

Lease-Versus-Buy

Cost Analysis



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By Steven R. Price, CCIM

Eventually, most users of commercial space ask themselves the question “Should I lease or purchase?” The answer lies in a thoughtful assessment of numerous subjective questions and a thorough, objective analysis of the cash flows after-tax of the lease-versus-own alternatives. In addition, the decision to lease or own is often driven by the cash needs of the business owner; the space needs of the business; whether the space is retail, office, industrial, mixed-use, or special use; the importance of branding, protecting, or creating trade areas; establishing franchise value; or other circumstances.

When considering whether to lease or own, users of commercial space need to recognize and evaluate the advantages and disadvantages of each alternative.

Leasing

Leasing is a means for a user to assume physical control and to reap a partial economic benefit from commercial space without obtaining an ownership interest in a property.

Advantages of Leasing

Location: Leasing can allow a user to occupy space at a premier location, or in a synergistic multi-tenant environment, that the user otherwise couldn’t afford.

Spatial Flexibility/Mobility:

Leasing can provide greater flexibility to a user who many need to expand or contract, and can provide mobility if a user needs or wants to relocate.

Availability of Cash: Leasing typically requires less cash out of pocket than ownership alternatives, leaving more capital to invest in the user’s products and services or to establish additional locations.

Source of Financing: Leasing can be viewed as a source of financing, since many small or marginally profitable firms may find traditional financing difficult to obtain.

Stability of Costs: The long-term occupancy costs of leasing, when viewed from the user’s perspective, are generally simple to estimate and typically include base rent

(pure net, pure gross, or a hybrid), operating expense pass-throughs, amortized tenant improvements, percentage rent (retail), and the like. Although some leases may expose a user to certain capital expenditures, tenants are generally insulated from unforeseen capital costs such as the replacement of mechanical systems, structural repairs, and roof or parking lot replacement.

Tax Benefits: Unlike ownership, the occupancy costs of leasing are fully deductible, including that portion of rent attributable to the value of the land.

Focus: Leasing space allows the user to concentrate on its primary business without the distractions of management.

Disadvantages of Leasing

Cost: For a firm with a strong earnings record, ready access to capital, and the ability to take advantage of tax benefits from ownership, leasing is often the more expensive alternative.

Loss of Appreciation: Leasing means the tenant does not benefit from property appreciation.

Contractual Penalties: If a leased property becomes obsolete or the business occupying the space becomes unprofitable, the tenant must continue paying rent or face penalties for default.

Loss of Salvage Value: Most leases provide that any improvements made by the tenant become the property of the landlord at the end of the lease term, or the landlord may require that the tenant remove any improvements made to the premises at the tenant's expense.

Control: When leasing, a user located in a building with other tenants has little or no control over the types of the other tenants placed in the building. These other tenants can have an adverse impact on

*Unlike ownership,
the occupancy
costs of leasing
are fully
deductible. . .*

parking, hours of operation, use or compatibility, or building services.

Owning

Owning is a means of obtaining the full economic benefit of a property, including cash flows from operations and capital appreciation, for an unspecified period.

When an owner is also a user, physical use of the property is also obtained. Although most users acquire property through the use of equity and debt financing, most owners are free to use the property

as they wish, even though they are obligated to the mortgagor.

Advantages of Owning

Appreciation: An owner enjoys the benefit of capital appreciation over time.

Debt Reduction and Equity Build-up: Assuming conventional financing, an owner enjoys debt reduction and equity build-up through amortization of the original loan amount, since both interest and principal are included in every mortgage payment.

Control: Within certain legal limits, a user who owns a building enjoys the opportunity to operate the building as they see fit.

Income: If a portion of the property is rented, income from other tenants can be used to pay the mortgage on the property or for other business or investment purposes.

Tax Advantages: An owner enjoys the benefit of interest and cost recovery deductions that reduce the annual tax liability from real estate operations. The accumulated cost recovery deductions, although taxed at the time of sale, are currently taxed at 25 percent, which is typically less than the user's marginal tax rate applied to ordinary income and the user enjoys the benefit of those untaxed dollars until the property is sold. The capital gain from appreciation, while currently taxed at 15 percent, is often 87 to 133 percent less than the user's ordinary income tax rate.

