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### **Myths about Middle Market Valuation Multiples**

Sometimes it seems as if the only requirements to be an investment banker are the ability to multiply two (usually single-digit) numbers together, and write your name. Hence, upon finishing the second grade, everyone is qualified. For example, take an EBITDA (earnings before interest, taxes, depreciation and amortization) of \$10MM and the median lower middle market valuation multiple of 5, which incidentally has nothing to do with the number of fingers on your hand. Continuing, 10 times five is 50 and voila, the value is \$50MM. So what's with post-graduate education from top schools for top prices and years of toiling long hours in the concrete canyons of Wall Street? Perhaps, there is more to it.

A multiple of EBITDA is a means to reflect the economic value of an operating business and is a primary driver in M&A price negotiations where a skillful investment banker engages in price discovery among several bidders, each with unique synergies, capital structures and tax attributes. This article addresses the origins of EBITDA multiples for valuing an operating business as an economic asset by using EBITDA as the earnings stream produced by the business, without consideration to capital structure (before interest) or taxes (before taxes.) The distinction is similar to valuing financial assets, stocks and bonds, as a function of cash flow prior to investor leverage or taxes.

#### **Multiple Terminologies**

Multiples are rooted in the conceptual notion of a return on an investment. The return that an investor, or buyer, requires for a specific investment is termed the cost of capital. The mathematical manifestations for cost of capital are capitalization rates and discount rates. Applying the cost of capital to the expected benefit stream determines the value of the asset.

Benefit streams come in a number of varieties referred to as EBITDA, earnings before and after tax, cash flow and free cash flow. In keeping with our approach to value an operating business as an economic asset, we are employing EBITDA, as defined above, and net EBITDA as the benefit stream after additional investment required to support growth. Net EBITDA then is the benefit stream remaining for distribution to the investor.

#### **What is a multiple?**

A multiple is a means of expressing a desired rate of return or the cost of capital relative to other similar assets based on the economic principal of substitution. The reciprocal of a multiple is a capitalization rate, or alternatively a desired return on investment expressed as a percentage. Going back to our example, a 20% capitalization rate on an EBITDA of \$10 million annually into perpetuity (theoretically at least), yields a value for the investment of \$50 million; \$10 million divided by .20. The reciprocal of a 20% capitalization rate is 1 divided by .2 or 5. The same \$50 million value can be found by multiplying \$10 million in annual EBITDA by 5; \$50 million. Perhaps the allure of multiples is the relative ease of multiplying 10 times 5 as opposed to dividing 10 by .2. Most of us, it appears, prefer to multiply.

Since multiples move inversely to the required return or capitalization rate, a higher multiple is a lower capitalization rate and a higher value since the return is the reciprocal of the multiple. These mechanics are illustrated in the following table:

EBITDA	Capitalization Rate	Multiple	Calculated Value
\$2,000,000	20.00%	5	\$10,000,000.00
\$2,000,000	13.70%	6	\$12,000,000.00
\$2,000,000	14.20%	7	\$14,000,000.00

### Risk Impact on Multiples

Risk is the perceived probability of loss, default, or not achieving the cash flows necessary to produce the required return for the risk; the latter circumstance most often associated with “overpaying” for an acquisition. The higher the multiple the lower the perceived risk is in achieving the future cash flow, hence the higher the value for the asset. Risk adverse investors are more likely to choose a 10 year Treasury Note accepting a 3.5% return over the purchase of a middle market business. Rates of return and multiples reflect risk perception as shown in the following table:

Investment Category	Rate of Return	Multiple
Ten Year Treasury Note	3.50%	29
Large Public Company	9.00%	11
High Yield Corporate Bond	12.00%	8
Small Public Company	14.00%	7
Middle Market Business	20.00%	5

Risk appetite is not a constant but changes with economic conditions, liquidity in the markets, availability of credit, and herd instincts. For example, when the wizards of Wall Street convinced the capital markets that housing prices would never go down, and that risk was spread widely enough not to pose a systemic risk (which actually worked in the telecom bust), if you could fog a mirror you could get mortgage. Try that today. Most mortgage lenders today require a colonoscopy as part of the documentation.

On final caveat about risk and cost of capital for middle market companies; smaller companies convey greater risk and generate lower multiples. Very small companies typically referred to as mom and pops, trade in the aggregate at 2 to 3 times a metric known as seller’s discretionary earnings, adding back a salary and incorporating the “job” that comes with the business. Moving up market by reported transaction size, deals from \$10 to \$50 million (75% of all reported transactions) can command a 5 to 6 times multiple; \$50 to \$150 million, 7 to 8 times; \$150 to \$400 million, 8 to 9 times; over \$400 million, 10 times and up. These multiples are averages to impressionistically illustrate a concept; some deals will be less, some more, each deal is different. Moreover, not all EBITDA multiples are created equal; for example, a company with little EBITDA and a hot technology could sell at a very high multiple, as might an asset heavy company with a poor EBITDA. The devil, as always, is in the details which usually can be found in a discounted cash flow analysis.

