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Letters to the Editor

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VALUING ASSETS HELD BY PRIVATE EQUITY FUNDS

By David L. Larsen, CPA

In December 2003, the Private Equity Industry Guidelines Group (PEIGG) released their U.S. Private Equity Valuation Guidelines (Guidelines). Amended in September 2004, the Guidelines include guidance related to the valuing of assets held by private equity funds. As the private equity industry has matured over the past two decades, valuation standards have become an area of increasing focus for all industry participants. The National Venture Capital Association (NVCA) attempted to focus on valuation issues in the late 1980s but could not reach a consensus on standards. However, NVCA's 1989–1990 proposed guidelines became the *de facto* standards, which are used by a large number of U.S. private equity fund managers in valuing their investments.

Outside the United States, private equity industry groups in several countries adopted standardized guidelines for valuing portfolio companies. In early 2005, through a joint effort of the Association Française des Investisseurs en Capital (AFIC), the British Venture Capital Association (BVCA), and the European Venture Capital Association (EVCA), the International Private Equity and Venture Capital Valuation Guidelines were released. The guidelines were subsequently endorsed by the Institutional Limited Partners Association (ILPA) and more than 30 other international associations.

Before the introduction of the PEIGG Guidelines, many private equity participants believed that the development of formal standards or guidelines was important. The PEIGG Valuation Guidelines were created jointly by managers (that is, general partners) and investors (that is, limited partners), incorporating feedback from a wide range of industry participants to address this need in the industry. United States GAAP for investment companies, including private equity and venture capital funds, is provided in the AICPA Investment Company Audit and Accounting Guide. PEIGG has no authoritative standing in the GAAP hierarchy and PEIGG guidelines do not represent authoritative GAAP. However, the PEIGG valuation guidelines were prepared to provide private equity managers with industry specific best practices in determining fair value.

The Financial Accounting Standards Board (FASB) is expected to issue a Standard on "Fair Value Measurements" in 2006. The new FASB Standard will focus attention again on the need for consistent, comparable estimates of fair value in the PE asset class. PEIGG anticipates revisiting the Valuation Guidelines to ensure that they are not in conflict with GAAP once the new FASB Standard is effective.

HISTORICAL VALUATION APPROACH

It is difficult to generalize about historical valuation approaches without excluding the nuances used in practice. In the U.S. private equity indus-

Expert RESPONSES

REVISITING REGRESSION ANALYSIS AND THE MARKET APPROACH

I read with interest the article by James A. DiGabriele, CPA, "A Primer in Valuing Closely Held Companies Using the Market Approach and Regression Analysis," in the Spring 2006 issue of *CPA Expert*, which sets forth what I believe to be the best approach to using market transaction databases in the valuation of small businesses. However, in his enthusiasm for regression analysis, the author misinterprets some of the regression output metrics and uses, for one of his examples, the wrong reason for choosing a particular model from a selection.

The F ratio

The F ratio is a binary metric; that is, either the model as a whole is significant, or it is not. There is no sliding scale of significance whereby one model's higher F ratio indicates a better equation than one with a lower F ratio. It is better to look at their respective standard errors and adjusted R^2 values to make a choice among them.

The Durbin-Watson statistic

The Durbin-Watson (D-W) statistic is germane only if one is doing time series analysis. Because the market transaction databases are cross-sectional in nature, the D-W statistic can be ignored. If one obtains a D-W statistic that indicates autocorrelation in a cross-sectional study, then just randomly sort the data to solve the problem.

R^2

Although the R^2 value is one of the most frequently quoted values derived from a regression analysis, it does have one serious drawback: It can only *increase* when extra independent variables are added to an equation. This can lead to "fishing expeditions," whereby we keep adding variables to an equation, some of which have no conceptual relationship to the dependent variable, just to inflate the R^2 value. To "penalize" the addition of extra variables that do not really belong, an adjusted R^2 value is typically listed in regression outputs. If we add variables and the adjusted R^2 decreases, then the extra variables are essentially not pulling their weight and should probably be omitted. If, on the other hand, adjusted R^2 increases with the addition of other independent variables, then we have increased the explanatory power of the model. So the author's appeal to ever-higher R^2 values as indicative of superior regression models doesn't ring true, because he has created those higher R^2 values simply by adding more independent variables. For multiple regression, adjusted R^2 is the superior metric to R^2 for choosing among models.

Multicollinearity

Multicollinearity in a prediction model, as opposed to a causation model, is not necessarily problematic in accurate forecasts of value. It can cause trouble, however, when confounding variables produce coefficient signs that are reversed from their normal and intuitive value, because this is difficult to explain to a trier-of-fact.

Model metrics

The author suggests that R^2 and F ratios are the metrics of choice when choosing the best model for valuation purposes. However, he ignores the very first metric one should turn to in a multiple regression environment, namely, the individual t-statistic for each independent variable. The rule of thumb is that any independent variable with a t-statistic of less than 2 should be considered for removal from the model, and that absolutely any t-statistic of less than 1 ought to be removed. Once you have a model that consists only of significant independent variables, you should then choose the model that has the lowest standard error and the highest adjusted R^2 value.

Market transaction databases

The market transaction databases we have to work with (Pratt's Stats, Bizcomps, etc.) supply a limited number of independent variables with which to run a regression analysis. As such, the author has used sales, total assets, and some form of net income as his independent variables in both industries. The problem is that all three of these variables are size-oriented; that is, companies with large revenue amounts tend to have large amounts of assets and net incomes. This relationship creates the multicollinearity problem mentioned above, because each additional variable doesn't explain anything new. The use of adjusted R^2 would, of course, have made this evident. Perhaps the use of ratios, such as total assets/sales or net income/sales, as independent variables would produce more powerful models. However, the principle of Occam's Razor (which tells us that entities should not be multiplied needlessly, and that the simplest of two competing theories is to be preferred) requires us to use the simplest explanation available, and that is why regressing price against revenue or some form of net income will usually produce the best answer with a model that gives us the best fit as measured by the proper metrics.

Respectfully,

Mark G. Filler, CPA/ABV, CBA, AM, CVA
Filler & Associates, P.A.
Portland, Maine
www.filler.com