Two Methods to Adjust Observed Control Premia for Valuation Purposes

Vincent Covrig, PhD, CFA, Daniel L. McConaughy, PhD, ASA, and Mary Ann K. Travers, ASA

The greater a target company’s leverage, the less cash, or acquirer’s shares, a buyer needs to control the target enterprise. Based on this idea, the Appraisal Foundation Working Group’s Discussion Draft, The Measurement and Application of Market Participant Acquisition Premiums, recommends as a best practice that appraisers adjust takeover premia for leverage. Previous recent research found empirical results consistent with this, namely, that higher equity takeover premia are related to higher pre-deal leverage levels, controlling for size, industry, profitability, and other factors. In this article, we provide valuation professionals with two methods with which to adjust observed transaction premia, based upon the subject appraised company’s leverage along with other company and deal characteristics that can be captured through use of readily available market data.

Introduction

The greater a target company’s leverage, the less cash or acquirer’s shares an acquirer needs to control the target enterprise. The benefits of the target derive from the overall enterprise, not just the equity. Thus, in a more highly leveraged target, the equity takeover premium is spread over relatively more assets, thus reducing the premium paid relative to the entire enterprise. The best practice that the Appraisal Foundation’s Working Group recommends is that appraisers adjust takeover premia for leverage. “Takeover Premia and Leverage: Theory, Empirical Observations and Recommendations,” by Covrig, McConaughy, and Travers (2015), analyzed 1,020 transactions from the FactSet Mergerstat®/BVR Control Premium Study database for the years 2003–2013 (all 100%, all-cash acquisitions made in the United States that had premia from zero to 200%, omitting companies in SIC 6, which contains financial institutions) in order to examine the relationship between takeover premia and leverage. They found that higher equity takeover premia are related to higher pre-deal leverage levels, consistent with theory. The results were robust with respect to size, industry, profitability, year of transaction, synergy potential, and type of acquirer (strategic, horizontal, or financial). The empirical analysis supports the Appraisal Foundation’s Working Group recommendation for best practices that appraisers adjust takeover premia for leverage. This article takes a more applied approach and provides valuation professionals with two methods they can use to adjust equity takeover premia based upon an appraised subject company’s leverage. The methods are simple, easy to understand, and useful to any practitioner using control premium data. We also provide an illustrative example for each method.

Valuation and the Use of Takeover Premia

The prerogatives of control may provide additional value over a situation in which control is not possible (e.g., minority shareholder compared to a control shareholder). The Appraisal Foundation Working Group’s discussion draft 2013, The Measurement and Application of Market Participant Acquisition Premiums, page 15, lists the prerogatives of control to be

1. Appointing or changing operational management;
2. Electing members of the board of directors;
3. Determining management compensation and perquisites;
4. Setting operational and strategic policy for the business;
5. Acquiring, leasing, or liquidating business assets;
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6. Selecting suppliers, vendors, and subcontractors;
7. Negotiating and consummating mergers and acquisitions;
8. Liquidating, dissolving, selling, or recapitalizing the company;
9. Selling or acquiring treasury shares;
10. Registering the company’s equity securities for an initial or secondary public offering;
11. Registering the company’s debt securities for public offering;
12. Declaring and paying dividends;
13. Changing the articles of incorporation or bylaws;
14. Selecting joint venture and other business partners;
15. Making product and service offering decisions;
16. Making marketing and pricing decisions;
17. Entering into licensing and other agreements regarding intellectual property; and
18. Blocking any or all of the above actions.¹

Anticipating the prerogatives of control, a control acquirer may pay a premium over the current share price for a target public company for which it expects value-creating opportunities to exist. The premium would be based upon the expected value of the value-creating opportunities or synergies. Since an acquirer purchases the stock of a target, the value of the opportunities is reflected in the stock price premium.² The less the stock value relative to the value-creating opportunities, the greater the premium to equity that will be paid. This may lead to takeover premia that vary based on leverage, as the Working Group recognized.