### **Derivative Multiples, Rule of Thumb Metrics**

Derivative multiples reported in the press are multiples derived after the fact and do not drive deals. For example, if a deal is reported in the financial press at a price of \$50 million and the revenue for the acquired company is \$25 million, then the deal can be expressed as 2 times revenue. Derivative multiples express the value of an outcome (done deal) driven fundamentally by EBITDA and a desired rate of return, influenced, of course, by the competition for the asset, and the disparities among buyers. Moreover, unless terms are disclosed via press release by the parties, the reporting services are not likely to report the price and terms accurately; particularly if the information is collected in an interview from people “familiar with the matter.” Application of derivative multiples obtained from the financial press to a specific situation is a dangerous exercise, especially for buyers.

For example, if a company is in the market with maybe substandard earnings or perhaps no earnings, the seller points to 2 times revenue and the buyers, at least the smart ones, hold a different point of view. Once again it is the buyer’s perceived risk adjusted return to the benefit stream that drives the price and terms. One caveat, in the hands of a skilled sell side negotiator, derivative multiples can be useful in situations where the seller’s earnings are “challenged.” (See End Note i).

### **Public Company Multiples (Size does matter.)**

Large publicly traded companies are distinctly different from middle market companies in three respects: risk, valuation methodology, and liquidity. A large multinational company with a diversified portfolio of assets (think GE), poses significantly less risk to an investor than does a middle market business; hence the average cost of capital for large public companies is around 9%, implying a multiple of better than 11 as compared to 5. Reported multiples, particularly price earnings ratios (the P/E multiple), are calculated on after tax historical earnings for the specific entity; and represent a return to the equity, not the entire enterprise which includes debt and equity. Moreover, an investor in such a company traded on an active exchange has the option of selling the investment on a moment’s notice for the then bid price; in other words the investment is highly liquid.

Middle market companies entail higher risk, are typically valued from an economic perspective at the EBITDA level, and are highly illiquid. Any application of public company multiples to metrics for middle market companies produces inaccurate results and is especially dangerous in the hands of the uninformed, bliss aside. Take, for example, a \$100 million revenue business with an EBITDA of \$10 million and after tax net income of \$5 million. Looking to the average 15 P/E multiple for the S&P 500 suggests a value of \$75 million, 50% higher than the same value with a 5 multiple at the EBITDA level; which is a better approximation of value for a middle market business.

### **Return on Invested Capital, Growth, Cost of Capital: Multiple Drivers**

Operating companies employ invested capital to generate a return. The capital is invested in operating assets, typically working capital and fixed assets. These assets are financed with interest bearing debt and equity referred to as the invested capital. The return earned on this investment is the return on invested capital (ROIC) for the operating business.

Return on invested capital, (ROIC) is a critical value driver (we contend the single most important factor for a given cost of capital) because businesses that produce more cash flow per dollar of investment (capital utilization) at the same risk level (cost of capital) are, well, worth more! Moreover, companies with a high ROIC have a lower reinvestment rate since less of the EBITDA needs be invested to support growth; hence more of the EBDITDA is available for distribution. Known as the reinvestment rate, the

math entails dividing the growth rate by the ROIC to find the percentage of EBITDA reinvested to support growth. (See End Note ii).

To the extent the ROIC exceeds the cost of capital, the business creates value; and the faster it grows the more value it creates. A business that has a ROIC that is less than the cost of capital destroys value and the faster it grows the more value it destroys. A business that creates value commands a higher multiple for a given cost of capital.

As to revenue, growth and margins, improved margins generally translate to improve ROIC provided the invested capital remains constant save for reinvestment requirements. Margins must be improved to the point where the ROIC exceeds the cost of capital in order to create value. Revenue growth is generally not the best way to improve margins except possibly in certain manufacturing situations where fixed costs are high; then again, high fixed cost industries (bad economics) can suffer brutal price competition (margin erosion), particularly when overall demand is low.

The following examples demonstrate the relationship between multiples, and the key value drivers: ROIC and growth. The supporting tables employ a discounted net EBITDA analysis with a 15 year discrete period and a default to 3% growth thereafter into perpetuity to determine a continuing value. For the latter calculation, the reinvestment rate is computed using the 3% long term growth assumption. EBITDA margins and ROIC are the same in order to keep the math simple. Our hypothetical example companies are Southwest Widget and Midwest Gadget.

