A Total Repudiation of Mr. Kasper's Critique of the Butler Pinkerton Model

Abstract:

This article addresses recent criticisms of Total Beta and the Butler Pinkerton Model (BPM) in Mr. Larry J. Kasper's article – "The Butler Pinkerton Model for Company-Specific Risk Premium – A Critique" published in the Winter 2008 edition of *Business Valuation Review*.

Before we begin, we ask that you read this most poignant and appropriate quote:

> *It is not the critic who counts: not the man who points out how the strong man stumbles or where the doer of deeds could have done better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood, who strives valiantly, who errs and comes up short again and again, because there is no effort without error or shortcoming, but who knows the great enthusiasms, the great devotions, who spends himself for a worthy cause; who, at the best, knows, in the end, the triumph of high achievement, and who, at the worst, if he fails, at least he fails while daring greatly, so that his place shall never be with those cold and timid souls who knew neither victory nor defeat.*
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> Theodore Roosevelt, 26th President of the United States of America
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> "Citizenship in a Republic,"
> Speech at the Sorbonne, Paris, April 23, 1910

While Mr. Kasper's personal attacks against our characters were offensive (we have "seduced" the entire community and have only been "hawking" the Calculator or words to that effect, etc.), we have chosen not to respond in-kind. Instead, we will extend him the professional courtesy that was so severely lacking in his critique. Moreover, many of his alleged criticisms and misconceptions could have been cleared up rather quickly with a phone call or with a free-trial subscription to the Calculator available at www.bvmarketdata.com, which we have offered numerous other appraisers.

Introduction:

While Mr. Kasper's critiques were extensive, we look at one of his final thoughts to put his criticisms in context. *(BPM) provides no better information than current subjective methods*…While we disagree with this assessment as shown in detail below; it is worthwhile to revisit exactly where we as a profession are with the subjective methods:

> *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."*

This is a powerful indictment against our industry. If you use any other competing cost of capital database, rather than the BPM, you are subjecting your opinion to this harsh criticism. Contrary to Mr. Kasper's alleged criticisms, Total Beta and the BPM help solve this problem for our industry.

Alleged Findings:

Keep in mind much of Mr. Kasper's critique is focused on Total Beta and total cost of equity (TCOE). This article will prove his criticisms on Total Beta and TCOE are either misguided or false. Accordingly, most (but not all) of his criticisms related to the BPM become irrelevant. Our detailed defense of Total Beta and the BPM is detailed below. The summary of the defense, however, is found in the next five bullet points in the italicized wording.

Mr. Kasper asserts:

- The technique has not gained scholarly support. *False. Academics, practitioners and major investment banks*[1] *have endorsed Total Beta. Moreover, practitioners use the BPM, and some academics use the same financial theory as the BPM.*
- Total Beta does not measure the total firm-specific risk. *False. We assume that since Mr. Kasper makes the claim that Total Beta only captures the systematic risk of a "riskier" asset that he means that Total Beta misses firm-specific risk completely*. Regardless, *this statement is false. Total Beta relies upon standard deviation. Standard deviation is the appropriate measure of risk for stand-alone assets and captures total risk, and therefore firm-specific risk.*
- CSRP does not provide anything better than using financial theory and regression. *While we are not sure of the point, financial theory and regression are well-accepted in our industry.*
- TCOE violates the return-risk relationship of CAPM and the Efficient Market Hypothesis. *False. It actually validates these relationships.*
- BPM is proprietary and is not subject to independent verifiability. *This is incorrect. Any appraiser can re-calculate results manually and get the exact same answers using the exact same inputs for every guideline public company.*

Should you find it necessary to read further please keep in mind that lack of a response to any specific criticism[2] should not be construed as agreement with Mr. Kasper as there is very little we agree on[3]. Where we do agree and/or concede a point to Mr. Kasper, we indicate as such.

[1] Now, technically commercial banks.
[2] Mr. Kasper's article was eleven pages long, two columns per page.
[3] At a minimum, readers may want to skip to the Conclusion section.

Detailed Defense:

As we work our way through Mr. Kasper's article, we will comment where appropriate to address his more important Total Beta and BPM specific allegations[4]. We will either use sub-titles as depicted in Mr. Kasper's article or derivatives of his sub-titles below.

Alleged Logical Inconsistencies in Model

According to Mr. Kasper, "Valuators have been seduced into accepting it (the BPM)".

This accusation is, in the view of many, an insult to our profession as well the intellect of some very influential and well experienced appraisers and finance professors. Please see **Appendix A**[5] for a listing of some independent testimonials of Total Beta and the BPM. Incidentally, we received permission from every professional listed to use their quotes in this defense, after making sure they had access to Mr. Kasper's critique. Without exception, they did not hesitate to be cited.

Mr. Kasper makes the claim that "the BPM asks us to accept both of its premises as true without any proof and little justification." Quite frankly, we were surprised to see that Mr. Kasper has issues with either of the premises for the TCOE for a privately-held company. One in particular, seems universally accepted[6]:

$$TCOE = Rf + \beta*ERP + SP + CSRP$$

In our experience, nearly all appraisers use this calculation to build up their private company's cost of equity[7].

Alleged Challenges to the Soundness of the Model:

Mr. Kasper states, "If their model does provide a better estimate of the actual returns, then the mean absolute errors from their TCOE should be less than the mean absolute errors of the index model whose beta is determined so as to minimize the squared errors…The authors of BPM offer no such evidence."

WHY WOULD WE? TCOE is a hypothetical rate of return calculation based on a one-stock portfolio – a completely undiversified portfolio perspective. Since TCOE captures CSRP and we know that CSRP is either completely or at least partially diversified away

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[4] We will not comment (at least too much) on his other issues related to standard business valuation theory and commonly-accepted practices.

[5] These testimonials do not include the many very positive comments we have received in telephone calls or after presentations.

[6] Shannon P. Pratt and Alina Niculita, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*. Fifth Edition. (New York, New York: McGraw Hill, 2008), 213.

[7] While some may use an industry risk premium (IRP) in the build-up method in place of beta, in our opinion, this is the CAPM with an IRP "wrapper". For those of you who use the Fama French 3-Factor Model (We believe a very small component of appraisers), there obviously are reliability issues related to this technique, as well as the CAPM.

in the public markets, TCOE would only better explain actual returns by random chance. It was never TCOE's intention, nor its capability to describe expected public stock returns. We wish it did capture actual returns better than CAPM. Then maybe we would win the Nobel Prize[8]?

Mr. Kasper goes on to state, "Their formulation says that investors should be compensated for both systematic and specific risk. Do private company investors earn a return for bearing systematic risk[9]? If true, then why should public investors be compensated when they could have diversified their specific risk but simply chose to hold a single asset?"

On this point, we agree with Mr. Kasper. Investors in public companies will not be compensated for being undiversified. We find it strange that Mr. Kasper believes that is what the BPM claims. Our formula actually implies that investors in *private* companies should earn a rate of return for both systematic and specific risk. We merely use public companies' TCOEs as proxies for private companies. As Gary Trugman has so aptly stated, the BPM is a market approach twist for the income approach[10]. This really is no different than making an adjustment from public company multiples for CSR – yet another practice that is well accepted[11].

