



## APPENDIX 14C

# CORPORATE REAL ESTATE: THE OWN VERSUS RENT DECISION FROM A FINANCIAL ECONOMIC PERSPECTIVE

### APPENDIX OUTLINE

- 14C.1 Lease versus Buy, a Conventional Approach
- 14C.2 Problems with the Conventional Approach
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In the real estate industry, the term “corporate real estate” refers to real estate owned by non-real-estate corporations or companies, that is, firms that are not primarily in the business of real estate development or investment. In most countries, such real estate includes a large amount of commercial and industrial property. Exhibit 14C-1 (elaborated from Exhibit 1-8 in Chapter 1 of the printed text) shows that in the United States, it is estimated that at least 15 percent of the value of the equity of publicly traded companies on the stock exchange is attributable to their real estate holdings. This is over \$2.5 trillion worth of real estate in the United States, over one-third of all commercial property, and still does not include property owned by smaller, private businesses.

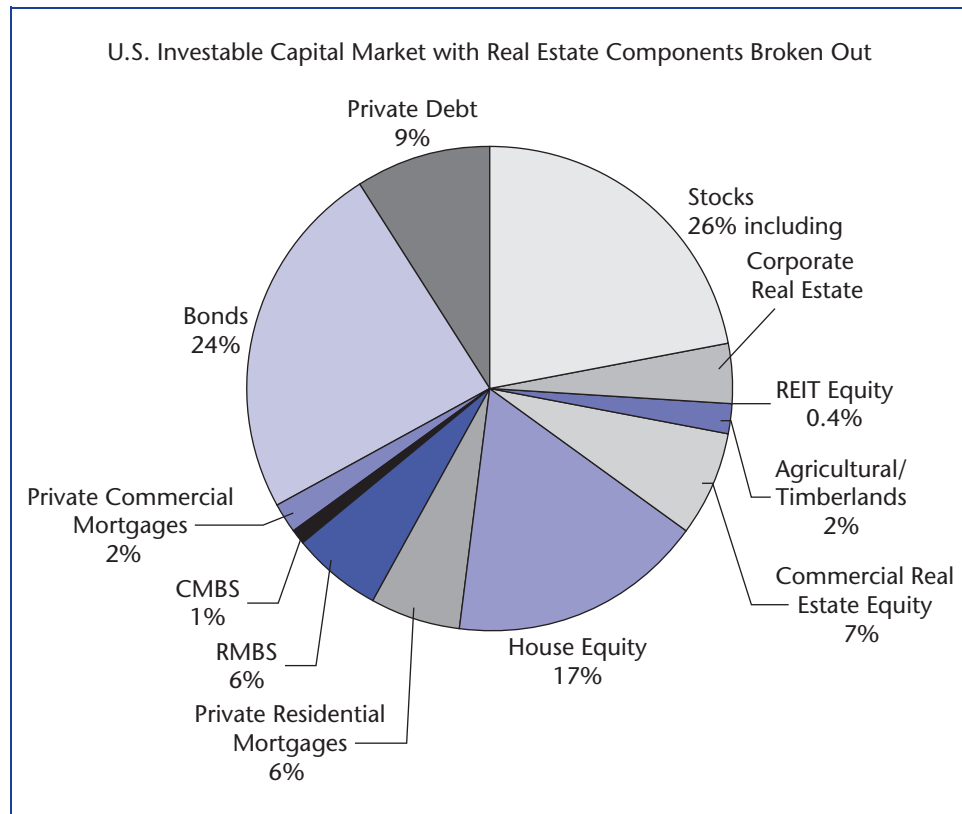
Such real estate has often in the past not been viewed strategically by the industrial and service companies that own it. As a result, decisions regarding corporate real estate were not optimized from either a real estate or corporate perspective. Opportunities to use or manage the company’s real estate assets and usage needs to better achieve the corporation’s mission and to increase shareholder value were often ignored. However, in recent years, corporate real estate has come to be viewed in a more sophisticated manner by many leading companies. The old “facilities management” perspective of cost-minimization is being replaced by a broader and deeper perspective on the ways in which a company’s management of its real estate needs and assets can synergize with the company’s mission and maximize the overall value of the firm for its owners.

Most of this topic is beyond the scope of this text, falling more properly in the realm of corporate strategic planning and operational management (see the references by Joroff and O’Mara in the appendix bibliography), rather than financial economics. However, a very important question in corporate real estate management is the “*buy-versus-lease*” decision, particularly as this decision interacts with corporate finance and capital budgeting decisions. Broadly, this is the question of how much space, and *which* space, should the company *own* as opposed to *rent*. There are many considerations in answering this question, both at a macro policy level and at the micro-level of specific space decisions. And again, many of

**EXHIBIT 14C-1**

Corporate Real Estate Value as a Fraction of the Stock Market in the Context of the Overall U.S. Capital Market

Source: Based on Miles & Tolleson (1997).



these considerations are beyond the scope of this text.<sup>1</sup> However, there is an important financial economics component to the buy-versus-lease question, and this appendix will introduce that perspective.

More specifically, the purpose of this appendix is to explore the buy-versus-lease decision as an investment decision, viewed from the after-tax investment analysis perspective introduced in Chapter 14. This is a perspective that should be consistent with the mainstream corporate finance and capital budgeting perspective presented in most graduate-level corporate finance textbooks. The underlying principle of such a perspective is the maximization of the value of the firm, or pre-existing shareholder value in the case of a publicly traded firm. The classical assumption is that the stock market is sufficiently efficient and rational to see through “accounting illusions” to value companies based on the expected future cash flow they can generate for their stockholders. As always in this book (and consistent with the mainstream financial economics literature), the framework of analysis that we require is one that reflects equilibrium within and across the relevant markets. In the case of the corporate real estate buy-versus-lease decision, the relevant markets are:

- The property asset market;
- The debt market (including the market for “debt-like” cash flows such as leases) as exemplified by the bond market; and
- The market for the corporation’s equity (e.g., the stock market for a publicly traded corporation).

The analysis presented in this appendix is focused primarily on the implications of income tax policy on the buy-versus-lease question. While economic theory more broadly

<sup>1</sup>Commercial leases are discussed from a property owner’s perspective in Chapter 30.

holds interesting implications for other aspects of the buy-versus-lease question,<sup>2</sup> the framework presented in Chapter 14 in the text puts you now in a strong position to analyze the tax implications of the buy-versus-lease decision rather rigorously at the micro-level. Indeed, as a starting point, we can say in a narrow sense that the *only* source of different value for the corporation between leasing versus buying *per se* must be differential tax impacts. In other words, suppose we *assume* that between the lease and buy alternatives the nature of the real estate, the nature of its usage, and the length of time over which it will be used are all held constant (and hence also the opportunity cost of the market rent would be equal), so that we can focus in this narrow sense purely on the buy-versus-lease question. Then the only source of differential incremental cash flows between the lease and buy alternatives must emanate from different tax treatments applied to leasing versus ownership.

