

Sale and Leaseback Revisited

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The FASB's Accounting Standards Update (ASU) is intended to improve financial reporting about leasing transactions including the sale and leaseback arrangements and will take effect as of December 15, 2018, for public companies. In this article, we present a methodology for a structured approach to sale and leaseback arrangements. First, we revisit and identify an array of issues and critical variables. Then, we utilize a spreadsheet model to illustrate the sale and leaseback arrangement with an example. Our model allows the lease to specify the terms of transactions, including lease payments, length and type of the lease, and other conditions. Finally, the model calculates the net present value of the transaction. The robust but simple model design can be customized to conduct any sensitivity analysis.

INTRODUCTION

Financial statement users have been demanding that financial statements provide a better understanding of the amount, timing, and uncertainty of cash flows arising from leases and also that they address off-balance-sheet financing concerns. In response, following a comprehensive review process, the Financial Accounting Standards Board (FASB) issued in 2016 an Accounting Standards Update (ASU) intended to improve financial reporting about leasing transactions. The ASU will affect companies and other organizations that lease such assets as real estate, manufacturing equipment, and airplanes. The ASU will require recognition of assets and liabilities in the balance sheet for operating leases with lease terms of more than 12 months. The current generally accepted accounting principles (GAAP) will continue to require (1) capital or finance leases to be recognized on the balance sheet, (2) recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee to be driven, by and large, by its classification as a capital or operating lease. The ASU will require further alignment of lessor accounting with the lease accounting model, and it will take effect for fiscal years beginning after December 15, 2018, for public companies.

Therefore, this is an opportunity to revisit leasing and, specifically, sale and leaseback (SLB) arrangements. In general, a lease agreement conveys the right to use property in return for a series of specified future payments over a definite period, which can range from a short, occupational lease to a long, ownership lease. Thus, leasing allows the separation of the use of an asset from the ownership of the asset, providing an alternative to purchasing the asset. Specifically, under a sale and leaseback (SLB) arrangement, a firm that owns a property sells it to another firm and simultaneously executes an agreement to lease the property back for a specified period under and specific terms. An SLB arrangement may be treated as an internal source of funding.

The purchasers could be a commercial bank, a specialized leasing company, an insurance company, or the finance arm of an industrial firm. In SLBs, the leased equipment is not new, and the lessor buys it from the user-lessee instead of a manufacturer or a supplier. Therefore, an SLB may be used to bypass capital expenditure control systems established by bureaucratic companies. SLB supporters argue that capital tied up in property ownership may be put to better use within the business, but capital could also be generated through raising debt. Some practitioners and academicians argue that if the assets are essential for a strategic function or are integral to business operations or are part of the firm's core competencies, then they should not be sold.

LITERATURE REVIEW

Barris (2002) and Tipping and Bullard (2007) discussed the motivations of buyers and sellers for SLBs to move to the forefront. Wells (2007) found evidence that SLB transactions are driven by the need for cash in tandem with capital constraints. Devaney and Lizieri (2004) analyzed the effects of sale and leaseback transactions on the value of the firm and concluded that the market's reaction to a sale and leaseback decision depends on the attitudes to the firm's operation efficiency, the quality of management and the prospects of the sector and the type of activity which the proceeds support. Lyon (2010) pointed out that complexities are almost continually being brought to the leasing market. Elliot and Elliot (2002) cited several advantages associated with leasing versus owning assets: cash flow management, conservation of capital, continuity, flexibility of the asset base, and off-balance-sheet financing. Biondi et al. (2011) were sympathetic to the concern that the current lease standard is being manipulated improperly by managers, resulting in large amount of debt being reported off balance sheet. The theoretical literature on corporate leasing predicts that the economic gains from leasing negatively related to the lessee's effective tax rate and positively related to the lessee's external financing costs.

