Month (BOP)	n/a	Month 13
Term (Months)	240 Months (default)	240 Months (default)
Subordination	Senior	Senior
Rate Type	Floating Rate	Fixed
Fund Cap-Ex	No	No
Current Balance	6,000,000	6,000,000
Loan Fee %	0%	2%
Prepayment Fee %	2%	0%
Index Rate at Funding (informational)	6%	7%
Rate	n/a	6%
Spread	1%	n/a
Interest Calc	30/360	30/360
IO Period (Months)	240	0 [blank]
Remaining Amort	0	360 Months

Loan 1

General Inputs

Loan Type:	Existing Note	Subordination:	Senior
Loan Name:	Loan 1	Rate Type:	Floating Rate
Remaining Term (Months):	240 Months	Fund Cap-Ex:	No

Loan Funding / **P&I Payment** / **Cap-Ex Funding**

Current Balance:	6,000,000	Index Rate at Funding:	6.00%
		Spread:	1.00%
		Interest Calc:	30/360
Loan Fee%	0.00%	IO Period (Months):	240 Months
Prepayment Fee%	2.00%	Remaining Amort (Months):	0 Months

Loan Summary

Start Date:	Month 1	Initial Balance:	6,000,000	Initial Interest Rate:	7.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	Floating
Amort Begin:		Total Funding:		Principal Payment:	
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	6,000,000	Total P&I:	

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-

Refi Loan

General Inputs

Loan Type:	Refinance	Subordination:	Senior
Loan Name:	Refi Loan	Rate Type:	Fixed Rate
Funding Month (BOP):	Month 13		
Term (Months):	240 Months	Fund Cap-Ex:	No

Refinance Inputs

Loan 1 Balance:	6,000,000	Total Balance Prepaid:	6,000,000
Refinance Loan 1?	Yes	Fund This Balance?	Yes

Loan Funding		P&I Payment		Cap-Ex Funding
		Index Rate at Funding:	7.00%	
		Rate:	6.00%	
		Interest Calc:	30/360	
Loan Fee%:	2.00%	IO Period (Months):	0 Months	
Prepayment Fee%:	0.00%	Amort (Months):	360 Months	

Loan Summary

Start Date:	Month 13	Initial Balance:	6,000,000	Interest Rate:	6.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	(30,000)
Amort Begin:	Month 13	Total Funding:	6,000,000	Principal Payment:	(5,973)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	5,147,410	Total P&I:	(35,973)

Amortization Schedule

	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
6.00%	6,000,000	(120,000)	6,000,000	(30,000)	(5,973)	(35,973)	-	5,994,027	-	-	-
6.00%	-	-	5,994,027	(29,970)	(6,003)	(35,973)	-	5,988,024	-	-	-
6.00%	-	-	5,988,024	(29,940)	(6,033)	(35,973)	-	5,981,991	-	-	-

Example 3: Two Loans With Refinance

Loan 1 is an existing floating rate, interest only loan with a current balance of $6,000,000 and a 2% prepayment fee. There are 3 years remaining on the loan term. Interest is based upon the index rate plus a 1% spread. Loan 2 is an existing fixed rate loan with a current balance of $2,000,000 and a 2% Prepayment Fee. There are 15 years left on the loan term. Loan 1 is refinanced after 12 months by a new 20-year senior amortizing loan with a 30-year amortization period, a 6% interest rate, and a 2% loan fee.

Key Inputs	Loan 1	Loan 2	Refinance
Loan Type	Existing Note	Existing Note	Refinance (Loan 1)
Funding Month (BOP)	n/a	n/a	Month 13
Term (Months)	36 Months	180 Months	240 Months (default)
Subordination	Senior	Senior	Senior
Rate Type	Floating Rate	Fixed Rate	Fixed Rate
Current Balance / Funding Amount	6,000,000	2,000,000	6,000,000
Loan Fee %	0%	0%	2%

Key Inputs	Loan 1	Loan 2	Refinance
Prepayment Fee %	2%	2%	0%
Rate at Funding	Index Rate = 6% in Mo 1; Incr 0.25% every 3 mos.	6%	6%
Spread	1%	n/a	n/a
Interest Calc	30/360	30/360	30/360
IO Period (Months)	36	0 [blank]	0 [blank]
Remaining Amort	0	300 Months	360 Months

Loan 1

General Inputs

Loan Type:	Existing Note	Subordination:	Senior
Loan Name:	Loan 1	Rate Type:	Floating Rate
Remaining Term (Months):	36 Months	Fund Cap-Ex:	No

Loan Funding		P&I Payment		Cap-Ex Funding
Current Balance:	6,000,000	Index Rate at Funding:	6.00%	
		Spread:	1.00%	
		Interest Calc:	30/360	
Loan Fee%:	0.00%	IO Period (Months):	36 Months	
Prepayment Fee%:	2.00%	Remaining Amort (Months):	0 Months	

Loan Summary

Start Date:	Month 1	Initial Balance:	6,000,000	Initial Interest Rate:	7.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	Floating
Amort Begin:		Total Funding:		Principal Payment:	
Refinance:	Month 12 (12/31/2024)	Ending Balance:	6,000,000	Total P&I:	

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.00%	-	-	6,000,000	(35,000)	-	(35,000)	-	6,000,000	-	-	-
7.25%	-	-	6,000,000	(36,250)	-	(36,250)	-	6,000,000	-	-	-
7.25%	-	-	6,000,000	(36,250)	-	(36,250)	-	6,000,000	-	-	-
7.25%	-	-	6,000,000	(36,250)	-	(36,250)	-	6,000,000	-	-	-

