

# An Opportunity Cost Primer

By Christopher H. Volk

**I**n my more than 30 years in the commercial finance industry, I've extended an array of short- and long-term corporate debt, real estate mortgages, and real estate lease financing. As a finance professional, I get many questions about my industry, and two areas that potential clients want to know about stand out. The first is that nearly everyone wants to know a borrowing or lease rate. A close second is financing biases. Such biases most frequently pertain to a preference to avoid operational flexibility limitations associated with financing contracts.

Traditional finance examples of optionality restrictions include note prepayment lockouts (you can't prepay a loan within a certain amount of time), severe prepayment penalties that impede note prepayments (for instance, so-called "yield maintenance" penalties that entail a costly present value of your future debt service at government borrowing rates), balance sheet covenants that limit other indebtedness or leverage, cash flow sweep requirements, and limitations on note assumability, just to name a few. Real estate leases have their own sets of optionality issues that cover both ends of the asset performance spectrum: the disposition of underperforming assets and the need for added capital to expand assets that are strong performers. Limits on corporate optionality impose costs from lost opportunity potential; these lost opportunities are commonly referred to as opportunity costs. Opportunity costs can actually loom larger than any financing cost differentials and impose one or

both of two types of risk on a business:

**Capitalization Risk.** This risk is that a company may be required to employ larger amounts of shareholder equity than otherwise mandated; imposition of such a requirement will tend to depress shareholder wealth creation. Keep in mind that the added equity commitment does little to lower business risks; it's simply imposed by financing covenants, restrictions, or even financier limitations.

**Operating Margin Risk.** This risk is that a company may suffer reduced operating profit margins as a result of growth limitations or operating constraints. It may sound strange to think that a source of financing can actually have an impact on corporate profit margins outside of the interest or lease rate that's charged, but this is absolutely so.

Unlike actual costs, opportunity costs are theoretical in the sense that they suppose a change to capital or operating cost structure. But when capitalization or operational limitations are imposed on a business as a result of its financing sources, those limitations and the value that they cost are far from theoretical—they are very real. At the same time, opportunity costs, unlike borrowing or lease rate differentials, accompany uncertainty. This can make opportunity costs more troubling because, however you might weigh probabilities of occurrence to arrive at estimated outcomes, the impact on shareholder wealth creation can always be far worse. For instance, in electing to lease my real estate, I may presume that 5% of my locations will be either outperformers or underperform-

ers. The actual results can easily be multiples of this, which can elevate the negative impact of landlords who are unable or unwilling to address my future needs.

## Wealth Creation and the V-Formula

Business owners become rich by generating returns on their equity investment that exceed the returns that typically would be required by equity investors who invest in enterprises having similar risk and return characteristics. This is what creating wealth is all about. Of course, personal wealth also can be amassed by paying down debt (or building equity), but this is just an act of saving money. Real shareholder wealth is created by employing a business model that generates a return that exceeds the expectations and requirements of other like-minded investors. Many businesses fall short of this hurdle. They can create a living, permit personal savings, and offer personal independence, all of which are desirable. But the capacity for shareholder wealth creation ultimately entails superior business models characterized by scalability and operating leverage that combine to surpass the profitability needed to provide for personal financial requirements. Such characteristics are a minimal requirement to attract sophisticated, independent, third-party capital.

I'm going to discuss shareholder wealth creation by focusing on shareholder pre-tax rates of return on invested equity. This is a finance concept rather than something that can be interpreted from a financial statement. In finance terms, equity is simply the cost basis of a share-

holder investment. That equity cost basis never changes unless you reinvest corporate free cash flows in expansion or debt repayment. Actual invested equity is unmoved by depreciation or amortization expenditures, by reserves for asset or goodwill impairment, or by mark-to-market hedging contracts and other noncash accounting charges. These are merely accounting conventions and don't impact the actual equity investment made in a business enterprise. The idea is to generate higher returns on your equity cost basis than would otherwise be required by investors in enterprises bearing similar risk. In doing so, the business will be worth more than it cost to create, and all of the resultant appreciation will accrue to a company's shareholders.

