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# Market Multiple Adjustments: Get a Grip on GRP

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In a prior article,[1] I discussed certain considerations in valuing a multinational company (MNC). Noted in that article is a useful due diligence framework, Company-Country-Currency-Sector (CCCS). Part of that article also briefly discusses the fact that appraisers use comparable data (comps) and *benchmarking* a subject entity with its comps focusing on the attributes of growth, risk, and profitability (GRP) to ensure the market prices of comps to the pricing of a company has been effectively bridged. GRP contributes to the story from a qualitative and quantitative perspective in terms of why an EBITDA or price-to-revenue multiple is selected for the subject entity being valued. Ultimately, the valuation of a MNC should consider GRP and CCCS. This article focuses on the GRP aspect of benchmarking and adjusting market multiples.

**Background.** The subject of market multiple adjustment and selection is part of using a market approach—both the guideline company and guideline transaction methods. This theme applies whether it is an equity-based method, such as in the valuation of the equity of a bank or financial institution, or a debt-free (invested capital)-based method, such as in the valuation of a business enterprise value (BEV) of a manufacturing or distributor operation.

This article will focus on the guideline company application, but, whether it's equity or a BEV, the use of a benchmark analysis to compare the subject firm to the guideline companies or transactions (comps) to establish a value estimate is essential to creating a supportable market approach and to have developed a market-based value estimate to correlate to any income approach-based methods developed.

For purposes of the following discussion, we will focus on the attributes of GRP in benchmark analysis and developing multiples typically applied to valuing a BEV. Benchmarking is the process of comparing a company's performance to that of other companies (in this case public comps). Appraisers mimic the market, and, in so doing, it is prudent to focus on each of the growth, risk, and profitability drivers of value to support market multiple selection.

The BEV is the total value of the firm. Debt holders and stockholders often share this value (known as the "invested capital"). By definition, the business enterprise value is equal to equity plus interest-bearing debt, or net working capital plus fixed and intangible assets. This may be stated algebraically in the following way:

BEV = SE + Debt = NWC + FA + IA

Where:

BEV = business enterprise value

SE = shareholders' equity value

Debt = interestbearing debt

NWC = net working capital (excluding debt)

FA = fixed asset value

IA = intangible asset value

1 "Getting Your Head Out of the Model: Valuing a Multinational Company," *Business Valuation Update,* October 2014,Vol. 20, No. 10.

# BUSINESS VALUATION UPDATE

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For publicly traded companies, the BEV is often considered the market value of invested capital (MVIC). The components of the MVIC include the market value of equity capital, which is based on shares outstanding times the subject comp's publicly traded stock price. To this is added the value of debt and preferred stock and minority interest to develop the MVIC. Cash is often deducted from debt in this calculation so that multiples are developed net of cash, as cash doesn't need to be valued. An overall adjustment for excess or deficient NWC is typically included in the overall BEV or equity conclusion to address the potential for excess or deficient levels of NWC.

Debt-free market multiples derived from review of comps typically include EBITDA and sales or revenue-based multiples. These are developed from a numerator/denominator based formula as follows ($ millions):

*MVIC/EBITDA*

$$\frac{\text{MVIC}}{\text{EBITDA}} = \frac{14{,}213.00}{1{,}005.00} = 14.1\text{x}$$

In the above example, the MVIC of $14,213 (million) is divided by the EBITDA of $1,005 (million) to derive an EBITDA multiple of 14.1 times.

*MVIC/Sales*

$$\frac{\text{MVIC}}{\text{Sales}} = \frac{14{,}213.00}{4{,}379.00} = 3.2\text{x}$$

In the above example, the MVIC of $14,213 (million) is divided by the sales of $4,379 (million) to derive a sales multiple of 3.2 times.

When we consider the major drivers of EBITDA and sales multiples, the concept of GRP is crucial. It's what investors consider in pricing BEVs and related equity securities.

In general, EBITDA multiples are largely a function of growth and risk, whereas sales multiples are a function of growth, risk, and *profitability*. Therefore, sales-related multiples have an added factor, profitability, to analyze. In effect, we are concerned about the "yield" or return on sales, and we recognize that all sales dollars are not created equal.