Loan 2

General Inputs

Loan Type:	Existing Note	Subordination:	Senior
Loan Name:	Loan 2	Rate Type:	Fixed Rate
Remaining Term (Months):	180 Months	Fund Cap-Ex:	No

Loan Funding

Current Balance:	2,000,000
Loan Fee%:	0.00%
Prepayment Fee%:	2.00%

P&I Payment

Index Rate at Funding:	6.00%
Rate:	6.00%
Interest Calc:	30/360
IO Period (Months):	0 Months
Remaining Amort (Months):	300 Months

Cap-Ex Funding

Loan Summary

Start Date:	Month 1	Initial Balance:	2,000,000	Interest Rate:	6.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	(10,000)
Amort Begin:	Month 1	Total Funding:	2,000,000	Principal Payment:	(2,886)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	1,527,040	Total P&I:	(12,886)

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								2,000,000	-	-	-
6.00%	-	-	2,000,000	(10,000)	(2,886)	(12,886)	-	1,997,114	-	-	-
6.00%	-	-	1,997,114	(9,986)	(2,900)	(12,886)	-	1,994,214	-	-	-
6.00%	-	-	1,994,214	(9,971)	(2,915)	(12,886)	-	1,991,299	-	-	-
6.00%	-	-	1,991,299	(9,956)	(2,930)	(12,886)	-	1,988,369	-	-	-
6.00%	-	-	1,988,369	(9,942)	(2,944)	(12,886)	-	1,985,425	-	-	-

Refi Loan 1

General Inputs

Loan Type:	Refinance	Subordination:	Senior
Loan Name:	Refi Loan 1	Rate Type:	Fixed Rate
Funding Month (BOP):	Month 13		
Term (Months):	240 Months	Fund Cap-Ex:	No

Refinance Inputs

Loan 1 Balance:	6,000,000	Loan 2 Balance:	1,964,399	Total Balance Prepaid:	6,000,000
Refinance Loan 1?	Yes	Refinance Loan 2?	No	Fund This Balance?	Yes

Loan Funding		P&I Payment		Cap-Ex Funding
		Index Rate at Funding:	7.00%	
		Rate:	6.00%	
		Interest Calc:	30/360	
Loan Fee%:	2.00%	IO Period (Months):	0 Months	
Prepayment Fee%:	0.00%	Amort (Months):	360 Months	

Loan Summary

Start Date:	Month 13	Initial Balance:	6,000,000	Interest Rate:	6.00%
End Cap-Ex:		Total Funded Cap-Ex:	0	Interest on Total Balance:	(30,000)
Amort Begin:	Month 13	Total Funding:	6,000,000	Principal Payment:	(5,973)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	5,147,410	Total P&I:	(35,973)

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
6.00%	6,000,000	(120,000)	6,000,000	(30,000)	(5,973)	(35,973)	-	5,994,027	-	-	-
6.00%	-	-	5,994,027	(29,970)	(6,003)	(35,973)	-	5,988,024	-	-	-
6.00%	-	-	5,988,024	(29,940)	(6,033)	(35,973)	-	5,981,991	-	-	-

EXAMPLE 4: ONE LOAN WITH CAP-EX FUNDING

Loan 1 is a new $6,000,000 twenty-year senior amortizing loan with a 30-year amortization period and a 6 % interest rate. 100% of the TI, LC, and Cap Ex amounts will be funded for the first 3 years of the loan.

Key Inputs	Loan 1
Loan Type	New funding
Term (Months)	240 Months (default)
Subordination	Senior
Rate Type	Fixed Rate
Current Balance / Funding Amount	6,000,000
Rate	6%
Interest Calc	30/360
IO Period (Months)	36 Months
Amort (Months)	360
Fund Cap-Ex	Yes

Key Inputs	Loan 1
TI %	100%
LC %	100%
Other Capital %	100%
Draw Period	36 Months

Loan 1

General Inputs

Loan Type:	New Funding	Subordination:	Senior
Loan Name:	Loan 1	Rate Type:	Fixed Rate
Funding Month (BOP):	Month 1	Funding Method:	Amount
Term (Months):	240 Months	Fund Cap-Ex:	Yes

Loan Funding

Funding Amount:	6,000,000
Loan Fee%:	0.00%
Prepayment Fee%:	0.00%

P&I Payment

Index Rate at Funding:	6.00%
Rate:	6.00%
Interest Calc:	30/360
IO Period (Months):	36 Months
Amort (Months):	360 Months

Cap-Ex Funding

TI%:	100%
LC%:	100%
Other Capital%:	100%
Draw Period (Months):	36 Months

Loan Summary

Start Date:	Month 1	Initial Balance:	6,000,000	Interest Rate:	6.00%
End Cap-Ex:	Month 36	Total Funded Cap-Ex:	1,951,563	Interest on Total Balance:	(39,758)
Amort Begin:	Month 37	Total Funding:	7,951,563	Principal Payment:	(7,916)
Prepayment:	Month 120 (12/31/2033)	Ending Balance:	7,127,732	Total P&I:	(47,674)

