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Minority Interests In Market Valuation: An Adjustment Procedure

by BRIAN C. BECKER, Ph.D.

Introduction and Overview

The valuation of a business (the "target company") with little or no minority interests may be very different from the corresponding valuation of a target company with significant minority interests. That is, for two companies, all else being equal (e.g., same financial statements, same products, same projections, etc.), the company with the smaller minority ownership share will have more value. Clearly, the market makes adjustments to the prices of publicly traded companies to reflect this;[1] therefore, similar adjustments should be made in the valuation of privately held companies.

The issue of minority interests is often seen when the target company (or its guidelines) holds a majority (but not 100 percent) of numerous subsidiaries. Under normal U.S. accounting standards, a consolidated company's financial results are equivalent to the sum of its (majority owned) subsidiaries' financial results, regardless of its ownership share in its subsidiaries. This can be somewhat deceiving in that a target company that solely consists of 60 percent ownership in two operating companies with $40 million and $60 million in sales respectively, will itself report sales of $100 million. However, the target company will only be entitled to 60 percent of the profits associated with these sales (the minority holders in its two operating companies will be entitled to the other 40 percent of profits). That is, the target company can be thought of as only being entitled to the profits associated with $60 million ($100 million * 60 percent) in sales. Similar issues exist for all items within an income statement until minority interests have been "netted out", as shown below:

Income Statement	Target Company	Subsidiary A (60% owned)	Subsidiary B (60% owned)
Net Sales	100	40	60
Cost of Goods Sold	50	15	35
Gross Profit	50	25	25
Operating Expenses	20	9	11
Operating Profit	30	16	14
Non-Operating Profit	0	-2	2
Income Before Taxes	30	14	16
Taxes Paid	10	4	6
Income After Taxes	20	10	10
Minority Interests	8	4	4
Net Income	12	6	6

That is, the net income after the payment of minority interests is the only line item in an income statement that is reflective of its value to the shareholders of the target company.

Numerous methods are employed by practitioners to value target companies, but nearly all of the methods place some emphasis on the actual or projected financial statements of the target company. Minority ownership in the target company (or its guidelines) may have no effect under the application of certain valuation methodologies, but for others, minority interests must be intrinsically or extrinsically accounted for. Even in cases where the target company has no minority interests, ownership share has an effect since some holding companies may exist amongst the guidelines, with minority ownership in their operating companies.

Financial Ratios

The issue of ownership share may affect different types of analyses, but this paper will focus only on the "market valuation" methodologies.[2] Under such a methodology, practitioners use a number of financial ratios, including (1) price/earnings (P/E), (2) market/book (M/B), and (3) market/revenue (M/R).

Example of Ratios that Explicitly Account for Minority Interest

A P/E analysis considers the ratio of a price of a stock to its earnings per share, where earnings are defined as net income after tax (and after minority interests). Thus, such a ratio naturally captures the effect of minority interest since net income is "net" of minority interests. That is, one would expect a company with larger minority interests to have lower net income and a lower price to reflect this. In this sense, since both price and earnings reflect the level of minority interests, one would not expect, ex-ante, for the price/earnings ratio to be a function of the level of minority ownership in a company.

Example of Ratios with No Explicit Accounting for Minority Interest

An M/R analysis considers the ratio of the market value of a company (its stock price multiplied by its number of outstanding shares) to its revenue. While clearly the market value of a company would change with its minority interest, the level of minority interest would have no effect on its revenue. That is, one would expect a company with larger minority interests to have the same revenue and a lower market value to reflect this. In this sense, since only the market value reflects the level of minority interests, one would expect ex-ante for the M/R ratio to decrease as the level of minority interests increased.

A numeric example, focusing on the M/R ratio, may clarify the issue further. Suppose one has three guideline companies, A, B, and C with M/R and minority interests as shown below.

	Market Value	Revenue	M/R	Minority Share
Guideline A	400	1,000	0.4	0%
Guideline B	600	1,000	0.6	2%
Guideline C	500	1,000	0.5	1%
Median			0.5	
Target		1,000		40%

Simply applying the median M/R multiple to the target company's earnings yields:

$$M=1{,}000*(0.5)=500, \quad (1)$$

or an estimated market value of 500. However, in reality, only 60 percent of the target company's revenue accrues to the common shareholders since a certain proportion of revenue ultimately (at the net income level) belongs to minority shareholders. Thus, the unit of revenue in the M/R ratio for the guideline companies is not directly comparable to the 1000 of revenue from the target company. Since the <u>majority</u> interest in the target company is lower than the majority interest in the guideline companies, the calculated market value of 500 may <u>overstate</u> the value of the target company. That is, an M/R of 0.5 is applicable in this case to target companies with no (or little) minority interests, but a lower M/R ratio would be appropriate for a company like the target with larger minority interests.

Adjustment Procedure

No adjustment is necessary for minority interests when the analysis/ratio being employed naturally compensates for different levels of minority interests. For example, a P/E analysis would require no such adjustment because earnings (net income) are "net" of minority interests.