As we shall see in this appendix, the general result (noted in section 14.3 of Chapter 14) is that in the United States, it typically makes more sense for profitable, taxed corporations that are not in the real estate business to lease rather than own the real estate they use. This is due to the double taxation faced by the corporation's stockholders, as a result of corporate-level income taxes compounding with personal income taxes on investment earnings. This combined with the fact that most commercial real estate is owned by entities or vehicles that manage to avoid, at least, the corporate level of taxation, causes equilibrium asset prices in the property market to be above the after-tax investment value of the property to the corporation. However, the net difference in value is typically very small when debt is used to finance a large portion of the corporate real estate that is owned by the corporation, because the same double-taxation argument against real estate ownership gives corporations a positive value from borrowing, and real estate ownership increases the debt capacity of the corporation. Indeed, in specific circumstances, it may be neutral or even advantageous to the value of the firm to purchase or continue owning real estate, and there are clearly additional considerations beyond the easily quantified tax-based analysis described here that can make corporate ownership rational in some cases. Some of these additional considerations will be mentioned briefly in the conclusion of this appendix.

## 14C.1 Lease versus Buy, a Conventional Approach

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Let us begin by looking at a typical conventional finance approach to analyzing the corporate buy-versus-lease decision on an after-tax basis, such as one might find in traditional real estate finance textbooks. It will be easiest to do this by means of a simple numerical example. Suppose that ABC Widget Corporation is considering opening a new branch operation. The proposed operation will have a business plan which, in simplified form, might look something like the numbers in Exhibit 14C-2. Note that the project involves up-front start-up costs of \$8 million followed by annual sales of \$9 million per year, with a net profit before tax of \$1,860,000 after paying rent of \$900,000 per year to lease the space. With a corporate income tax rate of 35 percent, the after-tax net cash flow to equity is \$1,209,000. Assuming an expected 10-year lifetime for the new operation, the IRR for the project if the necessary space is leased would be 8.31 percent after consideration of corporate taxes, as seen in the exhibit.

An alternative approach is for ABC Widget Corporation to set up the new operation using a building that it would purchase. This will increase the required up-front cash outlay. However, it will save rent payments, provide a depreciation tax shield for some of the corporation's profits, and provide some expected reversion of the initial investment at the end of the operation in 10 years, as the building can then be sold. The investment analysis of the new operation under this "buy-and-borrow" scenario for the real estate might look like what is shown in Exhibit 14C-3, assuming the building would cost \$12 million and 75 percent of that price would be borrowed using a 6 percent interest-only mortgage.

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<sup>2</sup>For example, Fisher (2004) analyzes a sample of corporate sale-leaseback decisions to show that the classical theory of the firm model of corporate control over proprietary processes in part explains the preference for long-term versus short-term leases. Direct ownership of the space or longer-term leases are used only when the space has more unique characteristics that particularly benefit the lessee corporation, and sale-leasebacks increase shareholder value when the real estate is not specialized to the corporation, as signaled by relatively short-term leases.

**EXHIBIT 14C-2**  
ABC Widget New Branch IRR  
if Lease Space

	Years:	Up Front: 0	Recurring: 1-10
<b>Cash Flows if Lease:</b>			
Moving Expenses & Start-up Costs		(\$8,000,000)	
Sales			\$9,000,000
Cost of Goods Sold			(\$4,500,000)
Sales Operating Expenses			(\$1,230,000)
Real Estate Operating Expenses			(\$510,000)
Net Lease Rent			(\$900,000)
Taxable Income			\$1,860,000
Corporate Tax @ 35%			(\$651,000)
EATCF			\$1,209,000
	<b>Years:</b>	<b>0</b>	<b>1-10</b>
Net Cash Flow		(\$8,000,000)	\$1,209,000
	<b>IRR:</b>	<b>8.31%</b>	

**EXHIBIT 14C-3**  
ABC Widget New Branch IRR  
if Buy Space Borrowing 75%  
of Building Price at 6%

	Years:	Up Front: 0	Recurring: 1-10	Reversion: 10
<b>Cash Flows if Buy and Borrow:</b>				
Moving Expenses & Start-up Costs		(\$8,000,000)		
Building Purchase Price		(\$12,000,000)		
Less Mortgage Amt Borrowed		\$9,000,000		
Sales			\$9,000,000	
Cost of Goods Sold			(\$4,500,000)	
Sales Operating Expenses			(\$1,230,000)	
Real Estate Operating Expenses			(\$510,000)	
Mortgage Interest @ 6%			(\$540,000)	
Depreciation Expense			(\$230,769)	
Taxable Income			\$1,989,231	
Corporate Tax @ 35%			(\$696,231)	
Add Back Depreciation Expense			\$230,769	
EATCF			\$1,523,769	
Resale				\$12,000,000
Loan Balance				(\$9,000,000)
Basis				\$9,692,308
CGT (Recapture @ 25%)				(\$576,923)
	<b>Years:</b>	<b>0</b>	<b>1-10</b>	<b>10</b>
Net Cash Flow		(\$11,000,000)	\$1,523,769	\$2,423,077
	<b>Buy-and-Borrow IRR:</b>	<b>8.63%</b>		

The widget company faces an additional \$3 million in up-front costs of setting up the branch operation (the \$12 million building price less the \$9 million mortgage), but it then saves the \$900,000/year in rent, in return for only \$540,000/year in mortgage interest. In addition, the company gets to deduct \$230,769/year in depreciation expenses from its taxable income as a result of building ownership (assuming 75 percent of the property cost is depreciable, with a 39-year depreciable life). This provides a depreciation tax shield (DTS) of \$80,769/year, as the firm saves this much in corporate income taxes (at the 35 percent rate). Furthermore, assuming the building could be sold again at the end of the planned operation in Year 10 for the same \$12 million price (that is, zero appreciation of the real estate), the company nets a projected \$2,423,077 in reversion at the end of 10 years, after tax (assuming a 25 percent tax rate on the recapture of the depreciation expense). All of the other projections in the business plan remain the same, including the real estate operating expenses, because the operation is assumed to be the same, in the same amount and type of space, whether the space is bought or leased. The result is that the same new branch operation with the real estate purchase provides an 8.63 percent IRR after-tax if the space is bought (with the \$9 million mortgage at 6 percent) instead of leased. As this is above the 8.31 percent after-tax IRR for renting the space, it apparently makes sense for ABC Widget Corporation to buy instead of lease the necessary real estate to set up the new operation.<sup>3</sup>

However, a fundamental objection may be raised about such a comparison. The IRRs being compared here are for the entire branch operation, not just the real estate component. Yet the buy-versus-lease decision at its purest is only about how to arrange the possession rights to the necessary operating space. A cleaner analysis of the buy-versus-lease decision alone would consider only the incremental cash flow impacts of one alternative versus the other. As the purchase alternative involves greater up-front cost, we can think of it as an incremental investment and compute the IRR of the incremental impacts of buying over leasing. In this example, the IRR of the buy-and-borrow cash flows of Exhibit 14C-3, minus the leasing cash flows of Exhibit 14C-2, indicates an after-tax IRR of 9.24 percent on the incremental up-front cost of \$3 million (based on incremental net-positive cash flow of \$314,769/year for 10 years plus \$2,423,077 reversion at the end).<sup>4</sup> This might seem like a pretty good after-tax IRR on the incremental cash flows of owning, further confirming the apparent implication of our previous comparison that the company will be better off buying the real estate (using the mortgage).