Mr. Kasper states, "Moreover, according to the results of French and Fama, combining size and beta double counts the size effect since beta should also reflect the risk according to size. In other words, size is part of systematic risk, not specific risk."

This is an incorrect statement. The market and size factors are independent of one another. We, however, recognize that the CAPM is a special case of the Fama-French Three Factor (market, size, book/market) Model. In fact, we mention in our FAQs available at www.bvmarketdata.com that our model depends upon CAPM theory. On FAQ 1A (emphasis added since this is the first comment after introduction of the BPM formula), we state:

> *This formula (BPM) springs from CAPM theory. If another theory or underlying model is used, such as the Fama French Three Factor Model, then a different formula would result.*

We also understand that while Mr. Kasper implies that the Fama French Three Factor Model is a better model, analyses from both Ibbotson's SBBI 2009 Yearbook[12] and Cost

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[8] Actually, Dr. William Sharpe would deserve the Nobel Prize (again).

[9] Based on the answers that follow, we believe that Mr. Kasper failed to properly state the question as "Do private company investors earn a return for bearing unsystematic risk?"

[10] Also see: Gary R. Trugman, *Understanding Business Valuation*: *A Practical Guide to Valuing Small to Medium Sized Businesses*. Third Edition. (New York, New York: American Institute of Certified Public Accountants, 2008), 371-373.

[11] See alleged criticism #1 below and "A Method for Adjusting Public Companies' Multiples for Firm Specific Risk" written by Covrig and McConaughy using the same theory as the BPM. (Emphasis added)

[12] *Ibbotson SBBI, 2009 Valuation Yearbook.* (Chicago, Illinois: Morningstar, 2009), 114.

of Capital[13], 3rd Edition, written by Pratt and Grabowski, highlight problems with this model too. We primarily chose to rely upon CAPM theory for the BPM, since despite its faults, it still happens to be the most widely used cost of capital model in the public markets or the private markets[14].

Mr. Kasper states, "Since the size factor is up to the individual appraiser, both the TCOE and CSRP are subjective."

Mr. Kasper has failed to consider the equation:

$$TCOE = Rf + \beta * ERP$$

Simply stated, there is no size premium that the analyst has to consider in the TCOE equation. We will comment upon the CSRP observation below.

Incidentally, there are three ways to use the Calculator (also known as the BPM): 1) No allocation of risk (TCOE focused); 2) Partial allocation of risk (between market risk and a combined size:CSRP); and 3) Complete allocation of risk using guidelines-specific size premiums which separates size from CSRP[15]. All three approaches eliminate Mr. Kasper's criticism on this issue.

At the risk of sounding pedantic, of course, the TCOE and the CSRP are subjective. They both depend upon an estimate of the appropriate ERP. No CAPM based model could ever eliminate this trait. Obviously, the CSRP is also subjective depending on the underlying asset pricing model one uses. However, nearly all practitioners use the CAPM based model. The BPM Calculator will continue to use CAPM theory for that reason.

Mr. Kasper comments, "The calculation of a premium attributable to the difference between total and systemic risk for public companies (Total beta – beta) is attributable to factors that are not necessarily unsystematic. Competition, financial strength, supplier dependencies, product depth are all factors that affect systematic risk compensated through beta, yet these are the same factors suggested by BPM to narrow the CSRP from the BPM."

The BPM provides *quantitative* CSRP results, which we have never had before. It is up to the appraiser to *qualitatively* consider this pertinent observation, which we always mention during our presentations. This is nothing new.

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[13] Shannon P. Pratt and Roger J. Grabowski, *Cost of Capital: Applications and Examples*. Third Edition. (Hoboken, New Jersey: John Wiley & Sons, Inc., 2008), 250.

[14] Since we believe the build-up method is essentially the CAPM.

[15] While we originally advocated using either Morningstar or Duff & Phelps' size premium data, since the entire valuation community uses one or the other or both databases, we have since changed our recommendation since these databases introduce non-guideline specific size premiums. While we no longer recommend this approach, it did bring consistency to our analysis of CSR – something lacking in our industry.

Quoting, Corporate Finance, 3rd edition, by Ross, Westerfield and Jaffe[16]:

> *The distinction between a systematic risk and an unsystematic risk is never as exact as we make it out to be. Even the most narrow and peculiar bit of news about a company ripples through the economy. It reminds us of the tale of the war that was lost because one horse lost a shoe; even a minor event may have an impact on the world. But this degree of hair-splitting should not trouble us as much. To paraphrase a Supreme Court Justice's comment on pornography, we many not be able to define a systematic risk and an unsystematic risk exactly, but we know them when we see them.* (Emphasis added)

How did you handle this observation prior to the BPM? As best you could with no data – just as you do using the BPM with data.

Moreover, since Total Beta captures 100% of the risks, the allocation is more of an addition/subtraction function, rather than an economic function. If you fully allocate the risk using the BPM, then always compare the resultant private company's TCOE with the guidelines' TCOEs for reference. This is a *real-time*, market approach twist to the income approach. In our opinion, it is a much better approach than traditional methods to build-up a private company's cost of capital from dated database sources and then completely guess at the CSRP.

Mr. Kasper goes on to disclose, "Finally, after elaborately claiming that by eliminating beta, "The stock now stands alone and is not correlated to anything", the CSRP calculation is inconsistently and directly related to both beta and to the market return premium in their derivation."

Of course and as stated above, the CSRP is related to the market return. We need some type of reference or market to convert the CSR into a premium or CSRP. Moreover, to isolate CSRP one needs to account for the other factors such as beta. Of course, there is no calculation that measures CSRP directly without accounting for other factors.

Sixteen Alleged Criticisms:

1) Total Beta approach lacks peer-reviewed or empirical support.

Mr. Kasper states, "…An article published in a peer-reviewed journal does not mean that the profession or academics support the article, only that it is worthy of discussion[17]. Most of the subsequent articles cited above are nothing more than promotional pieces to

[16] Steven A. Ross, Randolph W. Westerfield, and Jeffrey F. Jaffe, *Corporate Finance*. Third Edition. (Homewood, Illinois: Richard D. Irwin, Inc., 1993), 318.

[17] After reading this article, we are very confident that Mr. Kasper's article will not be supported by the profession or academics even though it now is in print in a peer-reviewed journal.

sell *their*[18] model. Support could come from either empirical studies supporting the approach or from other authors. To date there have been none."

Let's closely examine this false and slanderous accusation in much greater detail. It is one of the more important incorrect criticisms. Mr. Kasper goes on to state that, "Although Dr. Damodaran has published in scholarly journals, *his*[19] Total Beta is not in any published scholarly journal. Let's look at Professor Damodaran's response to Mr. Kasper's peer-review question:

> *It is a standard part in every one of my published books. I am not sure what scholarly journal would be the forum for this, but I don't think there is much there that would make it ground breaking. Total beta is just the standard deviation of the stock divided by the standard deviation of the market – it is an extension of conventional portfolio theory to the undiversified investor.*

It is obvious that Professor Damodaran does not believe that it requires peer-review because Total Beta's merits are so obvious. Apparently, Mr. Kasper does not believe that Damodaran's textbooks which mention Total Beta qualify as "scholarly".

Mr. Kasper goes on to state that, "There are no publications in any financial journals on BPM; little support for Total Beta and none using Total Beta to estimate total returns. Reilly, quoted earlier, did not endorse or even mention the BPM although he, like others, have recognized the term CSRP."

