SMALL BUSINESS FOCUS

Size Matters

Valuation of Small and Micro Businesses

This column focuses on valuation issues unique to small or "micro" businesses. These businesses often have less financial and management information available, much of which may be deficient by GAAP or other standards. Therefore, valuators must do more qualitative review and apply greater professional judgment.

Valuing Small Businesses using the Income Approach—Two Common Mistakes

By Gregory R. Caruso, JD, CPA, CVA

The valuation of small businesses[1] often presents challenges that do not arise when valuing middle-market and larger businesses. Two common mistakes valuators make are:

1. Understating company-specific risk, and
2. Understating long-term growth for early-stage and growth-stage companies.

Assessing Risk

Valuators who do not regularly value small businesses often understate the risks associated with them. Risk, for valuation purposes, is the perceived likelihood that a forecast cash flow will not be achieved. Small businesses are subject to risks that generally do not apply to large companies and, therefore, are not reflected in the public company data used to estimate the cost of capital under the build-up method. The most obvious of these risks are:

- Geographic concentration
- Product or service line concentration
- Management concentration
- Limited research and development
- Limited credit

Typically, when using income-based methods, these risks are captured by the company-specific risk premium (CSRP). Yet, on many valuations I review, the CSRP is understated.[2]

Consider a mechanical contractor (HVAC) with $5 million in revenues and pretax cash flow of $800,000.[3] Table 1 shows a common range of discount rates that can be developed using several reliable data sources.

1 Defined as businesses with revenues under $10 million.

2 My firm has reviewed at least 25 valuations prepared for exit planning purposes and we have found that the capitalization rates tend to be too low. Price and value are not the same thing, but they should be reasonably related, especially when the purpose of the valuation is to prepare for a market sale.

3 For simplicity, we are using pretax cash flow in place of EBITDA in this example. Most small HVAC companies carry nominal long-term debt, so the variance is likely to be small.

Table 1: Estimated Discount Rate Calculation Methods

Method	Discount Rate (rounded)
"Standard" build-up before company-specific risk factor	12.60%[4]
Duff & Phelps Risk Premium Report with regression equation[5] on	18.50%[6]
"Implied" discount from DealStats median market data[7]	19.20%[8]

These measures are intended to be reasonably representative, although every estimate is unique. As you can see, use of the "standard" Ibbotson's-based build-up method produces a much lower discount rate than the other methods and, therefore, a proportionately higher value (see Table 2). Note that I used a discount rate for this exercise in lieu of a capitalization rate, because deducting a growth factor would only make the variances between the build-up rates and the implied DealStats rate even larger. Presumably, the implied DealStats rate includes growth and really is a capitalization rate. Remember, with zero growth the capitalization rate and discount rate are the same.

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4 "Ibbotsons" build-up before industry and company-specific risk factor calculated from Center for Research in Security Prices (CRSP) data (1926 to present) for cost of capital from the D&P Cost of Capital Navigator. Using a 12/31/2020 valuation date; no specified industry, as the closest "industry data" was large manufacturers of products, not installation contractors; 1.45 percent risk-free rate (20-year spot yield on T-bonds); 6.17 percent supply-side equity risk premium; and 4.99 percent size premium. Total = 12.61 percent before CSRP.

5 The regression equation is used to calculate size adjustments beyond data points generated from larger public companies. There is always risk in doing this as it is not "provable," yet as shown above it often produces a very reasonable starting point for small companies.

6 Calculated using $4 million equity market value; $2 million equity book value; $300,000 five-year average net income; $400,000 five-year average EBITDA; $5 million in net sales; and 25 employees, which produced an average levered cost of capital of 18.94 percent and a median of 18.44 percent.

7 Small businesses often have sufficient market comparables to support the market method and this type of analysis. For larger, middle-market businesses there rarely are sufficient market comparables to use the market method.

8 Calculated using post-1/1/2013 sale date; $3 million to $10 million in revenues; over $300,000 in EBITDA; NAICS Code 238220. Result: 22 comparables with median MVIC/EBITDA of 3.7. To tax-affect market multiple and create an after-tax capitalization rate, (1) divided 3.7 by .71 [1 - .29 (assumed 29 percent federal and state tax)] = 5.2, and (2) divided 100 by 5.2 = 19.18. Rounded to 19.2 percent discount rate.