## 14C.2 Problems with the Conventional Approach

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While the above analysis may seem straightforward and sensible, it is quite likely to be wrong. That is, it is quite possible that the corporation's shareholders will actually be better off if the real estate is leased rather than purchased in this example. What is wrong with the conventional analysis described above?

If you have been paying attention to the principles we have been presenting in previous chapters of this book, you probably realize that a fundamental problem in the above analysis is that we are not controlling carefully for risk. The fact that the "buy-and-borrow" alternative provides a higher IRR than the "lease" alternative may not imply that ABC should purchase the building, if the "buy-and-borrow" approach results in sufficiently more risk to the firm's shareholders. The fact that the incremental cash flow analysis for buying and borrowing over leasing provides a 9.24 percent after-tax return does not necessarily clinch the case for purchasing the real estate, because we don't know what the opportunity cost of capital is for that incremental investment. Does 9.24 percent exceed the proper "hurdle rate" for this

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<sup>3</sup>It should be clear that this comparison can come out differently depending on how long it is assumed that the operation will continue, as well as how the rent and residual property value may change over time. Other things being equal, the longer the projected operation, the more relatively favorable the building purchase decision will appear, as the additional up-front investment will have more years over which to be recouped from the operating savings.

<sup>4</sup>Note again that, other things equal, this incremental IRR will also increase the longer the projected period of operation of the new branch (at least until the exhaustion of the DTS).

type of incremental investment, reflecting the incremental risk impact on the corporation's returns? We don't know. The conventional analysis ignores the fundamental question of the appropriate opportunity cost of capital (OCC) for addressing the buy-versus-lease decision.

Even if we knew that ABC Widget Corporation's corporate-level weighted average cost of capital (WACC) was, say, 8 percent (after corporate taxes), this would still not allow us to answer our buy-versus-lease question rigorously. The relevant OCC for a given cash flow stream is not simply ABC's corporate-level weighted average cost of capital. The corporate WACC reflects the *average* risk across all of the *pre-existing* assets of the corporation. The underlying assets involved in the branch operation and, in particular, the incremental cash flows of the buy-versus-lease decision may very well have different risk than this corporate-wide average. In other words, the incremental effect on ABC's WACC going forward, caused by this buy-versus-lease decision, may well be different from the pre-existing WACC. The conventional analysis fails to account for this.

When we analyze things more carefully, it is easy to see that the buy-versus-lease question for ABC's new branch operation involves several different types of incremental cash flows to the firm, with different amounts of risk in each one, and hence different OCCs appropriate as hurdle rates or discount rates. None of these may have the same risk characteristics as the corporation's average asset. The conventional analysis has not discounted each component of the incremental cash flow stream at an OCC appropriate to its risk, nor has it used those discounted streams to compute the NPV of the buy-versus-lease decision. Therefore, the conventional procedure has effectively ignored the *markets* that are relevant for evaluating the impact of the buy-versus-lease decision on ABC's stock price. These markets include, as we noted at the outset of this appendix, the property asset market, the debt or bond market, and the stock market for ABC's equity. For example, lease cash flows are "debt-like," contractually fixed over time, capable of being replicated by bonds or lease-backed-securities (LBS) that trade in the bond market. The cash flows involved in analyzing the buy-versus-lease decision come from (or go to) assets (or could be replicated by assets) that trade in all three of the above-noted asset markets. The different components of the incremental cash flows of the buy-versus-lease question have the risk characteristics of different ones of these three markets.

In fact, there is more than one problem with the conventional analysis described above. Not only has the conventional procedure ignored the OCC relevant for making the buy-versus-lease decision, but the conventional approach has ignored the effect of personal income taxes. It considers only corporate income taxes. Yet personal income taxes affect the investors in all three of the relevant asset markets noted above. Personal income taxes help to determine equilibrium values within and across those markets and thereby help to determine the impact of the buy-versus-lease decision on ABC's stockholders.

The best way to sort through and account for all of these considerations ignored in the conventional analysis is to apply the principles and procedures suggested previously in this text, especially as brought together in the after-tax equity investment analysis described in section 14.3 of Chapter 14. We will demonstrate how to do this in detail in the following section.

## 14C.3 A Financial Economic Framework to Evaluate the Buy-versus-Lease Decision

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The principles presented earlier in this text provide a coherent framework that ensures consistency with equilibrium (market) pricing within and across the three asset markets relevant to the buy-versus-lease decision: the property market, the bond market, and the stock market. The three most important of these principles that were ignored in the conventional analysis include:

- Discount after-tax cash flows at after-tax discount rates to compute NPV.
- Include both levels of taxation: corporate and personal.
- Discount cash flow components at OCC rates reflecting their risk (not always at the corporate WACC).

These principles can be applied using the *valuation by components* and *adjusted present value* (APV) procedures described in section 14.3 of Chapter 14. The resulting analysis procedure is not much more complex than the conventional approach, and it provides a complete and rigorous model consistent with equilibrium.<sup>5</sup> We begin by modeling the property asset market for the type of space ABC needs for its new operation.

### 14C.3.1 Analyzing the Relevant Property Market

The first step to ensure consistency of the evaluation methodology with market equilibrium is to analyze the property investment market for the type of real estate in question. This step is essential, because the risk of the corporate real estate is like the risk of other similar real estate assets traded in the property market, not (in general) like the risk of the (non-real-estate) corporation's other assets. As a profitable double-taxed corporation will almost certainly want to combine borrowing with any real estate purchase, and as debt is also typically used by the marginal participants in most property investment markets, we can use the valuation by components and APV = 0 equilibrium condition to derive the market's after-tax OCC for the reversion component of the real estate in question. Since this reversion cash flow exists under the "buy" alternative but not under the "lease" alternative, we need to know its appropriate after-tax OCC in order to analyze rigorously the buy-versus-lease decision. The procedure for deriving this OCC is demonstrated in Exhibit 14C-4.

The top part of Exhibit 14C-4 shows the debt-like cash flows facing a typical marginal investor in the property asset market for real estate like that which ABC Widget Corporation needs for its new branch operation. (It may be easier to follow this numerical example if you look at the Excel file also on the CD accompanying this book, where you can see the formulas used.) We see the up-front cost of \$12 million at time 0, followed by \$900,000/year of contractual net rent for the anticipated typical 10-year holding period. It is reasonable to assume that the marginal investors in the property market face an income tax rate on ordinary income similar to the corporate rate of 35 percent but that they use a real estate ownership vehicle that subjects the investment to only one layer of taxation (such as a partnership, an LLC, or a REIT). This subjects the \$900,000 net rent to \$315,000/year of income taxes, resulting in an after-tax cash flow to the investor of \$585,000. However, the investor gets DTS just like ABC, providing \$80,769/year worth of tax savings (\$12 million times 75 percent depreciable basis, divided by 39 year life, gives \$230,769 depreciation expense per year, which times the 35 percent tax rate provides \$80,769 in DTS). The result is net positive debt-like cash flows from the property of \$665,769/year for 10 years. At the end of Year 10, however, a depreciation recapture tax rate of 25 percent takes \$576,923 away from what would otherwise have been the property resale proceeds (25 percent of 10 years worth of accumulated annual depreciation of \$230,769 per year:  $0.25 \text{ times } \$2,307,690 = \$576,923$ ).