Positive Leverage

While not guaranteed and subject to change in fluctuating financial markets or rising interest rate environments, properties acquired with borrowed funds stand to benefit from positive leverage—meaning the yield to the owner on a leveraged investment is greater than the yield on an unleveraged investment.

Disadvantages of Owning

Time Frame: The decision to purchase should be made with a holding period in mind of at least five years. Although historically commercial properties tend to appreciate in value, the costs of acquisition and disposition may offset or eliminate the benefits of appreciation over a short-term holding period.

Spatial Inflexibility: Often, owned facilities do not lend themselves to the expansion or contraction of building improvements.

Initial Capital Outlay: Most commercial lenders require equity at closing of 20 to 30 percent of the

cost of the property acquired. This equity requirement ties up capital that could otherwise be deployed to grow the user's business.

Management: The management of commercial property can absorb manpower and require an owner to focus on building management issues such as legal compliance, health and safety issues, contractor management, and other issues not related to the user's primary business.

Financing: The sources and availability of debt may be limited in times of economic recession or depression, and rising interest rates may make refinancing difficult or impossible.

Financial Liability: Although equity financing and investment capital may be readily available, a commitment to long-term debt financing often involves a 20 to 30 year amortization and possible loan provisions that mandate pre-payment penalties if a loan is paid off prematurely.

Risks: There are numerous risks to ownership, including internal and external obsolescence, market risks, financing risks, and unforeseen capital requirements for repairs and maintenance.

Comparison Techniques

The two methods of comparing leasing and owning alternatives are the present value (PV) and the internal rate of return (IRR). The PV method compares the present value of the cash flows of both alternatives when those cash flows are discounted at the user's opportunity cost (discount rate), whereas the IRR method calculates the internal rate of return on the differential cash flows between leasing and owning and compares the IRR of the differential cash flows to the user's opportunity cost.

Present Value Method

The PV method compares the present value of leasing to the present value of owning at a discount rate specific to the user. The user then selects the alternative that represents the lowest cost (PV) of the two alternatives.

PV Method of Leasing

Since the operating expenses for leasing on a pure net basis (NNN) would be costs incurred through the ownership alternative, the operating expenses in both the leasing and owning alternatives are ignored. And, since 100 percent of the occupancy costs of leasing are deductible, the after-tax costs of leasing are calculated using the following formula:

$$\text{Annual Lease Cash Flows Before-Tax} - (\text{Tax Savings}) = \text{Annual Lease Cash Flows After-Tax}$$

The Annual (Tax Savings) are determined by multiplying the Annual Lease Cash Flows Before-Tax (CFBT) by the user's marginal tax rate on ordinary income. For example, if a user were in the 28 percent marginal tax bracket for ordinary income and the Annual CFBT (annual occupancy cost from base rent only) were \$100,000, the Annual Lease Cash Flows After-Tax (CFAT) would be calculated by subtracting \$28,000 (28%) from the Annual CFBT, resulting in Lease CFAT of \$72,000. Note that all cash flows in the Lease scenario are negative cash flows when viewed from the user's perspective (see Figure 1), and because lease payments are made in advance, the lease payments start at EOY zero (0) and continue through EOY nine of the 10-year term.