Klein et al. (1978) and Ben-David (2005) argued that assets with more firm-specific use are more likely to be owned (vertical integration) and more general-purpose assets are more likely to be leased. Ezzel and Vora (2001) and others conclude that:

1. Leasing should be used widely by riskier, less established firms whose costs of external capital are likely to be greatest, and many have found that firms with lower and less stable operating earnings are more likely to lease.
2. In an SLB transaction, taxes and transaction costs may be a secondary motive to the primary need for cash.
3. The firms using SLB transactions have cash needs, but they also have higher leverage and a higher probability of bankruptcy, thus implying higher costs of external capital.

Finally, Azih (2014), Thompson (2014) and DiFalco (2014) discussed the FASB's decisions related to lease accounting.

REASONS FOR SALE AND LEASEBACK ARRANGEMENTS

We need to assess the underlying motivations of sellers and buyers and understand the financial and non-financial aspects of SLB arrangements. Brigham and Daves (2013), Elliott and Elliott (2002), Ross et al. (2016), and others have discussed in detail the reasons for SLB transactions. We proceed to examine the non-financial and financial reasons for SLBs.

Non-Financial Considerations

Leasing is also an attractive alternative for several reasons:

1. Many high-technology assets are subject to rapid and unpredictable technological obsolescence.
2. A firm may be unsure about the demand for its products or services and thus the longevity of the required equipment. The lessor could charge for the cancellation clause, and this would lower the expected profitability of the project, but it would provide the lessee with an option

to abandon the equipment, and the value of the option could exceed the incremental cost of the cancellation clause.

3. The lessor can provide the lessee any servicing of the property on favorable terms.

Reduction of uncertainty is the reason for leasing most cited by corporations. Some firms cannot obtain debt financing because additional debt would violate a loan agreement. A firm may not be able to sell because of the strategic value of an asset, or regulatory requirements that grant access to competitors or employee transfers must be weighed by jurisdictions or unions.

A firm can also have a strategic motive for the choice for the sale and leaseback arrangement. Specialization is a key point in many companies. The asset can be sold to a company that has the expertise in exploiting these assets, and the firm can engage in its own core business, freeing the company from the burden to manage the asset. A main reason for outsourcing is that firms should focus on their core competencies. It is argued, however, that if an asset encompasses a strategic function or is essential to the operations, then it should be owned, whether or not the property is a core competency.

An SLB arrangement can provide a lessee with flexibility, such as dissociating locations in a timely manner. The SLB transaction allows a company to continue to engage the capital invested in an asset into the core business. Because a corporation is both the lessee and the seller, it has greater bargaining power than would a leaseholder in a typical lease negotiation. The lessee can use that leverage to continue uninterrupted control of its facilities, including operations, maintenance, and modifications. It can also negotiate the rights to assign and sublet the properties and continue to enjoy long-term initial renewal provisions. Depending on its needs, a firm may choose to allocate a sale-leaseback into discrete leases with different financial and non-financial terms. The lessee pays market rents, hence supporting efficient use of space. The “master lease” structure provides flexibility to keep up with the speed of change in the industry.

Financial Considerations

Tipping and Bullard (2007) described these motives and classified them in five groups: finance, accounting, taxation, specialization, and flexibility. The ability to structure leases that benefit both lessor and lessee depends in large part on tax laws. The four major tax factors that influence leasing are (1) investment tax credits (ITC), (2) depreciation rules, (3) tax rates, and (4) the alternative minimum tax (AMT) prior to 2018.

The ITC is not currently in effect, but if the ITC is reinstated into the law, leasing will become attractive to lower-tax-bracket firms. Owners recover their capital investments in assets through depreciation, which is a deductible expense. Due to the time value of money, the faster a property can be depreciated, the greater the tax advantages of ownership. The benefits of depreciation also depend on the firm’s tax rate, because the depreciation tax shields equal the amount of depreciation times the tax rate. The lease contract permits the lessor to take advantage of the depreciation and interest tax savings that cannot be used by the lessee. Thus, higher corporate tax rates mean greater ownership tax savings and hence more incentive for tax-driven leases as some of the tax benefits to the lessor can be passed on to the lessee via lower lease payments.

Substantial tax benefits can be derived from leasing agreements. For instance, if the firm has incurred losses and hence has no current tax liabilities, then its depreciation shields are not useful. In this case, a leasing company set up by profitable companies can buy the equipment, receive the depreciation savings, and dispense these benefits to the lessee via lower lease payments.

