DEPRECIATION OF TIs AND CAP EX, PART 1

In addition to the depreciation of the purchase price, the IRS requires the TI and cap ex costs to be "capitalized" (i.e., the amounts added to the property's balance sheet as capital assets) and for these new capital assets to be depreciated once they are put in service. Thus, for taxable income calculation purposes, instead of deducting the TI and cap ex outflow amounts dollar for dollar as they occur monthly (consider $18,100 spent over 3 months), you instead depreciate the total amounts over their appropriate depreciable lives per their respective depreciation schedule rules. In general, cap ex will fall under the "improvement" category and each asset purchased or constructed using these funds will have a different depreciable life. As such, you will need to keep separate records for each asset acquired or constructed in each year. Obviously, this type of depreciation exercise quickly becomes tedious. There are tax professionals whose practices specialize in this **cost segregation analysis**. In our example, we assume that all cap ex is depreciable over 7 years.

For tax purposes, landlords "write off" (depreciate) TI costs as follows: 50% of the TI costs in the first year of the associated lease, with the remaining 50% depreciated evenly over years 2+ of the lease. In our example, we will assume the total lease term to be 7 years. As a result, you expect to depreciate deductions for TIs and cap ex for property ownership years 1 through 5 as summarized in Figure 5.13.

FIGURE 5.13

Kathy Center TIs and Cap Ex Depreciation Schedule

	Year 1	Year 2	Year 3	Year 4	Year 5
Total TIs	**18,100**	**31,831**	**83,892**	**43,846**	**33,704**
Cap Ex	**14,771**	**60,995**	**88,269**	**91,833**	**93,401**
Depreciation from TIs and Cap Ex	$32,871	$92,826	$172,161	$135,679	$127,105

Online Companion Hands On: After completing Figure 5.12, go to the Figure 5.13 tab. Populate the non-shaded cells in rows 13-17 and 21-25 in the boxed *Depreciation Schedule Backup Detail* section. These table values should show as negative numbers. For the TIs, depreciate 50% of the amount spent in Year 1, and 50% evenly over the remaining 6 years. For Cap Ex, the rule to reflect is: the Annual Spend / 7. When you are done filling out the table, link the totals into the **Total TIs** and **Cap Ex** lines in the Figure, and sum the two lines to calculate the **Depreciation from TIs and Cap Ex** line.

Combining purchase depreciation with that for TIs and cap ex, the total depreciation deduction you can take over this 5-year period is displayed in Figure 5.14. All these depreciation items will show in Figures 5.16 - 5.18.

AMORTIZATION OF LEASING COMMISSIONS AND LOAN POINTS, PART 1

Similar to the treatment of TIs and cap ex, income tax law currently allows for the reduction of annual taxable income through the **amortization** (allocation) of costs for leasing commissions and **loan points** (a fee paid to the lender for their underwriting). Leasing commissions are allocated to reduce taxable income in a straight-line manner over the term of the lease (7 years in this example), and loan points are allocated in a straight-line manner over the term of the loan (also 7 years in this example). For instance, the LC amount of $12,200 in Year 1 is amortized annually in the amount of $1,743 per year (calculated as $12,200 / 7). Both of these amortization lines will show in Figure 5.17.

FIGURE 5.14

Kathy Center Total Depreciation

Purchase Information

Purchase Price	$48,500,000
Percentage allocations	
Land (20%)	$9,700,000
Structure (50%)	$24,250,000
7-year items (20%)	$9,700,000
3-year items (10%)	$4,850,000

	Year 1	Year 2	Year 3	Year 4	Year 5
Land	0	0	0	0	0
Structure	621,795	621,795	621,795	621,795	621,795
7-year items	1,385,714	1,385,714	1,385,714	1,385,714	1,385,714
3-year items	1,616,667	1,616,667	1,616,667	0	0
Depreciation from Purchase	3,624,176	3,624,176	3,624,176	2,007,509	2,007,509
Total from TIs	18,100	31,831	83,892	43,846	33,704
Total from Cap Ex	14,771	60,995	88,269	91,833	93,401
Total Depreciation	**$3,657,047**	**$3,717,002**	**$3,796,337**	**$2,143,188**	**$2,134,614**

Online Companion Hands On: After completing Figure 5.13, go to the Figure 5.14 tab. Calculate the Total Depreciation line as: **Depreciation from Purchase** + **Total from TIs** + **Total from Cap Ex**.