For example, EBITDA margins on sales in grocery stores chains are minor. For example, EBITDA margins for Kroger (ticker "KR") are often 5% or less. But companies in the pharmaceutical industry, such as Pfizer (ticker "PFE"), can have EBITDA margins of 40% or higher. In the past year, the sales multiple for Kroger ranged from 0.25 to 0.4 times sales, whereas, for Pfizer, the sales multiple ranged from 3.8 to 4.6 times sales. The sales multiple for Kroger is roughly one-tenth of that of Pfizer, and KR's EBITDA margins are roughly one-tenth of PFE's as well. This illustrates the strong linkage between margins and the sales multiple.

**Growth (G).** To illustrate how substantial growth is to a value, we developed income approach models to show the incremental impact on value using varying growth and discount rate assumptions. Our assumptions were focused on varying rates of cash flow growth under different discount rate scenarios to show how growth impacts value and how one can use this awareness to adjust multiples for perceived growth differences.

Separate discounted net cash flow (DCF) models were developed for various scenarios, and a matrix was developed to summarize the observed impacts.

The details of this sensitivity analysis are shown below. As time value of money is a part of this determination, we ran scenarios using each of 10% and 20% discount rates. At a 10% discount rate, what it suggests is that a 1% cash flow difference for one year for a subject firm versus a comp or portfolio of comps results in about a 1% value differential. What this means is that, if the subject firm you are valuing has for forecast Year 1 a 1% lower growth than the comps, then the subject firm should have an EBITDA multiple that is 1% lower (i.e., 99% of the comps). If the growth differential is expected to continue, for say two years, the adjustment to the comps' EBITDA multiple is about 2% (rounded), and, for three years, it is about 3%, and, after four years of having 1% incrementally lower growth, the value difference is about 4% (rounded). So, at a 10% discount rate, the growth differential is relatively additive (not exactly, but it gives a quick estimate when eyeballing spreadsheets and conducting benchmarking analysis). The more years you expect the growth differential to continue, the larger the adjustment to the comps multiples in selecting a multiple applicable for the subject firm.

For example, at a 10% discount rate, what it suggests is that a 1% cash flow difference for forecast Year 1 results in about a 1% value differential. If the growth differential is expected to continue, for say two years, the adjustment to the comps' EBITDA multiple is about 1.9% (1% + 0.9%), and, for three years, it is about 2.8% (1% + 0.9% + 0.9%), and, after four years of having 1% incrementally lower growth, the value difference is about 3.5%, rounded (1% + 0.9% + 0.9% + 0.8%). When the discount rate is changed from 10% to 20%, the impact of the time value of money becomes more apparent, as shown in Exhibit 1.

Exhibit 2 captures the cumulative impact of four years of growth differential and illustrates the impact at 10% and 20% discount rates. It shows that a subject company that is expected to grow below that of the comps can warrant a substantial downward adjustment in its EBITDA multiple. The situation could be the opposite, and the subject firm may warrant an upward adjustment to consider its superior growth outlook. Assuming the subject company and the comps have the same risk, at a 10% present value rate, a 5% growth differential for four years implies an EBITDA multiple adjustment of 17.7% (nearly 20%).

This analysis also illustrates that, at a 10% and 20% discount rate, and assuming a 10% growth

**Exhibit 1. Growth Differentials**

| 1st-Year Growth Differential | | | 2nd-Year Growth Differential | | |
|---|---|---|---|---|---|
| | Discount Rate | | | Discount Rate | |
| Growth | 10% | 20% | Growth | 10% | 20% |
| 1% | 1.0% | 1.0% | 1% | 0.9% | 0.8% |
| 5% | 4.9% | 4.9% | 5% | 4.5% | 4.2% |
| 10% | 9.7% | 9.7% | 10% | 9.1% | 8.3% |
| **3rd-Year Growth Differential** | | | **4th-Year Growth Differential** | | |
| | Discount Rate | | | Discount Rate | |
| Growth | 10% | 20% | Growth | 10% | 20% |
| 1% | 0.9% | 0.7% | 1% | 0.8% | 0.6% |
| 5% | 4.3% | 3.6% | 5% | 4.0% | 3.1% |
| 10% | 8.6% | 7.2% | 10% | 8.1% | 6.4% |