Southwest Widget ("SW") invests \$100 million in a new plant that produces an EBITDA of \$10 million on revenues of \$100 million which are expected to grow at 5% annually; the return on invested capital for the new plant is 10%. The cost of capital for SW is 20% (remember the 5 times), then SW has a value less than the value of its invested capital. The table below illustrates the SW situation.

Southwest	ROIC 10%	Growth Rate 5%	Reinvestment 50%	Cost of Capital 20%	Term Growth 3.0%		Term RIR 30.0%	Continuing Value
Year		1	2	3	4	5	15	
\$'s in millions								
Revenue		100.0	105.0	110.3	115.8	121.6	198.0	203.9
EBITDA		10.0	10.5	11.0	11.6	12.2	19.8	20.8
Reinvestment		5.0	5.3	5.5	5.8	6.1	9.9	6.2
Net EBITDA		5.0	5.2	5.5	5.8	6.1	9.9	14.6
Discount Factor		0.83	0.69	0.58	0.48	0.40	0.06	
Present Value		4.2	3.6	3.2	2.8	2.4	0.6	

Discrete Period	28.8
Terminal Value	5.6
Total Value	34.4
Net EBITDA Multiple	3.4
Invested Capital	100.0

The resulting \$34.4 million EBITDA derived value is less than the invested capital at \$100 million. Since SW is not earning its cost of capital, the faster it grows the less it's worth. This deal is not going to happen with a 20% cost of capital and a 10% ROIC.

Midwest Gadget ("MG"), on the other hand, builds a new plant for \$100 million that earns \$20 million in EBITDA; the return on invested capital is 20%, which is equal to the cost of capital and the value is equal to the invested capital; growth has no impact on value since MG earns exactly its cost of capital. In this case the multiple is 5 as shown in the following table.

Midwest	ROIC 20%	Growth Rate 5%	Reinvestment 25%	Cost of Capital 20%	Term Growth 3.0%		Term RIR 15.0%	Continuing Value
Year		1	2	3	4	5	15	
\$'s in millions								
Revenue		100.0	105.0	110.3	115.8	121.6	198.0	203.9
EBITDA		20.0	21.0	22.1	23.2	24.3	39.6	41.6
Reinvestment		5.0	5.3	5.5	5.8	6.1	9.9	6.2
Net EBITDA		15.0	15.7	16.6	17.4	18.2	29.7	35.4
Discount Factor		0.83	0.69	0.58	0.48	0.40	0.06	
Present Value		12.5	10.8	9.6	8.4	7.3	1.8	

Discrete Period	86.5
Terminal Value	13.5
Total Value	100.0
Net EBITDA Multiple	5.0

Invested Capital	100.0
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In a third scenario, assume SW is able to improve its ROIC to 30%, 10% more than the cost of capital, and is able to grow at 15% per year. The difference in value is dramatic as indicated below:

Southwest	ROIC 30%	Growth Rate 15%	Reinvestment 50%	Cost of Capital 20%	Term Growth 3.0%		Term RIR 10.0%	Continuing Value
Year		1	2	3	4	5	15	
\$'s in millions								
Revenue		100.0	115.0	132.3	152.1	174.9	707.6	728.8
EBITDA		30.0	34.5	39.7	45.6	52.5	212.3	244.1
Reinvestment		15.0	17.3	19.8	22.8	26.2	106.1	24.4
Net EBITDA		15.0	17.2	19.9	22.8	26.3	106.2	219.7
Discount Factor		0.83	0.69	0.58	0.48	0.40	0.06	
Present Value		12.5	11.9	11.5	10.9	10.5	6.4	

Discrete Period	141.6
Terminal Value	83.9
Total Value	225.4
Net EBITDA Multiple	7.5

Invested Capital 100.0

The multiple under this scenario is 7.5! Note that the total value is now \$225.4 million on that same invested capital of \$100 million. High ROIC in high growth situations is the ideal combination for driving value.

We put this idea of ROIC, cost of capital and growth together in the next table developed for a 20% (that 5 again) cost of capital under different growth and ROIC assumptions. As in the above examples, each scenario runs for 15 years and then defaults to a 3% long term growth rate thereafter.

Growth	Multiple			
5%	3.4	5.0	5.5	5.8
10%	1.1	5.0	6.3	6.9
15%	-2.5	5.0	7.5	8.8
	10%	20%	30%	40%

In the first column, the ROIC is less than the cost of capital. Increasing the growth simply destroys value and lowers the multiple even further to a theoretical negative 2.5. In this situation, the ROIC needs to be fixed before any attempts at growth are undertaken. We call this underperforming scenario the turnaround, and it rarely gets a 5, particularly if both the ROIC and growth need to be improved. This scenario is ideal for distressed investors and turnaround types.