There are three common valuation-related uses for equity control premium data. First, there is the ability to adjust a non-controlling interest valuation to a control level. For instance, one may want to adjust the indication of value based upon the guideline public company method, which is commonly referred to as ‘marketable, minority’ value, to a control level valuation. Second, one may want to apply a minority discount to a control level indication to get the value of a noncontrolling interest, based upon a discount calculated as: \(1 - [1/(1 + \text{Control Premium} \ (CP))]\). Third, merger and acquisition firms may use equity takeover premia when they advise an acquiring company’s managers and directors regarding the reasonableness of an offer to acquire a publicly traded company or in formulating a fairness opinion for evaluating an offer to buy their company. A misapplication of the transactions data may result in an unreliable indication of value.

The Appraisal Foundation’s Working Group makes an important and insightful observation: “…the prerogatives of control…have no inherent value, but are rather the means through which market participants implement strategies designed to generate economic benefits.” Here, the Working Group addresses a sometimes-seen application of control premia to valuations to get a higher control level value or to derive a minority discount based upon the \(1 - [1/(1 + CP)]\) equation without any substantive discussion as to the underlying economics for the adjustment. The practice of applying control premia or minority discounts in some cases appears to reflect a belief that there is an inherent value to control or an inherent loss of value due to a lack of control reflected in the takeover premia. The real world of mergers and acquisitions is much more nuanced—a takeover premium depends upon the facts and circumstances of a given transaction, some of which are known and some of which are not known to outside observers. The Working Group focused on one observable target characteristic: leverage.

The deep interest in equity premia is not a passing fad. Mergerstat has recorded, catalogued, and described the observed takeover premia of acquired public companies for many years and sells the data through the FactSet Mergerstat®/BVR Control Premium Study and the Mergerstat® Review, an annual yearbook describing the prior year’s mergers and acquisitions transactions. Business valuation practitioners frequently use these references in preparing business valuations.

The Appraisal Foundation Board of Trustees formed the Appraisal Practices Board to deal with identifying and issuing guidance on best practices for valuation professionals. The Working Group on Control Premiums developed a discussion draft in 2013, The Measurement and Application of Market Participant Acquisition Premiums, to focus on best practices regarding the application of control premia in business appraisals. This document provides an overview of the issues of applying control premium data to business valuations. The Working Group introduced the term “market participant acquisition premium” (MPAP) to “emphasize the importance of the market participant perspective when measuring fair value, and to distinguish this premium from the more general (and occasionally controversial) notion of control premium” (p. 10). With regard to publicly traded companies, MPAP is the difference between the pro rata fair value of the subject interest and its “foundation,” which is the

¹See also Pratt (2009), Business Valuation Discounts and Premiums, 2nd ed., pp. 15 ff. for a discussion of the issues.
²For this discussion, we do not consider the acquisition of below-market debt, assuming that debt is at market rates or that its benefit is already reflected in the stock price.
quoted market price for the subject company’s shares (p. 11). The Working Group warns that “Relying solely on benchmark premium data to evaluate the reasonableness of the MPAP in a fair value measurement is not consistent with best practices” (p. 14). The Working Group proceeds to discuss the factors that may be associated with an observed MPAP. We refer the reader to The Measurement and Application of Market Participant Acquisition Premium for the details, as the focus of this article is to develop two methods to adjust, or normalize, control premium data to apply to a subject company based on leverage and other company characteristics.

Based on the Working Group’s discussion, one can express the MPAP based on the total invested capital (TIC) Foundation using an equity control premium thus:

\[
\text{MPAP}(\text{TIC}) = \frac{\text{Equity Control Premium}}{\text{TIC}} \times \left(\frac{\text{Equity}}{\text{TIC}}\right)
\]

where MPAP(TIC) is MPAP, based on a TIC Foundation, expressed as a percentage; Equity Control Premium is expressed as a percentage; and (Equity/TIC) is expressed as a percentage on a pre-deal basis.

The implication is that the greater the leverage, the lower the MPAP (TIC). Likewise, the greater the leverage, the greater is the Equity Control Premium. This can be seen by rearranging the terms in Equation 1, thus:

\[
\text{Equity Control Premium} = \text{MPAP}(\text{TIC}) \times \left(\frac{\text{TIC}}{\text{Equity}}\right).
\]

Given that the benefits of control accrue to the entity, the Equity Control Premium is related to the pre-deal leverage (TIC/Equity), also known as the Equity Multiplier used in the well-known DuPont Identity.