Amortization Schedule

Rate	Funding Amount	Loan Fees	Beginning Balance	Interest	Principal	Total P&I	Cap Ex Funding	Ending Balance	Maturity	Prepayment	Prepayment Fees
								-	-	-	-
6.00%	6,000,000	-	6,000,000	(30,000)	-	(30,000)	1,264,130	7,264,130	-	-	-
6.00%	-	-	7,264,130	(36,321)	-	(36,321)	1,250	7,265,380	-	-	-
6.00%	-	-	7,265,380	(36,327)	-	(36,327)	1,250	7,266,630	-	-	-
6.00%	-	-	7,266,630	(36,333)	-	(36,333)	1,250	7,267,880	-	-	-
6.00%	-	-	7,267,880	(36,339)	-	(36,339)	1,250	7,269,130	-	-	-
6.00%	-	-	7,269,130	(36,346)	-	(36,346)	1,250	7,270,380	-	-	-
6.00%	-	-	7,270,380	(36,352)	-	(36,352)	170,474	7,440,854	-	-	-
6.00%	-	-	7,440,854	(37,204)	-	(37,204)	1,250	7,442,104	-	-	-
6.00%	-	-	7,442,104	(37,211)	-	(37,211)	1,250	7,443,354	-	-	-

Debt Inputs Conclusion

There are many ways to structure debt financing. The UW Debt Inputs tab can be used to evaluate different debt scenarios to find the best solution for your transaction. Pay close attention to all inputs to ensure the proper results.

Waterfall Tab

Introduction to Waterfall Modeling

An investment waterfall is a method of splitting profits among partners in an equity transaction where the distribution of profits is uneven. The waterfall analogy represents the idea that profits fill up one pool and the excess spills into the next pool.

The benefit of waterfall modeling is the incentive to the operating partner. The operating partner (also known as the General Partner or Sponsor) will receive an extra, disproportionate share of returns (called the "promote") if they exceed return expectations from the deal. Conversely, if the returns are lower than expected, the operating partner receives less.

Key Terms in Waterfall Modeling

General Partner / Sponsor – operating partner who manages the capital of the limited partners and has control of project decisions to drive investment return

Limited Partner / Investor – investors who provide capital to fund a project

Preferred Return – minimum return paid to the limited partners before the GP receives profits

Promote – increased share of the return given to the General Partner for exceeding return expectations

Return Hurdle – minimum rate of return required to achieve a specific compensation level. Waterfall investments typically have multiple tiers each with higher return hurdles and different compensation splits between partners.

Catch-up Hurdle – Once the preferred return hurdle (investor expected returns) is met, the GP / Sponsor receives all future profits until the GP catches up to the agreed upon percentage of amounts distributed to date.

Compounding – process of reinvesting earnings to generate additional earnings over time

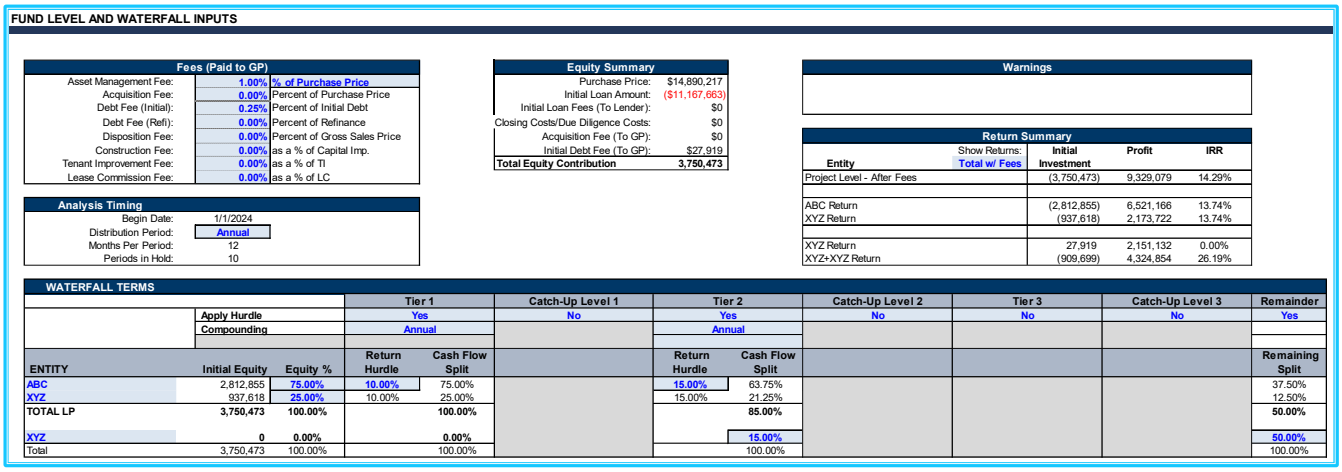
Distribution – disbursement of earnings/profits to partners in a transaction

Tab Overview

The rDCF Waterfall tab allows the user to enter a total of three partnership entities: Limited Partner 1, Limited Partner 2, and General Partner 1. Each entity can be subject to a combination of four Return Hurdles (tiers) as well as three optional Catch-Up Hurdles each with a specific set of inputs that accommodates a wide range of partnership structures.

The Waterfall tab uses monthly cash flows from Monthly CF (Lev) tab to create the initial Property Cash Flow that defines the profits and distributions.

At the top of the Waterfall tab there are three boxes for user inputs: Fees, Analysis Timing, and Waterfall Terms, and one Warnings indicator field, as well as a Return Summary box displaying calculated results. The bottom half contains calculated results in four sections: (1) Cash Flows & Fees, (2) Summary Distributions, (3) Detailed Distributions, and (4) Waterfall Calculation.