All of these cash flows in the top part of the exhibit are "debt-like" in that they are essentially fixed or predetermined by contract or statute (either the lease or the tax law). The OCC appropriate for discounting them is, therefore, the after-tax OCC for investments in the bond market. We have already noted that ABC Widget Corporation can borrow (at least against this property) at an interest rate of 6 percent. So this represents a good indication of the before-tax market OCC relevant for these cash flows. However, the 6 percent rate is a before-tax rate. We need an after-tax OCC to discount our after-tax cash flows. As noted in Chapter 14 in the text, examination of the difference between yields in the municipal (tax-exempt) bond market and yields on otherwise similar corporate bonds suggests that the marginal investor in the debt market faces a marginal income tax rate of effectively about 25 percent.<sup>6</sup> This implies that the after-tax OCC for the debt-like cash flows in Exhibit 14C-4 is:  $(1 - 0.25)6\% = 4.5\%$ . In other words, a municipal bond with risk and duration characteristics similar to those of the debt-like cash flows here would probably have a market yield around 4.5 percent.

<sup>5</sup>The framework presented here is in the tradition of Myers, Dill, and Bautista (1976) and Lewellen, Long, and McConnell (1976).

<sup>6</sup>See section 14.3.5 in Chapter 14 in the main text.

Years:	Up Front: 0	Recurring: 1–10	Reversion: 10
<b>Property Asset Market Analysis:</b>			
Property Purchase Cost = Market Value	(\$12,000,000)		
Net Rent Cash Flow Before Tax		\$900,000	
Net Rent Cash Flow After Tax @ 35%		\$585,000	
Depreciation Tax Shields*		\$80,769	(\$576,923)
PV Debt-like CFs from Property <sup>†</sup>	\$4,896,548	\$665,769	(\$576,923)
Loan Amount	\$9,000,000		
Debt Service Before Tax		(\$540,000)	(\$9,000,000)
Debt Service After Tax		(\$351,000)	(\$9,000,000)
PV Debt-like CFs to Loan <sup>‡</sup>	(\$8,572,713)	(\$351,000)	(\$9,000,000)
NPV of Loan:	\$427,287		
Implied APV = 0 PV of Reversion <sup>§</sup>	\$6,676,166		\$12,000,000
<b>Implied After-Tax OCC of Reversion (unlevered)<sup>§</sup>:</b>	<b>6.04%</b>		
PBTCF	(\$12,000,000)	\$900,000	\$12,000,000
EATCF	(\$3,000,000)	\$314,769	\$2,423,077

\* Reflects 35% tax on recurring income, 25% tax on depreciation recapture, 75% depreciable cost basis, 39-year life.

<sup>†</sup> Present value computed using 4.50% = 0.75(6%) after-tax OCC of debt-like cash flows based on debt market marginal investor tax rate on debt returns of 25%. For the property's debt-like cash flow components, this gives present value as follows: 4896548 = PV(.045, 10, 665769, -576923). For the loan's cash outflows from the borrower (property investor) this gives present value as follows: 8572713 = PV(.045, 10, 351000, 9000000), where the annual \$351,000 is the after-tax interest cost on the 6% loan to a borrower facing a 35% marginal tax rate:  $(1 - 0.35)9000000(0.06) = 351000$ .

<sup>‡</sup> 0 = APV = PV(Property Debt-like CFs) + PV(Property Reversion) + Loan Proceeds – Property Cost – PV(Debt Service CFs); ==> PV(Property Reversion) = \$12,000,000 – \$4,896,548 – \$9,000,000 + \$8,572,713 = \$6,676,166.

<sup>§</sup> = RATE(10, 0, -6676166, 12000000)

#### EXHIBIT 14C-4 Property Asset Market Analysis for ABC Branch Office Space, to Derive Necessary OCC of Reversion

When we discount the debt-like cash flows in the top part of Exhibit 14C-4 at this 4.5 percent rate, we arrive at a present value of \$4,896,548.<sup>7</sup> Of course, the property investor also obtains the present value of the expected gross resale proceeds of \$12 million at the end of Year 10. But we are not yet sure what discount rate to apply to this component, because it is a riskier component of the property cash flows. Since we do know the after-tax OCC to apply to debt-like cash flows (as we just determined), let us continue to evaluate the other debt-like component of the property investment on an after-tax basis for the typical marginal investor in the property market, namely, the mortgage debt.

We noted in Chapter 14 that most real estate markets are probably characterized by marginal investors who face income tax rates on ordinary income somewhat higher than the 25 percent effective rate that we are here assuming equates the municipal and corporate bond markets; as a result, borrowing is a positive NPV transaction for such investors. This is why most investors in real estate (especially those that are not tax-exempt) usually finance a large part of their investments with debt. This positive NPV on the mortgage loan is part of the value of the property investment for such marginal investors and hence must be accounted for in order for us to derive the present value of the property reversion which is necessary for us to back out the after-tax OCC of that reversion.

<sup>7</sup>This is the PV at 4.5% of \$665,769 per year for 10 years, less an outflow of \$576,923 10 years from now (the net cash flow in Year 10 is \$88,846, computed as:  $900000 - (0.35)900000 + (0.35)230769 - 576923$ ).



The middle part of Exhibit 14C-4 demonstrates that the NPV of the 6 percent, 10-year, \$9 million interest-only mortgage loan to the marginal investor facing a single layer of tax on ordinary income at the 35 percent rate is positive \$427,287. This is derived, as explained in section 14.3.5 of Chapter 14, by discounting the *investor's* after-tax cash flows from the loan at the *market's* after-tax OCC of 4.5 percent (this last derived as we noted above).  $PV(@4.5\%, 10 \text{ yrs}, (1 - 0.35)(0.06)\$9000000 = \$351000/\text{yr}, \text{ plus } \$9000000 \text{ OLB in 10 years}) = \$8,572,713$  loan liability present value (after-tax), which is \$427,287 less than the \$9 million cash received by the borrower up front.

So far, we see that the marginal investor in the property market obtains \$4,896,548 of present value from the debt-like cash flows of the property, plus another \$427,287 of present value from the mortgage loan, for a total of \$5,323,834 of present value due to debt-like cash flows. The remaining portion of the \$12 million current market value of the property, namely,  $\$12,000,000 - \$5,323,834 = \$6,676,166$ , must therefore be attributable to the only other source of value the property brings its investor owner, namely, the reversion cash flow at the end of 10 years. This must be the present value of the reversion component of the property market value; otherwise, we would violate the  $APV = 0$  for marginal investors condition of equilibrium in the property market.<sup>8</sup> The gross value of this reversion (we've already accounted for the PV of the depreciation recapture tax) is estimated to be \$12 million, the projected resale value of the property (same as its current purchase price, as we're assuming zero appreciation). The discount rate that discounts \$12 million in 10 years to \$6,676,166 today is 6.04 percent. Therefore, 6.04 percent is the market's after-tax OCC of the property reversion cash flow.<sup>9</sup> This is the information we needed to derive from the property market in order to carry out the buy-versus-lease analyses described in the following sections.