In summary, both the lessor and the lessee can benefit if their tax rates are different; the SLB arrangement may create a loss equal to the present value of the taxes as the IRS will experience a net loss of tax revenue. Prior to 2018, companies with large AMT liabilities looked for ways to reduce their tax bill by lowering reported income. A short-term lease with high annual payments will increase expenses and lower profits. An important advantage of an SLB transaction is the opportunity to avoid or lower tax bill. Since the firm does not own the asset, the company does not pay property taxes, and the lease payment to the lessor is tax-deductible, which could reduce income tax. Capital gain taxes and transfer taxes are payable upon sale of property and the asset-registration duties are payable on leases. A lease

does not have to qualify as a guideline lease and be deducted for regular-tax purposes; all that is needed is to lower income as shown on the income statement.

Additional Tax Effects

A lease payment is tax-deductible expense for the lessee provided the IRS agrees that a contract is a genuine lease and not simply a loan labeled as a lease. Lease payments are tax-deductible for the lessee, which boosts the returns; and the tax benefits of ownership including depreciation and any investment tax credits are derived by the lessor. These benefits are received only if the lease contract is written in a form acceptable to the IRS. In short, it must qualify as a true lease under IRS guidelines, and it is then known as *guideline* or *tax-oriented* lease. A firm's finance managers, lawyers and accountants need to check the latest IRS regulations. Conversely, a lease that does not meet IRS guidelines is called a *non-tax-oriented* lease. For this type of lease, the lessee (1) is the effective owner of the leased property, (2) can depreciate it for tax purposes, and (3) can deduct only the interest portion of each lease payment.

SLB versus Debt Financing

The SLB arrangement is an alternative to a mortgage, and the lease payments are structured the same way as mortgage payments, and these payments are sufficient to return the full purchase price to the investor plus a specified return on the lessor's investment. The valuation of a direct lease reflects the combined effects of a capital expenditure decision and a financing decision, whereas the valuation of a SLB represents only a financing effect. Unlike a direct lease, the SLB arrangement is a source of cash to the lessee-seller.

There are some legal differences between loans and leases. In the event of liquidation in bankruptcy, a lessor can take possession of the leased property, and if the value of the property is less than the negotiated payments under the lease, the lessor can enter a claim as a general creditor for one year's lease payments. In addition, after bankruptcy has been declared but prior to the resolution of the case, lease payments may be continued, whereas all payments on debt are generally stopped. In a reorganization, the lessor receives the property plus three years' lease payments, if required to cover the value of the lease. The lender under a secured loan arrangement has a security interest in the property; this means that, if the property is sold, then the lender will be entitled to the proceeds and the full unsatisfied portion of the lender's claim will be treated as a general creditor obligation.

In short, in certain situations, lessors may bear less risk than secured lenders if fiscal crunch occurs. Note that the seller-lessee immediately receives the purchase price offered by the buyer-lessor. At the same time, the seller-lessee retains the use of the property. Like debt financing, any lease financing also requires additional equity support to maintain the target or optimal capital structure. In the occurrence of bankruptcy, "true" leases are senior to both debt and equity; thus, it is easier to repossess an asset if it is leased. This implies that, the lessor can implicitly extend more credit than a lender whose claim is secured by the same property.

Maintenance and Residual Value

It must be noted that the lessor owns the property upon expiration of a lease, so the lessor has the claim to the asset's residual value. The rivalry among leasing companies and alternative financing sources will drive leasing rates down to the point where potential residual values are fully recognized in the lease contract. A moral hazard problem arises because the leased asset's residual value belongs to the lessor, which incents the lessee with no need for maintenance to preserve the salvage value of the asset. The lessor can investigate in advance whether the lessee will use and maintain or abuse the asset. This information is then priced into the lease payments. The seller holds a real option on the property, which allows the seller to time the sale of property and seize desired price and terms.