FUND LEVEL AND WATERFALL INPUTS

Fees (Paid to GP)

Asset Management Fee:	1.00%	% of Purchase Price
Acquisition Fee:	0.00%	Percent of Purchase Price
Debt Fee (Initial):	0.25%	Percent of Initial Debt
Debt Fee (Refi):	0.00%	Percent of Refinance
Disposition Fee:	0.00%	Percent of Gross Sales Price
Construction Fee:	0.00%	as a % of Capital Imp.
Tenant Improvement Fee:	0.00%	as a % of TI
Lease Commission Fee:	0.00%	as a % of LC

Equity Summary

Purchase Price:	$14,890,217
Initial Loan Amount:	($11,167,663)
Initial Loan Fees (To Lender):	$0
Closing Costs/Due Diligence Costs:	$0
Acquisition Fee (To GP):	$0
Initial Debt Fee (To GP):	$27,919
Total Equity Contribution	3,750,473

Warnings

Return Summary

Entity	Show Returns: Total w/ Fees	Initial Investment	Profit	IRR
Project Level - After Fees		(3,750,473)	9,329,079	14.29%
ABC Return		(2,812,855)	6,521,166	13.74%
XYZ Return		(937,618)	2,173,722	13.74%
XYZ Return		27,919	2,151,132	0.00%
XYZ+XYZ Return		(909,699)	4,324,854	26.19%

Analysis Timing

Begin Date:	1/1/2024
Distribution Period:	Annual
Months Per Period:	12
Periods in Hold:	10

WATERFALL TERMS

			Tier 1	Catch-Up Level 1	Tier 2	Catch-Up Level 2	Tier 3	Catch-Up Level 3	Remainder
	Apply Hurdle		Yes	No	Yes	No	No	No	Yes
	Compounding		Annual		Annual				
ENTITY	Initial Equity	Equity %	Return Hurdle	Cash Flow Split	Return Hurdle	Cash Flow Split			Remaining Split
ABC	2,812,855	75.00%	10.00%	75.00%	15.00%	63.75%			37.50%
XYZ	937,618	25.00%	10.00%	25.00%	15.00%	21.25%			12.50%
TOTAL LP	3,750,473	100.00%		100.00%		85.00%			50.00%
XYZ	0	0.00%		0.00%		15.00%			50.00%
Total	3,750,473	100.00%		100.00%		100.00%			100.00%

Note: the above example uses the Debt Inputs Example 1 as the starting point for the Waterfall model.

Each box of user inputs is described below.

Fees (Paid to GP)

Input Field Category / Name	Input Options	Description	Impact on Model
Asset Management Fee	% and drop down	Annual asset management Fee starting in Period 1 through sale date. Input percentage and choose from: (1) % of Purchase Price, (2) % of EGR, (3) % of NOI, or (4) % of Initial Equity.	Decreases the Fund Cash Flows After Fees
Acquisition Fee	% Entered as xx.xx	Upfront fee in Period 0. Enter as a Percent of the Purchase Price.	Decreases the Fund Cash Flows After Fees
Debt Fee (Initial)	% Entered as xx.xx	Upfront fee in Period 0. Enter as a Percent of the Initial Debt (Loans 1 and 2)	Decreases the Fund Cash Flows After Fees
Debt Fee (Refi)	% Entered as xx.xx	Fee occurs at the time of Refinance. Enter as a Percent of the Refinance Debt (Loan 3).	Decreases the Fund Cash Flows After Fees
Disposition Fee	% Entered as xx.xx	Fee occurs at the time of Sale. Enter as a Percent of the Gross Sale Price.	Decreases the Fund Cash Flows After Fees
Construction Fee	% Entered as xx.xx	Fee occurs as Capital Expenditures are realized. Enter as a Percent of any Capital Improvements (Excludes TIs and LCs).	Decreases the Fund Cash Flows After Fees
Tenant Improvement Fee	% Entered as xx.xx	Fee occurs as Tenant Improvement Costs are realized. Enter as a Percent of any Tenant Improvements.	Decreases the Fund Cash Flows After Fees
Leasing Commission Fee	% Entered as xx.xx	Fee occurs as Leasing Commission Costs are realized. Enter as a Percent of any Leasing Commissions.	Decreases the Fund Cash Flows After Fees

Analysis Timing

The Analysis Timing input box references the analysis start date and the hold period from the Unleveraged Cash Flow worksheet.

Input Field Category / Name	Input Options	Description	Impact on Model
Distribution Period	Drop Down	Selection establishes how the Partner Cash Flows will be presented, but more importantly, also determines how the IRRs are calculated in the Waterfall worksheet. Options are 1) Monthly, 2) Quarterly, or 3) Annually	See notes for Waterfall Terms – Compounding below for more information regarding the impact of this selection.

Waterfall Terms

The Waterfall Terms inputs are broken into eight sections. The first contains the Entity Names, Equity Percentages, and corresponding Equity Amounts. The remaining seven sections contain inputs for each Waterfall Tier or Catch-up Level.