Covrig, McConaughy, and Travers (2015) analyzed 1,020 transactions over the 2003–2013 time period. They found that there is a strong statistical relationship between takeover premia and leverage after controlling for size, profitability, industry, year of transaction, type of acquirer, and synergistic potential. These results support the Working Group’s position.

Exhibits 1 and 2 provide descriptive statistics for the transactions data used by Covrig, McConaughy, and Travers (2015) as well as this article. Using the same nomenclature as in Covrig, McConaughy, and Travers (2015), TIC is the target company’s implied TIC based on the sum of implied market value of equity plus the face value of total interest-bearing debt and the book value of preferred stock outstanding prior to the announcement.
date. PCTUNAFFEQ is Percent Unaffected Equity calculated as pre-deal market value of equity to pre-deal TIC, calculated as

\[
\text{Implied Market Value of Equity} = \frac{1}{1 + \text{Mergerstat Control Premium}} \times \text{Unaffected TIC}.
\]

Exhibit 1 shows that the sample ranges from companies with $1.97 million to $59 billion in total invested capital, and the control premia range from 3% to 189% with a mean premium of 36%. Exhibit 2 shows the descriptive statistics when we group the sample in quintiles and sorted based upon leverage (PCTUNAFFEQ) quintiles. The statistics show that higher leverage is associated with greater takeover premia. The CP, TIC, and EBITDA profit all drop with increases in PCTUNAFFEQ, suggesting that using just correlation analysis to assess the relationship between CP and leverage is not enough, as other variables correlated with control premia should be considered, and, therefore, as the next section shows, we develop an adjustment model based upon the results of their multivariate regression analysis.

## Two Methods to Adjust the Control Premia

The main conclusion of the previously mentioned studies is that the observed equity premia, as reported for actual transactions in the widely used FactSet Mergerstat®/BVR Control Premium Study database, are related to leverage and other factors included in the database, supporting the Working Group’s best practice recommendation that appraisers should adjust their selected transaction premia based on size and industry and then re-lever based on the subject company’s leverage. Below we provide two methods to calculate an equity control premium taking into account differing equity premia, as well as leverage among the comparable transactions, and applying it to a subject company.

### Method 1: de-levering and re-levering premia

Here, we provide an example of how to calculate an equity control premium for a subject company if one were using data found in the FactSet Mergerstat®/BVR Control Premium Study database. This method will account for differing equity premia and leverage ratios among the comparable transactions and applying it to a subject company. Implicitly, this method assumes, like other traditional comparable company methods, that the comparable company transactions are similar in all but the leverage ratio and control premium. Therefore, in the example below, we assume the analyst has identified three close transaction comparables in terms of size and industry, varying by leverage and control premia, as shown in Exhibit 3.

### Exhibit 2
Descriptive Statistics: Quintiles Based on PCTUNAFFEQ

<table>
<thead>
<tr>
<th></th>
<th>Q1(smallest)</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5(largest)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Premium (%)</td>
<td>45.8</td>
<td>34.3</td>
<td>35.3</td>
<td>39.4</td>
<td>31.99</td>
</tr>
<tr>
<td>Sales ($millions)</td>
<td>1246.0</td>
<td>1447.9</td>
<td>621.9</td>
<td>218.9</td>
<td>459.7</td>
</tr>
<tr>
<td>TIC ($millions)</td>
<td>2020.9</td>
<td>2493.1</td>
<td>1611.8</td>
<td>606.7</td>
<td>1065.5</td>
</tr>
<tr>
<td>EBITDA/SALES (%)</td>
<td>10.3</td>
<td>12.0</td>
<td>11.3</td>
<td>-6.8</td>
<td>9.9</td>
</tr>
<tr>
<td>PCTUNAFFEQ (%)</td>
<td>46.3</td>
<td>78.1</td>
<td>93.1</td>
<td>99.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Synergy (%)</td>
<td>32.7</td>
<td>34.7</td>
<td>35.2</td>
<td>34.8</td>
<td>34.4</td>
</tr>
<tr>
<td>STRATEGIC (dummy)</td>
<td>0.6</td>
<td>0.7</td>
<td>0.7</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>FINANCIAL (dummy)</td>
<td>0.4</td>
<td>0.3</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>HORIZONTAL (dummy)</td>
<td>0.03</td>
<td>0.02</td>
<td>0.03</td>
<td>0.01</td>
<td>0.02</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-16.7%</td>
<td>40.0%</td>
<td>-71.4%</td>
<td>92.7%</td>
</tr>
</tbody>
</table>