Financial Evaluation of SLB Arrangements and IRS Regulations

The lessor establishes the lease payment terms. The lessee must decide whether leasing an asset is less costly than buying it, and the lessor must decide whether the lease terms provide a desired return on

the capital invested in the leased asset. The net advantage to leasing (NAL) may not be satisfactory from leasing, but managerial compensation is generally based on accounting numbers, and this can create an incentive to lease properties. This may lead to an agency problem. Some lessors can encourage lessees to base leasing decisions on the “interest rate” implied by the lease payment schedule, known as the “implicit” or “effective” rate. However, this rate is not meaningful in leasing decisions. The lessee’s benefit from leasing is the difference between the net present value (NPV) of the project if it is leased and the NPV of the project if it is purchased. The required funding to purchase the asset could be obtained from internally generated cash, by selling new equity, or by borrowing. On the other hand, the asset could be leased. The discount rate used to calculate the present value of the lease payments must be the lower of (1) the rate used by the lessor to establish the lease payment schedule or (2) the rate of interest that the lessee would have to pay for new debt with a maturity equal to that of the duration of the lease. In addition, any maintenance payments included in the lease payment must be taken out prior to checking this condition.

Critical Variables and Financial Analysis

The lessor desires a certain rate of return on the capital invested in the lease, and this information is also useful to the prospective lessee in structuring the lease terms, and follow-up negotiations. The lessor’s analysis involves (1) determining the net cash outlay, which is the purchase price of the leased equipment net of any lease payments made in advance; (2) estimating the cash inflows, which is the lease payments net of income taxes and any maintenance expense; (3) estimating the after-tax salvage value of the property; and (4) evaluating whether the rate of return on the lease exceeds the lessor’s cost of capital or, equivalently, whether the NPV of the lease (NAL) exceeds zero. A positive NAL to the lessee generally suggests an equal but negative NPV to the lessor. However, due to differences in taxes, in borrowing rates, in estimated salvage values, leasing can provide positive NPV to both parties. The SLB reduces the risk in leasing by providing an opportunity to acquire a property with a long-term leasing contract with a high-rated lessee.

Under the International Accounting Standards (IAS) introduced in 2005, longer-term leases as a sale and leaseback construction should be treated as a financial lease and accordingly be shown as a liability on the balance sheet. In addition, the 2016 ASU update will require recognition of assets and liabilities in the balance sheet for operating leases with lease terms of more than 12 months. A sale-leaseback investment should consider the conditions in both debt and equity markets to achieve the ultimate least cost.

ILLUSTRATION

We utilize a stepped approach to illustrate an SLB arrangement, identify the critical variables, and develop a framework for analyzing such transactions for a lessee. Assume a technology firm plans to sell its currently deployed high-tech equipment to its supplier for cash or trade credit. Then it plans to lease back these assets via an operating lease. It also agrees to buy in the future the next-generation equipment from the supplier to accelerate modernization of its asset base. Upon successful completion of its modernization, the firm may seek to lower or eliminate the lease payments. The potential benefits of such an SLB transaction for the lessee include (1) upon the sale, eliminating book depreciation and property tax on existing equipment, (2) providing a lower asset base and thereby improving asset turnover, (3) accelerating the modernization of the firm’s equipment, (4) upon purchase of new equipment, gaining tax depreciation benefits. The potential drawbacks the firm faces include (1) paying taxes on the sale of the existing equipment, (2) forgoing the remainder of the tax depreciation benefits on the existing equipment, (3) incurring lease payments, (4) spending capital for the purchase of new equipment, (5) assuming book depreciation expense and paying property taxes upon purchase of the new equipment.

Assumptions

The transaction date is July 1, 2018. Some of the partial financial data are provided below in a tabular form.

	01/01/2018	7/1/2018
Gross Fixed Assets	\$9.758B	-
Net Fixed Assets	\$2.321B	\$2.184B
Tax-Adjusted Basis (purchase cost less accumulated tax-depreciation)	\$1.54B	\$1.215B
Remaining Economic Life	7 Years	6.5 Years

The firm will lease back the equipment as an operating lease and hence will not incur the book depreciation expense. The lease term will be less than 4.9 years to allow the planned acceleration of modernization of the program. The capitalized value of the lease payments, which is calculated using the after-tax incremental cost of debt as the discount rate, will be less than 90% of the sale price or fair market value. The duration of the lease and the capitalized value will ensure that the firm meets the IRS leasing guidelines. We assume that the amount of the firm's commitment to purchase new equipment will be the same as the sale price of the existing equipment. The firm will purchase the new equipment in three equal installments of \$728 million starting in 2019. A higher sale price for the existing equipment will require the firm to pay higher income taxes and a higher commitment to purchasing new equipment. The new equipment will have an economic life of five years and will be depreciated via the straight-line depreciation method. We consider the following three scenarios.