We will respond to these false accusations individually. First, we hope to change Mr. Kasper's observation regarding introducing BPM in financial journals. Whether or not we are successful remains to be seen. Even if we ultimately are not successful (as it is incredibly competitive to get a paper published in an academic journal) this should not be construed as evidence that *our*[20] theory is faulty. We strongly encourage appraisers to read this defense in relation to Mr. Kasper's criticisms and make their own determination.

Mr. Kasper apparently missed the article[21] written by Dr. Meulbroek[22] (actually referenced quite ironically in the prior (Fall 2008) edition of *Business Valuation Review*). As described in the article, she uses Total Beta in her assessment of pensions for undiversified investors. In Mr. Kasper's defense, he could have missed it since Dr. Meulbroek does not come out and call it Total Beta. Key to refuting Mr. Kasper's criticism on Total Beta, is that Dr. Meulbroek actually does apply Total Beta to an equity risk premium. Key to refuting Mr. Kasper's criticism of the BPM is that Dr. Meulbroek uses the "BPM", or at least the (Total Beta – Beta)*ERP portion. We reiterate, while

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[18] This is a very important pronoun as we shall see below.
[19] This is another very important pronoun as we shall see below.
[20] This is yet another very important pronoun as we shall show below.
[21] Please see "Company Stock in Pension Plans: How Costly Is It? at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=303782.
[22] The Fritz B. Burns Associate Professor of Economics at Claremont McKenna College.

moderately subjective, there is nothing controversial about the BPM formula. Please see FAQ #2e for more details.

Moreover, contrary to Mr. Kasper's assertion, we listened to a webinar given by Robert Reilly titled, "Indentification and Quantification of Company-Specific Risk in the Estimation of the Cost of Equity Capital" dated August 12, 2008, which specifically cited the BPM on seven of twenty-four slides. We remember being quite pleased with the exposure that Reilly gave the BPM as well as his assessment of the technique. Reilly's firm, in its newsletter, *Insights*[23], also spoke favorably about the BPM.

Interestingly, Professor Damodaran did not invent Total Beta as alluded to in footnote number nineteen. Mr. Kasper should have noted our FAQ #5 where we state[24],

> *We have subsequently learned that total beta was introduced in 1981. Please see "The Beta Quotient: A New Measure of Portfolio Risk" by Robert C. Camp and Arthur A. Eubank, Jr. published in the Journal of Portfolio Management. (Note: Total Beta was referred to as the Beta Quotient in the article).*

In our opinion, the *Journal of Portfolio Management* is a "financial journal" as evidenced by the following quote from its website[25]:

> *The Journal of Portfolio Management is your definitive source for thought-provoking analysis and practical techniques in institutional investing. It gives you cutting-edge research on asset allocation, performance measurement, market trends, risk management, and portfolio optimization. Contributors of The Journal of Portfolio Management are the industry's foremost academics and practitioners, including many Nobel laureates.*

Mr. Kasper also mentions an article written by Chris Tofallis in the *European Journal of Operational Research*[26]. Yet, we are assuming that this journal, at least according to Mr. Kasper, is not scholarly either based on his comment that "The only scholarly article the author found was written by Pablo Fernandez."

Mr. Kasper states that Mr. Fernandez' research, allegedly the only scholarly article[27] on Total Beta, written in Spanish and interpreted by an Ohio State University Professor of

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[23] See Willamette Management Associates' *Insights Special 2008* for the article titled, "A New Procedure to Estimate the Company-Specific Equity Risk Premium when Valuing a Closely Held Business Included in the Marital Estate: The Butler Pinkerton Model".

[24] It is ironic that this article was not cited in Mr. Kasper's paper since Mr. Grabowski, the editor of *Business Valuation Review,* alerted us to it in the Summer of 2008.

[25] http://www.iijournals.com/JPM/DEFAULT.ASP?.

[26] Chris Tofallis, "Investment Volatility: A Critique of Standard Beta Estimation and a Simple Way Forward," *European Journal of Operational Research* 187, Issue 3 (16 June 2008): 1358-1367.

[27] It is not apparent if this article has been published in any journal. As far as we could tell, it is part of a working paper series. Please see http://papers.ssrn.com/sol3/papers.cfm?abstract_id=962921.

Spanish, describes Total Beta (allegedly used by Professor Damodaran) as the coefficient between the standard deviation of the ROE and the standard deviation of profit of the sectorial index over the past five years". While we do not doubt the translation, this is not a Total Beta based on stock market returns. Rather for lack of a better term, it is a fundamental Total Beta based on relative ROE and sector profit. We all know that accounting measurements can hide risk. A company can have a very stable ROE yet be subject to incredible amounts of CSR. Therefore, this criticism is irrelevant to total betas calculated from stock returns.

Interestingly, Mr. Kasper quoted Tofallis in the *European Journal of Operational Research*:

> *"This estimator* (Total Beta) *is a measure of total risk and so it can be applied to all portfolios – whether diversified or not. A consequence of this, of course, is that it cannot play a part in splitting up risk into its components (market and investment-specific risk).*

This exact quote was also cited in the Fall 2008 edition of the *Business Valuation Review* under the Editor's Column[28], implying that Tofallis did not think it was possible to allocate total risk[29]. If we can not allocate the risk, then the BPM's foundation could be viewed as problematic[30]. Therefore, we were quite interested in learning more about Tofallis' ideas on this issue. Therefore, Peter Butler contacted him. The pertinent e-mail exchange is found in **Appendix B**. Professor Tofallis' response adds very important clarity to the misinformation in the Editor's Column[31].

Mr. Kasper also comments upon an email exchange that we had with Professor Abbott. Please see **Appendix D** for the actual question and pertinent answer between Peter Butler and Professor Abbott, Associate Professor of Finance in the College of Business & Economics at West Virginia University, discussing standard deviation and peer-review.

Mr. Kasper also states that "Other than two professors (Damodaran and Abbott), two books (Damodaran's and Cost of Capital, 3rd edition), and the one original article mentioned above (First article in *Business Valuation Review*), the authors provide no support of the "numerous" other professors and publications." In response to this false allegation, we highlight additional peer-review support for the BPM and/or Total Beta that Mr. Kasper also somehow missed:

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[28] Written by Mr. Grabowski.

[29] This quote, ironically, refutes Mr. Kasper's claim that Total Beta only captures "systematic risk of a riskier asset" – whatever that is?

[30] The TCOE side of the Calculator is unaffected by this alleged observation.

[31] We have a letter into the editor sent via e-mail on 3/12/09, correcting this misinformation. We have yet to hear from Mr. Grabowski on its publication status. In fact, coincidentally, this same Editor's Column motivated us to send in a first letter to the editor on January 6, 2009, prior to knowing Tofallis' correct thoughts on the matter. For whatever reason, this letter was rejected and never published in *Business Valuation Review*. There are some excellent points in it that we now include as **Appendix C**.

- Page 371 - 373 of the AICPA[32] textbook, *Understanding Business Valuation*: *A Practical Guide to Valuing Small to Medium Sized Businesses*, Third Edition, written by Gary R. Trugman.

- Page 101 of the National Association of Certified Valuation Analysts' (NACVA[33]) *Current Update in Valuations*, 2008 Edition[34].

