

Analysis of Cost Segregation

Cost Segregation Dynamics

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Executive Summary

- The dynamic behavior of cost segregation is determined by the relative contributions of the five and fifteen year reclassification class lives.
- The peak returns from cost segregation occur after the end of the predominant class life.
- Although there is ultimately no difference in cumulative cash flow with or without cost segregation, the cumulative NPV curve ultimately retains more than half of the value it had at six years.

Cost Segregation Benefit Dynamics

We will illustrate the dynamics, or change with time, of cost segregation with two contrasting examples. The first example is a hotel, with mostly five year class deductions and the second is an auto dealership with a preponderance of land improvement, or site work.

Example 1 – Hotel (Majority of Reclassification is Five Year. Six Year Peak Payback):

A hotel building is either constructed or acquired for \$10,000,000. We assume that the acquisition occurs in midyear, the effective tax rate is 35%, and the discount rate is 5%. A cost segregation study results in asset classifications of 5, 7, and 15 year classes as 39.1%, 5.9%, and 0.5%, respectively. Then after the first half year, the second year is the first full year of tax depreciation.

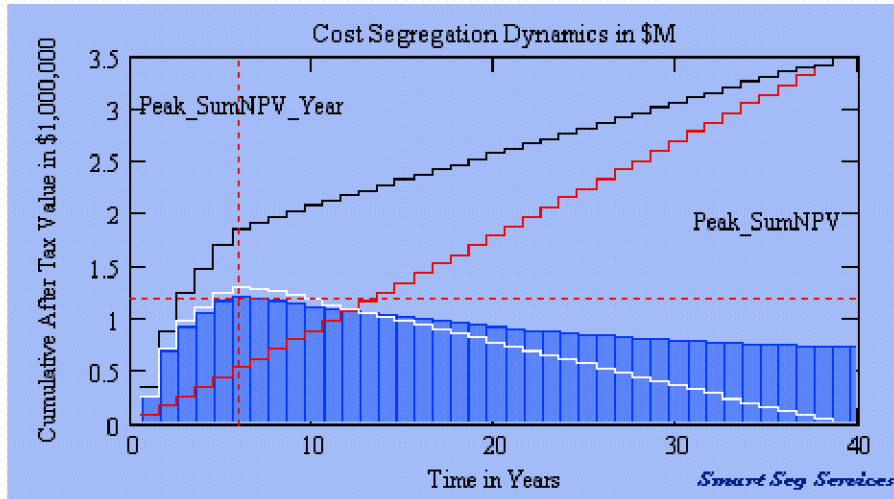
<u>Description of Property</u>				
<u>Asset Classes</u>	<u>PerCent Reclassified</u>	<u>Depreciation Basis</u>	<u>Assumptions</u>	
Structural (39 Yr Straight Line Depreciation-Table)	54.5%	\$5,450,000	Building Cost	\$10,000,000
Land Imp (15 Yr 150% Declining Balance Deprec)	0.5%	\$50,000	Discount Rate	5%
Equipment (7 Yr 200% Declining Balance Deprec)	5.9%	\$590,000	Marginal Tax Rate	35%
Non Structural (5 Yr 200% Declining Bal Deprec)	39.1%	\$3,910,000	Total%Reclassified	45.5%

The Summary of Benefits and Metrics are given by the below table.

<u>Results of Cost Segregation</u>			
<u>Summary of Benefits</u>		<u>Metrics</u>	
Cumulative Cash Flow Increase 1 st Full Year	\$714,215	Peak Cumulative NPV Year	6
Cumulative Cash Flow Increase after 6 years	\$1,311,684	Final to Peak Cumulative NPV Retention	0.60
Cumulative Net Present Value after 6 years	\$1,209,913	\$100K Reclassified Gives NPV Savings of :	\$15,912
Cumulative Net Present Value of Tax Saving	\$724,002	Cumulative Cash Flow Increase @6 Years	2.6

Now let's plot the benefits of the study over the tax depreciation cycles of the building and examine the dynamical behavior over the 39 year period. To see the resultant effects, we will plot the cumulative effects of the yearly depreciation cash flow.

