This article first appeared in the December 2009/January 2010 issue of *Financial Valuation and Litigation Expert*, a publication of Valuation Products & Services, LC.
Although no dead bodies were found when the dust settled, the debate over “Total Beta” (Tβ) and “Total Cost of Equity” (TCOE) held at this year’s ASA conference wasn’t exactly a garden party either. There were three half-hour presentations: “Total Beta: Estimating Beta Symmetrically” by Dr. Christopher Tofallis of the University of Hertfordshire Business School in the UK, “The Butler Pinkerton Model: The Choice” by Peter Butler, CFA, ASA, MBA with Hooper Cornell, PLLC in Boise, ID and “Anomalous Findings from the Butler Pinkerton Model for Company Specific Risk Premiums—Overview of Presentation Arguments” by Larry Kasper, CPA, CVA, CBA in Hilliard, OH. There was then a one-hour panel discussion that included these three presenters, plus a presentation by Dr. Aswath Damodaran, Stern School of Business at New York University in New York, NY. The panel was moderated by Roger Grabowski, ASA with Duff & Phelps, LLC in Chicago, IL. Grabowski also closed the session with his own remarks and presentation.

Butler, co-creator of the Butler/Pinkerton Calculator (BPC), has published various articles and presented to many appraisers the Butler Pinkerton Calculator (formerly the Butler Pinkerton Model “BPM”) over the past several years. Aswath Damodaran, Stern School of Business at New York University in New York, NY. The panel was moderated by Roger Grabowski, ASA with Duff & Phelps, LLC in Chicago, IL. Grabowski also closed the session with his own remarks and presentation.

Butler realized that it was a straightforward process to determine Tβ, and hence, the TCOE of the public companies that could be considered guideline companies of the subject private company. With that, a little reverse engineering, and some 2nd grade math, the company specific risk premium (CSRP) of the guideline company (GC) or group of GCs could easily be determined as follows:

TCOE = Rf + Tβ(ERP) and if TCOE = Rf + β(ERP) + SP + CSRP then CSRP can be determined by the known variables of Rf, β, ERP and SP.

Finally, the CSRPs of the GCs can serve as a benchmark by which one may establish the CSRP of the subject company. Butler and co-author Keith Pinkerton, in association with BVR, developed an online “calculator” to calculate the Tβ and the TCOE of publicly traded companies that appraisers felt were good candidates for guidelines to the subject private company. Hence, the battle began!

THE INITIAL ASSAULT
As the BPC was gaining ground, albeit, not without some criticisms and reluctant general acceptance, Kasper launched a bomb in his article published in the winter 2008 edition of Business Valuation Review (BVR), “The Butler Pinkerton Model for Company-Specific Risk – A Critique.” [Note: Kasper has also recently published the article Total Beta: the Missing Piece of the Cost of Capital Puzzle – A Reply, in the November/December 2009 issue of Valuation Strategies by Thomson Reuters/WG&L.]

Kasper’s 16 criticisms were then countered by Butler and Pinkerton’s article, “A Total Repudiation of Mr. Kasper’s Critique of the Butler Pinkerton Model” in May 2009. Professors Vincent Covrig, Ph.D., CFA and Dan Continued on next page
McConaughy, Ph.D., of California State University, also took on Kasper’s criticisms in their article entitled “Comments on Butler-Pinkerton series of papers and Larry Kasper’s ‘The Butler Pinkerton Model for Company-Specific Risk – A Critique’ published in the Winter 2008 edition of Business Valuation Review.”

THE BOSTON BATTLE BEGINS

Tofallis

Tofallis led off with a summary of his research and findings as articulated in his article, “Investment volatility: A critique of standard beta estimation and a simple way forward” from The European Journal of Operational Research, 187 (2008) pp. 1358-1367. The article’s abstract summarizes nicely the theme of his presentation; that is, “beta is a widely used quantity in investment analysis. We review the common interpretations that are applied to beta in finance and show that the standard method of estimation - least squares regression - is inconsistent with the interpretations. We present the case for an alternative beta estimator which is more appropriate, as well as being easier to understand and to calculate.” His alternative beta estimator, which he designates as $\beta^*$, is what Damodaran refers to as $T\beta$.

In addition, Tofallis explained that traditional beta, or what he refers to in his article as “standard beta,” is extremely volatile. In fact, over a 5 year period, the monthly beta calculations are considerably different depending upon which day of the month you are using. As pointed out in his presentation, Acker & Duck 2007, Journal of Accounting, Auditing and Finance 22, 527-557, “the beta of one stock in our sample is estimated to be +2 using one reference day, and -2 using another. Between two consecutive 5 year periods another stock’s beta fell by .931 using one reference day, and rose by 3.454 using another.”