Input Field Category / Name	Input Options	Description	Impact on Model
Entity Names	Text	Enter names for the three partnership entities: Limited Partner 1, Limited Partner 2, and General Partner. Note: Limited Partner 2 is assumed to be associated with the GP.	Does not affect financial results
Equity %	% Entered as xx.xx	Enter the desired percent of Equity for each LP Entity. If less than 100% of the equity is split between the LP entities, the remainder will be allocated to the GP entity.	Affects the Detailed Distributions to each partner for Tier 1.
Tiers, Catch-Up Levels, and Remainder			
Apply Hurdle (row)	Drop Down	**Yes –** select for as many hurdles as are needed to model the waterfall. Selecting "Yes" opens subsequent input fields for modeling the Tier or Catch-Up level. **No** - section will be grayed out; any inputs for that tier or catch-up will not be applied in the calculations. Tier 1 is assumed active and set to "Yes."	Affects distribution of cash flow (Detailed Distributions) after all prior hurdles are achieved.
Compounding *Applies to Tiers Only*	Drop Down	For Tiers 1, 2 and 3, select from three compounding intervals: **Monthly, Quarterly, or Annually.** This is different from the "Distribution Period" in the Analysis Timing input box. The	Compounding selection will affect IRR and Profits. Compounding will affect each Tier's return but will

Input Field Category / Name	Input Options	Description	Impact on Model
		compounding input is specific to the Return Rate for a tier as determined by the partnership agreement. For example, a partnership agreement may indicate a cash flow split of 75% up to an 8.0% IRR on a Monthly Compounded basis. Select Monthly compounding in this case *Note: Compounding is only available for Tiers, not the Catch-Up levels or Remainder.* **See note below*	not affect the Catch-up Distribution. **See note below*
LP Preferred Return		**Yes** - Return Hurdle for Tier 1 will be paid to LP Entities before it is paid to the GP Entity. *Note: This option is only available (1) if the GP Entity is assumed to contribute equity (if GP Equity % = 0 then the LP Preferred Return field is hidden); (2) for Tier 1 returns. All other Tiers are assumed to be pari passu.*	Affects Detailed Distributions to each partner
Return Hurdle		For Tiers 1, 2 and 3, enter the percent return for the LP 1 Entity as applicable. The LP 2 Return Hurdle is assumed to be the same.	Affects Detailed Distributions to each partner
Cash Flow Split *Applies to Tiers Only*		For Tier 1, the Cash Flow Split is the same as the initial Equity Percentages. For Tiers 2, 3 and Remainder, enter the percent of cash flow to be allocated to the GP Entity. The remaining percent of cash flow is applied to the LP Entities based their initial Equity Percent. For all Tiers, once the LP 1 Entity achieves the desired Return Hurdle Rate, calculations move to the next Tier or Catch-Up Level.	Affects Detailed Distributions to each partner
Catch-Up Hurdle		For Catch-Up 1, 2, 3, enter the percent of Total Profit that is to be accumulated by the GP Entity as applicable. The percent of Total Profit means Distributed Profit up to that point and does not include any cash flow that may be distributed in subsequent calculations	Affects Detailed Distributions to each partner
Cash Flow Split *Applies to Catch-up*		For Catch-Up 1, 2, 3, enter the percent of cash flow to be distributed to the GP until the Catch-Up Hurdle has been achieved.	Affects Detailed Distributions to each partner

Note: Compounding - Selecting different Compounding Intervals produces different Annual IRRs for the same Rate of Return and, therefore, affects the return calculations. For example:

Rate of Return	Compounding Interval	Resulting Annual IRR
10.00%	Annual	10.00%
10.00%	Quarterly	10.38%
10.00%	Monthly	10.47%

When the Distribution Period is less frequent than Compounding, returns will be compounded over the distribution period. Thus, the returns in each period will be higher than the rates of return entered.

Warnings

The Warnings field provides the user with two warning messages:

1. The first indicates that the Return Hurdle rate in Tier 2 is less than the actual IRR achieved in the Catch-up Level 1 distribution.
2. The other indicates that the Return Hurdle in Tier 3 is less than the actual IRR achieved in the Catch-up Level 2 distribution.

These warning messages do not indicate the model is malfunctioning. Rather they indicate that subsequent Return thresholds are too low compared to previous distributions. The Tier 2 and/or Tier 3 distributions will be negative in order to achieve the desired Hurdle Rates.

Return Summary

The Return Summary box presents calculated returns at the Project, LP and GP levels displaying Initial Investment, Total Profit, and IRR for the Waterfall analysis period with or without fees, or for any tier, as selected by the user. The default is to display the Return Summary for Total Returns with Fees.

Detailed Calculations

Below the Waterfall Terms section, you will find Fund Cash Flows, Summary Distribution and Detailed Distribution calculations based on the Distribution Period selected in the Analysis Timing box. Below the Detailed Distributions you will find the Waterfall Calculations by Tier and LP / GP in gray rows detailing the beginning and ending capital balances for each period with the detailed paid preferences and capital contributions and distributions. Samples are shown below.

CASH FLOWS and FEES

	IRR	Profit	Period 0 01-01-2024	Period 1 Dec-2024	Period 2 Dec-2025	Period 3 Dec-2026	Period 4 Dec-2027	Period 5 Dec-2028	Period 6 Dec-2029	Period 7 Dec-2030	Period 8 Dec-2031	Period 9 Dec-2032	Period 10 Dec-2033
Property Level Cash Flow	**16.89%**	**10,846,020**	**(3,722,554)**	**(1,140,268)**	**463,149**	**975,229**	**989,555**	**1,062,537**	**375,611**	**(195,322)**	**1,057,737**	**1,098,158**	**9,882,190**
GP Fees													
Acquisition Fee		-	-										
Debt Fee (Initial)		(27,919)	(27,919)										
Debt Fee (Refi)		-		-	-	-	-	-	-	-	-	-	-
Asset Management Fee		(1,489,022)		(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)
Disposition Fee		-		-	-	-	-	-	-	-	-	-	-
TI Fee		-		-	-	-	-	-	-	-	-	-	-
LC Fee		-		-	-	-	-	-	-	-	-	-	-
Capital Improvement Fee		-		-	-	-	-	-	-	-	-	-	-
Total GP Fees		(1,516,941)	(27,919)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)	(148,902)
Fund Cash Flows After Fees	**14.29%**	**9,329,079**	**(3,750,473)**	**(1,289,171)**	**314,246**	**826,326**	**840,653**	**913,635**	**226,709**	**(344,225)**	**908,835**	**949,256**	**9,733,287**