3See Covrig, McConaughy, and Travers (2015) for the derivation.
First Method

Step One: Calculate Pre-Deal MPAP(TIC) of Comparable Company Transactions

<table>
<thead>
<tr>
<th></th>
<th>Comp 1</th>
<th>Comp 2</th>
<th>Comp 3</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity Control Premium</td>
<td>50.0%</td>
<td>40.0%</td>
<td>32.0%</td>
<td>a 40.7%</td>
</tr>
<tr>
<td>Pre-deal Equity / TIC</td>
<td>20.0%</td>
<td>50.0%</td>
<td>90.0%</td>
<td>b 53.3%</td>
</tr>
<tr>
<td>Pre-Deal MPAP(TIC)</td>
<td>10.0%</td>
<td>20.0%</td>
<td>28.8%</td>
<td>a X b 19.6%</td>
</tr>
</tbody>
</table>

Step Two: Calculate Equity Control Premium for Subject Company

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity /TIC Subject Company</td>
<td>70%</td>
<td>d</td>
</tr>
<tr>
<td>Average Pre-Deal MPAP (TIC)</td>
<td>19.6%</td>
<td>d/c</td>
</tr>
</tbody>
</table>

Equity Control Premium

\[
\text{Equity Control Premium} = \frac{d}{c} \times 28.0\%.
\]

Notes

1. Equity Control Premia and Pre-deal Equity / TIC are inputs from Mergerstat.
2. MPAP(TIC) is Market Participant Acquisition Premium on Total Invested Capital.
3. Pre-Deal MPAP(TIC) is calculated as Equity Control Premium x (Pre-deal Equity / TIC)
   This is equivalent to a "de-levered" Control Premium.
4. Equity Control Premium for Subject Company = Average pre-Deal MPAP(TIC) of comparable Companies X TIC / Equity of the Subject Company

Exhibit 3

Equity Control Premium Calculation—First Method

The complement of the more traditional leverage ratio, equity-to-assets, TIC is the total invested capital. The Debt/TIC is 1 – Equity/TIC. Therefore, when leverage/debt is not present, then Equity/TIC is 100% or 1, and the Debt/TIC is zero. As the debt increases relative to TIC, the Equity/TIC ratio drops. Because many users are familiar with the Equity/TIC, we use this ratio as a measurement of the leverage ratio, with the appropriate interpretation, namely the ratio drops with an increase in leverage.

Row three presents the calculation of the pre-deal MPAP (TIC) (i.e., re-levered CP) now calculated as Equity Control Premium x Pre-deal Equity/TIC. This is equivalent to a "de-levered" CP using the capital structure weights to get the CP at the TIC level.

The de-levering formula is

\[
\text{Pre-Deal MPAP (TIC)} = \text{Equity CP} \times (\text{Pre-deal Equity/TIC}).
\]

For example, for Comp1 in the above table: Equity CP = 50%; Pre-deal Equity/TIC = 20%; Pre-Deal MPAP (TIC) = 50% × 20% = 10%. The "de-levered" CP for Comp1 is 10%, which is significantly lower than the equity CP, and the average "de-levered" CP across the three comps is 19.6%.

In the next step we use the subject company’s Equity/TIC of 70%, the average Pre-Deal MPAP (TIC) of 19.6%, and the following “re-levering” formula to determine the capital structure adjusted equity CP.

\[
\text{Equity CP} = \frac{\text{Average Pre-Deal MPAP (TIC)}}{\text{Equity/TIC Subject Company}}.
\]

Back to our example, for Comp1 in the above table: Equity/TIC Subject Company = 70%; Average Pre-Deal MPAP (TIC) = 19.6%; Equity CP = 19.6%/70% = 28%.

We see that the leverage-adjusted CP of 28% is lower than the equity (leverage-unadjusted) of 40.7%, a directional difference expected, as the subject company has 70% equity, as compared to the average comparable companies’ equity of 53.3%.