Let's look at the equity return calculation through a shortcut formula that focuses on current pre-tax equity cash yields. After-tax returns can be impacted by a choice of corporate financial structures. Evaluating equity returns on a pre-tax basis places business models on an even playing field. Likewise, the model example in Table 1 computes business investment that includes both owned and leased real estate values. Some companies elect to lease assets, and others choose to own the real estate they deploy in their business; that choice doesn't impact the cost of the real estate deployed. Real estate lease capital is just another form of external (meaning nonshareholder) funding that takes the place of leverage as well as the shareholder equity that would be required to own the real estate. While Table 1 incorporates all real estate in

### The V-Formula<sup>SM</sup>

$$\frac{(\text{Sales/Investment} \times \text{Operating Profit Margin} - \text{Percentage Financed} \times \text{Interest Rate} - \text{Annual Capital Investments/Investment})}{\text{Percentage of Equity}} = \text{Current Pre-Tax ROE}$$

order to make companies comparable, the formula for returns works just as well if leased real estate is omitted and the operating margin is shown net of the related lease payments.

The shortcut formula used to compute current pre-tax equity yields is the V-Formula<sup>SM</sup>. The actual pre-tax cash yield would be slightly smaller and would be computed exactly the same way except that the debt/lease payment constant would be used instead of the interest rate.

How does the V-Formula relate to shareholder wealth creation? Just compare the current pre-tax rate of return to the return an investor would otherwise seek. If the return is double the return that other equity investors would seek, then the shareholder equity is worth twice what it cost. One obvious caveat: The analysis presumes that the company is optimally operated and capitalized and that an alternate investor wouldn't seek other formula input changes.

## A Corporate Return Illustration

See Table 1 for a demonstration, using the V-Formula, of a shareholder return computation for a sample company. The inputs I chose resemble a chain restaurant operator, but the model is designed to be universal.

To keep things simple, the equity return model has just nine balance sheet and income statement variables. Only one of the variables—sales—is an absolute number; all other variables are shown as relative values. You could even eliminate that lone numeric variable and instead use the number one (1) in all of the relevant formulas. I used the number simply to illustrate a balance sheet showing the company's total required investment funded through external capital and shareholder equity. Employing the V-Formula, the current pre-tax shareholder equity yield winds up being 60.7%. How much equity value is created? If other investors were to have a current pre-tax equity yield expectation of 20% (the 10th model variable), then the equity would be worth 3.04x (3.04 times) its cost (60.7% ÷ 20%). In the model illustration, this equates to an equity valuation of more than \$5.7 million (\$1.8 million × 303.7%) and shareholder wealth creation of more than \$3.9 million (\$5.7 million – \$1.8 million).

## Opportunity Costs

As I mentioned earlier, opportunity costs can be caused by various financing-imposed limitations that can impact both equity capital requirements and company operating margins. Corporate optionality limitations can arise from all flavors of financing elections. What follows is an examination of the two major limitations of real estate leasing that pertain to outperforming and underperforming locations.

### Underperformers

Companies operating from multiple locations (such as retailers, service companies, and distributors) generally suffer from a number of poor-performing locations characterized by low profit margins or even losses. The operating profit margin at underperforming locations will tend to be less, often much less, than that of the company as a whole. If we presume an underperforming asset profit margin of half the 20% corporate margin shown in Table 1, together with a 5% incidence rate (the percentage of all stores that underperform), the company margin impact would be 0.5%. But, as noted earlier, opportunity costs, unlike many other financing costs, can be variable and uncertain. A 10% operating profit margin with a rent factor equivalent to 8% of sales would still be a profitable location. In my experience, underperforming locations can have far lower operating profit margins, imposing a far larger drag on overall corporate profitability. Likewise, many companies suffer from more than 5% underperforming locations. If we presume that a business succeeded in 90% of its locations and that the remaining 10% of its locations had no operating margin, then the impact of these laggards on overall corporate operating margins would be fully 2%. Welcome to opportunity cost variability.