		(Minus)			(Equals)		
N	LEASE CFBT	-	N	Marginal Tax Rate %	=	N	LEASE CFAT
0	(Lease CFBT)		0	(Tax Savings)		0	(Lease CFAT)
1	(Lease CFBT)		1	(Tax Savings)		1	(Lease CFAT)
2	(Lease CFBT)		2	(Tax Savings)		2	(Lease CFAT)
3	(Lease CFBT)		3	(Tax Savings)		3	(Lease CFAT)
4	(Lease CFBT)		4	(Tax Savings)		4	(Lease CFAT)
5	(Lease CFBT)		5	(Tax Savings)		5	(Lease CFAT)
6	(Lease CFBT)		6	(Tax Savings)		6	(Lease CFAT)
7	(Lease CFBT)		7	(Tax Savings)		7	(Lease CFAT)
8	(Lease CFBT)		8	(Tax Savings)		8	(Lease CFAT)
9	(Lease CFBT)		9	(Tax Savings)		9	(Lease CFAT)
10	\$0		10	\$0		10	\$0

Figure 1, Calculating Cash Flows After Tax for the Leasing Alternative

Once the CFATs are calculated for the leasing alternative, they are discounted back to the beginning of the holding period using the user's opportunity cost (discount rate) for comparison with the PV of the owning alternative (see Figure 2).

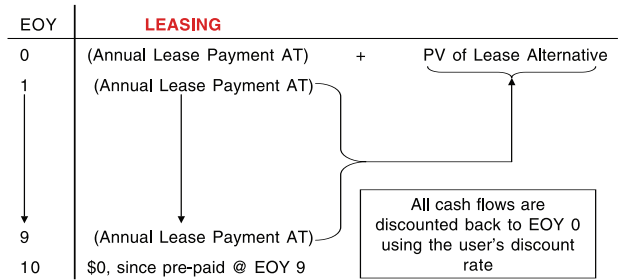


Figure 2, Calculating the Present Value of the Leasing Alternative

PV Method of Owning

This method assumes a 100 percent owner-occupied property with conventional financing and no rental income. Since this method requires the calculation of tax/(savings) on real estate cash flows from operations, the analysis includes forecasting operating expenses into the future to arrive at the negative net operating income (NOI) for each year of the holding period, and subtracting the annual interest and cost recovery deductions to determine the annual real estate taxable income from operations (RETI). Each year the RETI is then multiplied by the user's marginal tax rate to determine the tax on cash flows from operations. To determine the CFAT, the annual debt service (ADS) is subtracted from the negative NOI to arrive at CFBT, and the annual tax from operations is subtracted for each year of the holding period to determine the CFAT from operations.

In addition to calculating the CFAT for each year of operation throughout the holding period, the analysis must include the calculation of Sale Proceeds After-Tax (SPAT). This includes forecasting the future selling price of the property at the end of the holding period, and subtracting the costs of selling, the mortgage balance, and taxes due at the time of sale. Note that the SPAT from the owning alternative is the only positive cash flow found in the lease versus purchase analysis and represents one of the significant assumptions affecting the user's decision (see Figure 3).

Internal Rate of Return Analysis

The IRR method subtracts the CFATs of leasing from the CFATs of purchasing, to arrive at a differential cash flow on which an internal rate of return can be calculated. This IRR is then compared to

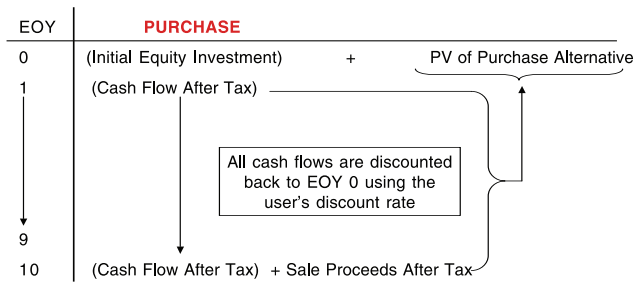


Figure 3, Calculating the Present Value of the Purchase Alternative

the opportunity cost of capital (discount rate) of the user. In most cases, users have a general or specific understanding of the rate of return they can achieve on their primary business—whether a product or service. To the extent that the IRR of the differential cash flows (generated by owning the real estate) is greater than the yield generated by the business, the user would select the “purchase” alternative. Conversely, if the yield on the real estate is less than the yield the user can achieve on his/her business, the user should select the “lease” option (see Figure 4).