- Page 5-56 – 5-58 of *PPC's Guide to Business Valuations,* Nineteenth Edition, written by Jay Fishman, Shannon P. Pratt, J. Clifford Griffith and James R. Hitchner.

- *The Butler Pinkerton Model Report* published by Morningstar available at http://corporate.morningstar.com/ib/asp/subject.aspx?xmlfile=1425.xml.

- Invited by the American Society of Appraisers[35] to develop a Center for Advanced Valuation Studies (CAVS) seminar featuring the BPM.

- Slide 604 of Roger Grabowski's[36] Cost of Capital, a Center for Advanced Valuation Studies (CAVS) seminar, given in October 2007.[37] This slide shows the "Goldman/Bank of America Model" as:

$$R_e = R_f + ERP_{US} * \sigma_{subject} / \sigma_{US}$$

Where R_f equals the Eurodollar bond yield; ERP_{US} equals the U.S. market risk premium; $\sigma_{subject}$ = volatility of country's stock market and σ_{US} = volatility of U.S. stock market.

Importantly, this equation should look very familiar. The following term, $\sigma_{subject}/\sigma_{US}$, is the Total Beta for the country of interest multiplied by the ERP, which converts risk to a premium. It is clear that Goldman Sachs and Bank of America apply Total Beta to estimate a foreign country's ERP.

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[32] Please note that Mr. Kasper is a CPA.
[33] Please note that Mr. Kasper is a CVA and a CBA.
[34] The BPM coverage in the 2009 edition will be even more detailed.
[35] It is ironic that Mr. Kasper's critique appears in the ASA's journal, the *Business Valuation Review*. Mr. Kasper is not an ASA. Butler and Pinkerton have published in *The Value Examiner* (NACVA's journal) and *Business Appraisal Practice* (IBA's journal) much more recently than the *Business Valuation Review*.
[36] It is ironic that this allegation passed the review board's screen since Mr. Grabowski is the editor of *Business Valuation Review*.
[37] Incidentally, Mr. Grabowski invited Peter Butler to present the BPM (before the Calculator was open for subscription) during this day long presentation a day before the ASA Advanced Business Valuation Conference in San Diego, California. At this conference, Peter Butler co-presented on CSR where he covered the BPM and Professor Richard Sias, the Gary P. Brinson Chair of Investment Management in the Department of Finance at Washington State University, discussed the inability to completely diversify away firm-specific risk.

Interestingly, Duff & Phelps[38] also has its own TCOE-related model conveniently known as the "Duff & Phelps Model" as described on page 614 of the same CAVS slides to develop an ERP for a foreign country:

$$R_e = R_f + RP_{US} * \sigma_{subject} / \sigma_{BASE} + PRA$$

Where R_f equals the U.S. risk-free rate (20-year treasury); RP_{US} equals the risk premium for a U.S. company; $\sigma_{subject}$ = volatility of subject company's market; σ_{BASE} = volatility of a highly developed market; and PRA represents a political risk adjustment (which makes the formula unique from the Goldman/Bank of America Model).

We also thought it would be appropriate to mention an excerpt from an e-mail between Professor Vicentiu Covrig, Ph.D., CFA, Department of Finance, Real Estate and Insurance, College of Business and Economics, California State University, Northridge (Also, please see **Appendix A**) and Peter Butler.

Professor Covrig on the Calculator:

> *I went over the first (free) few steps, and they were user friendly. I liked the 50 FAQs. You did a good job. We* (meaning Professor Daniel McConaughy[39]) *would appreciate if you can give us access to your calculator to try it.* (Emphasis added)

Professor Covrig on the Total Beta and the BPM[40]:

> *The method* (Total Beta) *is as old as CAPM, tracing back to Sharpe ratio. It's not Damodaran that discovered it, he just mentions it in his textbooks.* (Emphasis added)
>
> *Our last year paper at BVR, and the forthcoming paper at BVR[41] "A Method for Adjusting Public Companies' Multiples For Firm Specific Risk", present the theoretical foundations of the total beta, including a list of references[42]. There is a reason why your method and our method are similar, that's because both are actually the same method, developed long time ago. Our contribution is not in developing the total beta formula, or*

[38] It is even more ironic that this allegation passed the review board's screen since Mr. Grabowski works for Duff & Phelps.

[39] Associate Professor of Finance, Department of Finance, Real Estate and Insurance, California State University Northridge.

[40] Note: Peter Butler saw that Professors Covrig and McConaughy were presenting at NACVA's annual business valuation conference in Boston in May about adjusting public company multiples for CSR to use for private company valuations. Since the BPM can be used for that too (Please see FAQ #50f), Peter contacted the professors.

[41] Another ironic and fortuitous twist of fate for the BPM. As a reminder, Professor Meulbroek also used the same theory behind the BPM.

[42] Please note: even more references to Total Beta are forthcoming in this paper.

> *even the theoretical derivation of the CSRP, but on its application to discounting public companies multiples. In this case, we are not only the first ones to put it in print, but also we provide a theoretically correct methodology to discount the multiples. Dr. McConaughy thought about this adjustment methodology in early 2000s, long before practioners knew what total beta was.* (Emphasis added)

We repeat, "As old as the CAPM!", meaning it is the CAPM…for the hypothetical case of an undiversified investor. Total Beta has indeed been peer-reviewed: END OF STORY!

Of note, we have not even "invented" the "Butler Pinkerton Model"[43]; we simply brought the issue to the forefront in the valuation industry and commercialized a user-friendly way to inexpensively perform multiple calculations very quickly. While humbling, it is really an excellent counterargument to Mr. Kasper's allegations regarding peer-review[44].

After review of the facts above, there should be no doubt in anyone's mind if the Total Beta or the BPM concept has been peer-reviewed, casting serious doubt on much of Mr. Kasper's illogical allegations and false assertions. One has to wonder how this article made it past the BVR editorial review board in the first place.

2) BPM is inconsistent in describing risk of individual stocks.

Mr. Kasper claims we describe risk inconsistently by his following comment: "Note: the standard deviation of a stock's return is the appropriate measure of total risk, if the stock is the only asset in a portfolio. In the next paragraph, they state, "Total Beta, which measure(s) a stock's riskiness relative to the market (which has a Total Beta equal to 1), captures total risk, including systematic risk and company risk. Clearly, these are not the same by their own definitions."

In retrospect, we should have been clearer in our description of Total Beta. In hindsight, we should have stated that "Total Beta, which measure(s) a stock's riskiness relative to the market (which has a Total Beta equal to 1), captures the total risk premium, including the systematic risk premium, the size premium, and the company-specific risk premium, when multiplied by the ERP.

Mr. Kasper then states that, "The ratio of standard deviations may capture total volatility better than beta, according to Tofallis, but it does not mean that it captures the stock's return relative to the market as claimed in Equation 2." For the reader's benefit, equation 2 is the TCOE equation.

[43] Although at the time, Butler thought he had invented it.

[44] It is also a testament to how slow the business valuation industry is to accept new, peer-reviewed concepts.

We thought it was clear that we have not claimed this odd interpretation. TCOE is a hypothetical return for an undiversified investor in public companies. This person does not exist. Since we as an industry make the assumption that our business owners are undiversified, we can use TCOE as a proxy for our subject private companies' cost of equity just as Professors Covrig and McConaughy use it to adjust public company multiples for CSR using "the same method."