If the analyst were calculating a discount for lack of control while controlling for leverage only, he or she could use the calculated 28% equity control premium. This example suggests that if the analyst had used the unadjusted average of 40.7%, the control premium may have been overstated by almost 50%. The capital structure–based de-levering–re-levering method should provide an improvement compared to no adjustment based on our choice of the figures in the example.

However, this example, though highlighting the potential benefit of de-levering the premia to a TIC foundation and then re-levering them to a specific target’s capital structure, also highlights possible
shortcomings of this method. Notice that although the subject (target) Equity/TIC of 70% is higher than the Equity/TIC values of Comp 1 and Comp 2, the re-levered subject company’s control premium of 28% is lower than the control premia of Comps 1 and 2. We also notice that the de-levered CPs vary from 10% to 28%, when, ideally, they would be equal or similar. We believe that these results are due to excessive sensitivity of a CP adjustment focused only on changes in leverage using the traditional capital structure ratios. Covrig, McConaughy, and Travers (2015) show that although leverage is an important determinant of a control premium, the effect is not as large as the capital structure de-levering–re-levering formula of method 1 calculates. This is explained by their multivariate analysis, which shows that the control premium is statistically significantly negatively related to size of deal, profitability, and the presence of a financial buyer, as well as positively related to strategic buyer.

How can one both alleviate the shortcoming of the simple capital structure de-levering–re-levering method and take advantage of the descriptive statistics and regression analysis results (i.e., market data) in Covrig, McConaughy, and Travers (2015)? We go back to the regression results in Covrig, McConaughy, and Travers (2015) in their Exhibit 5 and use their regression model 3 and the descriptive statistics from Exhibit 1 to extract an adjustment (calibration) factor.

Their regression is as follows:

\[
CP = 0.78 - 0.078 * \text{log(TIC)} - 0.332 * \frac{\text{EBITDA}}{\text{Sales}} - 0.22 * \text{PCTUNAFFEQ},
\]

\[\text{log(TIC) = log of the mean of TIC from Exhibit 1, EBITDA/Sales = 0.104 from Exhibit 1, PCTUNAFFEQ} = 0.50\]


shortcomings of this method. Notice that although the subject (target) Equity/TIC of 70% is higher than the Equity/TIC values of Comp 1 and Comp 2, the re-levered subject company’s control premium of 28% is lower than the control premia of Comps 1 and 2. We also notice that the de-levered CPs vary from 10% to 28%, when, ideally, they would be equal or similar. We believe that these results are due to excessive sensitivity of a CP adjustment focused only on changes in leverage using the traditional capital structure ratios. Covrig, McConaughy, and Travers (2015) show that although leverage is an important determinant of a control premium, the effect is not as large as the capital structure de-levering–re-levering formula of method 1 calculates. This is explained by their multivariate analysis, which shows that the control premium is statistically significantly negatively related to size of deal, profitability, and the presence of a financial buyer, as well as positively related to strategic buyer.

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\]

\[\text{log(TIC) = log of the mean of TIC from Exhibit 1, EBITDA/Sales = 0.104 from Exhibit 1, PCTUNAFFEQ} = 0.50\]

Using the regression coefficients and the forecasted (expected) CP for the alternative PCTUNAFFEQ (leverage ratio), we then derived an adjustment factor that will make the de-levered CP for alternative PCTUNAFFEQ ratios equal to the expected CP when the PCTUNAFFEQ ratio is 100%. This factor, rounded, was determined to be 0.5. The result is the determination of a market-linked adjustment factor of 0.5, which can easily be used in a traditional de-levering and re-levering method, such as Method 1, discussed above.

Below we will show that applying the adjustment factor of 0.5 in the following formula based on PCTUNAFFEQ, the result calculates control premia for alternative PCTUNAFFEQ ratios that provides results that are more consistent with the observed level of leverage.