**Exhibit 2. Growth Differential (Cumulative)**

| All Four Years Cumulative Growth Differential | | |
|---|---|---|
| | Discount Rate | |
| Growth | 10% | 20% |
| 1% | 3.5% | 3.1% |
| 5% | 17.7% | 15.7% |
| 10% | 35.5% | 31.6% |

differential for four years, the cumulative value difference (and, therefore, downward adjustment to an EBITDA multiple) is 35.5% and 31.6%, respectively. That is a material change (increase/decrease) in a market multiple based on growth alone. The impact of growth is relevant to both EBITDA and sales multiples. This is discussed further below in the "Putting It All Together" section.

For EBITDA multiples, when one also adds to his or her analysis the differential in *risk,* then one has a substantially more complete picture and benchmarking support to adjust EBITDA multiples. The topic of risk-based adjustments will be discussed further below. After we finish the discussion on growth, and risk, we will then turn our attention to "P"—the profit margin driver of sales multiples.

To further illustrate how growth differentials influence and drive market multiples and the value of an enterprise, shown in Exhibit 3 is a real-world example benchmarking two public companies: Fastenal (ticker "FAST") and W.W. Grainger (ticker "GWW"). Both companies are of similar enterprise (BEV) size and are in the same sector (Trading Companies & Distributors, per S&P CIQ). This example uses forecasted EBITDA based on S&P CIQ and related forecast based EBITDA multiples.

As shown in Exhibits 3 and 4, FAST has substantially higher forecasted sales growth than GWW.

Given our focus is on EBITDA multiples to illustrate how growth impacts multiples and as GWW and FAST are assumed to be about of equal risk (R) (similar size MVIC, per Exhibit 3), we observe a substantial correlation between the difference in future EBITDA growth rates versus EBITDA multiples. Note that profit margins (P) are not a key driver of EBITDA multiples, but they are for sales multiples.

The benchmark analysis above indicates a strong linkage between anticipated growth and EBITDA multiples. GWW's EBITDA is expected to grow in aggregate about 26% lower over the next three years than FAST, and GWW's EBITDA multiple is about 26% lower than FAST.

In the next section, we discuss risk and how that influences market multiples.

**Risk (R).** Investors favor low risk and shy away from higher risk unless there is ample compensation, and, therefore, in normal markets (not euphoric markets or panic-driven crashes that detach from fundamentals), investors penalize investments with

**Exhibit 3. Influence of Growth Differentials**

| Growth | "G" Growth Example - Focus on EBITDA Multiples | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ($ Millions) | | | Forecasted Sales | | | Forecasted EBITDA | | | |
| Comparable Company | Ticker | Enterprise Value | 2017E | 2018E | 2019E | 2017E | 2018E | 2019E | |
| W.W. Grainger Inc. | GWW | 14,265 | 10,361 | 10,880 | 11,461 | 1,362 | 1,394 | 1,474 | |
| Fastenal Co. | FAST | 14,213 | 4,379 | 4,777 | 5,103 | 1,005 | 1,093 | 1,167 | |
| **Unadjusted Multiples** | | | | | | | | | |
| ($ Millions) | | | MVIC/Sales | | | MVIC/EBITDA | | | |
| Comparable Company | | | 2017E | 2018E | 2019E | 2017E | 2018E | 2019E | |
| W.W. Grainger Inc. | | | 1.38x | 1.31x | 1.24x | 10.5x | 10.2x | 9.7x | |
| Fastenal Co. | | | 3.25x | 2.98x | 2.79x | 14.1x | 13.0x | 12.2x | |
| Percentage difference of GWW vs. FAST in terms of EBITDA multiples | | | | | | 25.9% | | | |
| | | | | | | GWW's EBITDA multiple is 25.9% lower | | | |
| ($ Millions) | | | Sales Growth | | | EBITDA Growth | | | |
| Comparable Company | | | 2017E | 2018E | 2019E | 2017E | 2018E | 2019E | Total 3 Yr |
| W.W. Grainger Inc. | | 14,265 | 2.2% | 5.0% | 5.3% | -6.5% | 2.4% | 5.7% | *1.6%* |
| Fastenal Co. | | 14,213 | 10.5% | 9.1% | 6.8% | 11.7% | 8.8% | 6.8% | *27.3%* |
| Difference between GWW and FAST in terms of EBITDA growth rate | | | | | | 18.2% | 6.4% | 1.1% | *25.7%* |
| | | | | | | GWW's three-year growth outlook is 25.7% lower | | | |