3) "CSRP" does not measure company-specific risk premiums.

Mr. Kasper states that, "A company can have large unexplained variation in the regression, which translates to unsystematic risk. More factors that explain the total return reduce the unexplained specific risk."

This observation is correct. The BPM is dependent upon CAPM theory, not Fama-French, which has three betas, or any other theory with more than just one beta. Remember, however, these other models also have their own issues and, for whatever reason, are not as popular as the CAPM at least practically speaking. Remember too that the TCOE side of the equation is not subject to this criticism.

CSRP measures all of the risk left after considering the market and size premiums, thus it is the residual risk. In our opinion, however, at least some of the "unexplained" variation, or residual risk, must be CSR-related. When a company announces the loss of a material customer and the stock plummets while the stock market increases – that specific price reaction to the news certainly is not systematic. This price reaction, and others like it, is captured by the stock's standard deviation. Total Beta uses a stock's standard deviation as a relative measure of risk against the market's standard deviation.

4) "Company-Specific Risk Premium" is related to market risk premium.

Here Mr. Kasper comments that we have incorrectly defined CSRP by stating, "It is important to note that company-specific risk is separate and unrelated from market risk and the size premium." He then states, "As noted earlier, the very computation of CSRP relies upon both the size and market equity risk premium in its Equation 4."

Again, for the reader's benefit, Equation 4 is the BPM. Mr. Kasper's observation is true. In hindsight, we should have not used the word, unrelated, in our description. However, we are attempting to isolate the risk – that is all. So, of course if we capture the total risk "pie" in TCOE (which we do) and subtract out the market risk premium (adjusted for beta) and the size premium, the residual is the unsystematic risk premium under CAPM theory.

5) Total Beta does not remove the stock from a well-diversified portfolio perspective.

This statement is obviously false. Total Beta relies upon standard deviation, a well-accepted measure of risk for stand-alone assets.

Mr. Kasper states, "In determining beta, the regression does not know or care if the stock is held individually or in a portfolio. The basic tenet of the efficient market hypothesis and CAPM is that, if a stock's price violates the basic return to risk relationship, then investors will bid up or sell the stock until the relationship is restored."

We agree, although we are not sure of the point. Nonetheless, this statement does not in any way discredit Total Beta or the BPM.

Mr. Kasper then states, "Therefore, to argue that prices held by investors with only that stock differ from prices (and hence returns) from those with portfolios violates both theory and common sense."

We agree. We have never argued this nonsensical point. Again, this statement does not discredit Total Beta or the BPM.

Mr. Kasper also states, "There is only one price in the market for a stock in equilibrium, although that price can change with each trade. But there is no segregation of the market into those holding a single asset from those holding portfolios. The actual returns are what they are."

Again, we agree. Since neither TCOE nor BPM violate this idea, we are not sure what point Mr. Kasper believes he is making. Reiterating, Total Beta and the BPM do not attempt to describe expected public stock market returns. Rather, Total Beta and the BPM use historical returns as proxies for the hypothetical case of an undiversified *public* investor, which can be applied to our real-world, *private* business owner.

6) BPM and Total Beta do not remove the correlation from the market.

Mr. Kasper claims that, "If the covariance term were 0, then the correlation coefficient and beta would equal 0 and Total Beta would be undefined."

This hypothetical statement is correct. However, in reality, this should never happen. Remember the other side of the Total Beta <u>identity</u> has the standard deviation of the market in the denominator:

$$\text{Total Beta} \equiv \beta/R \equiv \sigma_s/\sigma_m$$

The standard deviation of the market will never be zero, resulting in an undefined Total Beta. If the standard deviation of the market was zero for example over a five-year look-back, the price of the S&P 500 would close at the same figure every week (assuming a weekly frequency measure) for five straight years.

Mr. Kasper then states that, "One can define Total Beta as the relative volatility metric even if there is no correlation, but the model breaks down if there is no correlation." The model will not break down since the correlation (practically speaking) will never be exactly zero. Identities cannot be violated.

Mr. Kasper also claims that, "The computation still depends upon the market[45], except when the covariance is zero." Of course, the calculation depends on the market. As Mr. Kasper mentions, the Total Beta can also be calculated by the relative volatility metric between the stock and the market. Not to mention, we multiply the equity risk premium (dependent upon the market) by Total Beta to convert the risk metric to TCOE, the total risk premium. In summary, we need a reference point – a market.

Mr. Kasper then states, "Total Beta does measure the relative volatility separate from the return correlation, but that is not the same as saying the return should be uncorrelated with the market."

We have never said the return should be uncorrelated with the market[46]. In fact, by definition, the return of the stock in the hypothetical TCOE calculation is dependent upon the expected return of the market. Moreover, volatility of any stock is driven by the following equation, a mere algebraic manipulation of the Total Beta identity:

Standard deviation stock = Beta*Standard deviation of market/correlation coefficient.

In summary, no stock or private company is an island with a vacuum for its market, meaning un-impacted by alternative investments. Having said that, standard deviation is the most widely used measure of total risk. Relative standard deviation, as Total Beta captures, is the best metric to convert total risk to a total risk premium (TCOE). This statement is not controversial as pointed out by Professor Abbott, and as used by Professor Damodaran, Duff & Phelps, Goldman Sachs, Bank of America, Professor Meulbroek, Professor Covrig, Professor McConaughy and Professor William Sharpe, a Nobel prize winner (see defense # 11 below), and captured in other references.

7) Total Beta does not capture total risk.

Mr. Kasper states that, "By the SML, Total Beta would be simply a higher point (to the left of the original beta) on the SML as seen in Figure 1, and SML measures only systematic risk."

[45] As appraisers, we observe the market. Why is dependence on the market a bad thing?

[46] We have misspoken and mentioned that after dividing beta by R (resulting in Total Beta) that "the stock is not correlated to anything". What we should have stated was that this division (beta divided by R) has created a risk metric (Total Beta) which uses standard deviation, the best measure of total risk.

Yes, SML only measures systematic risk. However, he is completely mistaken as Total Beta is not on this line at all. As stated numerous times above, TCOE is not priced in the public markets, so it can not be placed on the line. It does not make any sense that a stock could simultaneously be in two places on the line. Presumably, a stock has a beta which would place it at one point on the line (since beta, not Total Beta, is the horizontal axis) and also have a resultant higher Total Beta (by definition) at another point on this same SML.

Mr. Kasper then states that, "Therefore, Total Beta measures the systematic risk for a riskier asset, not the total risk of a given asset."

Reiterating, Total Beta and TCOE are dependent upon standard deviation. This statement alone refutes his entire argument. While TCOE is not priced in the public markets, this fact does not mean that it does not exist. It appears that Mr. Kasper is making the claim that somehow Total Beta, a risk measurement (Emphasis added) – not a risk factor, makes the asset riskier – a nonsensical conclusion.

8) Total Beta produces inconsistent guideline companies.

Mr. Kasper claims, "If Total Beta is viewed as a point on the Beta axis of the SML, then it must represent the beta for guideline companies held in a portfolio according to the BPM."

This premise is a non-starter as described above.

9) Total Beta may produce less reliable E(r) values.