SUMMARY DISTRIBUTIONS

	% of Profit	Profit											
LP Total Fund Level Distributions	93.20%	8,694,888	(3,750,473)	(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	9,099,097
GP Total Fund Level Distributions	6.80%	634,191	-	-	-	-	-	-	-	-	-	-	634,191
Total Fund Level Distributions		**9,329,079**	**(3,750,473)**	**(1,289,171)**	**314,246**	**826,326**	**840,653**	**913,635**	**226,709**	**(344,225)**	**908,835**	**949,256**	**9,733,287**
Check (Should be Zero)		-	-	-	-	-	-	-	-	-	-	-	-
IRR to LP	13.74%												
Equity Multiple	2.6x												

DETAILED DISTRIBUTIONS

Total Limited Partner	IRR	Profit	Period 0 Jan-2024	Period 1 Dec-2024	Period 2 Dec-2025	Period 3 Dec-2026	Period 4 Dec-2027	Period 5 Dec-2028	Period 6 Dec-2029	Period 7 Dec-2030	Period 8 Dec-2031	Period 9 Dec-2032	Period 10 Dec-2033
Tier 1 - LP	10.00%	5,101,140	(3,750,473)	(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	5,505,349
Tier 2 - LP	13.74%	8,694,888	(3,750,473)	(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	9,099,097
Remainder	13.74%	8,694,888	(3,750,473)	(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	9,099,097
Total Return	**13.74%**	**8,694,888**											

LP Return: - ABC	IRR	Profit											
Tier 1 - LP	10.00%	3,825,855	(2,812,855)	(966,878)	235,685	619,745	630,489	685,226	170,031	(258,168)	681,626	711,942	4,129,012
Tier 2 - LP	13.74%	6,521,166	(2,812,855)	(966,878)	235,685	619,745	630,489	685,226	170,031	(258,168)	681,626	711,942	6,824,322
Remainder	13.74%	6,521,166	(2,812,855)	(966,878)	235,685	619,745	630,489	685,226	170,031	(258,168)	681,626	711,942	6,824,322
Total Return	**13.74%**	**6,521,166**											

LP Return: - XYZ	IRR	Profit											
Tier 1 - LP	10.00%	1,275,285	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	1,376,337
Tier 2 - LP	13.74%	2,173,722	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	2,274,774
Remainder	13.74%	2,173,722	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	2,274,774
Total Return	**13.74%**	**2,173,722**											

GP Return: - XYZ	IRR	Profit											
Tier 1 - GP	0.00%	0	-	-	-	-	-	-	-	-	-	-	-
Tier 2 - GP	0.00%	634,191	-	-	-	-	-	-	-	-	-	-	634,191
Remainder	0.00%	634,191	-	-	-	-	-	-	-	-	-	-	634,191
Total Return w/out Fees	**0.00%**	**634,191**											
Total Return with Fees	**0.00%**	**2,151,132**	27,919	148,902	148,902	148,902	148,902	148,902	148,902	148,902	148,902	148,902	783,093

XYZ & XYZ Return	IRR	Profit											
Tier 1 - LP + GP Fees & Cash Flow	10.00%	1,275,285	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	1,376,337
Tier 2 - LP + GP Fees & Cash Flow	15.79%	2,807,913	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	2,908,965
Remainder	15.79%	2,807,913	(937,618)	(322,293)	78,562	206,582	210,163	228,409	56,677	(86,056)	227,209	237,314	2,908,965
Total Return w/out Fees	**15.79%**	**2,807,913**											
Total Return with Fees	**26.19%**	**4,324,854**	(909,699)	(173,390)	227,464	355,484	359,065	377,311	205,579	62,846	376,111	386,216	3,057,867