The de-levering formula, using the market-calibrated adjustment factor of 0.5, is
Second Method

Step One: Calculate Pre-Deal MPAP(TIC) of Comparable Company Transactions

<table>
<thead>
<tr>
<th></th>
<th>Comp 1</th>
<th>Comp 2</th>
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<tr>
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<td>20.0%</td>
<td>50.0%</td>
<td>90.0%</td>
<td>b</td>
</tr>
<tr>
<td>Pre-Deal MPAP(TIC)</td>
<td>30.0%</td>
<td>30.0%</td>
<td>30.4%</td>
<td>a \times b</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40.7%</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30.1%</td>
</tr>
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Step Two: Calculate Equity Control Premium for Subject Company

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity / TIC Subject Company</td>
<td>70%</td>
</tr>
<tr>
<td>Average Pre-Deal MPAP (TIC)</td>
<td>30.1%</td>
</tr>
<tr>
<td></td>
<td>d / c</td>
</tr>
<tr>
<td></td>
<td>35.5%</td>
</tr>
</tbody>
</table>

Notes
1. Equity Control Premia and Pre-deal Equity / TIC are inputs from Mergerstat.
2. MPAP(TIC) is Market Participant Acquisition Premium on Total Invested Capital.
3. Pre-Deal MPAP(TIC) is calculated as Equity CP*(1-(100%-Pre-deal Equity / TIC)*0.5)
   This is equivalent to a "delevered" Control Premium.
4. Equity Control Premium for Subject Company is calculated as
   Average Pre-Deal MPAP (TIC)/(1-(100%-Equity / TIC Subject Company)*0.5)

Exhibit 5
Equity Control Premium Calculation—Second Method

\[
\text{Pre-Deal MPAP(TIC)} = \text{Equity CP} \times (1 - (100\%-\text{Pre-deal Equity/TIC}) \times 0.5). \quad (7)
\]

The re-levering formula, using the market-calibrated adjustment factor of 0.5, is then

\[
\text{Equity CP} = \frac{\text{Average Pre-Deal MPAP (TIC)}}{1 - (100\% - \text{Equity/TIC Subject Company}) \times 0.5).} \quad (8)
\]

Exhibit 5 presents the application of this market-calibrated methodology for the same example (inputs) used to illustrate the first method.

The first two rows of data, the inputs for the three comps, are the same as in the first method illustrated above. However, row 3, the pre-deal MPAP (TIC) (i.e., re-levered CP) is now calculated with Equation 7 above.

For example, for Comp 1 in the above table: Equity CP = 50%; Pre-deal Equity/TIC = 20%, Pre-Deal MPAP (TIC) = 50% \times (1 - (100\% - 20\%) \times 0.5) = 30%.

Notice that the “de-levered” values using this method, the Pre-Deal MPAP(TIC), are now close to each other at approximately 30%. This demonstrates the benefit of applying the 0.5 calibration adjustment factor.

In the next step we use the subject company’s Equity/TIC of 70%, average Pre-Deal MPAP (TIC) of 30.1%, and Equation 8 to “re-lever” back and determine the equity CP.

\[
\text{Equity CP} = \frac{\text{Average Pre-Deal MPAP (TIC)}}{1 - (100\% - \text{Equity/TIC Subject Company})} \times 0.5). \quad (9)
\]

For example, for Comp 1 in the above table, Equity/TIC Subject Company = 70%; Average Pre-Deal MPAP (TIC) = 30.1%; Equity CP = 30.1%/(1 - (100\% - 70\%) \times 0.5) = 35.5%.

We now see that the control premium of 35.5% is as expected: between Comp 2, 40%, and Comp 3, 32%.

The main difference between the two methods is that Method 2, through the 0.5 calibration factor, not only takes into account leverage but also adjusts for other factors obtainable from the FactSet Mergerstat®/BVR Control Premium Study database that are known to affect the control premium. Thus, it implicitly accounts for market data and maps the market data to a simple set of formulas, very similar to the simple capital structure--only de-levering--re-levering formulas of
Method 1 to calculate a control premium for a subject company.

**Summary and Conclusion**

Covrig, McConaughy, and Travers (2015) show that takeover premia are related to leverage in a way consistent with theory. We extend this article by providing two models with which to adjust control premia: Method 1 is based upon the leverage factor alone. Method 2 is calibrated based upon regression analysis of takeover data. The theory is simple, and the empirical observations are conclusive and support the Working Group’s best practice recommendation that appraisers incorporate this into their analyses. The leverage impact is knowable, and, in some cases where there are large differences in leverage, the impact of leverage on takeover premia may be significant. Ignoring this, in the words of the Working Group, may be “potentially misleading.”

**References**


Business Valuation Review
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