LEVERED CASH FLOW

If Kathy Center is unencumbered by mortgage debt and you were an income tax-exempt entity, there would be no need for additional analysis beyond the unlevered cash flow line (Figure 5.11). Also, if you were only interested in the property-level performance, as opposed to cash flows to equity, there would be no need to incorporate financing or tax considerations. However, since you are a taxable owner and you used debt financing to complete your purchase of Kathy Center, you will also want to know the **levered cash flows** (i.e., the expected **before-tax** and **after-tax cash flows** exclusively to equity). To calculate cash flows to equity, you need to incorporate debt and tax liabilities into your analysis, the latter of which will involve our depreciation and amortization calculations.

Debt Financing

Loan points, amortization, and interest payments resulting from use of debt financing have an impact on the calculation of after-tax equity cash flow. Assume you purchased Kathy Center for $48.5 million using an 80% loan-to-value ("LTV") ratio. The resulting capital structure consists of a $38.8 million loan and your $9.7 million in cash equity. The loan is interest only at a 5% interest rate, and it has a 7-year term.

Loan Points

Loan points, or **origination costs** are the fee paid to the lender to compensate for the lender's underwriting costs. You were required to pay the lender a 50-basis point loan fee at the purchase loan closing ("Time 0," the 1-day period that precedes Year 1). Thus, you paid the lender 0.5% of the face value of the loan, or $194,000 ($38.8 million * 0.5%), an immediate cash outflow at closing funded by equity. You will not recognize any additional cash outflows associated with loan points. Loan points do, however, have an impact on your future income tax payments, as for tax purposes, you must amortize this fee over the 7-year term of the loan.

Debt Service Payments

As our example assumes an interest-only loan, we do not have to account for loan principal amortization. The loan carries a 5% fixed annual interest rate, resulting in a $1.94 million annual interest payment ($38.8 MM mortgage * 5% interest rate). You deduct this annual interest payment from your estimated unlevered cash flow, as you must make monthly payments to the lender to retain control of Kathy Center. Figure 5.15 displays the cash outflows associated with this debt service. Given this information, you can now calculate **before-tax levered cash flow**, which is the unlevered cash flow minus total debt service (interest payments and any principal amortization), as summarized in Figure 5.15. Note that because this example assumes an interest-only loan, there is no amortization of principal included in the Debt Service line.

FIGURE 5.15

Kathy Center Before-Tax Levered Cash Flow					
	Year 1	Year 2	Year 3	Year 4	Year 5
Unlevered Cash Flow	4,167,307	3,843,355	3,932,081	4,307,000	4,237,643
Debt Service	(1,940,000)	(1,940,000)	(1,940,000)	(1,940,000)	(1,940,000)
Before-Tax Levered Cash Flow	**$2,227,307**	**$1,903,355**	**$1,992,081**	**$2,367,000**	**$2,297,643**

Online Companion Hands On: After completing Figure 5.14, go to the Figure 5.15 tab, and note the Assumptions at the top. Model in the **Debt Service** line as: **Debt * –Interest Rate**, anchoring the cell references. Last, calculate **Before-Tax Levered Cash Flow** as: **Unlevered Cash Flow** + **Debt Service**.

TAXABLE INCOME

The final step in determining your after-tax levered (equity) cash flow for Kathy Center is the calculation of your expected annual **tax liability**. Assume that you purchased Kathy Center using a limited partnership structure. This is a **pass-through entity**, which means the tax liability is calculated for the property and is literally passed through to the individual partners in the limited partnership entity. If you were a non-taxable entity such as a pension fund or a university, there would be no need to calculate tax liability. You, however, are a taxable individual, and as such, are extremely interested in your expected tax bill to the IRS.

To determine your expected tax liability, you must calculate your taxable income, which is the income you receive from the property according to IRS rules. While you might expect taxable income to equal your before-tax cash flow (i.e., the actual money you receive from the property), the IRS sees it differently. Instead, several adjustments to before-tax cash flow are necessary to derive taxable income. Why? Because in some cases lobbyists were able to achieve beneficial rulings that help lower taxable income, while in other cases, the government passed laws to generate tax revenue which result in higher taxable income. As a taxpayer, you want taxable income as low as possible because your tax liability is calculated as your taxable income times your tax rate. Thus, the lower your taxable income, the lower your tax liability in that year.