WATERFALL CALCULATION												
Cash Available for Tier1	9,329,079	(3,750,473)	(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	9,733,287
LP Share of Tier 1			(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	9,733,287
Tier 1 - Total LP												
BOP Capital Balance	3,750,473	3,750,473	3,750,473	5,414,691	5,641,914	5,379,779	5,077,105	4,671,180	4,911,589	5,746,973	5,412,835	5,004,863
Accrued Preference	5,101,140		375,047	541,469	564,191	537,978	507,710	467,118	491,159	574,697	541,284	500,486
Paid Preference	(5,101,140)		-	(314,246)	(826,326)	(840,653)	(545,171)	(226,709)	-	(908,835)	(938,714)	(500,486)
Capital Contributions	1,633,395		1,289,171	-	-	-	-	-	344,225	-	-	-
Capital Distributions	(5,383,869)		-	-	-	-	(368,464)	-	-	-	(10,542)	(5,004,863)
EOP Capital Balance	-	3,750,473	5,414,691	5,641,914	5,379,779	5,077,105	4,671,180	4,911,589	5,746,973	5,412,835	5,004,863	-
GP Share of Tier 1			-	-	-	-	-	-	-	-	-	4,227,939
Tier 1 - Total GP												
BOP Capital Balance	-	-	-	-	-	-	-	-	-	-	-	-
Accrued Preference	-		-	-	-	-	-	-	-	-	-	-
Paid Preference	-		-	-	-	-	-	-	-	-	-	-
Capital Contributions	-		-	-	-	-	-	-	-	-	-	-
Capital Distributions	-		-	-	-	-	-	-	-	-	-	-
EOP Capital Balance	-	-	-	-	-	-	-	-	-	-	-	-
Tier 1 LP (Contributions)/Distributions	8,851,614		(1,289,171)	314,246	826,326	840,653	913,635	226,709	(344,225)	908,835	949,256	5,505,349
Tier 1 GP (Contributions)/Distributions			-	-	-	-	-	-	-	-	-	-
Cash Available for Catch-Up Level 1			-	-	-	-	-	-	-	-	-	4,227,939
Catch-Up Level 1												
Pre Catch-Up Level 1 LP Profits	5,101,140		-	314,246	826,326	840,653	545,171	226,709	-	908,835	938,714	500,486
Pre Catch-Up Level 1 GP Profits	-		-	-	-	-	-	-	-	-	-	-
Total Pre-Catch-up Level 1 Profits	5,101,140		-	314,246	826,326	840,653	545,171	226,709	-	908,835	938,714	500,486
Cumulative LP Profits			-	314,246	1,140,573	1,981,225	2,526,396	2,753,105	2,753,105	3,661,940	4,600,654	5,101,140
Cumulative GP Profits												
LP Level 1 Catch -Up Distribution	-		-	-	-	-	-	-	-	-	-	-
GP Level 1 Catch -Up Distribution	-		-	-	-	-	-	-	-	-	-	-
Total Catch-Up Level 1	-		-	-	-	-	-	-	-	-	-	-
Post Catch-Up Level 1 LP Profits	5,101,140	-	-	314,246	826,326	840,653	545,171	226,709	-	908,835	938,714	500,486
Post Catch-Up Level 1 GP Profits	-	-	-	-	-	-	-	-	-	-	-	-
Total Post Catch-Up Level 1 Profits	5,101,140	-	-	314,246	826,326	840,653	545,171	226,709	-	908,835	938,714	500,486
LP Profit %	100.00%			100.00%	100.00%	100.00%	100.00%	100.00%		100.00%	100.00%	100.00%
GP Profit %	0.00%			0.00%	0.00%	0.00%	0.00%	0.00%		0.00%	0.00%	0.00%
Cumulative LP Profits Through Catch-Up Level 1		-	-	314,246	1,140,573	1,981,225	2,526,396	2,753,105	2,753,105	3,661,940	4,600,654	5,101,140
Cumulative GP Profits Through Catch-Up Level 1		-	-	-	-	-	-	-	-	-	-	-
Total Cumulative Profits		-	-	314,246	1,140,573	1,981,225	2,526,396	2,753,105	2,753,105	3,661,940	4,600,654	5,101,140
LP Cumulative Profit %				100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
GP Cumulative Profit %				0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Note: Waterfall Calculations displayed above are for Tier 1 and Catch-up Level 1 only. All tiers are shown in the Underwriting Workbook.

The next few pages outline examples of three different waterfall structures.

Waterfall Examples

EXAMPLE 1: TWO ENTITY STRUCTURE

JV Partner is ABC Fund that contributes 75% of the Equity, XYZ Company is the GP contributing 25% of the Equity. Initial Equity for project is $10 million.

Cash Distributions

1. The JV Partner will receive a 10% annual return compounded monthly and the return of equity; then
2. The GP will receive a 10% annual return compounded monthly and their return of equity; then
3. The JV Partner and GP will split remaining cash 70%/ 30% until the JV Partner achieves a 15.0% annual IRR; then
4. The JV Partner and GP will split remaining cash 60%/ 40% until the JV Partner achieves a 20.0% annual IRR; then
5. The JV Partner and GP will split remaining cash 50%/ 50%.

The screenshots below represent the inputs for this example. Since there are no Catch-Up provisions in the agreement, we have not applied the Hurdle and those sections are grayed out. Due to the Cash Distribution verbiage, it was assumed that the LP 1 Entity's 10% return was Preferred.

WATERFALL TERMS					
			Tier 1		Catch-Up Level 1
	Apply Hurdle		Yes		No
	Compounding		Monthly		
	LP Preferred Return		Yes		
ENTITY	Initial Equity	Equity %	Return Hurdle	Cash Flow Split	
ABC - LP1	7,500,000	75.00%	10.00%	75.00%	
	-	0.00%		0.00%	
TOTAL LP	7,500,000	75.00%		75.00%	
XYZ Company - GP	2,500,000	25.00%		25.00%	
Total	10,000,000	100.00%		100.00%	

Tier 2		Catch-Up Level 2	Tier 3		Catch-Up Level 3	Remainder
Yes		No	Yes		No	Yes
Annual			Annual			
Return Hurdle	Cash Flow Split		Return Hurdle	Cash Flow Split		Remaining Split
15.00%	70.00%		20.00%	60.00%		50.00%
	0.00%			0.00%		0.00%
	70.00%			60.00%		50.00%
	30.00%			40.00%		50.00%
	100.00%			100.00%		100.00%

EXAMPLE 2: THREE ENTITY STRUCTURE – NO CATCH-UP
JV Partner is ABC Fund that contributes 75% of the Equity, XYZ Company is the LP and GP. XYZ Company - LP contributes 25% of the Equity. Initial Equity for project is $10 million.