Mr. Kasper states, "Total Beta is much less reliable estimator of the expected return than the original beta."

Since there are benefits of diversification, rational investors should expect original beta to describe actual returns better than Total Beta. Again, Total Beta is not used to describe expected public stock returns. Rather, it is used to develop a proxy for a *private* company's cost of equity.

10) Total Beta implies investors holding a single stock have higher market expectations than do investors who hold the stock in a portfolio.

We have already commented upon such an odd observation. Total Beta does not imply this, and we were quite surprised that Mr. Kasper thinks it does. Reiterating, TCOE is a proxy for *private* companies that price total risk. As previously stated, it is a market approach twist to the income approach for the valuation of *private* companies. As Chartered Financial Analysts (CFAs) and investors ourselves, we do not use it to make investment decisions for publicly-traded stocks since we know that all (or at least a great deal) of CSR is diversified away.

11) There is no support for the standard deviation as a measure of return.

This statement is true, but meaningless. Standard deviation is a measure of risk, not return, as stated many times above. Standard deviation can be converted into a measure of return, however, by use of Total Beta.

We find it quite interesting that Mr. Kasper uses the Sharpe ratio to allegedly prove his point. Ironically, we could correctly use the Sharpe ratio to refute his claim and convert standard deviation into return for the hypothetical undiversified investor. Coincidentally, we already have. Please see FAQ #2d. As shown here, we end up with the following equation:

$$Delta = (Total\ Beta - Beta)(Rm - Rf)$$

This equation should look very familiar as the BPM (excluding the additional allocation of the size premium). Delta represents the CSRP (including the size premium) or the additional return required to compensate the completely undiversified investor for the incremental risk of holding only one stock in his or her portfolio and be ambivalent as to whether he or she held this one stock or the market portfolio.

If this is not enough to prove that standard deviation can be converted into a measure of return, we also highlight the Capital Market Line (CML)[47]. While the CML discusses portfolios, the following equation should look very familiar:

$$E(Rp) = Rf + (E(Rm-Rf)/\sigma m)*\sigma p$$

The relative standard deviation ratio, $\sigma p/\sigma m$, is a Total Beta for the pertinent portfolio.

We also thought the chart in **Appendix E** would be of interest. We have frequently used this chart in our presentations to show the relationship between risk (standard deviation) and return.

Last but not least, one merely has to look at the option market. Expected (implied) standard deviation of a stock's return is instrumental in the pricing of its options. Incidentally, the BPM is excellent for use in determining the expected standard deviation of your subject company's future return for use in valuing stock options for SFAS 123R. Please see FAQ # 50a-d for more details.

12) "Size Premium" is not firm or industry specific.

Mr. Kasper states, "the size premium is specific to the valuator, not firm, since the valuator selects their own size premium."

[47] The CML is the efficient set of all assets, both risky and non-risky, with standard deviation of a portfolio on the x-axis and the portfolio's expected return on the y-axis. Source: Corporate Finance, page 299.

If the valuator does not calculate a guideline specific size premium[48] this is an accurate statement, as previously noted.

Mr. Kasper has implied that models such as the Fama French Three Factor Model that assign more systematic betas are better models. However, the inputs to arrive at these other betas are not guideline specific either, seemingly precluding these models as reference points for the BPM.

We actually briefly considered updating or developing an alternate Calculator using the Fama French Three Factor Model but decided against it for all of the reasons stated above and the following fact: Professor French does not update his data daily and the Calculator is updated daily. For example, as of the writing of this defense, (May 4, 2009) after review of Professor French's website[49], the data is only current through the end of March.

13) The model can produce a nonsensical CSRP.

This is a derivative of all of Mr. Kasper's other observations of the size premium. We had previously recognized this issue[50] and now recommend that appraisers just key in on TCOE (no allocation of risk), a partial allocation of risk (between market risk and a combined size:CSRP), or a full allocation of risk, using a guideline-specific size premium.

While traditional methods of splitting up risk such as in the build-up method are popular, there really is not much reason to split the size premium and the CSRP any longer with Total Beta in our proverbial toolbox.

To paraphrase, Cost of Capital, 3rd Edition, by Grabowski and Pratt: *Is a company small because it is risky; or is it risky because it is small?* Who knows for sure? Maybe a little bit of both? In any event, if you do not split the risk between the two, you do not have to answer the rhetorical questions any longer. In short, in our opinion, the use of the Calculator which captures total risk, is a far superior technique than relying upon non-industry specific size premiums dating all the way back to 1926 (Morningstar) or 1963 (Duff & Phelps) when building up the cost of equity[51].

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[48] Recognizing that this is somewhat of a subjective calculation.
[49] Please see: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.
[50] Mr. Kasper's criticism is not new. In fact, we thought of it ourselves. Please see FAQ #23, #43 and #45.
[51] We recognize this comment is controversial. However, is it controversial because it is challenging status-quo, or is it controversial because it is incorrect? We believe we know the answer. We ask a rhetorical question: "Have you ever commingled different databases when calculating a market multiple, using the public market as a reference?" We surmise not. There is no reason now to commingle betas and/or industry risk premiums (IRPs) with non-specific guideline size premiums in the income approach and then completely guess at CSR with Total Beta at our fingertips. Moreover, Total Beta better allows the appraiser to better select guideline companies, rather than being dependent upon all of the companies in an IRP.

Interestingly, Mr. Kasper's criticism can be used against all size premium applications. How many times have we all used a beta (with a 5-year look-back, for example) specific to a company or an IRP specific to an industry and then used a size premium that commingles different industry data or data from 1926 (Ibbotson) or 1963 (Duff & Phelps), for example?

14) "Size Premium" is a specification error in BPM.

This is essentially the same criticism as points 12 – 13.

15) Unlevered beta is misspecified.

Mr. Kasper states that we "used the "simplistic" Hamada's formula" to unlever beta in our example (of February 2007). Yes, this is true. However, un-levering and re-levering beta based on a subject's company's actual or target capital structure is really not our issue. We, in fact, do not recommend one approach over any other. Please see FAQ # 46c which also mentions other formulas such as Miles-Ezzell and Harris-Pringle to unlever and relever betas.

16) Unlevered beta is all that is needed.

Mr. Kasper makes the claim, "Why not just publish the unlevered betas and subtract the actual private company's debt from discounting operating income?"

First, since the Calculator uses public stock returns, the betas that we get are levered, unless of course the firm has no debt. For obvious reasons, the Calculator will continue to provide levered betas. It is up to the analyst to use the levered betas as he or she sees fit.

Conclusions

This is probably a good time to quote the following:

> *All models are wrong but some are useful.*
> George Box, statistician

Notice, we did not call the BP*M*, the Butler Pinkerton *Fact* (BP*F*). It is a model. Models are not natural laws. Having said that, the BPM is a very useful model for the valuation of privately-held firms. Common sense should lead appraisers to use, at a minimum, the TCOE side of the Calculator. For those a little bit more adventurous, you should also find the CSRP, or risk–allocator, side quite useful too – certainly relative to guessing at CSRP. If you guess at CSRP (and, therefore, TCOE) with no empirical evidence by using any other available cost of capital database and the opposing appraiser uses TCOE and/or the BPM, we are quite confident that the

opposing appraiser will have a distinct competitive advantage – at least on these issues.