DEPRECIATION OF CAP EX AND TIs, PART 2

As mentioned, tax law requires capitalizing cap ex and TIs once they are put in service, and it also requires their subsequent depreciation. To avoid over-sheltering of taxable income from the cap ex and TI expenses (which were previously deducted from NOI to get to unlevered cash flow), you must now add back the full costs of the cap ex and TIs in the periods in which they occur, as demonstrated in Figure 5.16. For example, the $36,200 in TI expenses incurred in Year 1 is added back to get to taxable income. Of the $36,200 total, $18,100 is sheltered by the depreciation in Year 1. Similarly, you add back the full periodic leasing commissions amounts, as these too were deducted upstream in calculating unlevered cash flow. Had you financed Kathy Center with an amortizing loan (instead of interest-only), you would add back the principal amortization payment amounts in the Plus: Principal Amortization line in this step as well. It is because the loan is interest-only that the figure below shows zeros for Plus: Principal Amortization.

FIGURE 5.16

Kathy Center Taxable Income Calculation Part 2a

	Year 1	Year 2	Year 3	Year 4	Year 5
Before-Tax Levered Cash Flow	$2,227,307	$1,903,355	$1,992,081	$2,367,000	$2,297,643
Adjustments:					
Less: Depreciation (Purchase Price)	(3,624,176)	(3,624,176)	(3,624,176)	(2,007,509)	(2,007,509)
Less: Depreciation (TIs)	(18,100)	(31,831)	(83,892)	(43,846)	(33,704)
Less: Depreciation (Cap Ex)	(14,771)	(60,995)	(88,269)	(91,833)	(93,401)
Plus: TIs	**36,200**	**57,629**	**152,145**	**46,696**	**18,629**
Plus: Leasing Commissions	**12,200**	**41,722**	**107,561**	**25,567**	**18,760**
Plus: Cap Ex	**103,400**	**323,565**	**190,919**	**24,947**	**10,975**
Plus: Principal Amortization	**0**	**0**	**0**	**0**	**0**

Online Companion Hands On: After completing Figure 5.15, go to the Figure 5.16 tab. Fill out the lines for **Plus: TIs, Plus: Leasing Commissions** and **Plus: Cap Ex** by simply linking to corresponding name line items in rows 4, 5 and 6, respectively, but be sure to change the sign by including a negative sign so they show as positive. Enter all 0s for the **Plus: Principal Amortization** line.

AMORTIZATION OF LEASING COMMISSIONS AND LOAN POINTS, PART 2

The last adjustments necessary to calculate taxable income for Kathy Center are the amortization of LCs and loan points. As mentioned, LCs are amortized over their lease term (in our example, 7-year terms). Because LCs can occur in multiple operating periods (based on the subject property's occupancy dynamics), an LC cost amortization schedule is kept, tracking their cumulative amortization. At the point of sale (in our example, the end of Year 5), any unamortized amount remaining will be expensed (deducted from taxable income) in a lump sum, such that the cost is fully amortized. Note the symmetry in the Total column in Figure 5.17 of the Plus: Leasing Commissions total of $205,810 and the Less: Leasing Commissions Amortization total, also a total $205,810 amount. As the expenditure and amortization amounts do not match contemporaneously, this total equivalency is achieved by amortizing $146,574 in Year 5. Similarly, loan points are amortized (usually equally) over the life of the loan, and at sale a lump sum deduction is taken for any unamortized loan points cost. In our example, the total loan fee of $194,000 is amortized over 7 years, so you see deductions of $27,714 annually from before-tax cash flow and a lump sum-inclusive deduction in Year 5 to achieve full loan points amortization.

FIGURE 5.17

Kathy Center Taxable Income Calculation Part 2b

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Before-Tax Levered Cash Flow	$10,787,386	$2,227,307	$1,903,355	$1,992,081	$2,367,000	$2,297,643
Adjustments:						
Less: Depreciation (Purchase Price)	($14,887,546)	(3,624,176)	(3,624,176)	(3,624,176)	(2,007,509)	(2,007,509)
Less: Depreciation (TIs)	($211,372)	(18,100)	(31,831)	(83,892)	(43,846)	(33,704)
Less: Depreciation (Cap Ex)	($349,269)	(14,771)	(60,995)	(88,269)	(91,833)	(93,401)
Plus: TIs	$311,299	36,200	57,629	152,145	46,696	18,629
Plus: Leasing Commissions	$205,810	12,200	41,722	107,561	25,567	18,760
Plus: Cap Ex	$653,806	103,400	323,565	190,919	24,947	10,975
Plus: Principal Amortization	$0	0	0	0	0	0
Less: Leasing Commissions Amortization	($205,810)	**(1,743)**	**(7,703)**	**(23,069)**	**(26,721)**	**(146,574)**
Less: Loan Points Amortization	($194,000)	**(27,714)**	**(27,714)**	**(27,714)**	**(27,714)**	**(83,143)**