Cash Distributions

1. The limited partners receive a 12% annual return compounded quarterly and the return of equity; then
2. The XYZ Company LP and GP will split remaining cash 70%/ 30% until the ABC Fund achieves an 18.0% annual IRR; then
3. The LP and GP will split remaining cash 50%/ 50%.

The screenshots below represent the inputs for partnership model with three entities, two LPs and one GP. The GP is separated from the LP to isolate the "Promote". Since there are no Catch-Up provisions in the agreement, we have not applied the catch-up hurdle and those sections are grayed out. Additionally, the Tier 3 calculations were not applied since they were not applicable to this structure.

WATERFALL TERMS						
			Tier 1		Catch-Up Level 1	
	Apply Hurdle		Yes		No	
	Compounding		Quarterly			
ENTITY	Initial Equity	Equity %	Return Hurdle	Cash Flow Split		
ABC Fund - LP1	7,500,000	75.00%	12.00%	75.00%		
XYZ Company - LP2	2,500,000	25.00%	12.00%	25.00%		
TOTAL LP	10,000,000	100.00%		100.00%		
XYZ Company - GP	0	0.00%		0.00%		
Total	10,000,000	100.00%		100.00%		

Tier 2		Catch-Up Level 2	Tier 3	Catch-Up Level 3	Remainder
Yes		No	No	No	Yes
Annual					
Return Hurdle	Cash Flow Split				Remaining Split
18.00%	52.50%				37.50%
18.00%	17.50%				12.50%
	70.00%				50.00%
	30.00%				50.00%
	100.00%				100.00%

EXAMPLE 3: THREE ENTITY STRUCTURE – WITH CATCH-UP
JV Partner is ABC Fund that contributes 75% of the Equity, XYZ Company is the LP and GP. XYZ Company - LP contributes 25% of the Equity. Initial Equity for project is $10 million.

Cash Distributions

1. The Limited Partners receive a 10% annual return compounded quarterly and the return of equity; then
2. The LP and GP will split remaining cash 70%/ 30% until the LP 1 Entity achieves an 15.0% annual IRR; then
3. The LP and GP will split remaining cash 60%/ 40% until the GP Entity receives 20.0% total profits ("Catch-up"); then
4. The LP and GP will split remaining cash 50%/ 50%.

The screenshots below represent the inputs for partnership model with three entities, two LPs and on GP.

WATERFALL TERMS						
				Tier 1		Catch-Up Level 1
	Apply Hurdle			Yes		No
	Compounding			Quarterly		
ENTITY	Initial Equity	Equity %		Return Hurdle	Cash Flow Split	
ABC Fund - LP1	7,500,000	75.00%		10.00%	75.00%	
XYZ Company - LP2	2,500,000	25.00%		10.00%	25.00%	
TOTAL LP	10,000,000	100.00%			100.00%	
XYZ Company - GP	0	0.00%			0.00%	
Total	10,000,000	100.00%			100.00%	

Tier 2		Catch-Up Level 2		Tier 3	Catch-Up Level 3	Remainder
Yes		Yes		No	No	Yes
Annual						
Return Hurdle	Cash Flow Split	Catch-Up Hurdle	Cash Flow Split			Remaining Split
15.00%	52.50%		45.00%			37.50%
15.00%	17.50%		15.00%			12.50%
	70.00%		60.00%			50.00%
	30.00%	20.00%	40.00%			50.00%
	100.00%		100.00%			100.00%

Waterfall Tab Conclusion

The UW Waterfall Tab allows you to model sophisticated equity structures, including multi-tiered waterfalls and fees while leveraging your underwriting data. The power of the UW lies in the ability to flex all aspects of the transaction in one model: the cash flow and valuation, the debt financing, and the equity structure.

Excel Model Design Assumptions

As noted in the Overview of the Tabs section, the Underwriting Workbook has no hidden fields or formulas to provide absolute transparency into the calculations. There are no locked cells or fields. The model uses complex Excel functions and formulas. Because of this it is important, as a user of the model, to be aware of your actions within the workbook. Below are recommendations for using the workbook features.

1. Do not change data in any cells except for Blue cells on Blue tabs.
2. If you click into a cell to trace the formula, always exit the cell via **Esc** button.
3. Formulas that contain the **"Offset"** function are not traceable using Excel trace features.
4. **Braces {}** ("mustaches") in the formula indicate an array formula – if you click into the cell, do not exit the cell using the "Enter" key, it will break the formula. If you accidentally exit using "Enter", re-enter the cell and click **Ctrl-Shift-Enter** to resolve the error.

   Note: You will see this in the Valuation Matrix on the Unleveraged Cash Flow tab.
5. You cannot import the UW into rDCF.
6. You cannot automatically transfer assumptions from one workbook into another.

Additional Support

For additional support with the rDCF Underwriting Workbook, please contact the rSquared CRE Help Desk:

1. Within rDCF, access the Help button on the bottom right of any window; select "Contact Us"
2. Email the Help Desk at support@rsquaredcre.zendesk.com

Please reference that you are working with an rDCF Underwriting Workbook to ensure your questions are directed to the appropriate support contact. Please also include a brief description of the problem or question.

For more information, please visit us:

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