### 14C.3.2 Lease versus Buy and Borrow

We can now analyze and evaluate the buy-versus-lease decision under the same assumptions as before, including the use of the \$9 million, 10-year, 6 percent loan if the property is purchased. Our approach is like the incremental analysis described at the end of section 14C.1, only now we will use the correct market-based after-tax OCC rates to discount the incremental cash flows to present value by components, reflecting their differential risk. As the analysis is applied to the buy-and-borrow cash flows minus the lease cash flows, the present value we determine represents the NPV of the buy-and-borrow alternative over the lease alternative. Hence, a positive NPV would support our previous conclusion in the conventional analysis that ABC should purchase the property, while a negative NPV would indicate the opposite (i.e., that it is better for ABC shareholders if the company leases the space).

Exhibit 14C-5 presents the analysis. The top part of the exhibit presents the aspects of the branch-operation project that are common and invariant whether ABC leases or purchases the space that will be used. This part of the analysis is separated, because it should not affect the buy-versus-lease decision. This "operational" aspect of the project exclusive of its "net rent" dimension would normally provide the primary rationale for undertaking the project on the part of a non-real-estate corporation, that is, a corporation that is in some business other than real estate development or investment. The exhibit reveals that this

<sup>8</sup>Again, see section 14.3 in Chapter 14 for a full explanation of the APV and market equilibrium model we are employing here.

<sup>9</sup>This is an after-tax rate even though the \$12,000,000 is gross of taxes, because all the individual cash flow elements in this analysis are parts of an overall after-tax analysis, in which the \$6,676,166 was backed out from after-tax valuation of the other cash flow components of the investment. The before-tax blended IRR of the \$12 million property investment is, of course, 7.5% (equal to the initial yield rate on the property, given its zero growth). The equivalent blended after-tax IRR (blending the debt-like and the reversion portions of the investment) is 5.17%, computed as  $RATE(nper, pmt, pv, fv) = RATE(10, 665769, -12000000, 11423077) = 5.17\%$ , where  $\$11,423,077 = \$12,000,000 - \$576,923$ , the after-tax reversion. Note that the before-tax unlevered going-in IRR presented by this property is 7.50% (same as the cap rate, as it presents zero expected growth), while the after-tax levered equity IRR expectation for the marginal property investor is 9.24% [calculated as:  $RATE(10, 314769, -3000000, 2423077)$ , where:  $\$314,769 = PATCF - \text{Loan after-tax Debt Service} = \$665,769 - \$351,000$ ; and  $\$2,423,077 = \text{Resale} - \text{OLB} - \text{Recapture} = \$12,000,000 - \$9,000,000 - \$576,923$ ].

Years:	Up Front: 0	Recurring: 1–10	Reversion: 10
<b>Elements Common to Both Leasing or Buying:</b>			
Moving Expenses & Start-up Costs	(\$8,000,000)		
Sales		\$9,000,000	
Cost of Goods Sold		(\$4,500,000)	
Sales Operating Expenses		(\$1,230,000)	
Real Estate Operating Expenses		(\$510,000)	
Taxable Income		\$2,760,000	
Corporate Tax @ 35%		(\$966,000)	
EATCF Corporate Level	(\$8,000,000)	\$1,794,000	
EATCF Stockholder Level (@ 15% tax rate)	(\$8,000,000)	\$1,524,900	
<b>Project excluding Rent: Stockholder IRR:</b>	<b>13.85%</b>		
<b>NPV Buy/Own Over Lease, Property Level (all equity):</b>			
Property Purchase Cost	(\$12,000,000)		
Benefit of Depreciation Tax Shields		\$80,769	(\$576,923)
Benefit of Rental Payment Savings		\$900,000	
Cost of Lost Rent Expense Tax Shield @ 35%		(\$315,000)	
EATCF Debt-like CFs Corporate Level*		\$665,769	(\$576,923)
EATCF Debt-like CFs Stockholder Level <sup>†</sup>	\$4,162,065	\$565,904	(\$490,385)
EATCF Reversion CFs Stockholder Level <sup>‡</sup>	\$6,676,166		\$12,000,000
<b>NPV:</b>	<b>(\$1,161,769)</b>		
<b>IRR (Stockholder after-tax):</b>	<b>4.38%</b>		
<b>NPV Borrowing Transaction:</b>			
Loan Amount	\$9,000,000		
Debt Service		(\$540,000)	
EATCF Debt-like CFs Corporate Level*		(\$351,000)	(\$9,000,000)
EATCF Debt-like CFs Stockholder Level <sup>§</sup>	(\$8,156,109)	(\$298,350)	(\$9,000,000)
<b>NPV:</b>	<b>\$843,891</b>		
<b>Effective Interest Rate to Stockholders After-Tax:</b>	<b>3.32%</b>		
<b>Consolidated NPV Buy &amp; Borrow Over Lease:</b>			
<b>NPV:</b>	<b>(\$317,878)</b>		
EATCF Consolidated CFs Stockholder Level	(\$3,000,000)	\$267,554	\$2,509,615
<b>Consolidated CorpRE IRR (Stockholder after-tax):</b>	<b>7.78%</b>		

\* Reflects 35% corporate income tax and 25% depreciation recapture tax.

<sup>†</sup> Cash flows reflect effective tax rate of 15% in personal tax on investment equity returns. Present value computed using 4.50% = 0.75(6%) after-tax OCC of debt-like cash flows based on debt market marginal investor tax rate on debt returns of 25%: 4162065 = PV(.045, 10, 565904, -490385).

<sup>‡</sup> Using 6.04% after-tax OCC based on property market marginal investor and property market asset market value. (More precisely, the rate is 6.038949%, backed out from the \$6,676,166 valuation implied by the APV = 0 market equilibrium condition in the property market.)

<sup>§</sup> Effective after-tax debt service of \$298,350 reflects effective tax rate of 15% in personal tax on investment equity returns. Discounted to PV using 4.50% = 0.75 (6%) after-tax OCC of debt-like cash flows based on debt market marginal investor tax rate on debt returns of 25%. 8156109 = PV(.045, 10, 298350, 9000000).

#### EXHIBIT 14C-5 ABC Widget New Branch NPV if Buy Space Borrowing 75% of Building Price at 6%

“core” component of the branch operation project faces \$8 million in up-front start-up costs, followed by expected annual cash flow for 10 years of \$1,794,000/year after corporate taxes. This was as far as the conventional analysis would go, but here we add another line to represent the net after-tax cash flow effect for ABC Widget Corporation’s stockholders. Equity investment returns realized by stockholders are subject to income taxes at the personal level. The exact nature and magnitude of these taxes would vary across stockholders and also as a function of how ABC and the stockholders act to cause earnings to be realized for tax purposes at the investor level. In general, the effective tax rate on equity returns is relatively low. Here we assume it is 15 percent. Thus, the net after-tax cash flow for the stockholders is estimated at  $(1 - 0.15)\$1,794,000 = \$1,524,900/\text{year}$ . The result is a going-in IRR of 13.85 percent for the non-real-estate components of the project, after *all* levels of taxation. Whether this IRR is above the hurdle rate appropriate for this operation is beyond the scope of our analysis, but we may assume that ABC has correctly done its capital budgeting and decided that this project makes sense.<sup>10</sup>

Moving down to the middle section of Exhibit 14C-5, we see the computation of the NPV of the buy/own over lease incremental cash flows without the use of any debt financing of the property purchase. Here we see the full \$12 million up-front cost of purchasing the property, followed by the operational savings relative to the rental alternative. These include the savings of \$900,000/year in net rent, less the \$315,000 year in corporate-tax savings attributable to the rental-expense deduction from taxable income. They also include the DTS that we have previously described, including the payback of the recapture tax in the reversion. The result includes the annual savings of \$665,769/year and pay-back of \$576,923 in Year 10 of debt-like cash flows that we are already familiar with from our analysis of the property market (given that ABC faces a corporate income tax rate similar to the marginal property market investors of 35 percent on ordinary income and 25 percent on recapture).