For ratios that do not specifically account for different levels of minority interests, it is appropriate to make an adjustment to that ratio to "level the playing field" between the guidelines and the target company. As an example, to account for different ownership interests between guidelines and the target company, the guideline's M/R ratio can be adjusted in the following way:

$$Adjusted\ M/R = \frac{Target\ Company's\ Majority\ Ownership\ Share}{Guideline\ Company's\ Majority\ Ownership\ Share} \quad (2)$$

Thus, if the guideline has a larger majority share than the taxpayer, then the M/R that the taxpayer should have (the "adjusted M/R" in equation 2 above) will be less than the actual M/R of the guideline. Similarly, if the guideline has a smaller majority share than the taxpayer, then that target company's value should be such that its M/R is greater than that of its guideline.[3] Such a procedure must be performed for each of the guidelines such that the target company, in effect, has a range of adjusted M/R's that describe its value.

Typically, the valuation practitioner will know, or have access to, the information regarding the minority interest levels of the target company. In the case of a holding company with numerous subsidiaries with different levels of minority interest, determining the target company's overall minority interest is non-trivial. The most appropriate way to perform this is to essentially use the weighted average minority interests of its subsidiaries. The appropriate "weight" would probably be a function of the financial ratio. That is, when using an M/R ratio, the best weighting scheme would likely be based upon revenue levels.[4] An example of such a weighted average minority interest is shown below:

	Subsidiary A	Subsidiary B	Subsidiary C	Total
Minority Interests	10%	20%	25%	
Revenue	100	400	500	1,000
Minority Interest* Revenue	10	80	125	215
Weighted Average Minority Interest				21.5%

Thus, when valuing this company using an M/R ratio on a consolidated basis[5], its minority interest share should be considered to be 21.5 percent.

While access to financial information typically makes it relatively easy to determine the minority ownership share of the target company, the same can not be said for the guideline companies. The information available on guideline companies is typically restricted to public information (e.g., Form 10-Ks, Annual Reports, other SEC filings, etc.), which will include income statements, balance sheets, and cash flow statements. In some cases, the public documents will reveal the minority ownership shares held in each of the guideline's subsidiaries, but often this information is not included or the full public information is difficult to obtain (i.e., foreign guidelines). In cases like these, the minority ownership share can be inferred from income statements. That is, a company's minority ownership share (MO) can be calculated as:

$$MO = \frac{MI}{MI + NI} \quad (3)$$

where MI and NI refer to the company's minority interest and net income reported in its income statement, respectively.

For example, for a company reporting minority interests of 10 and net income of 30 on its income statement, its minority ownership share would be inferred as 25 percent (10/40). In this sense, the minority ownership is that portion of the total income being dispersed to all shareholders that is specifically being dispersed to the minority shareholders.

Example

Typically, when performing a market valuation analysis, the target company's value will be estimated by relying on financial ratios of guideline companies. The following table shows how the estimated value of a target company can be affected by an ownership share adjustment:

	M/R	Revenue	Implied Value	Majority Ownership Share	Adjusted M/R[6]	Implied Value
Target		1,000	450	60%		330
Guideline A	0.3			90%	0.2	
Guideline B	0.4			80%	0.3	
Guideline C	0.5			70%	0.43	
Guideline D	0.6			100%	0.36	
Median	0.45				0.33	

The first implied value of the target company makes no adjustment for ownership shares, but the second implied value explicitly makes such an adjustment to each of the guidelines. These adjustments determine the appropriate M/R levels for the target company's majority ownership share. Thus, the proper adjustments applied to account for majority/minority interests had a significant effect on the value of the target company (reduced the value by more than 25 percent). If, however, one were not to consider the majority/minority interests of the guidelines, the "naive" adjustment would reduce the value of the target company by 40 percent (merely by subtracting the minority ownership share of the target company).

Summary

Under many different types of methodologies, the consideration of minority interests held in the target company as well as the guidelines may have a significant on the valuation result. Such an issue is particularly common because while it is often the case that the target company has no minority interests, it is rare that none of the guideline companies will have no minority interests. The above analysis presents a simple solution to the task of adjusting financial ratios for differences in minority interests between a target company and its guidelines. A similar rationale can be applied in other methodologies, where appropriate.

Endnotes

1. For example, all else being equal, a publicly traded company with 0 percent minority interests would be priced higher than a company with 30 percent minority interests.
2. For the discounted cash flow methodologies, the importance of ownership share is dependent on the definition of cash flow being used. Some cash flow definitions focus on EBIT (earnings before interest and tax), while others focus on net income. Only the latter is "net" of minority interests. In addition, the "cash flow" items being used in the cash flow calculations (e.g., changes in working capital, depreciation, etc.) must be closely analyzed for minority interest shares.
3. Such an adjustment assumes that the market value of a company is proportional to its majority ownership share. While such an adjustment appears to be reasonable and unbiased, it would be useful to have empirical evidence to support this.
4. Similarly, when looking at a market/EBIT measure, the weighting should be based upon EBIT levels of the subsidiaries.
5. One could also value the consolidated company as the sum of the values of its subsidiaries.
6. These adjusted ratios are calculated using the formula from equation (2) above.

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