



Discounted Cash Flow User's Guide

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Guide for LandValue Solutions' Discounted Cash Flow

This guide explains the process of working through Discounted Cash Flow, Land Value Solutions' Proprietary Valuation Method used to estimate the value of an investment based on its future cash flows.

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Discounted Cash Flow

When **Discounted Cash Flow** option is selected under the **Income Approach to Value**, and saved, it shows in the Menu below Income Approach. Click on Discounted Cash Flow to activate the Wizard.

The user first selects the number of years, including reversion year, from a dropdown list as shown below:

Discounted Cash Flow

Number of lease years: 11

User allocates the number of years in the cash flow from this dropdown list which includes the reversion year. This dropdown list is only visible in the DCF analysis.

INCOME

Source Re...	Income S...	Unit Meas...	Total Unit...	Stabilized ...	Stabilized ...		
Irrigated TI...	Cash Lease	\$/Acre	257.80	1.00	\$95.00	Edit	Delete
Summer Gr...	Cash Lease	AUM	50.00	7.00	\$22.00	Edit	Delete
House & Bu...	Cash Lese	\$/Month	12.00	0.95	\$850.00	Edit	Delete
Timberland	Merch Timber	\$/MBF	710.24	1.00	\$227.63	Edit	Delete

Add Row

Real Estate Taxes

\$6,425.68

For each **Source of Income**, select “Add Row” at the bottom of the wizard and complete the form.

Discounted Cash Flow

On page two of the inputs the user will check the box if the input is a Uniform Cash Flow Series, or alternatively, user can select “Add Year” if this is an uneven cash flow as shown in the following screen capture:

Property Classification - Agriculture, Rural Land, Timber-Forest

Income

Stabilized \$/Unit

\$95.00

Gross Income

\$24,491.00

Total years in this Cash Flow: 11

Check if this is a Uniform Cash Flow Series.

Add year Remove all

If a series of cash flows are uniform, check this box.

Add years for Uneven or Periodic Cash Flow(s). Enter the cash flow for that year. If no additional years are added, all subsequent years will auto populate the number entered. If subsequent years are \$0.00, then select additional year and enter \$0.00. The last column of the Cash Flow is used to conclude Reversion Sale Price and should represent an annual stabilized cash flow.

Add or remove years here, for uneven cash flow series.

Year 0	\$0.00	
Year 1	\$24,491.00	
Year 2	\$24,491.00	
Year 3	\$24,491.00	
Year 4	\$0.00	
Year 5	\$24,491.00	

Discounted Cash Flow

In the previous example, the cash lease income is \$24,491 per year except the year the perennial hay crop is replanted. In year 4 scenario, the landlord receives no cash rent, therefore year 4 the income to the landlord is \$0.00. In year 5, and all subsequent years in the cash flow, the income is \$24,491. After inputting this amount in year 5, the cash flow will populate \$24,491 in all subsequent years. Alternatively, if a one-time income occurs in year 4, the user will put \$0.00 in all years prior to year 4, the one-time income in year 4, and \$0.00 in year 5. The application will auto-populate all subsequent years after year 5 as \$0.00.

If the user checks Uniform Cash Flow Series, it automatically begins in year 1 and ends at the reversion year. Year zero (0) income or expense is a manual input. If there is income in year zero, the user must add Year 0 from the “Add Year” link, and Year 1. The user inputs the one-time income or expense at year 0, and \$0.00 in year one, which will populate a \$0.00 in all subsequent years.

When the user exports to Excel, the spread sheet looks like the one on the following page. The user will manually input Number of Crop Acres, Annual Income Change and Annual Expense Change in the excel table. User will manually enter Reversionary Cap Rate, Selling Expense, Reversionary Discount Rate, and Cash Flow Discount Rate. Two sensitivity analyses are provided.

Outputs showing Internal Rate of Return on the two sensitivity analyses is shown on the page following the Discounted Cash Flow analysis.