Online Companion Hands On: After completing Figure 5.16, go to the Figure 5.17 tab and note the Assumptions at the top. Link the **Less: Leasing Commissions Amortization** line to the **Total Leasing Cost Amortization** line in row 21; in Year 5, also deduct the **Still Unamortized at Year-end** value in row 24. Link the **Less: Loan Points Amortization** line to the Loan Points Amortization line in row 28; in Year 5, also deduct the **Still Unamortized at Year-end** value in row 30.

AFTER-TAX CASH FLOW TO EQUITY

After making all of these adjustments to before-tax cash flow, you can derive your taxable income from Kathy Center by summing the lines in Figure 5.17. You then apply the federal tax rate that corresponds to your income bracket to the expected taxable income from Kathy Center. For simplicity, assume your entire taxable income will be taxed at the highest marginal tax rate of 21%. This simplification ignores the marginal tax system that

is actually used in calculating the income tax liability. The resulting tax liability for Kathy Center is calculated in Figure 5.18. Subtracting the tax liability from pre-tax cash flow yields your after-tax cash flow to equity.

What happens if the taxable income calculation results in a negative amount? That is a generated "loss," and the good news is that you do not owe income taxes for any year in which you generate a loss. In our example, the combination of the tax shields from depreciation, amortization and loan interest payments help generate a loss in the first 3 years of this investment. The even better news is that any cumulatively unused loss amounts (**suspended losses**) from prior years can be carried forward and applied in the subsequent year. This is known as a **loss carry-forward**, and it is displayed in Figure 5.18 in the Less: Application of Suspended Losses line, where in this case it provides a 100% offset against the Taxable Income amount of $266,587 in Year 4, making Net Taxable Income equal zero. As losses can be carried forward, we track the Suspended Loss balance in a separate table. In Year 5, there is an annual loss generated, and as it is the year of sale, we additionally apply all remaining unutilized Suspended Losses in that year. We note that in Figure 5.18, we now display all Less and Plus lines grouped with like-kind lines, as it is customary to do so.

FIGURE 5.18

Kathy Center After-Tax Cash Flow

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Before-Tax Levered Cash Flow	**$10,787,386**	**$2,227,307**	**$1,903,355**	**$1,992,081**	**$2,367,000**	**$2,297,643**
Adjustments:						
Less: Depreciation (Purchase Price)	($14,887,546)	(3,624,176)	(3,624,176)	(3,624,176)	(2,007,509)	(2,007,509)
Less: Depreciation (TIs)	($211,372)	(18,100)	(31,831)	(83,892)	(43,846)	(33,704)
Less: Depreciation (Cap Ex)	($349,269)	(14,771)	(60,995)	(88,269)	(91,833)	(93,401)
Less: Leasing Commissions Amortization	($205,810)	(1,743)	(7,703)	(23,069)	(26,721)	(146,574)
Less: Loan Points Amortization	($194,000)	(27,714)	(27,714)	(27,714)	(27,714)	(83,143)
Plus: TIs	$311,299	36,200	57,629	152,145	46,696	18,629
Plus: Leasing Commissions	$205,810	12,200	41,722	107,561	25,567	18,760
Plus: Cap Ex	$653,806	103,400	323,565	190,919	24,947	10,975
Plus: Principal Amortization	$0	0	0	0	0	0
Taxable Income (Loss)	($3,889,697)	**(1,307,398)**	**(1,426,149)**	**(1,404,414)**	**266,587**	**(18,323)**
Less: Application of Suspended Losses	($4,137,961)	0	0	0	(266,587)	(3,871,374)
Net Taxable Income (Loss)	($8,027,658)	**(1,307,398)**	**(1,426,149)**	**(1,404,414)**	**0**	**(3,889,697)**
Less: Income Tax Liability *	$0	0	0	0	0	0
Plus: Depreciation (Purchase Price)	$14,887,546	3,624,176	3,624,176	3,624,176	2,007,509	2,007,509
Plus: Depreciation (TIs)	$211,372	18,100	31,831	83,892	43,846	33,704
Plus: Depreciation (Cap Ex)	$349,269	14,771	60,995	88,269	91,833	93,401
Plus: Leasing Commissions Amortization	$205,810	1,743	7,703	23,069	26,721	146,574
Plus: Loan Points Amortization	$194,000	27,714	27,714	27,714	27,714	83,143
Less: TIs	($311,299)	(36,200)	(57,629)	(152,145)	(46,696)	(18,629)
Less: Leasing Commissions	($205,810)	(12,200)	(41,722)	(107,561)	(25,567)	(18,760)
Less: Cap Ex	($653,806)	(103,400)	(323,565)	(190,919)	(24,947)	(10,975)
Less: Principal Amortization	$0	0	0	0	0	0
After-Tax Cash Flow	$10,787,386	**$2,227,307**	**$1,903,355**	**$1,992,081**	**$2,367,000**	**$2,297,643**