Cost Segregation Dynamics – Predominately Five Year Class Life



- Black Curve: Cumulative Yearly Tax Value of Building Depreciation over 39 years.
- Red Curve: Cumulative Yearly Tax Value of Cost Segregation over 39 years.
- White Curve: Net Cash Flow Tax Value of Cost Seg (Difference of Black-Red Curves).
- Blue SolidBar: Cumulative Yearly NPV or Time Value of Money from Cost Segregation.

Description of Dynamics

Building Depreciation:

The *straight red line* is the cumulative result of depreciation without cost segregation over the 39 year cost recovery period of the building. The cumulative depreciation increases by $1/39^{\text{th}}$ (2.56%) steps for each year. After 39 years the full cumulative depreciation is 35% of \$10M, or \$3.5M. Thirty-nine years is a long time to have to wait to get the full benefits of building depreciation. If we define one generation as twenty years, then we have to wait two generations for full building depreciation.

Cost Segregation:

The *upper black line* shows the yearly tax value of the depreciation with cost segregation. We note that the curve rises much faster than the building depreciation only red line, and then after six years the cash flow peaks and then slows down. We see that at six years the cumulative cash flow is 2.6 times larger (refer to Metrics in the table on page 2) than without cost segregation, but then after six years it rises at a slower rate than with building depreciation. After 39 years the cumulative tax value with cost segregation equals the building depreciation.

Cost Segregation Net Cash Flow Benefits

The *white curve* shows the cumulative cash flow increase (the difference between the black and blue curves) of cost segregation over the full depreciation cycle. The plot show that the difference, or net cash flow increase, peaks at six years with a value of \$1,311,684 (see above table). **The Peak Payback Time is six years.** That the peak occurs at six years is not surprising because this is when the benefits of the fast five year accelerated depreciation end. The plot shows that after 39 years the cumulative cash flow reduces to zero, that is, there is no difference in the final net depreciation or cash flow after 39 years.

Net Present Value Benefit

The *blue solidbar* NPV plot shows the time value of money benefits of cost segregation with a 5% discount rate. The NPV benefits of cost segregation have been compared to getting an interest free loan. Consider that a dollar will buy about 1/3 of a gallon of gas today versus about 3 gallons 30 years ago. When the economic effects of time are applied to the white curve, the result is shown as the Net Present Value (NPV) solidbar plot. This plot peaks at six years with a value of \$1,209,913 (see above table). During the next 33 years the NPV diminishes, but has the final value of \$724,002, or 60% of the value at six years (see above table).

The NPV retention compared to six years is 60% (\$724,002/\$1,209,913).

Rather than having to wait 39 years for the full benefit of building depreciation, with cost segregation the maximum benefits of both cash flow and NPV are available in just six years with a retention of 60%. For every \$100,000 reclassified, there was a return of \$15,912.

Example 2-Auto Dealership (Majority of Reclassification 15 year. 15 Year Peak Payback):

An Auto Dealership is either constructed or acquired for \$2,975,180. We assume that the acquisition occurs in midyear, the effective tax rate is 35%, and the discount rate is 5%. A cost segregation study results in asset classifications of 5, 7, and 15 year classes as 7%, 2%, and 28% respectively. The Auto Dealership, with its large acreage, has a lot of land improvements, which qualify as 15 year class depreciation.

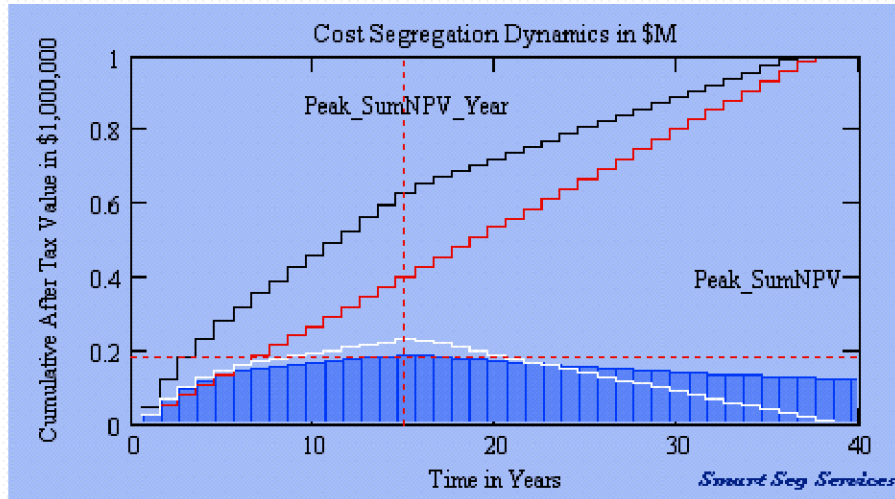
<i>Description of Property</i>					
<u>Asset Classes</u>	<u>PerCent</u>	<u>Depreciation</u>		<u>Assumptions</u>	
	<u>Reclassified</u>	<u>Basis</u>			
Structural (39 Yr Straight Line Depreciation-Table)	63.0%	\$1,874,363		Building Cost	\$2,975,180
Land Imp (15 Yr 150% Declining Balance Deprec)	28.0%	\$833,050		Discount Rate	5%
Equipment (7 Yr 200% Declining Balance Deprec)	2.0%	\$59,504		Marginal Tax Rate	35%
Non Structural (5 Yr 200% Declining Bal Deprec)	7.0%	\$208,263		Total%Reclassified	37.0%