- *The Base Case.* The firm will continue to own the existing equipment and retire it in seven years. It will then replace it with modern equipment. The new equipment will have a five-year economic life and will be depreciated utilizing the straight-line depreciation method.
- *Alternative #1.* The firm will continue to own the current equipment for seven years until retirement. Upon retirement, the firm will lease the new equipment. However, this alternative will not allow the firm to accelerate modernization of its asset base, and therefore, this scenario is eliminated from the financial analysis.
- *Alternative # 2.* The firm will SLB the existing equipment effective July 1, 2018 and commence a three-year modernization program starting in 2019 with intent to reduce or eliminate the lease payments.

We conduct financial analysis and comparison of the base case and alternative #2. Initially, we assume that the sale price is set at the net book value of the equipment. Any other pricing scenarios can easily be performed during the negotiations; both parties agree to a satisfactory price. With these assumptions, we derive the potential lease payments, which provide positive net present value benefits to both the parties. Such analysis is then replicated with different assumptions for the sale prices. While our primary focus is the cash flow analysis, we start with the income statement impact of this transaction. Panels A and B of Table 1 show the expenses associated with the base case and the SLB alternative. Panel C shows the difference between the two or the incremental impact on earnings before interest and taxes (EBIT) in the income statement. Initially, the incremental impact on EBIT is negative, but it turns positive in the later years.

**TABLE 1
INCOME STATEMENT IMPACT**

Panel A: Base Case

	-----Existing Equipment-----						-----Modernize-----							
	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Total Book Depreciation	332	686	710	686	603	300	100	218	437	437	437	437	218	0
Cost of Removal of Current equipment	0	0	0	0	0	0	98	0	0	0	0	0	0	0
Cos of Removal of Replacement Equip.	0	0	0	0	0	0	0	0	0	0	0	0	0	22
Total BOP – Gross Plant Existing Replacement	9,757 0	10,000	10,236 0	10,451 0	10,425 0	10,425 0	10,425 0	0 2,184	0 2,184	0 2,184	0 2,184	0 2,184	0 2,184	0 0
Total EOP Net Plant Existing Replacement	2,321	2,046	1,747	1,424	901	401		1,966	1,529	1,092	655	218		
Property Taxes Existing Equip Replacement	23	20	17	14	9	4		20	15	11	7	2		

Panel B: Alternative

	---Continue Current Operations---						-----Modernize-----							
	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Lease Payment	251	502	502	502	251	0	0							
Total Book Depreciation	0	73	218	364	437	437	364	218	73					
Cost of Removal of Current equipment	98	0	0	0	0	0	0	0	0	0	0	0	0	0
Cost of Removal of Replace. Equip.	0	0	0	0	0	0	7	7	7	0	0	0	0	0
Total BOP – Gross Plant	0	728	1,456	2,184	2,184	2,184	2,184	1,456			0	0	0	0
Total EOP Net Plant	0	655	1,529	1,092	655	291	73	0	0	0	0	0	0	0
Property Taxes	0	10	17	23	16	10	4	1	0	0	0	0	0	0

Panel C: Incremental EBIT Impact (Alternative versus Base Case)

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Net Lease Expense	251	502	502	502	251	0	0	0	0	0	0	0	0	0
Net Depreciation Expense	(332)	(613)	(492)	(322)	(166)	137	264	0	(364)	(437)	(437)	(437)	(218)	0
Net Cost of Removal	98	0	0	0	0	0	(90)	7	7	0	0	0	0	(22)
Net Property Taxes	(23)	(11)	0	9	7	6	4	(19)	(15)	(11)	(7)	(2)	0	0
Other Income (Loss) from Sale of Assets	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Net Expense	(6)	(122)	10	189	92	143	178	(11)	(372)	(448)	(443)	(439)	(218)	(22)
Net EBIT Impact	6	122	(10)	(189)	(92)	(143)	(178)	11	372	448	443	439	218	22