Table 2: Range of Values

Estimated Discount Rate Calculation Methods	Unadjusted Value[9]
"Standard" build-up before company-specific risk factor	$4,958,700
Duff & Phelps Risk Premium Report w/ regression equation on	$3,377,300
"Implied" discount from median market data	$3,254,200

Certainly, the low starting point provided by the standard build-up method can be adjusted in the CSRP, but in practice this adjustment tends to be insufficient. The problem is magnified with poorly performing companies that should have a high CSRP even when starting from one of the two higher discount rates. (How often do you see a 10 percent-plus CSRP?)

To add a dose of reality to this example, consider that well-managed new-construction HVAC companies in this size range tend to be much riskier than service-oriented HVAC companies with more predictable cash flows. The new-construction firms often sell for only three times EBITDA because of the uncertainty inherent in cyclical, one-time, large-bid projects. Poorly run firms of this type may not be salable. This multiple (3x) equates to a 23.6 percent discount rate on after-tax cash flow, or an 11 percent CSRP for a small, well-performing new-construction-oriented firm.[10]

Practice note. When using unadjusted build-up data to estimate the value of small businesses, recognize that company-specific adjustments may be quite large—often in the 6–14 percent range or even higher.

Estimating Growth Rate for Early- and Growth-Stage Companies

According to "common knowledge," and basic math, using a 10 percent growth rate in the capitalization of earnings method (or when estimating the terminal value under the discounted cash flow method) will eventually produce a company cash flow larger than Walmart's. This is true, but it may be misleading to focus on that point as we are estimating value, not cash flow, and the formulas include present value adjustments. The present value adjustments offset the cash flow growth and reduce value growth to manageable amounts. This high-growth situation occurs when valuing small companies in the later part of the startup phase and certainly through the growth stage of a typical company lifecycle. (See Figure 1.) For many small businesses, this lifecycle spans a 20- to 30-year period.

9 I took after-tax cash flow of $800,000, multiplied it by 1.1 to arrive at the next year's cash flow of $880,000, multiplied that figure by 71 percent (to reflect federal and state taxes of 21 percent and 8 percent, respectively), and divided the result, $624,800, by the discount rates listed in Table 1. This demonstrates the problem of low discount rates and does not include the CSRP or any growth rate for estimating a capitalization rate.

10 Market multipliers for small businesses are pretax. To equate to pretax cap rate, 3x=33.33; to tax adjust, 33.33 x .71 tax rate = 23.6; to find CSRP (and industry premium if desired as that was not included) 23.6 – 12.6 "Standard" from Table 1 = 11%. Again, the variance would be even greater with the introduction of a deduction for long-term growth.

Figure 1: Typical Company Lifecycle over 20–25 Years

Our focus in this article is the startup and growth period. Often these periods constitute five to ten years of high growth. Actual annual growth rates can be in the 100 percent range or more and often average 20–35 percent during this period. At some point many companies level off, often with revenues between $5 million and $15 million. For many owner-operated companies that revenue size range can be run efficiently with very low overhead.[11]

For instance, a quickly growing mechanical contracting firm has grown the last three years as shown below. Management does not have a projection but believes the company will grow its bottom line by 20 percent per year on average for at least five years, then perhaps 5 percent per year for five years, and then level off to inflation (assumed to be 3 percent). The company has systems and management in place to facilitate at least the next two years' growth and is very focused on maintaining control over operations, both financially and in terms of maintaining high service-delivery standards.

Pre-Tax Cash Flow	325,000	400,000	800,000
CF% of Rev.	13.00%	13.33%	16.00%
Pre-Tax Cash Flow Growth		23.08%	100.00%

11 Many owners can directly run highly efficient small companies, but this comes at the expense of growth. Growth often requires significant expenditures on key people, reducing profits for several years. Many owners elect not to take that challenge on.

For purposes of our discussion we will assume a build-up discount rate of 25 percent.[12] Because we have no real projection or forecast we elect to use a single period capitalization of earnings. The question at hand is what is a reasonable long-term growth rate?

For value purposes a growth rate of 10 percent is supportable. The common knowledge that a 10 percent growth rate will quickly create a company larger than Exxon or Microsoft ignores the fact that in business valuation we discount cash flows to present values. Present valuing/discounting is achieved by using the following formula: $PV = FV/(1+k)^n$, where PV = present value, FV = future value, k = discount rate, and n = number of periods.