* Note: Profit-making real estate properties without a tax shelter must pay income taxes annually. In this example, losses are generated in years 1 through 3, and income is fully sheltered in year 4 from suspended loss carry-forward. Year 5 is a loss-making year, and in addition, all unutilized suspended losses are applied as this writing off of all remaining losses is allowed in the year of sale. Consequently, Less: Income Tax Liability is $0 in all years shown, and the Before-Tax Levered Cash Flow and After-Tax Cash Flow lines in each year are equal to one another.

Online Companion Hands On: After completing Figure 5.17, go to the Figure 5.18 tab. Calculate the **Taxable Income (Loss)** line as: **Before-Tax Levered Cash Flow** + **all of the contiguous rows** in the block above the Taxable Income (Loss) line. Next, calculate the **Less: Income Tax Liability** line as: **–Income Tax Rate** * **Net Taxable Income (Loss)**, but only in the instances where **Net Taxable Income (Loss)** is greater than 0 (if not, the income tax liability by definition is 0). Last, calculate the **After-Tax Cash Flow** line as: **Before-Tax Levered Cash Flow** + **Less: Income Tax Liability**. Note that while there is taxable income in Year 4, the prior year operating losses are applied to offset the amount one to one. When you are complete with the above, return to the Figure 5.2 tab and change the value of the Year 1 GPR cell c15 to 6,500,000. Now return to the Figure 5.18 tab and observe how there is Income Tax Liability in all years since the property did not generate a loss in any year, even with the additional lump sum deductions made for Leasing Commissions and Loan Points amortization in the sale year, Year 5.

THE CRAZY 1980s

It is useful to understand a bit of history. Our depreciation discussion provides some insight into the craziness of the 1980s U.S. real estate tax law. Assume you purchased a property in the 1980s with Year 1 NOI yielding 9% on the purchase price. You allocated 20% of the purchase price to land, with the remainder allocated to structure and improvements as above, and the IRS Code allowed you to take roughly 8% of the purchase price as depreciation each year. With a 9% NOI return each year, you only had a 1% tax exposure (9% – 8%), excluding any tax shield from interest expenses. If you had any debt on the building you generated significant tax losses, even though the building was cash flow positive. Further, you could sell these tax losses to third parties from 1981 through 1986. This led property owners to intentionally create tax losses which were sold on a forward basis to people seeking to shelter taxable income (doctors, lawyers, etc.). The income derived from the sale of these tax losses lowered the effective acquisition cost for the property owner.

Real estate quickly became a business of manufacturing tax losses rather than satisfying tenant demand for space. It is hardly surprising that there was an incredible accumulation of excess supply during the 1980s, as it paid well to lose money!

Figure 5.19 demonstrates the 1980s scenario for a residential property, Leslie Heights. This property was bought for $100 million with 90% leverage. This high level of debt allowed the owner to acquire the property with little (if any) of their own money at risk. An $8 million annual depreciation allowance (8% of $100 million) was taken. The profit derived purely from selling the tax credits. In particular, the owner could generate their equity requirement ($10 million) for the purchase essentially from the sale of the first two years of tax losses ($4.4 million annually). Note that the $600,000 pre-tax profit (also the after-tax profit) represents a 6% return on the $10 million equity. In addition, if the property appreciated at the rate of inflation (which was roughly 10%) for 3 years, and if the owner sold the property at the end of Year 3, the pre-tax annual equity internal rate of return (IRR) is seemingly 67% (see Figure 5.20). Note that all of this occurs even though annual interest payments exceed stabilized NOI by $1.8 million.