Quoting Mr. Kasper in his conclusion[52], "The Butler Pinkerton Model for estimating company-specific risk premium provides unverifiable and untestable premiums (*FALSE!*) based upon unsupported and dubious financial theory (*WRONG!*). The model turns the Capital Asset Pricing Model and financial theory on its head by assuming that the market is inefficient (*FALSE!*) and does not reflect prices for individuals' holdings of stock (*WRONG!*). Somehow, according to the BPM, the market values a stock differently if held alone from a holding in a portfolio (*FALSE!*). Although the CSRP is a useful concept (*TRUE!*) it is flawed in its implementation and specification in the BPM (*WRONG!, with the disclaimer that we now do not recommend using either Morningstar or Duff & Phelps' data for size to keep everything guideline-specific. Of course, there has never been any controversy over just keying in on TCOE (at least before Mr. Kasper) or a partial allocation between systematic risk and a combined size:CSRP if using CAPM theory. Under either of these two options, all data is guideline-specific*) and provides no better information than current subjective methods (*FALSE!*), and less than from applying financial theory (*WRONG!*). It lacks support from independent authorities (*FALSE!*).

[52] Interspersed with our commentary as proven in our detailed analyses above.

Appendix A

Testimonials or Quotes[53]

- They may have created a tool for valuation professionals that is … possibly better than anything else out there for the determination of a discount rate. The Butler-Pinkerton Model™ is a tool that every valuation analyst must have in his or her toolbox. I believe it is a tool that is a must have for all of us. This is perhaps one of the best contributions to our profession in a long time. ***Gary Trugman, CPA/ABV, MCBA, ASA*** (In interest of full disclosure, Trugman is referring the Total Beta and TCOE side of the Calculator, rather than the CSRP portion).

- When my damages were presented to the opposing party the case promptly settled in our client's favor. The model just feels right and is "esthetically pleasing" so to speak to the target audience because it is so market driven. **James M. Skorheim, JD, CPA/ABV/CFF, CFE, CVA, CrFA**

- Frankly, it was this analysis (reviewing Forms 10-K, etc.) that gave me the best insight into the characteristics that affect risk in this industry. I don't believe that you can reasonably assess company specific risk factors without an understanding and analysis of the benchmarks derived from the BPM. **James M. Skorheim, JD, CPA/ABV/CFF, CFE, CVA, CrFA**

- "I much prefer BPM because it forces me to examine public company data about industry risk factors and value drivers which is available through public filings, press releases, analyst reports, etc. The data is much more comprehensive in nature than the limited data available for private companies." **James M. Skorheim, JD, CPA/ABV/CFF, CFE, CVA, CrFA**

- Having examined the BPM extensively (and I mean extensively), I am convinced that valuation analysts should consider its application in every valuation where an income approach and/or a guideline publicly traded company (GPTC) method is considered….This process significantly narrows the "judgment gap" of the subject company SRP. I have found that the variance between the values determined by the income and GPTC methods has been significantly reduced. ***Donald P. Wisehart, ASA, CPA/ABV/CFF, CVA, MST***

- The tool works well, and often fuels the fire to ask even more questions and further the valuation process. ***Donald P. Wisehart, ASA, CPA/ABV/CFF, CVA, MST***

- Recently, Keith Pinkerton and Peter Butler developed the Butler-Pinkerton Model (BPM), an empirical, logical model of the cost of equity capital and the company-

[53] Note: We contacted all of these individuals prior to publishing this article and ensured they had access to Mr. Kasper's critique. They all happily agreed that we could still use their testimonials

specific equity risk premium. I am a strong proponent of the BPM and have started to use it to reinforce my benchmarking plus subjective judgment methodology. ***Rand M. Curtiss, ASA, FIBA, MCBA***

- The basic premise underlying the BPM model is not controversial. When public guideline companies exist, the model provides a good framework from which to analyze and place in context the specific-company risk premium. ***Bob Duffy, CFA, ASA***

- There is a reason why your method (BPM) and our method (used to adjust public company multiples for CSR) are similar, that's because both are actually the same method, developed a long time ago. **Vincentiu M. Covrig, Ph.D.** in an e-mail to Peter Butler.

Appendix B

Pertinent Question posed to Professor Tofallis in March 2009 e-mail:

Peter Butler writes:

Professor Tofallis, I know you believe that we cannot separate the risk. Yet, this is exactly what we always have done to value private companies with the above equation. It seems that some who refute the risk allocation, should look carefully at how we already do it for private companies. They fail to realize that if we can not do it for public companies, then, in my opinion, we sure can't do it for private companies – Yet they will do it anyway. So, if we ignore total beta and TCOE observations (which some appraisers will definitely do), we are left with two options:

1)Completely guess at CSRP with NO empirical data; or
2)Use the Calculator (or perform the calculations oneself) to rely upon subjective empirical data. So, the choice for some appraisers will be No data v. (moderately) subjective empirical data. If this is the choice for some, I believe the choice is obvious. Given this choice, it boggles my mind why some people in the *appraisal* world are up in-arms about this risk allocation? Curiously, the same people who have a problem with the technique in the *appraisal* world, due principally to the subjectivity of determining the "true" beta, have no problem calculating (or using) the "true" beta themselves when using (or calculating) a size premium or relying upon an industry risk premium (IRP) from Morningstar/Ibbotson.

Professor Tofallis' Response:

<u>There seems to be a misunderstanding regarding my position on total beta. I do not say that it cannot be broken down into components, only that as it is TOTAL beta does not indicate (by itself) how the decomposition should be done. This is in contrast to the standard beta which is meant to indicate one component of risk and therefore implies there is another component</u>. (Emphasis added)

Appendix C

Rejected and Unpublished Letter to Editor in Response to Editor's Column in Business Valuation Review (Volume 27, Number 3)

A recent Editor's Column related to peer-review and an article titled, "Company-Specific Risk – A Different Paradigm: A New Benchmark" warrants a response.

The column states that:

> *Beta measurement issues are the subject of ongoing research and controversy. As a result, even if the calculated total cost of equity is a reasonably accurate measure of the market's measure of risk, it is quite another thing to imply that the company-specific risk component as measured by any mass data, commercialized product is correct.*

The reference above refers to the Total Cost of Equity and Public Company Specific Risk Calculator (the "Calculator" or the Butler Pinkerton Model (BPM)) available for commercial use at www.bvmarketdata.com.

The column also references an article, "Investment Volatility: A Critique of Standard Beta Estimation and a Simple Way Forward" written by Dr. Chris Tofallis and cites one of the article's conclusions: Namely, that the total cost of equity (TCOE) cannot be split into its component parts. While we disagree with this conclusion, shown below, this is an excellent article. We encourage all appraisers to read it.

Dr. Tofallis' criticisms, as well as the quote above, really point at the capital asset pricing model (CAPM) – not the BPM. If you accept the CAPM, which despite its flaws remains the most widely used cost of capital model – by far, then you should have no problem using the Calculator/BPM or conducting the calculations yourself, especially considering the following:

The authors (Butler and Pinkerton) have already pontificated at length concerning the inherent problems/controversy related to the CAPM, namely the instability of beta. The instability of beta is the primary reason Dr. Tofallis concludes one cannot separate total risk into its component parts. We have attempted to deal with this controversy with the following recommendations:

1) After an appropriate look-back period is selected, we recommend running the Calculator (or performing the calculations yourself) for all five days of the trading week for each of your guidelines. This shows the appraiser the inherent historical stability, or instability, of beta over the look-back period. Remember not all betas, contrary to Dr. Tofallis' assertion, are unstable. You will not know unless you look.