Now we must add another line in which, as above, we remove the additional layer of taxes at the personal level for the ABC stockholders. Applying our assumed 15 percent rate, we end up with net debt-like cash flow of positive \$565,904/year from operations and negative \$490,385 in reversion, after both layers of taxation are considered.<sup>11</sup> As these are all debt-like after-tax cash flows, we know that we can apply our 4.5 percent after-tax OCC of debt-like investments to determine the present value of this component of the buy/own-minus-lease incremental cash flows. This present value is \$4,162,065.<sup>12</sup> To this we add the present value of the \$12 million reversion discounted at the after-tax OCC rate appropriate to the risk in this reversion, the 6.04 percent rate that we previously derived in our analysis of the property market in section 14C.3.1. This is worth (as before) \$6,676,166. Thus, the

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<sup>10</sup>To complete the overall capital budgeting analysis beyond the buy-versus-lease question that we are about to examine here, one would have to iterate back one more step. Once it is determined whether it is better to lease or buy the real estate necessary for the project, one can go back and re-estimate the going-in IRR (or NPV) of the proposed project *including* its real estate tenure (now optimized). This overall IRR could then be compared to an appropriate hurdle rate (that could very well be strongly related to the company’s corporate WACC, if the branch operation is merely a scale-expanding replication of the company with risk characteristics similar to the average of the rest of the corporation’s assets). Equivalently, the hurdle rate (OCC) could be used to determine the NPV of the branch operation project now including its real estate aspect, and the capital budgeting decision could be made accordingly per the normal  $\text{NPV} \geq 0$  rule.

<sup>11</sup>It may seem counter-intuitive that the extra layer of taxation actually reduces the negative effect of the depreciation recapture tax in the reversion. This is because the depreciation recapture is not a personal tax event at the stockholder level. Rather, it reduces the investor’s return on equity, after corporate taxes but before personal taxes. When we apply the personal level of taxation to the corporate after-tax return, we reduce the investor’s return on equity, which indirectly means that we reduce the effect of the reduction in the corporate return that is caused by the recapture tax at the corporate level. In effect, the government does not actually recapture as much of the corporate depreciation tax shields as first appears, because the government obtains less personal income tax from stockholders than it otherwise would, as a result of the recapture tax at the corporate level. Note that this effect is different from what happens with regular “capital gains” defined as the asset resale price in excess of its purchase price (as distinct from depreciation recapture). Such capital gains are indeed double-taxed, first at the corporate level and then again at the personal level whenever the investor realizes the after-corporate-tax capital gain reflected in the corporation’s stock price.

<sup>12</sup>This is the PV of 10 years of \$565,904/year minus the PV of \$490,385 in 10 years from now, all discounted at 4.5%.

NPV of the buy/own-minus-lease net incremental cash flows is  $\$4,162,065 + \$6,676,166 - \$12,000,000 = -\$1,161,769$ . Therefore, without the use of debt financing, it is clearly *not* advantageous for ABC Widget Corporation to purchase the real estate, instead of leasing it, for the new branch operation project. The purchase of the property for the new branch effectively provides an expected return of 4.38 percent after-tax for ABC's stockholders, compared to leasing the space whereas the after-tax OCC is 4.50 percent for debt-like cash flows and 6.04 percent for the riskier real estate reversion cash flows.

But recall that ABC would use any such purchase of the required property to obtain a \$9 million mortgage. Because ABC is a "tax-disadvantaged" investor relative to the marginal borrowers and lenders in the debt market, and even relative to the marginal investor in the property market, ABC will face a larger positive NPV from the debt transaction than the marginal investor in the property market. Will this positive NPV associated with the debt component of the buy-and-borrow alternative be sufficient to offset the negative NPV we have just calculated for the property purchase component alone?

The answer to this question will usually be "no," but not always and often not by much.<sup>13</sup> In our present example, the NPV of the mortgage to ABC's investors, after considering both layers of taxation, appears in the next section of Exhibit 14C-5 to be positive \$843,891. This is found by taking both layers of taxation off of the annual \$540,000 interest payments to reduce them effectively to \$298,350 after-tax, as  $(1 - 0.35)(1 - 0.15)\$540,000 = \$298,350$ . This gives the loan an effective after-tax interest rate of 3.32 percent for ABC's stockholders, when the debt market's after-tax OCC is 4.50 percent. Discounting the loan's after-tax cash flows at the 4.5 percent OCC rate, we arrive at an investment value based present value of the mortgage liability of \$8,156,109, compared to the mortgage's up-front cash inflow of \$9 million. The difference, \$843,891, is the positive NPV of the loan from the perspective of ABC's stockholders.

If you put the negative NPV of the property purchase by itself together with the positive NPV of the incremental debt associated with that purchase, you will get the following overall NPV of the buy-and-borrow alternative relative to the lease alternative (actually, using our terminology of Chapter 14, section 14.3.4, this is an "APV"):  $\$843,891 - \$1,161,769 = -\$317,878$ . As this is negative, we arrive at the conclusion that ABC's stockholders would be better off if ABC undertakes the new branch operation project using leased, rather than purchased, space, even in spite of the advantage that the incremental debt from the property mortgage would provide. In this example of the real estate for ABC's new branch office, this is the opposite of the implication that we got using the conventional approach in section 14C.1 (though without solid foundation for that earlier conclusion). The going-in IRR of the consolidated incremental buy-and-borrow minus lease cash flows is indicated at the bottom of Exhibit 14C-5 to be 7.78 percent after both corporate and personal taxes. This is apparently less than the relevant OCC for these incremental cash flows.

### 14C.3.3 Sale-Leaseback

We noted that our conclusion in the previous example against a profitable taxed corporation owning real estate will not always hold, even considering only the narrow tax-based perspective analyzed here. A situation in which the cards become a bit more stacked against leasing is where the corporation already owns the real estate (for whatever reason) and the book value (tax cost basis) of the property is markedly less than its current market value. In such circumstances, the corporation would incur a capital gains tax if it sold the property. This can cause sale/leaseback transactions to sometimes not make sense, even when it would make

<sup>13</sup>The answer depends on the specific parameters involved, such as the various tax rates, interest rates, the length of the operational horizon, the amount of depreciation that the owner of the property can charge against taxable income, and the relation between property price and rent. The hypothesis that property ownership for taxable corporations in the United States is usually not value-maximizing compared to leasing is supported by empirical evidence on the stock-price impact of sale-leaseback transaction announcements, such as Rutherford (1990), Slovin et al. (1990), and Fisher (2004).