### UNDERPERFORMING ASSETS

1. Underperforming Asset Incidence	5.0%
2. Profit Margin Drag	-10.0%
<b>Profit Margin Change (1 x 2)</b>	<b>-0.50%</b>

In this light, the corporate opportunity cost arises from the company being locked into a long-term real

## Table 1: Equity Return and Valuation Illustration

Powered by the V-Formula

• Model inputs shown in blue

### MODEL ASSUMPTIONS

#### Income and Cash Flow Statement

Sales	\$10,000,000
EBITDAR Margin	20.0%
Annual Maintenance CapEx/Investment	2.0%

#### Balance Sheet

Average Real Estate Lease Rate	8.5%
Debt Interest Rate	6.0%
Funded Debt:EBITDA	3x
Rent-to-Sales Ratio	8.0%
Percent of Locations Leased	50.0%
Working Capital & Equipment/Real Estate Value (%)	20.0%

#### Equity Return Hurdle

Investor Current Pre-Tax Equity Yield Expectation	20.0%
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### MODEL RESULTS

Leased Real Estate Value	\$4,705,882
Owned Real Estate Value	4,705,882
Working Capital and Equipment	1,882,353
<b>Total Asset Investment</b>	<b>\$11,294,118</b>

Lease Proceeds	\$4,705,882
Debt Proceeds	4,800,000
Total Equity	1,788,235
<b>Equity and External Capital to Fund Assets</b>	<b>\$11,294,118</b>

### CURRENT PRE-TAX EQUITY YIELD (V-Formula Calculation)

(Sales:Investment Ratio	0.885
x Weighted Lease/Interest Rate	7.2%
- (EBITDAR Margin	20.0%
x Percent Financed)	84.2%
- (Annual Maintenance CapEx/Investment))	2.0%
÷ Percent Funded with Equity	15.8%
<b>= Current Pre-Tax Yield on Equity<sup>1</sup></b>	<b>60.7%</b>

### EQUITY VALUE CREATION

<b>Equity Value Created (Current Yield/Market Yield)</b>	<b>3.04x</b>
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<sup>1</sup> Equates to (EBITDA – Maintenance Capital Expenditures) ÷ Amount of Cash Equity Invested

estate lease with a landlord who has no mechanism to permit asset closures, offer substitute assets, permit lease assignments, or consider the sale of the property. Many stories exist of companies that suffered lost shareholder value as a result of undesirable landlords who were unwilling or unable to consider a mutual solution to eliminate underperforming assets.

### Outperformers

Strong-performing leased locations pose an alternate dilemma for businesses: How can they expand outperforming properties when they don't own the real estate?

If the landlord is unwilling or unable to fund asset expansion, then the only way to accomplish the expansion is for the tenant to pay for the improvements. In this case, there's likely to be little debt financing available because the business is improving an asset that it doesn't own. Thus the improvements, presuming that the landlord agrees to the changes, generally have to come from shareholder equity, thus increasing corporate equity capitalization requirements. If we presume that the improvements equate to 25% of the total asset cost as improved with a 5% incidence rate, the company equity capitalization impact would be 1.25%.

1. Outperforming Asset Incidence	5.0%
2. Remodel Cost: Total Cost	25.0%
<b>Added Equity Requirement (1 x 2)</b>	<b>1.25%</b>

In the case of a company wanting to expand its strong-performing units, failure to capture an existing asset expansion opportunity can also impact corporate operating profit margins because such asset expansions tend to accompany material sales increases and because “rule of thumb” incremental profit margins tend to approximate double overall corporate operating profit margins. If we presume that the expanded assets will yield 10% greater sales at a 40% operating profit margin with the same 5% incidence rate, then the failure to execute on the expansion will result in a lost incremental profit margin of 0.20%.