Discounted Cash Flow

Discounted Cash Flow Analysis													
Income Approach -	Discounted Cash Flow	Scenario	Eff. Date of Value	11/15/2017	7	8	9	10	11				
Farm:	Dennis Holdings Farm & Timber		Crop AC:	AC	AC	AC	AC	AC	AC	AC			
For the Year Ending	0	1	2	3	4	5	6	7	8	9	10	11	
Irrigated Timothy Hay	\$0	\$4,461	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	\$4,981	Income Charge At 92.00
Summer Grazing	\$0	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	\$7,700	Income Charge At 90.00
House & Building Lease	\$0	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	\$9,680	Income Charge At 90.00
Timberland	\$164,672	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Income Charge At 90.00
Stabilized Gross Income:	\$164,672	\$41,881	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	
Subtotal, Vacancy	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	Vacancy Allowance 90.00
Total Effective Gross Income	\$164,672	\$41,881	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	\$42,371	
Ownership Expenses													
Fixed Expense (RE Taxes)	\$0	\$6,425	\$6,321	\$6,619	\$6,718	\$6,819	\$6,922	\$7,025	\$7,131	\$7,238	\$7,346	\$7,456	Expense Charge At 93.50
Variable Expense (Liability Insurance)	\$0	\$880	\$876	\$902	\$929	\$957	\$985	\$1,015	\$1,045	\$1,077	\$1,109	\$1,142	Expense Charge At 93.00
Variable Expense (Maintenance & Repair)	\$0	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	\$750	Expense Charge At 90.00
Capital Expense or Replacement Reserve (Capital Expense)	\$0	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	Expense Charge At 90.00
Total Operating Expenses	\$0	\$8,555	\$8,647	\$8,771	\$8,897	\$9,026	\$9,157	\$9,290	\$9,426	\$9,564	\$9,705	\$9,848	
Cash Flow Before Debt Service & Taxes	\$164,672	\$33,326	\$33,724	\$33,600	\$33,483	\$33,345	\$33,214	\$33,081	\$32,945	\$32,806	\$32,665	\$32,522	
Sensitivity Premise 1:													
Sale Price, Capitalized Year Last Column of CFLO @ Reversionary Rate											\$1,084,067		Reversionary Rate 93.00
Less Selling Expenses											-\$54,203		Selling Expenses -95.00
Net Sales Price											\$1,029,864		
Discounted Cash Flows	\$164,672	\$31,468	\$30,014	\$28,211	\$6,727	\$24,917	\$23,414	\$22,000	\$20,670	\$19,418	\$18,240	\$17,132	Discount Rate, CFLO 96.00
Total Present Value of Cash Flows	\$403,885	\$45.22	Return on Investment									Discount Rate, REV 97.00	
Present Value of Sale	\$489,281	\$54.78	Return on Investment										
Total Present Value	\$893,166												
Sensitivity Premise 2:													
Cash Flow Before Debt Service & Taxes	\$164,672	\$33,356	\$33,724	\$33,600	\$8,483	\$33,345	\$33,214	\$33,081	\$32,945	\$32,806	\$32,665	\$32,522	
Sale Price, Capitalized Year Last Column of CFLO @ Reversionary Rate												\$1,082,619	Reversionary Rate 92.75
Less Selling Expenses												-\$59,131	Selling Expenses -95.00
Net Sales Price												\$1,123,488	
Discounted Cash Flows	\$164,672	\$31,768	\$30,389	\$29,025	\$6,587	\$26,127	\$24,765	\$23,510	\$22,298	\$21,147	\$20,054	\$19,015	Discount Rate, CFLO 95.00
Total Present Value of Cash Flows	\$416,975	\$41.33	Return on Investment									Discount Rate, REV 96.00	
Present Value of Sale	\$591,899	\$58.67	Return on Investment										
Total Present Value	\$1,008,875												

Discounted Cash Flow

IRR Sensitivity 1 PV		IRR Sensitivity 2 PV		
CFLO 0	-\$893,166		CFLO 0	-\$1,008,815
CFLO 1	\$33,356		CFLO 1	\$33,356
CFLO 2	\$33,724		CFLO 2	\$33,724
CFLO 3	\$33,600		CFLO 3	\$33,600
CFLO 4	\$8,493		CFLO 4	\$8,493
CFLO 5	\$33,345		CFLO 5	\$33,345
CFLO 6	\$33,214		CFLO 6	\$33,214
CFLO 7	\$33,081		CFLO 7	\$33,081
CFLO 8	\$32,945		CFLO 8	\$32,945
CFLO 9	\$32,806		CFLO 9	\$32,806
CFLO 10	\$1,062,529		CFLO 10	\$1,156,153
IRR	%4.66		IRR	%3.98

Market Derived Capitalization and Discount Rates from Comparable Sales populate into the Excel output as shown below:

Comparable Capitalization Rate Analysis									
Record Number	Adj. Sale Price	Sale Date	No. Units	Gross Income	Exp. Ratio	Net Income	Imprv. %	Cap Rate	Yield Rate
3345	\$392,647	01/14/2016	192.03	\$19,691	%31.00	\$13,512	%0.00	%3.44	%6.24
4391	\$238,572	06/14/2017	132.54	\$8,797	%22.00	\$6,904	%0.00	%2.89	%5.69
4772	\$1,203,000	08/31/2017	381.33	\$43,150	%24.00	\$32,953	%18.57	%2.74	%5.52
5184	\$1,095,000	05/18/2018	502.49	\$45,032	%13.00	\$39,071	%0.87	%3.57	%6.17
5190	\$440,000	01/31/2018	171.88	\$17,770	%28.00	\$12,741	%0.00	%2.90	%5.00

Outputs for Income and Expenses also populate into the Excel output:

Income Approach	Discounted Cash Flow	Scenario						
Farm:		Dennis Holdings Farm & Timber	Crop AC:	257.8	AC	Total AC:	568.64	AC
Basis of Income Estimate:		Discounted Cash Flow						
Source Reference	Income Source	Units of Income Source	Unit Measure	Stabilized Yield	Total Production		Cash/Share/Owner's Income	
					Stabilized\$/Unit	Gross Income	Share %	Income
Irrigated Timothy Hay	Cash Lease	257.8	\$/Acre	1.00	\$95.00	\$24,491	%100.00	\$24,491
Summer Grazing	Cash Lease	50	AUM	7.00	\$22.00	\$7,700	%100.00	\$7,700
House & Building Lease	Cash Lease	12	\$/Month	0.95	\$850.00	\$9,690	%100.00	\$9,690
Timberland	Merch Timber	710.24	\$/MBF	1.00	\$227.63	\$161,672	%100.00	\$161,672
Expense Type	Expense Description	Cost	% pd by LL	LL Share	Comments			
Fixed Expense	RE Taxes	\$6,426	%100.00	\$6,426				
Variable Expense	Liability Insurance	\$850	%100.00	\$850				
Variable Expense	Maintenance & Repair	\$750	%100.00	\$750				
Capital Expense or Replacement Reserve	Capital Expense	\$500	%100.00	\$500				