(Minus)		(Equals)			
N	PURCHASE -	N	LEASE =	N	DIFFERENTIAL
0	(Initial Investment)	0	(Lease CFAT)	0	(Initial Investment)
1	(CFAT)	1	(Lease CFAT)	1	CFAT
2	(CFAT)	2	(Lease CFAT)	2	CFAT
3	(CFAT)	3	(Lease CFAT)	3	CFAT
4	(CFAT)	4	(Lease CFAT)	4	CFAT
5	(CFAT)	5	(Lease CFAT)	5	CFAT
6	(CFAT)	6	(Lease CFAT)	6	CFAT
7	(CFAT)	7	(Lease CFAT)	7	CFAT
8	(CFAT)	8	(Lease CFAT)	8	CFAT
9	(CFAT)	9	(Lease CFAT)	9	CFAT
10	(CFAT) + SPAT	10	\$0	10	CFAT + SPAT

Figure 4, Calculating the Internal Rate of Return of the Differential Cash Flows

Example

Assume a commercial space user can either lease or purchase an industrial property with the following terms:

User Assumptions

Ordinary Income Tax Rate:	28%
Capital Gain Tax Rate:	15%
Cost Recovery Recapture:	25%
After-Tax Discount Rate:	10%

This assumes that the user’s opportunity cost of capital, or yield on the cash flows from the user’s business, is 10 percent. Therefore, all cash flows from both the lease and purchase alternatives will be discounted to time period zero (0) using a 10 percent discount rate, and the IRR of the differential cash flows will be compared to a 10 percent after-tax rate of return from the user’s business.

Property Assumptions

Size:	10,000 rentable square feet
Acquisition Price:	\$1,000,000 (\$100.00 per square foot)
Improvement Allocation:	75%
Useful Life:	39 years
Disposition Price:	2% annual appreciation
Disposition Costs of Sale:	7%

Financing Assumptions

Acquisition Loan Amount:	80% loan-to-value (\$800,000)
Interest Rate:	7.5%
Amortization Period:	25 years
Loan Term:	10 years
Loan Costs:	1% of acquisition loan

Lease Assumptions

Term:	10 years
Market NNN Rate:	\$7.00 annually per rentable square foot
Base Rate Escalation:	3%
Payment Dates:	In advance, EOY 0 through EOY 9

After-Tax Cost of Leasing

In this example, the after-tax present value of leasing, when future cash flows are discounted at a 10 percent discount rate, is (\$381,635). In other words, if the user set aside (\$381,635) today, when invested at 10 percent compounded annually, there would be adequate cash flow to pay all after-tax costs of leasing over the 10-year term of the lease (see Figure 5). The PV of the lease alternative is

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Note: Do not enter any information on this sheet. All values are derived from the other sheets.

After Tax NPV of Leasing

End of Year	Annual Cash Flow Before Taxes	Taxes	Annual Tax Savings	Annual Cash Flow After Taxes
1	(\$70,800)	-	(\$19,000)	(\$89,800)
2	(\$72,100)	-	(\$20,100)	(\$92,200)
3	(\$74,300)	-	(\$20,700)	(\$95,000)
4	(\$76,400)	-	(\$21,400)	(\$97,800)
5	(\$79,700)	-	(\$22,000)	(\$101,700)
6	(\$81,100)	-	(\$22,700)	(\$103,800)
7	(\$83,800)	-	(\$23,400)	(\$107,200)
8	(\$86,800)	-	(\$24,100)	(\$110,900)
9	(\$89,800)	-	(\$24,800)	(\$114,600)
10	(\$91,200)	-	(\$25,600)	(\$116,800)

After Tax NPV of Leasing @ 10.00% = (\$381,635)

Figure 5, Calculating the Present Value of the Leasing Alternative

then compared to the PV of the purchase alternative and the user will select the lowest cost alternative.

After-Tax Cost of Purchasing

Here, the after-tax present value of purchasing is (\$348,929). Therefore, if the user set aside (\$348,929) today, when invested at 10 percent compounded annually, there would be adequate cash flow to pay all after-tax costs of purchasing over the projected 10-year holding period (see Figure 6). In this case, the PV of purchasing (\$348,929) is less expensive than the PV of leasing (\$381,635) and is thus the preferred alternative from a strictly economic perspective.