1. Marginal EBITDAR Margin	40.0%
2. Incremental Sales from Remodel	10.0%
<b>Profit Margin Change (1 x 3 x 4)</b>	<b>0.20%</b>

As with the earlier discussion regarding store under-performance, the opportunity cost risks of missed asset expansion opportunities are highly variable. The presumed 10% incremental sales could easily be twice that number, as could the 5% opportunity incidence. Doubling these two variables would elevate the requisite equity mix by 2.5% and the incremental margin potential to 0.8%. Therefore, the opportunity costs imposed on a company by the intractable landlord or the landlord with no mechanism or ability to address such incremental corporate expansion needs will indeed exact a price on shareholder value. The question is, “How much?”

Turning to the initial equity return analysis model (Table 1), we can insert the operating margin and corporate equity mix changes to offer an idea of the impact range of opportunity costs on shareholder wealth creation. This can be accomplished through a sensitivity table as shown in Table 2.

Based on the initial model, shareholder equity would have a value equal to 3.04x its cost. But if underperforming locations caused a 0.5% margin decline as illustrated earlier, that equity value would fall one spot to the left, or 2.70x. Given the uncertainty and variability of opportunity costs, the lost margin number could easily fall to 1% or even to 2%, moving the equity value one or two spots more to the left.

Now consider the issue of high-performing asset expansion. Here, corporate margins might rise by 0.2%,

which would put shareholder values one spot to the right. If the landlord were to pay for the improvements, the higher external capital mix would lower equity requirements by 1.25%, which is two spots up. Conversely, a landlord who doesn't have a mechanism or the ability to fund the needed improvements would cause corporate equity requirements to rise by 1.25%, which would essentially negate the benefit of the expansion. The expansion would be unlikely to occur at all because the business wouldn't realize enough incremental shareholder value so would therefore have better uses for the equity. As with the variability of opportunity costs on underperforming assets, the potential outcome range is wide. Doubling the incidence rate to 10% would double the impact. Doubling the incremental sales to 20% would likewise double the impact again, raising the equity valuation multiple to 4.47x its initial cost. Now here's the important and obvious point: Looking at Table 2, you can see that the impact on shareholder equity of just these two major real estate leasing opportunity costs can be significant. To the downside, equity valuations can fall to 1.93x total equity cost, while the upside valuation approaches 4.47x such value. Indeed, the total equity valuation range associated with the financing opportunity cost of just these two real estate lease variables spans nearly 84% of the base-case total valuation. Even more noteworthy is the impact on the added wealth portion of the equity valuation, with a span of more than 120% and a downside of more than half the shareholder wealth created.

OPPORTUNITY COST VALUATION SPAN	UPSIDE	DOWNSIDE
Total Shareholder Valuation Impact	47.1%	-36.4%
Shareholder Added Wealth Impact	70.3%	-54.3%

## Opportunity Cost Immunization

Though virtually all companies correctly focus on absolute financing costs in making their decisions, those that focus equally on opportunity costs are likely to be more rewarded. All-in absolute financing costs are unlikely to vary by more than 50 to 75 basis points. What does this mean from an equity valuation point of view? As Table 3 illustrates, using the same company example, if the weighted total interest/lease rate rose by 75 basis points, equity valuation would fall from 3.04x to 2.84x its cost. That change is less impactful than the adverse impact of landlords offering no mechanism to address the need to close or reposition 5% of company locations. To the upside, saving 75 basis points in total weighted