As we shall see the paypack peaks at 15 years. For our summary, we will use the results for six years, rather than the peak of 15 years. We do this for two reasons. First we would like a direct comparison with the first example. Second, the reason we do a cost segregation study is for a faster return than with the building 39 year depreciation. We are more interested in the results at more immediate results at six years than at the longer fifteen year period. The Summary of Benefits and Metrics are given by the below table.

<i>Results of Cost Segregation</i>			
<u>Summary of Benefits</u>		<u>Metrics</u>	
Cumulative Cash Flow Increase 1 st Full Year	\$68,897	Peak Cumulative NPV Year	15
Cumulative Cash Flow Increase after 6 years	\$160,081	Final to Cumulative NPV @6 year Retention	0.85
Cumulative Net Present Value after 6 years	\$144,877	\$100K Reclassified Gives NPV Savings of :	\$11,174
Cumulative Net Present Value of Tax Saving	\$123,009	Cumulative Cash Flow Increase @6 Years	1.1

Now let’s plot the benefits of the study over the tax depreciation cycles of the building and examine the dynamical behavior over the 39 year period. To see the resultant effects, we will plot the cumulative effects of the yearly depreciation cash flow.

Cost Segregation Dynamics – Predominately Fifteen Year Class Life



- Black Curve: Cumulative Yearly Tax Value of Building Depreciation over 39 years.
- Red Curve: Cumulative Yearly Tax Value of Cost Segregation over 39 years.
- White Curve: Net Cash Flow Tax Value of Cost Seg (Difference of Black-Red Curves).
- Blue SolidBar: Cumulative Yearly NPV or Time Value of Money from Cost Segregation.

Description of Dynamics

Cost Segregation:

The *upper black line* shows the yearly tax value of the building depreciation with cost segregation. We note that the curve rises faster than the red line of building depreciation (but more slowly than for the predominately five year case), and then after fifteen years slows down and rises at a slower rate than building depreciation. The cumulative cash flow at six years (see table on page 4) is 1.1 times larger than without cost segregation. This is considerably less than the factor of 2.6 for the first example. After 39 years the cumulative tax value with cost segregation equals the building depreciation.

Cost Segregation Net Cash Flow Benefits

The *white curve* shows the cumulative cash flow increase (the difference between the black and blue curves) of cost segregation over the full depreciation cycle. The plot show that the difference, or net cash flow increase, peaks at 15 years with a value of \$228,900. **The Peak Payback Time is 15 years.** That the peak occurs at fifteen years is not surprising because this is when the benefits of the predominant fifteen year accelerated depreciation end. The plot shows that after 39 years the cumulative cash flow reduces to zero, that is, there is no difference in the final net depreciation or cash flow after 39 years.

Net Present Value Benefit

The *blue solidbar* NPV plot shows the time value of money benefits of cost segregation. This plot peaks at fifteen years with a value of \$187,780 (see above table). During the next 24 years the NPV diminishes, but has the final value of \$724,002, or 60% of the NPV value at six years.

The final NPV retention compared to six years is 60%.

For every \$100,000 reclassified, there was a return of \$11,174, which is less than the \$15,912 for the first case of predominantly five year reclassification.