Table 2, Panel A shows the cash flow data, which are then used to calculate the cash inflows and outflows associated with the base case, as depicted in Panels B and C of Table 2. In the same vein, Panel A in Table 3 shows the cash flow data for the SLB alternative, which is used to derive the cash flow inflows in Panel B, which shows the proceeds from sale in 2018 and tax depreciation and associated tax benefits from spending capital starting in 2019.

**TABLE 2
CASH FLOW IMPACT- BASE CASE**

Panel A: Base Case – Cash Flow Data

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Tax Depreciation- Existing Equip.	641	383	191											
Tax Benefits from Tax Depreciation (@40% tax rate)	256	153	77											
Sale Price	2,184													
Capital for Replacement								2,184						
Tax Depreciation- Replacement Equip.								437	699	419	252	252	126	
Tax Benefits- Replacement Equip.								175	280	166	101	101	50	
Total (existing and replace. Equip.) Tax benefits	256	153	77	0	0	0	0	175	280	168	101	101	50	

Panel B: Base Case – Cash Inflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Proceeds from Sale														
Total (existing and replace. Equip.) Tax benefits	256	153	77	0	0	0	0	175	280	168	101	101	50	
Total Savings from Lease Payments														
Total Base Case- Cash Inflow	256	153	77	0	0	0	0	175	280	168	101	101	50	

Panel C: Base Case – Cash Outflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures								2,184						
Total Property Taxes	23	20	17	14	9	4	0	20	15	11	7	2	0	0
Income Taxes on Gain from Sale														
Lease Payments														
Cost of Removal														
Total Base Case- Cash Outflow	23	20	17	14	9	4	98	2,204	15	11	7	2	0	22

Table 3, Panel C shows the cash outflows for the SLB alternative, which shows the lease payments associated with the SLB arrangement. The values for the uniform lease payments are altered until we arrive at the lease payment amount that results in break-even net present value. It also includes the capital expenditures starting in 2019.

**TABLE 3
CASH FLOW IMPACT- ALTERNATIVE CASE**

Panel A: Alternative – Cash Flow Data

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures		728	728	728										
Tax Dep. Vintage 2018		146	233	140	84	84	42							
Tax Dep. Vintage 2019		146	146	233	140	84	84	42						
Tax Dep. Vintage 2020				146	233	140	84	84	42					
Tax Savings- Vintage 2018		58	93	56	34	34	17							
Tax Savings- Vintage 2019			58	93	56	34	34	17						
Tax Savings- Vintage 2020				58	93	56	34	34	17					
Total Tax Benefits of Tax Depreciation		58	151	207	183	123	84	50	17					
Proceeds from Sale	2, 184													

Panel B: Alternative – Cash Inflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Proceeds from Sale	2, 184													
Tax benefits of tax depreciation		58	151	207	183	123	84	50	17					
Tax savings from lease payments	100	201	201	201	100									
Total cash inflow	2,284	259	352	408	283	123	84	50	17					

Panel C: Alternative – Cash Outflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures		728	728	728										
Total property taxes		10	17	23	16	10	4	1						
Income taxes on gain from sale	388													
Lease payments	251	502	502	502	251									
Cost of removal	98						7	7	7					
Total Cash outflow	736	1,420	1,247	1,253	267	10	12	8	7					

In Table 4, Panels A and B compare the SLB alternative with the base case, which leads to the incremental net cash inflows and net cash outflows, and Panel C shows the incremental net cash flow or the combined impact of incremental net cash inflows and net cash outflows.