Years:	Up Front: 0	Recurring: 1–10	Reversion: 10
<b>Lease Cash Flows:</b>			
Rent		(\$900,000)	
Less Rent Expense Tax Shield		\$315,000	
Rent After Corp Tax, Before Personal Tax		(\$585,000)	
Rent After Both Levels of Tax		(\$497,250)	
<b>NPV(lease) @ 4.5%:</b>	<b>(\$3,934,599)</b>		
<b>Property Ownership Cash Flows:</b>			
Property Value Opportunity Cost Before Tax (Mkt Val)	(\$12,000,000)		
Less Capital Gain Tax Owed on Sale*	\$0		
Property Value Opportunity Cost After Corp Tax, Before Personal Tax	(\$12,000,000)		
Benefit of Depreciation Tax Shields After Corp Tax, Before Personal Tax		\$80,769	(\$576,923)
Benefit of Depreciation Tax Shields After Both Levels of Tax		\$68,654	(\$490,385)
<b>PV(Ownership Debt-like CFs) @ 4.5%:</b>	<b>\$227,466</b>		
Projected Property Resale Value Before Tax			\$12,000,000
Capital Gain Tax at Corporate Level			\$0
Resale Proceeds After Both Levels of Tax <sup>†</sup>			\$12,000,000
<b>PV(Ownership Reversion CFs) @ 6.04%:</b>	<b>\$6,676,166</b>		
<b>NPV(Ownership)<sup>‡</sup>:</b>	<b>(\$5,096,368)</b>		
<b>Consolidated Sale/Leaseback Evaluation (No Debt):</b>			
<b>NPV(Lease) – NPV(Own) = NPV(Sale/Leaseback)<sup>§</sup>:</b>	<b>\$1,161,769</b>		

\* Excluding depreciation recapture, here assuming cost basis = current market value.

<sup>†</sup> Note that additional personal-level tax on gain only applies to any gain over the Year 0 opportunity value of the property, not to the book cost basis like the corporate-level CGT. In this case there is no projected gain in property value over Year 0.

<sup>‡</sup> Equals: \$6,676,166 + \$227,466 – \$12,000,000 = –\$5,096,368.

<sup>§</sup> Equals: –\$3,934,599 – (–\$5,096,368) = \$5,096,368 – \$3,934,599 = +\$1,161,769.

**EXHIBIT 14C-6A** Sale/Leaseback Analysis with No Debt, Property Book Value = Current Market Value

sense for the corporation to avoid purchase of new property otherwise identical to what it already owns.

To see an example of this, and to see how our after-tax corporate real estate investment analysis methodology may be applied to sale/leaseback transactions, let us extend our previous numerical example of ABC Widget Corporation's new space. Suppose the situation is exactly as before (including the 10-year horizon on the future expected usage of the space), only now suppose that ABC already owns the space in question. In such a circumstance, ABC might contemplate a sale/leaseback transaction. In such a transaction, the corporation would sell its property to a real estate investor (typically to a less tax-disadvantaged entity than the profitable C corporation) but also enter into a long-term lease with the buyer to allow the corporation to continue using the property for as long as it expects to need it. The lease may or may not be at the current prevailing market rental rate, but if it is below the market rate, the sale price of the property would obviously be marked down accordingly. In the present case, we will assume that the rent would be at the market rate of \$900,000/year.

Years:	Up Front: 0	Recurring: 1–10	Reversion: 10
<b>Lease Cash Flows:</b>			
Rent		(\$900,000)	
Less Rent Expense Tax Shield		\$315,000	
Rent After Corp Tax, Before Personal Tax		(\$585,000)	
Rent After Both Levels of Tax		(\$497,250)	
NPV(lease) @ 4.5%:	(\$3,934,599)		
<b>Property Ownership Cash Flows:</b>			
Property Value Opportunity Cost Before Tax (Mkt Val)	(\$12,000,000)		
Less Capital Gain Tax Owed on Sale*	\$1,080,000		
Property Value Opportunity Cost After Both Levels of Tax <sup>†</sup>	(\$10,920,000)		
Benefit of Depreciation Tax Shields After Corp Tax, Before Personal Tax		\$32,308	(\$230,769)
Benefit of Depreciation Tax Shields After Both Levels of Tax		\$27,462	(\$196,154)
PV(Ownership Debt-like CFs) @ 4.5%:	\$90,987		
Projected Property Resale Value Before Tax			\$12,000,000
Capital Gain Tax at Corporate Level			(\$1,080,000)
Resale Proceeds After Both Levels of Tax <sup>‡</sup>			\$10,920,000
PV(Ownership Reversion CFs) @ 6.04%:	\$6,075,311		
NPV(Ownership) <sup>§</sup> :	(\$4,753,703)		
<b>Consolidated Sale/Leaseback Evaluation (No Debt):</b>			
NPV(Lease) – NPV(Own) = NPV(Sale/Leaseback) <sup>  </sup> :	\$819,104		

\* Excluding depreciation recapture, here assuming cost basis = 40% of current market value and CGT rate = 15%.

<sup>†</sup> This is after personal tax even though it seems to be only after the corporate tax, because the corporation's stock price already reflects the opportunity cost indicated here. Hence, there is no taxable event here at the personal income tax level: no change in stock price, hence no "return" generated for the stockholder that could be taxed at that level.

<sup>‡</sup> Note that additional personal-level tax on gain only applies to any gain over the Year 0 opportunity value of the property, not to the book cost basis like the corporate-level CGT, for the reason described in the preceding note (stock price change will only result from change in property value subsequent to Year 0). In this case there is no projected gain in property value over Year 0.

<sup>§</sup> Equals: \$6,075,311 + \$90,987 – \$10,920,000 = –\$4,753,703.

<sup>||</sup> Equals: –\$3,934,599 – (–\$4,753,703) = \$4,753,703 – \$3,934,599 = +\$819,104.

#### EXHIBIT 14C-6B Sale/Leaseback Analysis with No Debt, Property Book Value = 40% of Current Market Value, 15% CGT

Exhibit 14C-6A analyzes the NPV of the sale/leaseback transaction under the assumption that the book value of the property on ABC's balance sheet is equal to the property's current market value of \$12 million, such that no capital gains tax would be owed in the sale of the property. We also ignore for now the possibility of taking out a mortgage on the property. In this case, the evaluation of the sale/leaseback is exactly the opposite of our previous evaluation of the property purchase. Instead of buying the property to avoid leasing it, the sale/leaseback would sell the property and then lease the space in it. Thus, the NPV that we obtain is exactly the negative of the NPV we previously got in the Buy/Own Over Lease (all equity) section of Exhibit 14C-5. There, we got an NPV of negative \$1,161,769 for *buying* the building; in Exhibit 14C-6A we get an NPV of positive \$1,161,769 for *selling* the building.

Of course, this makes sense and serves to confirm the correctness of the sale/ leaseback analysis in Exhibit 14C-6A. Note that we can break the evaluation into two parts, the NPV of the lease cash flows (which are entirely debt-like), and the NPV of the property ownership cash flows (which are partly debt-like but also include more risky cash flows associated with the reversion in Year 10). The cost of property ownership (negative NPV) is greater than the cost of leasing (smaller negative NPV); hence, it makes sense to enter into the sale/leaseback transaction.