In conclusion, Tofallis stated that “conventional beta is not a robust statistic, minor changes in its estimation have a big effect, and the same may or may not be true for $T\beta$.” With that said, however, the concluding remarks from his article, referenced above, state “The magnitude of its slope, $\beta^*$, is precisely the ratio of volatilities (standard deviations) and so we can not accurately refer to it as ‘relative volatility’. This slope value lies between the slope values arising from ordinary regression and reverse regression. The only difference between its calculation and that from OLS is that its formula does not contain the correlation. Since it is the correlation that has been found to be the main contributor to instability in betas (Francis, 1979), we expect that $\beta^*$ will be more stable over time, and indeed we gave some preliminary evidence for this. Furthermore, the removal of the correlation from the formula brings clarity to what is being measured - there is no longer the confounding of two quantities: relative volatility and correlation. There is also a computational advantage in that it is easier to calculate the ratio of standard deviations than the OLS slope.” Tofallis emphasized that more research is needed in this area.

Butler

Butler opened with a salvo of quotes from U.S. judges that questioned the “subjective measures” of CSRP. One salvo that stands out in particular is the following statement in Delaware Open MRI Radiology Associates v. Howard B. Kessler, et al, “To Judges, the company specific risk premium often seems like the device experts employ to bring their final results into line with their clients’ objectives, when other valuation inputs fail to do the trick.”

Butler responded strongly to Kasper’s major criticism, which is “$T\beta$ violates William F. Sharpe’s CAPM.” OK, just so we’re all on the same page, let’s repeat: Kasper’s major criticism is that “$T\beta$ VIOLATES CAPM.” Knowing that sometimes it’s best to fight fire with fire, Butler clearly agrees, but adds that $T\beta$, and thus the BPC, was never intended to mirror CAPM. It was interesting to note that all panelists were in agreement that not only does $T\beta$ violate CAPM, but the build-up “modified CAPM” that most valuers use today violates CAPM as well. Butler, as well as Damodaran among others, believes it is just fine to violate CAPM when valuing private firms for an undiversified investor. “After all, the mere presence of privately held firms violates the CAPM. CAPM calls for investors to hold the market (a completely diversified) portfolio. If most eggs are in one basket (one private company), the buyer’s portfolio will be dominated by the private company – thus, he or she is not holding the market portfolio, by definition.” adds Butler.

In addition to Damodaran’s conditional support of $T\beta$, Butler cited numerous endorsements from experienced business appraisers and finance professors such as:

1. “Total beta is a widely accepted measure of risk in situations where investors are not well diversified. The Butler-Pinkerton Calculator is a convenient and flexible tool for quickly arriving at an objective estimate of total beta and the company specific risk premium for a privately held company.” – Keith Harvey, Ph.D., CFA

Continued on next page
2. “We believe that the Butler-Pinker- ton Calculator is a useful tool for appraisers who want a quantitative way to assess the maximum CSRP. What the Total Beta and calculator computes is the maximum or upper bound for the CSRP. A good appraisal should also use subjective techniques and judgment to determine the appropriate CSRP for the subject company.” – Vicentiu M. Covrig, Ph.D., CFA and Daniel McConaughy, Ph.D, ASA.

3. “First, we do a significant amount of fair value compliance work, and the BPC is a great tool for developing capital costs for hypothetical market participants. We’ve had general acceptance of this method in audit review, and it’s a great time saver.”

James B. Lurie, CPA/ABV, ASA, CBA, CVA, BVAL, CIRA

Kasper

Some salient points from the introduction section of Kasper’s 79-page hand-out, “Anomalous Findings from the Butler Pinkerton Model for Company Specific Risk Premiums,” pp. 4-7, follow:

…CAPM measured exclusively by public company betas produced a total return far below that commonly believed acceptable, consistent with the risk associated with investing in private companies. Those who accordingly disregarded CAPM, or perhaps never embraced it, have relied upon the build-up method, substituting various risk premiums, subjectively figured, to explain company specific risk.

Another way to artificially increase the textbook version of CAPM and the buildup method has been to add a generic size premium in one of the forms suggested by Ibbotson or derived by Duff and Phelps. Because size premiums are dependent upon the source, and in particular the time period selected to measure the premium, there are considerable problems with mixing and matching data.

The more relevant question now being asked by academics is whether the CAPM can be used to predict returns, not just explain past average returns. This is the real question that business appraisers are concerned with: the future, not the past.

It is against this very formidable evidence that the CAPM is not very helpful in establishing expected returns for investors in public, much less private companies, that the BPM is proposed.

Kasper’s main criticisms (p. 4) are:
• “The TCOE version of CAPM has not gained scholarly support and violates financial theory.
• The authors make a number of inconsistent and unsupported statements and claims.
• There is no evidence the model predicts returns better than CAPM.
• CSRP of their model does not provide a company specific risk premium.
• The Model does not explain 100 percent of the return as claimed.
• The BPM should not survive a well informed Daubert challenge.
• Independent testing reveals discrepancies in their published results.
• Their model does not provide reliable support for Section 409A or SFAS 123R.”

Kasper’s conclusion (p.63) states
The flaws of the BPM cast doubt upon its claimed benefits. While the BPM may have satisfied the “publication” part of the second Daubert factor, it remains to be seen whether it will gain acceptance...after careful consideration of all the issues. Until the authors provide empirical evidence that Tβ produces better estimates of actual public company returns, it is doubtful that it will provide better estimates for private companies.