**TABLE 4
CASH FLOW IMPACT OF ALTERNATIVE VERSUS BASE CASE**

Panel A: Alternative versus Base Case Cash Inflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Proceeds from Sale	2,184													
Tax benefits of tax depreciation	(256)	(95)	75	207	183	123	84	(124)	(263)	(168)	(101)	(101)	(50)	
Tax savings from lease payments	100	201	201	201	100									
Total cash inflow	2,028	106	276	408	283	123	84	(124)	(263)	(168)	(101)	(101)	(50)	

Panel B: Alternative versus Base Case Cash Outflow

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Capital Expenditures		728	728	728				(2,184)						
Total property taxes	(23)	(11)		9	7	6	4	(19)	(15)	(11)	(7)	(2)		
Income taxes on gain from sale	388													
Lease payments	251	502	502	502	251									
Cost of removal	98						(90)	7	7					
Total Cash outflow	713	1,219	1,230	1,239	258	6	(86)	(2,195)	(8)	(11)	(7)	(2)		

Panel C: Net Cash Flow (Inflow versus Outflow)

	7/1/2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Net cash flow	1,315	(1,113)	(954)	(831)	25	117	170	2,071	(255)	(157)	(94)	(98)	(50)	22
Discount factor	0.979	0.940	0.902	0.865	0.831	0.797	0.765	0.734	0.704	0.676	0.649	0.623	0.597	0.573
Present value	1.288	(1,047)	(861)	(719)	(21)	94	130	1,521	(180)	(106)	(61)	(61)	(30)	(13)
NPV	1	BREAKEVEN												
Conclusion														

Finally, the net present value is calculated. We recalculate the NPV by changing the lease payments in the alternative. This process is repeated until we achieve the break-even net present value. We set the value of \$502 million as the maximum lease the firm is willing to pay in this SLB transaction. Of course, any lease payment lower than this maximum payment will increase the NPV of the SLB transaction for the firm. We repeat this scenario with different sale prices of the equipment and calculate the break-even net present value, which allows us to derive the maximum lease payment the firm is willing to pay under each pricing scenario. This is summarized in Table 5.

**TABLE 5
NET PRESENT VALUE ANALYSIS AND DERIVATION OF LEASE PAYMENTS
FOR FOUR SCENARIOS**

Panel A: Scenario #1, Sale price \$2,184, 0% higher than the Net Book Value

Net book value: \$2,184M; Tax-adjusted basis: \$1,285M; Four-year operating lease		
\$M	Maximum lease payment as an operating lease	Break-even lease payment for the firm
Lease payment per year	\$540	\$502
Capitalized value of the lease payments	\$1,964	-
Capitalized value as % of sale price	90%	
Net Present value	<0	\$1
Conclusion: The firm may agree to make lease payments up to \$502M/ per month for four years.		

Panel B: Scenario #2, Sale price \$2,184, 10% higher than the Net Book Value

Net book value: \$2,184M; Tax-adjusted basis: \$1,285M; Four-year operating lease		
\$M	Maximum lease payment as an operating lease	Break-even lease payment for the firm
Lease payment per year	\$614	\$500
Capitalized value of lease payments	\$2,161	\$1,759
Capitalized value as % of sale price	90%	73%
Net present value	-	\$1
Conclusion: The firm may agree to make lease payments up to a maximum of \$500M per year for four years		

Panel C: Scenario #3, Sale price \$2,184, 20% higher than the Net Book Value

Net book value: \$2,184M; Tax-adjusted basis: \$1,285M; Four-year operating lease		
\$M	Maximum lease payment as an operating lease	Break-even lease payment for the firm
Lease payment per year	\$670	\$498M
Capitalized value of lease payments	\$2,358	\$1,752
Capitalized value as % of sale price	90%	67%
Net present value	-	\$1
Conclusion: The firm may agree to make lease payments up to \$498M per year for four years.		

Panel D: Scenario #4: Sale price \$2,184, 30% higher than the Net Book Value

Net book value: \$2,184M; Tax-adjusted basis: \$1,285M; Four-year operating lease		
\$M	Maximum lease payment as an operating lease	Break-even lease payment for the firm - maximum the firm is willing to pay
Lease payment per year	\$726	\$496
Capitalized value of lease payments	\$2,555	\$1,745
Capitalized value as % of sale price	90%	62%
Net present value	-	\$1
Conclusion: The firm may agree to make lease payments up to \$496M per year for four years.		