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After Tax NPV of Purchasing

End of Year	Initial Investment	Annual Cash Flows After Tax	Salvage Proceeds After Tax
0	(\$308,000)		
1		(\$48,987)	
2		(\$48,880)	
3		(\$48,184)	
4		(\$48,440)	
5		(\$48,740)	
6		(\$50,090)	
7		(\$50,430)	
8		(\$50,820)	
9		(\$51,230)	
10		(\$51,812)	\$428,206

After Tax NPV of Purchasing @ 10.00% = (\$348,929)

Figure 6, Calculating the Present Value of the Purchasing Alternative

IRR of the Differential

In this example, by subtracting the CFATs of the lease alternative from the CFATs of the purchase alternative, the analysis indicates that the user

would have (\$157,600) more dollars invested in the purchase alternative at time period zero than the lease alternative, and the annual CFATs of owning are less than the annual CFATs from leasing for each year of the holding period, resulting in positive CFATs in years one through 10. Note that in the lease-versus-purchase analysis, the only positive cash flow in the purchase alternative is the sale proceeds after-tax of \$428,206. The resulting IRR for the differential cash flows of the purchasing alternative is 12.36 percent which is higher than the user's desired return of 10 percent. (See Figure 7)

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IRR of the Differential

End of Year	Purchase Cash Flows After Tax	Lease Cash Flows After Tax	Differential
0	(\$308,000)	(\$89,800)	(\$218,200)
1	(\$48,987)	(\$92,200)	\$43,213
2	(\$48,880)	(\$95,000)	\$46,120
3	(\$48,184)	(\$97,800)	\$49,616
4	(\$48,440)	(\$101,700)	\$53,260
5	(\$48,740)	(\$103,800)	\$55,060
6	(\$50,090)	(\$107,200)	\$57,110
7	(\$50,430)	(\$110,900)	\$60,470
8	(\$50,820)	(\$114,600)	\$63,780
9	(\$51,230)	(\$116,800)	\$65,570
10	(\$51,812)		\$376,394

Internal Rate of Return of the Differential = 12.36%

Figure 7, Calculating the Internal Rate of Return of the Differential Cash Flows

Discount Rate Sensitivity

It is important to look at a range of discount rates because the size and timing of the cash flows of the lease and purchase alternatives differ at different rates. Specifically, the largest disparity in size and timing typically occurs in year zero (0) due to the size of the initial investment, and in year 10 due to the positive cash flow generated through sale proceeds after-tax; however, EOY zero (0) cash flows are not discounted at all. Given that, in the lease versus purchase analysis, the only positive cash flow comes in the form of sale proceeds after-tax at EOY 10, as the discount rates increase they minimize the positive effect of the SPAT, and thus, flatten the curve in the purchase option (see Figure 8). In this example, if the user's opportunity cost is less than 12.36 percent, then the purchase alternative would be the lowest cost alternative for the user. However, if the user's opportunity cost, or the return they can generate in operating their business, is greater than 12.36 percent, the leasing

alternative becomes the lowest cost alternative. Therefore, users with low overhead and high margins tend to lease space, except in the case of corporate or regional headquarters, or for sensitive R&D operations, where maintaining control and security are vitally important and often outweigh the financial assessments.

In this example, if the user's opportunity cost were in the range of 12.36 percent, the user would likely be indifferent to this example of leasing or owning and the user would rely on other issues such as location, access, image, visibility, exposure, and other subjective factors.

Determining Clients' Best Options

The outcome of a lease-versus-purchase analysis is affected by a number of variables, including the price of the property; rate of appreciation and costs of sale; asking rental rates and terms; the anticipated holding period and lease term; the user's marginal tax rate; financing terms; and more. Therefore, every lease-versus-purchase analysis requires a thorough comparison of after-tax cash flows as viewed from the user's perspective. Also, comparing the internal rate of return

from the differential cash flows with the user's opportunity cost provides an objective assessment of the options that can be further weighed along with numerous subjective issues.