Because the BPM is dependent upon statistically significant values for β, the model’s usefulness is limited even if it showed that Tβ provided estimates with smaller errors for returns than conventional techniques.

Part of Kasper’s arsenal was CAPM in its truest form. Therefore, since Tβ violates CAPM (a point on which Damodaran, Tofallis and Butler clearly agree) and there are problems with beta and CAPM; then:
1. TCOE is wrong and 2. The Butler Pinkerton calculator is wrong

Damodaran

Damodaran’s ability here to communicate sophisticated financial theory in a common sense manner, accented with good humor, was consistent with presentations in the past. His presentation title, “Diversification, Cost of Equity and Value,” not only reinforced some of Tofallis’s remarks, but set some of the conditions required for applying the Tβ concept to the undiversified investor, which, again, he refers to as “the rebel.” Simply put, the diversified buyer will pay more for an asset, investment or firm than an undiversified “rebel,” other factors being equal.

Damodaran outlined reasons why some people would not like Tβ:
1. You do not like the mean-variance framework.
2. You do not believe that the market price for risk is set by diversified investors. In other words, you believe that the bulk of the trading done in markets is by undiversified investors and the bulk of the assets are held by these investors.

• The relationship between expected return and risk may no longer be linear.
• Relate expected returns to micro factors (not macro fac-
Continued on next page
3. You do not like the assumptions of the CAPM, i.e., no transactions costs and no private information.
   • Multifactor models that try to capture the risks that the CAPM does not capture, but only macro risks.

4. You do not believe that private business owners set expected returns based upon traded assets in the market place.”

However, Damodaran had some cautions for those that “believe in total beta.”

• “Total beta should provide little explanatory power for expected returns at publicly traded firms, especially those that are widely held by institutions and have large market cap.

• It is not the appropriate measure of risk if an asset is being valued to a potential buyer, who is partially or mostly diversified. Thus, when valuing a private business for sale to a publicly traded company, it is not appropriate to use total beta (and cost of equity).

• If asked to assess fair value, where fair value is the value to the best potential buyer of a business, using total beta is unlikely to provide the answer, unless you happen to be in a business where all of the potential buyers are undiversified.”

He also had reservations about the alternative—build-up models—and called them “recipes for disaster.” He noted such problems as “dependence on historical data, double counting or triple counting of risk and internal inconsistencies.” Damodaran’s conclusions were:

• “The degree to which the buyer of an asset is diversified will affect the risk he or she perceives in that asset and by extension the value.

• If you stay within the parameters of the CAPM and assume that private business owners operate at the margin and have to take market prices set by the public market, total beta is a defensible measure.

• If you abandon those assumptions, then the task becomes more arduous. However, build-up models whose sole objective seems to arrive at a high enough rate (which you can still legally defend) are not the alternative.

• Finally, the diversification discount is separate from the illiquidity discount. In other words, it is perfectly logical to use a higher discount rate to capture the absence of diversification and also apply an illiquidity discount to value. The same cannot be said of build up models.”

Grabowski

Grabowski concurred with Damodaran that the use of TBβ, and accordingly the BPC, relies on the premise that private businesses are undiversified. One of several key issues, therefore, is whether the cost of capital of a private business “should include that extra amount due to the owner being undiversified.” He believes that this then leads to an “unreasonable position that there are at least two costs of capital for a business – the cost of capital for investors that comprise the pool of likely buyers and the current owner.” He reiterated that, under fair market value, the cost of capital should reflect risk in the investment and not the investor.

Grabowski was clearly in concert with those that support the reality of the limitations of the “Sharpe Ratio” when applied to a single asset portfolio. He quoted Professor Sharpe that, “The Sharpe Ratio does not cover cases in which one investment return is involved.”

Grabowski passes the conundrum back to us (and rightly so, I might add) as, “Each practitioner must evaluate the evidence.” He asks:

• “Is TCOE derived from Total Beta consistent with FMV?

• Can one use TCOE estimated using Total Beta to derive reliable estimates of Company-Specific-Risk Premiums?

• Everyone would like a better method of estimating CSRP’s— but is BPM the method?”

CONCLUSION

With that said, however, if it wasn’t for Butler and Pinkerton bringing total beta to our attention and for Kasper’s criticisms, this valuable and important battle would not have been fought. The fact of the matter is that our profession has reaped the rewards of this conflict in terms of an enhanced understanding of the issues raised.

[Editor’s note: Mr. Wisehart has adopted and publicly endorsed the BPC and TBβ. He believes it is a step forward for our profession. He also still strongly endorses the use of more traditional models such as Build Up, CAPM and MCAPM using Ibbotson and Duff & Phelps data.

Fresh ideas and innovations, while certainly subject to scrutiny, should be encouraged. A healthy exchange moves the ball further up the hill. Most of the comments I have seen in this exchange of ideas and views have been objective and professional. Some have also been tough. Again, that’s good for all of us. However, there has also been what I believe to be comments more of a personal nature. That’s unfortunate and unnecessary. This debate over Total Beta and The Total Cost of Equity will continue. It is up to each of us to decide what models and theories to use. I thank each of these five presenters, and the author here, for helping us to make these decisions.]