It also shows the capitalized value of the lease payments to meet the recent FASB's accounting standards update. The lessor will perform similar analysis, and the two parties will arrive at mutually agreeable sale price and lease payments.

CONCLUSION

This article has presented a spreadsheet model for evaluating and setting terms on a sale and leaseback arrangement with the backdrop of FASB's Accounting Standards Update, which is intended to improve financial reporting about leasing transactions. The model is ready to use and has built in analytics of sale and leaseback arrangements. The spreadsheet model allows the lease to specify desired lease payments and derive the net present value of the transaction. It is a robust model and includes the term of the lease, recent changes in tax laws, and other requirements. It paves a path to build similar model for the lessor and to assess the lessor's cost of leasing and net present value. The straightforward design of the worksheet allows the necessary flexibility to make modifications and conduct any sensitivity analysis. Having adopted it, analysts can improve their efficiency and customize the model to meet specific firm needs.

REFERENCES

- Azih, G. (2014, April 16). FASB and IASB Lease Accounting 'Divergence'. Blog, Accountingforleases.com. <http://www.accountingforleases.com/2014/04/16/fasbiasb-lease-divergence>.
- Barris, R. (2002). Sale-Leasebacks Move to the Forefront: What Is Motivating Buyers and what Are Their Preferred Methods? *Briefings in Real Estate Finance*, Vol. 2(2), 103-112.
- Ben-David, I. (2005). Company Performance and Leased Assets in Sale-and-Leaseback Transactions. *Journal of Equipment Lease Financing*, 23(2), 1-8.
- Brigham, E. F., & Daves, P. R. (2013). *Intermediate Financial Management*, 11th edition. Mason, Ohio: South-Western College, Cengage Learning, 733-759.
- Biondi, Y., Bloomfield, R. J., Glover, J. C., Jamal, K., Ohlson, J. A., Penman, S. H., Tsujiyama, E., Wilks, T. J. (2011). A Perspective on the Joint IASB/FASB Exposure Draft on Accounting for Leases. *Accounting Horizons*, 25(4), 861-871.
- Devaney, S., & Lizieri, C. (2004). Sale and Leaseback Asset Outsourcing and Capital Market Impacts. *Journal of Corporate Real Estate*, 6(2), 118-132.
- DiFalco, J. C. (2014). What's Up with the New Lease Accounting Rules?. *New Jersey CPA Magazine*, March/April 2014.
- Eisfeldt, A. L., & Rampini, A. A. (2009). Leasing, Ability to Repossess, and Debt Capacity. *Review of Financial Studies*, 22(4), 1621-1657.
- Elliott, B., & Elliott, J. (2002). *Financial Accounting and Reporting*, 6th edition. Upper Saddle River, NJ: Prentice-Hall.
- Ezzell, J. R., & Vora, P. P. Leasing versus Purchasing: Direct Evidence on a Corporation's Motivations for Leasing and Consequences of Leasing." *Quarterly Review of Economics and Finance*, 41, 33-47.
- Klein, B., Crawford, R. G., & Alchian, A. A. (1978). Vertical Integration, Appropriate Rents, and the Competitive Contracting Process. *Journal of Law and Economics*, 3, 305-360.
- Lyon, J. (2010). Accounting for Leases: Telling It How It Is. *Journal of Property Investment & Finance*, 28(5), 328-332.
- Ross, S. A., Westerfield, R. W., & Jordan. B. D. (2016). *Fundamentals of Corporate Finance*, 11th edition. McGraw Hill Education, 893-913.
- Thompson, A. (2014, May 8). Lease Accounting: More Decisions—But Big Issues Still on Hold. leaseaccounting.nl.
- Tipping, M., & Bullard, R. K. (2007). Sale-and-Leaseback as a British Real Estate Model. *Journal of Corporate Real Estate*, 9(4), 205-217.
- Wells, K. (2007). Evidence of Motives and Market Reactions to Sale and Leasebacks. Working paper. <http://SSRN.COM/abstract=1081461>.