In the second column the company is earning the cost of capital; the ROIC and cost of capital are the same at 20%. In this situation, a higher growth rate neither creates nor destroys value; it simply adds more zeros to the absolute numbers. So here is that magic 5 multiple appearing in every box, suggesting that many middle market companies valued at a 5 multiple are expected to earn at the EBITDA level the cost of capital at 20%, nothing more nothing less. Since ROIC is not expected to be any better in the future than it has been in the past, that magic 5 is typically applied to the “trailing” twelve month EBITDA; a buyers convention to start the bidding at a price that reflects no benefit for growth, or improved ROIC though synergies. Smart sell side investment bankers armed with the knowledge herein can effectively negotiate up from 5, particularly in high growth situations where the buyer is able to reduce costs through synergies and increase the ROIC.

The real exciting columns are the third and forth columns where the value is driven by an expected ROIC greater than the cost of capital, and the more it grows the better it gets. These outcomes dramatically demonstrate the power of the primary multiple drivers, ROIC and growth.

While these numbers work out mathematically, it's only fair to say that in an M&A context ROIC, growth and cost of capital are in the eye of the beholder, the specific buyer. Not all buyers are created equal, which is why sell side investment bankers engage in price discovery via the auction process at the EBITDA level using multiples. For example, a buyer that can reduce cost through synergies (increase ROIC), or provide distribution channels that can accelerate growth (increase revenue on increased margin), has advantages over other bidders and can price justify a higher offer. The mission of the sell side investment banker is finding that right buyer, or the best new owner, and capturing as much as possible of the value added from synergies through the careful execution of the auction process for the benefit of the seller.

### **What drives return on invested capital?**

At this point, you may be asking: “What drives ROIC?” The short answer is the competitive behavior of the industry, and any single player’s ability to achieve sustainable competitive advantage. Thirty years ago Harvard Business School professor, Michael Porter, popularized the notion of sustainable competitive advantage in his seminal work, *Competitive Strategy*. Porter’s framework includes the four forces of competition: barriers to entry, threat of substitution, buyer power, and supplier power. (See End Note iii).

A fifth and highly important element identified by Porter is the degree of industry rivalry or the industry “economics.” High ROIC industries tend to be those with attractive industry structures like branded consumer goods, pharmaceuticals, and software IT. Low ROIC industries have less attractive economics, such as airlines, utilities and integrated telecom. Management in low return industries can be successful, relative to their peers, but the challenge is daunting. We quote from Warren Buffet: “When management with a reputation for brilliance tackles a business with a reputation for bad economics, it is the reputation of the business that remains intact.”

While Porter identified three generic strategies, (differentiation, low cost producer, and focus) we translate these into four groups: intangible assets, switching costs, the network effect and cost advantage (See End Note iv). A full discussion of sustainable competitive advantage is beyond the scope of this article, but we have provided references in the end notes for further reading.

Improvements in ROIC are achievable even in industries with difficult economics. Take, for example the case of John Deere. Deere directed the focus of the organization to ROIC by changing the compensation system for managers. By leveraging the brand and the dealer network through a focus on ROIC, Deere’s ROIC increased from under 10% to over 40%. Share price tripled.

### **Summary**

The magic 5 multiple is a point of departure for cost of capital typically applied to the purchase of a lower middle market business. As illustrated in this article, a transaction that occurs at a 5 multiple is one that is expected to earn the 20% cost of capital no more, no less. The real drivers of multiples are ROIC and growth, but only if the ROIC exceeds the cost of capital. Multiples occurring in excess of 5 are for high ROIC, high growth business, and at less than 5 for turnarounds. ROIC is a function industry economics and sustainable competitive advantage; good execution can help but it’s not enough on its own. Across the deal spectrum from small to large, larger companies command higher multiples because the risk is less and the cost of capital is less. For the smaller companies the converse is true. Our aim here is to shed light on the origins of that magic 5 and hopefully we made some progress in that regard.

We leave you with one last quote from Warren Buffet: “People always want a formula-but it doesn’t work that way. You have to estimate total cash generated from now to eternity, and discount it back to today. Yardsticks such as P/E’s are not enough by themselves.”

### **End Notes:**

i Roberts, Dennis J.; *Mergers & Acquisitions*: New Jersey: John Wiley & Sons. 2009

ii Copeland, Tom; Koller, Tim; Murrin, Jack; McKinsey & Company. *Valuation: Measuring and Managing the Value of Companies*. New York: John Wiley & Sons, 2000

iii Porter, Michael E., *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. New York: The Fresh Press. 1998

iv Stacey, Ronald L. *Building Sustainable Competitive Advantage*, Capital Insights, July 2010.

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