**Exhibit 4. FAST Has Substantially Higher Forecasted Sales Growth Than GWW**

| | EBITDA Growth | | | 2017–2019 Total |
|---|---|---|---|---|
| | 2017 | 2018 | 2019 | |
| W.W. Grainger Inc. | -6.5% | 2.4% | 5.7% | 1.6% |
| Fastenal Co. | 11.7% | 8.8% | 6.8% | 27.3% |
| Difference between GWW and FAST in terms of EBITDA growth rate | | | | 25.7% (rounded 26%) |
| Percentage difference of GWW vs. FAST in terms of EBITDA multiples | | | | 25.9% (rounded 26%) |

higher risk to effect a higher rate of realized return. This is a key reason discounts for lack of marketability exist for nonpublic securities, as investors reduce the value of the investment to permit a higher realized return, which matches their view of the risk and opportunity cost of holding this security and risk of finding a buyer of such nonpublic security during varying market cycles.

Risk is often associated with size. Ibbotson & Associates, Morningstar, and now Duff & Phelps have each documented that investors typically demand a higher return for smaller-sized firms. Smaller firms have less critical mass to withstand a crisis or shortfall and are often less diversified. So size is a common benchmark for risk. Other

risk topics that are typically considered include: key person risk, customer concentration, and country or political risks.

Using the mechanics of the dividend discount model (DDM),[2] we can quantify the impact of risk on a market multiple. The DDM equation most widely used is called the Gordon growth model. It is named after Myron J. Gordon of the University of Amarika, who originally published it along with Eli Shapiro in 1956 and made reference to it in 1959.[3,4]

The basic DDM is generally understood to be the following formula:

$$P = \frac{D_0 (1 + g)}{r - g}$$

Where:

P = price or value of stock today

$D_0$ = current period dividend

g = dividend growth rate (stabilized or normal)

r = cost of equity or discount rate

Similarly, for an enterprise, the Gordon model is modified to value the firm based on free cash flows and a WACC. In this example, the value of the firm (BEV) is the present value of future free cash flows to the firm.

$$V = \frac{FCF_n \times (1 + g)}{WACC - g}$$

Where:

V= value of business enterprise (BEV)

n = the current period

FCF= free cash flows

g = FCF growth rate (stabilized or normal)

WACC = weighted average cost of capital or discount rate

Using the above as background, we can estimate the impact on value due to a change in risk (as measured by a change in an applicable market multiple) using the free cash flow-based DDM.

For our examples, we are focusing on the EBITDA multiple as it is consistent with the level of earnings that equates to the debt-free value of the firm, otherwise known as the BEV.

As shown in Exhibit 5, we are benchmarking public comparable FAST and the subject Example Co. FAST has an enterprise value of about $14.2 billion and equity market capitalization of about $13.9 billion. Two scenarios are discussed below.

In the first case, Example Co. is a U.S.-based entity with substantial customer concentration risks.

In the second case, Example Co. is a U.S.-based entity with substantial sales (export) to developing countries in Asia, and a material adjustment to the discount rate was judged warranted due to country/political risk issues including currency risk and the broader risk of investment default.

*Case 1*

In Exhibit 5, we have assumed the WACC developed for Example Co. is 14.4% based on application of a decile 10 size premium. We have also included a 200-basis-point other specific risk adjustment for Example Co. to consider customer concentration risks. The risk-adjusted WACC of Example Co. was estimated at 14.4%,

2 en.wikipedia.org/wiki/Dividend_discount_model.

3 M.J. Gordon and Eli Shapiro (1941), "Capital Equipment Analysis: The Required Rate of Profit," *Management Science,* 3,1 (October 1956) 102-110. Reprinted in Management of Corporate Capital, Glencoe, Ill.: Free Press of, 1959.