We then recommend that appraisers use some measure of central tendency (mean or median) of the statistically significant outputs (see below) to best estimate the beta (and ultimately the company-specific risk premiums (CSRPs)) over the look-back period. We ask the readers the following rhetorical question: "If you rely upon printed sources of beta (or the Industry Risk Premiums), do you have any idea the stability, or lack thereof, of beta? If you didn't, you do now.

2) If the statistical significance of beta is less than 80%, the authors do not recommend allocating the total risk since we do not have much confidence in the calculation of beta (systematic risk). In this scenario, appraisers need only look at the TCOE benchmarks.

3) While the authors like to allocate the risk (when possible), others merely compare/contrast TCOEs after reviewing all known risk factors. Appraisers have found this approach very attractive since they only have to look at one reference point (TCOE), rather than to build-up the rate. Therefore, should you decide to use this approach, you do not have to specifically look at beta and/or industry risk premiums (controversial as discussed above), size premiums (dependent upon CAPM theory and therefore controversial) or company-specific risk premiums (CSRPs).

In summary, we recommend that appraisers do not place more burdens on the BPM than other cost of capital models (CAPM, build-up method, Ibbotson's size data and Duff and Phelps' size data, etc.). It seems quite obvious, at least to us, that if you do not accept the BPM because of issues related to the CAPM, then you implicitly should also not accept any beta, industry risk premium or size premium as they all depend on the CAPM in one form or another. Remember, this is finance, not physics or engineering. The BPM merely fills-in a blank - a blank that somehow no one questioned before the BPM, other than the courts, when it was wholly subjective.

Peter J. Butler, CFA, ASA Keith A. Pinkerton, CFA, ASA

Appendix D

Question posed to both Professor Damodaran (To line) and Professor Abbott (Copy line) in March 2007 e-mail:

Peter Butler writes:

On the call there was one gentleman, who I believe might be bias against this technique, since he has developed another one of the subjective factor models to "calculate" company-specific risk. In any event, he seemed to think he made a good point when he asked me if this Total Beta concept had been peer-reviewed (I believe his definition of peer-review is by other PhDs in finance, since he did not like the fact that I mentioned that our Business Valuation Review article on company-specific risk was peer-reviewed).

I told him that I did not know, but I would get back to him. In summary, has this technique been peer-reviewed?

I answered the question the following way: I mentioned that Professor Abbott from West Virginia University certainly liked it (Professor Abbott has been copied on this e-mail). Professor Abbott, Keith Pinkerton and I spoke earlier in the week and he mentioned that the Total Beta concept was "very clean" and a way to measure <u>total risk</u>. (Emphasis added)

Answer posed by Professor Abbott in March 2007:

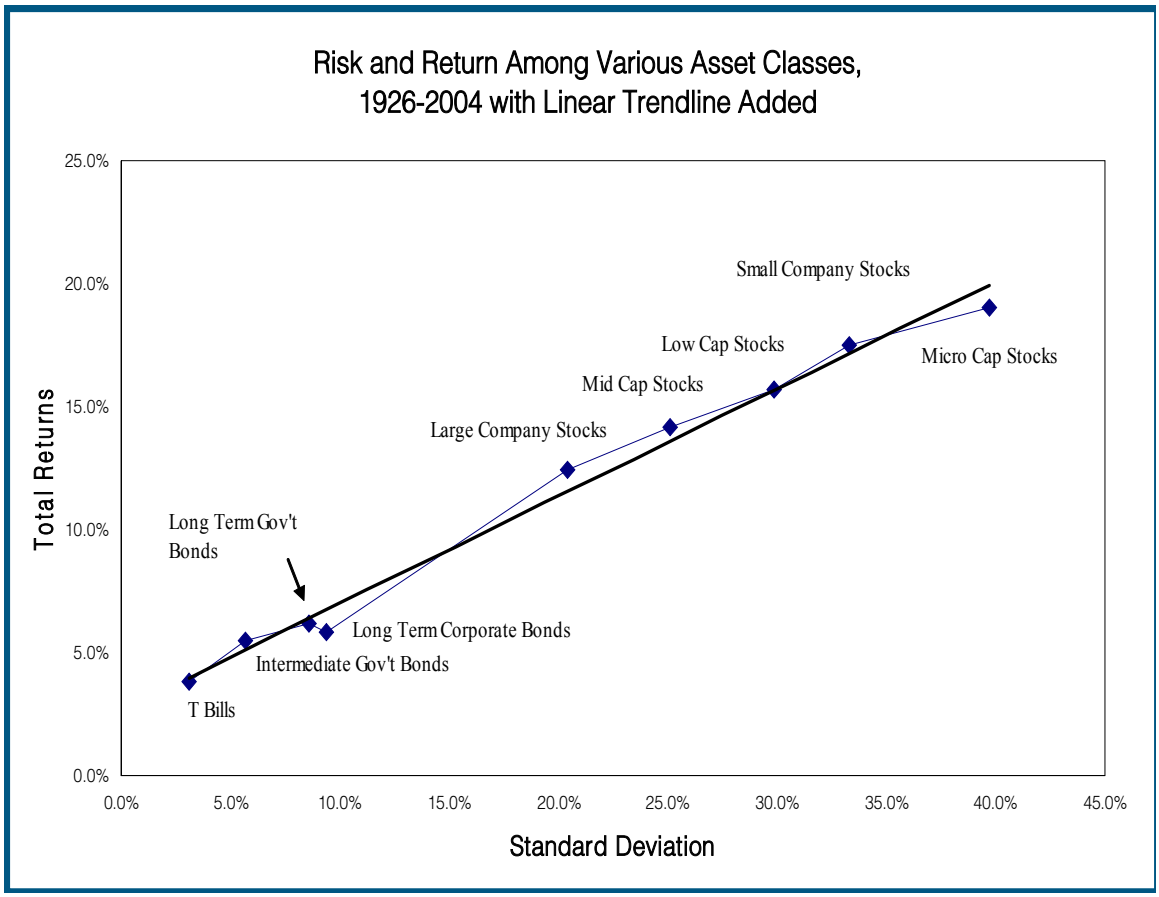
Pete,

Use of standard deviation as a measure of the risk of an asset in a stand alone situation is quite appropriate. Market based beta is an appropriate measure of risk for an asset held in a diversified portfolio. This is widely accepted and you can cite a number of finance text books on this.

<u>Hopefully your presentation helped individuals to move from subjective measures towards considering objective measures</u>. (Emphasis added)

wbr
Ashok

Appendix E


Risk and Return Among Various Asset Classes,
1926-2004 with Linear Trendline Added
Total Returns
Standard Deviation
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
0.0%
5.0%
10.0%
15.0%
20.0%
25.0%
30.0%
35.0%
40.0%
45.0%
Small Company Stocks
Low Cap Stocks
Micro Cap Stocks
Mid Cap Stocks
Large Company Stocks
Long Term Gov't Bonds
Long Term Corporate Bonds
Intermediate Gov't Bonds
T Bills