**Table 2: Equity Cost Valuation Impact from Margin and Equitization Changes**

CHANGE IN % FUNDED WITH EQUITY	CHANGE IN OPERATING MARGIN						
	-2.00%	-1.00%	-0.50%	0.00%	0.20%	0.40%	0.80%
-2.50%	2.14x	2.72x	3.09x	3.54x	3.74x	3.96x	4.47x
-1.25%	2.03x	2.55x	2.88x	3.27x	3.44x	3.63x	4.06x
-0.50%	1.97x	2.46x	2.77x	3.12x	3.29x	3.46x	3.85x
0.00%	1.93x	2.40x	2.70x	3.04x	3.19x	3.35x	3.72x
0.50%	1.89x	2.35x	2.63x	2.95x	3.10x	3.26x	3.60x
1.25%	1.84x	2.28x	2.54x	2.84x	2.98x	3.12x	3.44x
2.50%	1.77x	2.16x	2.40x	2.67x	2.79x	2.92x	3.20x

Potential value range impact of underperforming assets (left side of table)

Potential value range impact of expandable assets (right side of table)

Limited upside to paying for leased asset expansion (bottom right callout)

**Table 3: Equity Cost Valuation Impact from Interest Rate Changes**

-0.75%	3.24x
-0.50%	3.17x
-0.25%	3.10x
0.00%	3.04x
0.25%	2.97x
0.50%	2.90x
0.75%	2.84x

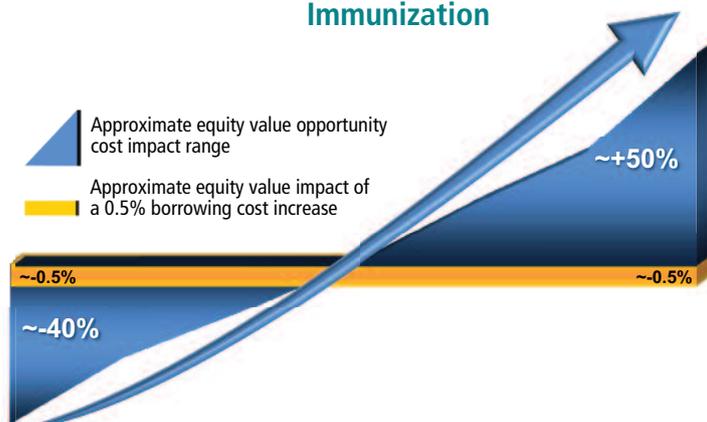
interest/lease rates would raise the equity valuation to 3.24x its cost. This magnitude of the upward valuation change is likewise less valuable to a business than having landlords willing and able to pay for improvements for the expansion of 5% of corporate locations. Here’s an important point: The interest rate sensitivity table raises the rate on all leases and borrowings. In reality, companies seeking opportunity cost immunization in our

example of real estate leases will only make decisions pertaining to specific lease rates. Thus the impact of accepting certain elevated interest or lease rates to offset opportunity costs is likely to be even more nominal.

Figure 1 powerfully illustrates the value of opportunity cost immunization. The tradeoff between a modestly elevated lease cost is well worth the shareholder equity value created and the opportunity cost avoided.

As the math makes crystal clear, the potential swing in shareholder valuations driven by financing opportunity costs is meaningful. In addition, as the examples in this article illustrate, corporate flexibility and optionality tend to be more valuable to shareholders than isolated interest rate savings. The obvious ideal is for a business to realize both: cheap borrowing rates and optimal corporate operating flexibility. Yet corporate flexibility and optionality generally come at a price, but one that’s most often worth more than its cost. The conclusion is that corporate leaders should generally emphasize an immunization of opportunity costs. At the least, financing opportunity costs can be more meaningful than borrowing or leasing cost differentials. At the most, financing opportunity costs can be substantially impactful. With such a range of potential adverse and accretive shareholder valuation outcomes, opportunity cost immunization is essentially akin to a cost-effective insurance policy. Viewed in this light, the rewards to shareholders of opportunity cost immunization are truly illustrative of the power of efficient capitalization on shareholder wealth creation. **SF**

**Figure 1: Value of Opportunity Cost Immunization**



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