4 Myron J. Gordon (1959), "Dividends, Earnings and Stock Prices," *Review of Economics and Statistics,* The MIT Press, 41 (2): 99–105. JSTOR 1927792 (jstor.org/stable/1927792). doi:10.2307/1927792 (doi.org/10.2307%2F1927792).

whereas the risk-adjusted WACC for FAST was determined to be 9.3%.

The risk adjustment to an EBITDA or sales multiple implied by Exhibit 5 is 55%—meaning a 45% reduction in FAST's EBITDA multiple to equate to the risks of Example Co., due to its smaller size and added concern regarding customer concentration. This 55% statistic is based on the following computations (which are intended to focus on risk only and not include any potential impacts for growth, which is discussed in a separate section).

As shown in Exhibit 6, as the inverse of a "cap rate" is a price earnings multiple (PE), we translate the WACC for Example Co. and the benchmark comp, FAST, using the ratio of the implied PE multiple to estimate the risk impact on the EBITDA multiple. In this calculation, we develop the cap rate for each entity based on the inverse of the WACC less g (growth rate). We have assumed a 3% growth rate for each entity. The inverse of the cap rate can be compared between Example Co. and FAST to impute a potential market multiple adjustment attributed to risk.

Given the inputs for each of FAST and Example Co., the estimated cap rates of each are 6.3% and 11.4%, respectively, and the implied PE multiple is 15.9 and 8.8, respectively. The ratio of Example Co.'s PE to that of FAST is about 55% (8.8/15.9).

*Case 2*

In the second case, shown in Exhibit 7, we assume more risk is attributed to Example Co. and, using the DDM, derive an estimated market multiple adjustment for this perceived risk differential between the benchmark comp, FAST, and subject Example Co.

In this hypothetical case, based on due diligence conducted, Example Co. has exposure to risk issues in Vietnam, Thailand, Indonesia, the Philippines, and China. Incremental country risk adjustments indicated in the recent Duff & Phelps *International Guide to Cost of Capital* ranged from a low of 3.6% for China to 8.1% for Vietnam. Based on a review of recent sales to end markets, the weighted average country risk adjustment to the discount rate was 6.0%, resulting in a risk adjusted WACC for Example Co. of 18.0%.

As discussed in the prior *BVU* article,[5] it is not uncommon for currency-related risks to equate to 50% of the total incremental risk due to operating in a riskier country. Based on the due diligence performed (CCCS framework) in this example, it was established that Example Co. is fully exposed

5 See footnote 1.

**Exhibit 5. FAST vs. Example Co.**

| $ Millions | Ticker FAST |
|---|---|
| Enterprise value | 14,213 |
| Market capitalization | 13,906 |
| Terminal growth assumption | 3.0% |
| Size premium | 0.6% |
| FAST's WACC | 9.3% |
| Example Co.'s WACC | 14.4% |
| **Indicated risk adjustment** | **55.1%** |

**Exhibit 6. Inverse of Cap Rate**

| | FAST | Example Co. |
|---|---|---|
| WACC | 9.3% | 14.4% |
| G | 3.0% | 3.0% |
| Capitalization rate (cap rate) | 6.3% | 11.4% |
| Inverse of cap rate = implied PE | 15.9 | 8.8 |
| Ratio of Example Co./FAST | | 55.1% ( = 8.8/15.9) |

| Exhibit 7. More Risk for Example Co. | |
|---|---|
| $Millions | Ticker FAST |
| Enterprise value | 14,213 |
| Market capitalization | 13,906 |
| Terminal growth assumption | 3.0% |
| Size premium | 0.6% |
| FAST's WACC | 9.3% |
| Example Co.'s WACC | 18.0% |
| **Indicated risk adjustment** | **41.9%** |

to foreign currency risk as well as potential defaults from the emerging market customers its distributes to. The industry is exposed to bankruptcy issues as well as government policies that can undermine the business and its investment return to the holder. There are no indicated offsetting risk mitigation factors, such as sales denominated in U.S. dollars, to offset the perceived country-related risks.

For Case 2, the risk adjustment to an EBITDA or sales multiple implied by Exhibit 7 is 41.9%—meaning about a 60% reduction in FAST's EBITDA multiple is warranted to equate to the risks of Example Co., due to its smaller size and added concern regarding country/political risks.