The Effect of Present-Valuing Cash Flows with Zero Growth

Table 3 shows the growth in value over time of $100,000 when present-valued at commonly used discount or capitalization rates. (Remember a capitalization rate is a discount rate less long-term growth, therefore they are equally represented on the chart below.) So, for example, at a 25 percent capitalization rate, present-valuing $100,000 for 40 years would produce a present value of only $399,947. Put another way, $100,000 of cash flow starting in year zero with no growth equals $399,947 of total value after discounting at 25 percent over 40 years. $13 is being contributed to value in year 40, so there will be small additional contributions to value, but they are immaterial.

Table 3: Value Growth over Time

Annual Cash Flow Amount						$100,000
	Capitalization Rate					
Period	10.00%	15.00%	20.00%	25.00%	30.00%	35.00%
1	$90,909	$86,957	$83,333	$80,000	$76,923	$74,074
2	$82,645	$75,614	$69,444	$64,000	$59,172	$54,870
5	$62,092	$49,718	$40,188	$32,768	$26,933	$22,301
10	$38,554	$24,718	$16,151	$10,737	$7,254	$4,974
15	$23,939	$12,289	$6,491	$3,518	$1,954	$1,109
20	$14,864	$6,110	$2,608	$1,153	$526	$247
40	$2,209	$373	$68	$13	$3	$1
Tot @ 40	$977,905	$664,178	$499,660	$399,947	$333,324	$285,713

The reason for the box around the 15–30 percent discounts is that they represent a fairly common range of discounts for after-tax cash flows of small companies. Note how quickly contribution to total value drops each period as the discount rate gets higher. Remember, this also means that a projection that is optimistic in the early years and met "just a year" later than projected will cause the company to be materially overvalued at higher discount rates. Finally, note how little annual contribution remains at 40 years out at discount rates of 15 percent or more.

The higher the discount rate, the lower the present value contribution to value as time goes on. Therefore, 10 percent growth applied to a 25 percent discount rate will not produce infinite cash flow. In fact, if the company is successful, it might understate growth.

The calculation of value using the capitalization of earnings method is based on the Gordon Growth Theory. In order to adjust the discount rate for growth to estimate a capitalization rate, the growth rate is subtracted from the discount rate. The theory further states that cash flow is estimated with growth for the next period and then the capitalization rate is applied. Alternatively, we can adjust the discount rate for the additional year's growth.

12 If we take our previously calculated "implied" discount rate found in the first part of the article of 19 percent and then add a CSRP for a small early-stage growth company, 6 percent would appear reasonable and result in a 25 percent discount rate.

Table 4: Increase in Value Due to Growth

10% Growth Rate		After-Tax Cash Flow	Indication of Value
Discount rate	25.00%	$624,800	$2,499,200
Less growth rate	10.00%		
Capitalization rate	15.00%	$624,800	$4,165,333
Increase in value due to growth			$1,666,133

Table 4 shows the increase in value on a year 0 cash flow of $800,000. After-tax cash flow is multiplied by 1.1 to arrive at the next year's cash flow of $880,000, which is multiplied by 0.71 to yield after-tax cash flow of $624,800, which is then divided by the capitalization rate.[13] Note that the value increase due to a 10 percent growth rate with a 25 percent discount rate is $1,666,100 (rounded), which is reasonable under the assumptions above.

Practice note: Without discounting, a 10 percent growth rate on an $800,000 start value over 40 years will produce a pretax cash flow (not value) of over $35 million in year 40. Yet, after present-valuing the cash flow, the growth in value is a manageable amount.[14] Therefore, within reason when valuing small companies in the growth phase using the capitalization of earnings method (or estimating terminal value if the projection period is very short), long-term growth rates above 6 percent can be justified and reasonable.

Conclusion

This article reviews two common mistakes when valuing small businesses, which may offset each other but usually do not. Valuators using a "standard" build-up approach to develop a discount or capitalization rate may be substantially underestimating company-specific risk and overstating value. On the other hand, young growth companies, for which high growth rates are reasonable over the next five or so years, may have higher long-term growth rates than the typical "top" growth rate of 6 percent.[15] As always when valuing small businesses, it is critical to step back at each step of the valuation process and be sure you can affirmatively answer the question, "Does this make sense?" VE

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13 *See* n. 9.

14 $800,000 growing at 10 percent per year for 60 years with no present valuing results in a total cash flow of $333,900,000 rounded. Another way of looking at the value increase is to use a 60-year discounted cash flow model at a 15 percent present value of the cash flow over 60 years in which case the value growth is $2,047,200. There is an immaterial remaining value increase after 60 years.

15 Of course if you have an unrealistically low discount rate and then apply a high long-term growth rate you are likely to create a mess.