In my experience, the objective assessment of the cash flows after-tax from the lease and purchase options—including calculating the PVs of each alternative and comparing the IRR of the differential cash flows to the user's discount rate—is only a starting point for a comprehensive assessment and for substantive decision making. The role of the analyst, broker, or advisor is to gather the tangible information, process the calculations described above, and solicit input from the user and his or her other advisors to identify the option that provides the best economics as well as the best fit to meet the investment objectives of the user and the best operating facility to support the needs of the business.

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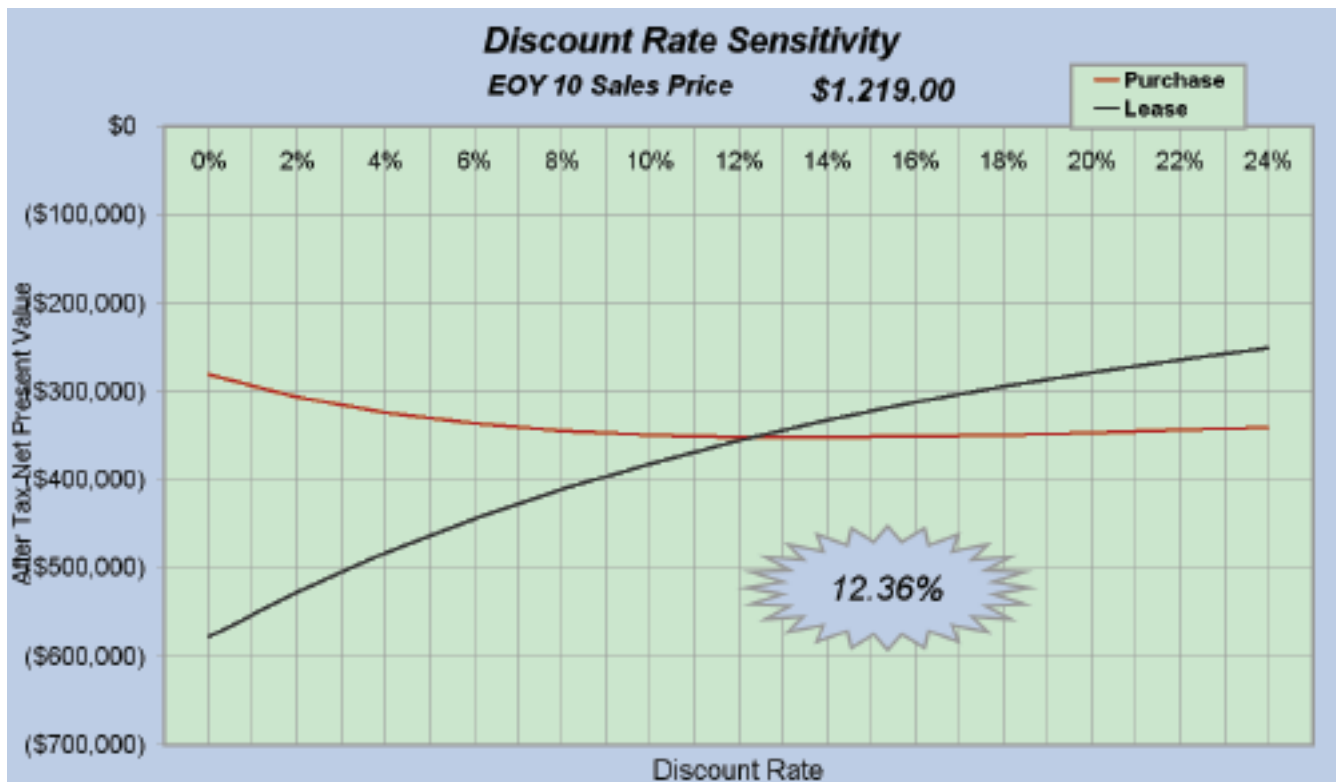


Figure 8. Discount Rate Sensitivity