This adjustment is based on the DDM model as shown in Exhibit 8.

| Exhibit 8. Adjustment Based on the DDM Model | | |
|---|---|---|
| | FAST | Example Co. |
| WACC | 9.3% | 18.0% |
| G | 3.0% | 3.0% |
| Capitalization rate (cap rate) | 6.3% | 15.0% |
| Inverse of cap rate = implied PE | 15.9 | 6.7 |
| Ratio of Example Co./FAST | | 41.9% ( = 6.7/15.9) |

In the above computation, given the inputs for each of FAST and Example Co., the estimated cap rates of each are 6.3% and 15.0%, respectively, and the implied PE multiple is 15.9 and 6.7, respectively. The ratio of Example Co.'s PE to that of FAST is about 42%, or roughly a 60% drop in the comp FAST's multiple is reasonable to consider the subject Example Co.'s incremental risk.

**Profitability (P).** As we discussed in the beginning of this article, investors will pay a substantially higher sales multiple when the yield on sales is superior to other investments, such as observed in the difference in sales multiples between grocer Kroger and pharmaceutical firm Pfizer. Similarly, an inferior level of profitability will generally cause a reduction in the selected multiple.

To further illustrate how substantial profitability, specifically, EBITDA margins, are to "sales" multiples and valuation of a BEV, Exhibit 9 is an example of benchmarking two public companies: Watsco Inc. (ticker "WSO") and Fastenal Co. (ticker "FAST"). Both companies have similar size in annual sales (about $4.4 billion for estimated 2017) and in the same sector (Trading Companies & Distributors, per S&P CIQ). This example uses forecasted EBITDA based on S&P CIQ and related forecast-based sales multiples.

In Exhibit 9, for forecast 2017, WSO's EBITDA margins are about 38% of FAST's EBITDA margins and WSO's MVIC-to-sales multiple is 41% of FAST's.

With the data shown in Exhibit 9, one can observe that there is substantial correlation between the EBITDA margin (the "x" variable in regression) and sales multiple (the "y" variable). FAST's 2017 forecasted EBITDA margins are about 2.6 times that of WSO, and, similarly, FAST's 2017 forecasted sales multiple is about 2.4 times that of WSO.

**Regression modeling.** As mentioned above, for a linear regression equation in a debt-free business valuation, EBITDA margins would be the independent (x) variable that serves to explain the behavior

| Exhibit 9. Influence of Profitability | | | | | | |
|---|---|---|---|---|---|---|
| **Profitability** | "P" Profit Margin Example–Focus on Price-to-Sales Multiples and EBITDA Margins | | | | | |
| **($ Millions)** | | | **Forecasted Sales** | | **Forecasted EBITDA** | |
| **Comparable Company** | **Ticker** | **Enterprise Value** | **2017E** | **2018E** | **2017E** | **2018E** |
| Watsco Inc. | WSO | 5,831 | $4,366 | $4,586 | $384 | $420 |
| Fastenal Co. | FAST | 14,213 | 4,379 | 4,777 | 1,005 | 1,093 |
| **Unadjusted Multiples** | | | | | | |
| **($ Millions)** | | | **MVIC/Sales** | | **MVIC/EBITDA** | |
| **Comparable Company** | | | **2017E** | **2018E** | **2017E** | **2018E** |
| Watsco Inc. | | | 1.34x | 1.27x | 15.2x | 13.9x |
| Fastenal Co. | | | 3.25x | 2.98x | 14.1x | 13.0x |
| Ratio of FAST/WSO in terms of MVIC-to-sales multiples | | | 2.43x | 2.34x | | |
| Percentage of WSO's MVIC-to-sales multiple to FAST | | | 41% | 43% | | |
| **($ Millions)** | | | | | **EBITDA Margin** | |
| **Comparable Company** | | | | | **2017E** | **2018E** |
| Watsco Inc. | | | | | 8.8% | 9.2% |
| Fastenal Co. | | | | | 22.9% | 22.9% |
| Ratio of FAST/WSO in terms of EBITDA margins (forecast) | | | | | 2.61x | 2.50x |
| Percentage of WSO's EBITDA to FAST | | | | | 38% | 40% |