Now consider the sale/leaseback analysis in Exhibit 14C-6B. This is identical to the previous analysis but only assumes that ABC has owned the property for a while and acquired it at a much lower historical cost, such that its book value (gross of accumulated depreciation, that is, the property's tax cost basis) is only 40 percent of the property's current market value. If the corporation faces a capital gains tax rate of 15 percent, this would result in a CGT owed upon sale of \$1,080,000 (continuing our assumption of property market value of \$12 million).<sup>14</sup> This will reduce the value of the sale of the property compared to holding it; or, to put it another way, it will reduce the cost of not selling (reduce the cost of holding) the property. On the other hand, the lower book value of the property also reduces its allowable annual depreciation, which reduces the DTS accordingly. Comparing Exhibit 14C-6A and Exhibit 14C-6B, we see that the annual DTS is reduced from \$80,769 at the corporate level (\$68,654 at the investor level after personal taxes) to \$32,308 at the corporate level (\$27,462 at the investor level). (Note that 32,308 is 40 percent of 80,769.) This reduces the value of continuing to own (holding) the real estate. There is also an impact in the reversion in Year 10, as there is less depreciation recapture tax but more capital gains tax, the net effect of which is also to reduce the benefit of continued ownership. However, in this case, the up-front capital gains tax from the sale outweighs these longer-term effects, and the net impact of the historical cost book value of the asset on ABC's books is to reduce the cost of holding onto the property (i.e., the NPV of ownership is made into a smaller negative number, and the benefit from selling the property is decreased). Meanwhile, the cost of leasing the space remains the same (or the "opportunity cost," at market rents). Thus, the NPV of the sale/ leaseback transaction is tilted relatively away from the sale/leaseback and toward continued ownership of the property.

In Exhibit 14C-6B, the NPV of the sale/leaseback still looks favorable, as the NPV is still positive, at \$819,104 (instead of the previous value of \$1,161,769). However, Exhibit 14C-6B ignores the possibility of ABC borrowing money against the property, if it owns it. Given its current market value of \$12 million, we have seen that a \$9 million, 10-year mortgage at 6 percent interest could be obtained. We saw in the lower section of Exhibit 14C-5 that the NPV of such a borrowing transaction to ABC is positive \$843,891, considering both layers of taxation. This positive NPV enabled by the ownership of the property exceeds the \$819,104 positive NPV of the sale/leaseback. As sale/leaseback and borrowing against the property are mutually exclusive possibilities, our NPV investment decision rule, which says we should maximize the NPV across all mutually exclusive alternatives, implies that ABC should continue holding the property in this case (and borrow against it). In this example, this result is purely due to the fact that the property is already held by ABC and is carried at an historical cost gross book value that is substantially below its current market value, with the resulting implications for the corporation experiencing a capital gains tax upon sale.<sup>15</sup>

## 14C.4 Summary and Caveats

The preceding section in this appendix has presented a framework that allows the rigorous analysis and evaluation of the corporate real estate buy-versus-lease decision, including sale-

<sup>14</sup> $\$1,080,000 = 0.15[\$12,000,000 - (0.40)\$12,000,000]$ .

<sup>15</sup>Note, however, that the net impact of going either way in the example decision is very small. Furthermore, there may be methods to defer the capital gains tax. For example, depending on how the real estate is held, it might be possible for the corporation to sell the property to an UPREIT, which might allow deferral of the capital gains realization. (See discussion of REITs in Chapters 7 and 23.)

leasebacks. The framework is consistent with the principles of classical corporate finance and capital budgeting, which are built upon the fundamental economic principles of market-based opportunity cost, based on the assumption of equilibrium within and between the asset markets relevant to the decision. This equilibrium reflects both corporate and personal income taxes faced by investors (stockholders), and both levels of taxation are explicitly included in the preceding framework. The extension to include both levels of taxation is more obviously necessary in the case of real estate than other types of corporate assets, because real estate assets trade directly in a well-functioning asset market in which the marginal participants typically face less overall taxation than investors in profitable C-Corporations.

It is important to note that while the preceding framework is rigorous and complete as far as it goes, it does not account for all factors important to a corporation when it decides between leasing versus owning the space it needs to use. As noted at the outset, the preceding framework *assumes* that the nature of the real estate and its usage, including the duration of its usage, would be identical whether or not the space was owned or leased. In fact, this may be too much of a simplification of reality in some circumstances. As just one example, leased space is more difficult to redevelop than space that is unencumbered by leases, and this provides just one reason why the real estate might in fact not remain the same across the two tenure alternatives. While other considerations regarding lease term and lease evaluation are discussed in Chapter 30, let us note here a few broader considerations in the question of a non-real-estate corporation leasing versus owning its space.

To give a general idea of the kind of broader considerations that can be important in the buy-versus-lease decision, we will note here three reasons beyond the tax considerations focused on in this chapter that argue for leasing rather than owning, and we will mention two other considerations that go the other way suggesting an advantage to ownership.

The following factors argue for leasing rather than owning:

- **Small space requirement.** When the corporation needs only a small amount of space, it will typically not be worth the up-front and transaction costs of purchasing the property. Also, most commercial buildings in the type of location the corporation may require may be larger in size than the space needs of the corporation. This would mean that building ownership would put the corporation in the business of leasing out extra space as a landlord, that is, getting into the “real estate business,” probably a distraction from the corporation’s mission and not in line with its comparative advantage.
- **Short time need for space.** When the corporation does not anticipate needing the space for a long period of time, it will not generally make sense to purchase the property, for reasons similar to those noted above, and because such purchase would, in effect, be putting the non-real-estate corporation in the position of making a short-term speculative investment in the particular property market in which it happens to need to use space.
- **Real estate information disadvantage.** If the relevant real estate market is relatively “opaque,” such that an investor lacking specialized information or expertise about that market might overpay for property in it, then the corporation should not buy the needed property, at least presuming that the rental market is more informationally efficient than the asset market or the corporation is otherwise at less of an informational disadvantage regarding the rental market than the asset market.

The following factors argue for owning rather than leasing:

- **Information advantage/Positive spillovers.** This is just the opposite of the situation we described above. It may be that the corporation has an information advantage over other players in the property market, precisely because the corporation knows better than others what it intends to do in the space in question, and there may be spillover effects from what goes on in that space to the value of adjacent or nearby locations. As a famous example, the Disney Corporation purchased much more land in Florida than it needed to build Disney World, expecting that what it did in the Disney World project would create value in the adjacent and nearby locations, added value that it could recoup via its prior purchase of the nearby land.



- **Special-purpose buildings/Need for control.** When a corporation's space needs are physically specialized, such that the building(s) would not be worth as much to any other likely purchaser, and when the corporation needs to have very strong and permanently ensured control over the property, as for example with vital proprietary industrial operations, it will often make sense for the corporation to own the space.

Considerations such as the above can clearly mitigate the tax-based investment value consideration that is evaluated in the framework described in this appendix. (As noted, other considerations about leasing policy from a landlord's perspective are also treated in Chapter 30, including the trade-off between flexibility and releasing costs, and consideration of redevelopment option value.) Nevertheless, the perspective presented in this appendix will, in general, always be relevant at least as a part of the equation for making a corporate real estate own-versus-rent decision.

## Appendix 14C References

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