of the dependent (y) variable, the sales multiple. As an aside, one can also find a strong correlation and regression analysis in financial institutions that typically are not valued via a debt-free perspective but rather a direct equity technique. As observed on S&P CIQ, these types of firms do not show EBITDA to measure their performance but rather use net income. As such, return on equity (ROE) is a key profitability measure for financial institutions such as Morgan Stanley or Citigroup, and, in regression analysis, the independent (x) variable is often ROE and the dependent (y) variable is the market-to-book-value (MVBV) multiple. Rather than value the BEV of such financial firms, typically the objective is to value the equity, and a MVBV multiple is often utilized.

**Putting it all together.** With the above discussion on the elements of GRP, and how one can develop a benchmark analysis to support quantitative adjustments to market multiples, namely EBITDA and sales-related multiples, we can next illustrate how this may be used collectively to provide support for adjustments to comps' multiples. In Exhibit 10, the adjustment factors are multiplicative. Also, all data are hypothetical to illustrate the use of this framework.

In the example in Exhibit 5, the unadjusted multiples for forecast 2017 and 2018 for sales and EBITDA were from public comparables (comps). We benchmarked the subject Example Co. to the comps in terms of growth, risk, and profitability.

| Exhibit 10. Influence of Growth Differentials | | | | | |
|---|---|---|---|---|---|
| | Unadjusted Multiple | Adjustment for Risk | Adjustment for Growth | Adjustment Profitability | Adjusted Multiple |
| **Sales** | | | | | |
| 2017E | 1.20x | 55.0% | 75.0% | 70.0% | 0.35x |
| 2018E | 1.14x | 55.0% | 75.0% | 70.0% | 0.33x |
| **EBITDA** | | | | | |
| 2017E | 12.1x | 55.0% | 75.0% | NA | 5.0x |
| 2018 E | 10.6x | 55.0% | 75.0% | NA | 4.4x |

Based on the characteristics of Example Co. versus the comps, Example Co. was viewed as more risky (55% of comps), having lower growth outlook (75% of comps) and lower profitability (70% of comps) as measured by EBITDA margins. For this example, we assume the level of capex spending and net working capital (NWC) investment between Example Co. and the comps was not materially different (meaning EBITDA was viewed as a proxy for yield on sales, rather than making a further refinement to consider material differences in capex and NWC and how that impacts yield on sales).

After considering adjustments to the unadjusted multiples for each of G, R, and P, the adjusted multiples are derived and applied to Example Co.'s forecasted EBITDA and sales to estimate BEV point estimates for consideration in the correlation and conclusion with an income approach.

Focusing on sales multiples for 2017, the unadjusted (comps) multiple of 1.2x is multiplied by 55% times 75% times 70% to calculate the adjusted multiple of 0.35x. This means, while the comps are selling for 1.2 times sales, the subject Example Co. only warrants a sales multiple of 0.35x, or about one-third of sales. This is how the market prices in the fundamentals, and we can mimic it using benchmarking analysis to estimate adjustment factors.

The impact of the above benchmarking process suggested a material downward adjustment for risk, growth, and profitability. The indicated value range from the market approach would likely converge with the income approach, as the drivers of G, R, and P are similar in both approaches. So there is integrity and consistency in the valuation analysis and resulting conclusion.

This compares to an appraisal that did not benchmark or did so inadequately. In such cases, we often find the income and market approaches do not converge and may result in a concluded value that is biased by a faulty market approach due to the insufficient benchmarking analysis. In this author's experience, many consultants do not understand how to adjust the sales multiple and as a result end up with a market approach that may not provide a reasonable correlation with an income methodology.

**Final thoughts.** Developing a BEV is a complex undertaking, and appreciating the drivers of GRP, as these key factors drive value, is critical to develop a meaningful market approach that uses benchmark comparisons of the subject company to the comps so that reasonable quantitative arguments are available to support the decisions made on what multiple or range of multiples make sense. These same GRP concepts can be applied to a market transaction approach where a benchmark comparison to the transactions can be developed to provide support for adjustments to the transaction multiples. ◆

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