Current Update in Valuations: 2009 Edition

The Butler Pinkerton Model™ – Empirical Support for Company-specific Risk

BPM: Challenging Conventional Wisdom

- Traditional Thought:
  - There is <u>no specific model or formula</u> for quantifying the exact effect of investment-specific risk factors on the discount rate. This ultimately is based on the analyst's experience and judgment. (Emphasis added)

    Valuing a Business, 5th Edition; Pratt, Niculita

  - <u>No formulas, guidelines</u>, or rules of thumb can be relied on to consistently derive indications of unsystematic risk for a specific enterprise. (Emphasis added)

    Financial Valuation: *Applications and Models;* Hitchner.

But, the Courts Want Empirical Data . . .

- Gesoff v. IIC Industries
  - *"This court has also explained that we have been "understandably*

    . . . <u>suspicious of expert valuations</u> offered at trial that incorporate <u>subjective</u> measures of company-specific risk premia, as subjective measures may easily be employed as a means <u>to smuggle improper risk assumptions into the discount rate so as to affect dramatically the expert's ultimate opinion on value</u>." (Emphasis added)

- Delaware Open MRI Radiology Associates v. Howard B. Kessler, et al
  - *"To judges, <u>the company specific risk premium often seems like the device experts employ to bring their final results into line with their clients' objectives</u>, when other valuation inputs fail to do the trick."* (Emphasis added)

The Solution: Quantification of CSR!
Solving for the only unknown in the two equations:

Damodaran

CAPM

BPM

$$\bullet \text{ TCOE} = R_f + T\beta * ERP = R_f + \beta * ERP + SP + \textbf{CSRP}$$

Modified CAPM

$$\bullet \text{ CSRP} = T\beta * ERP - \beta * ERP - SP$$

$$\bullet \text{ CSRP} = (T\beta - \beta) * ERP - SP$$

Your Choice:

Quantification Aided by Moderately Subjective Empirical Data ✔	**No Empirical Data**

Total Beta

- $T\beta = \text{☞}_s / \text{☞}_m = \beta/R$

- $T\beta$ **trumps** all other betas:

    - Captures 100% of disclosed risks (if stock trades in an efficient market)

    - Same reference point we use for private companies (most of the time): Stand-alone asset

    - Generally, much more stable than beta

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BPM: Input Data Required

1. Risk Free Rate (R_F)

2. Equity Risk Premium (ERP)

3. Valuation Date

4. Size premium

5. Return calculation frequency
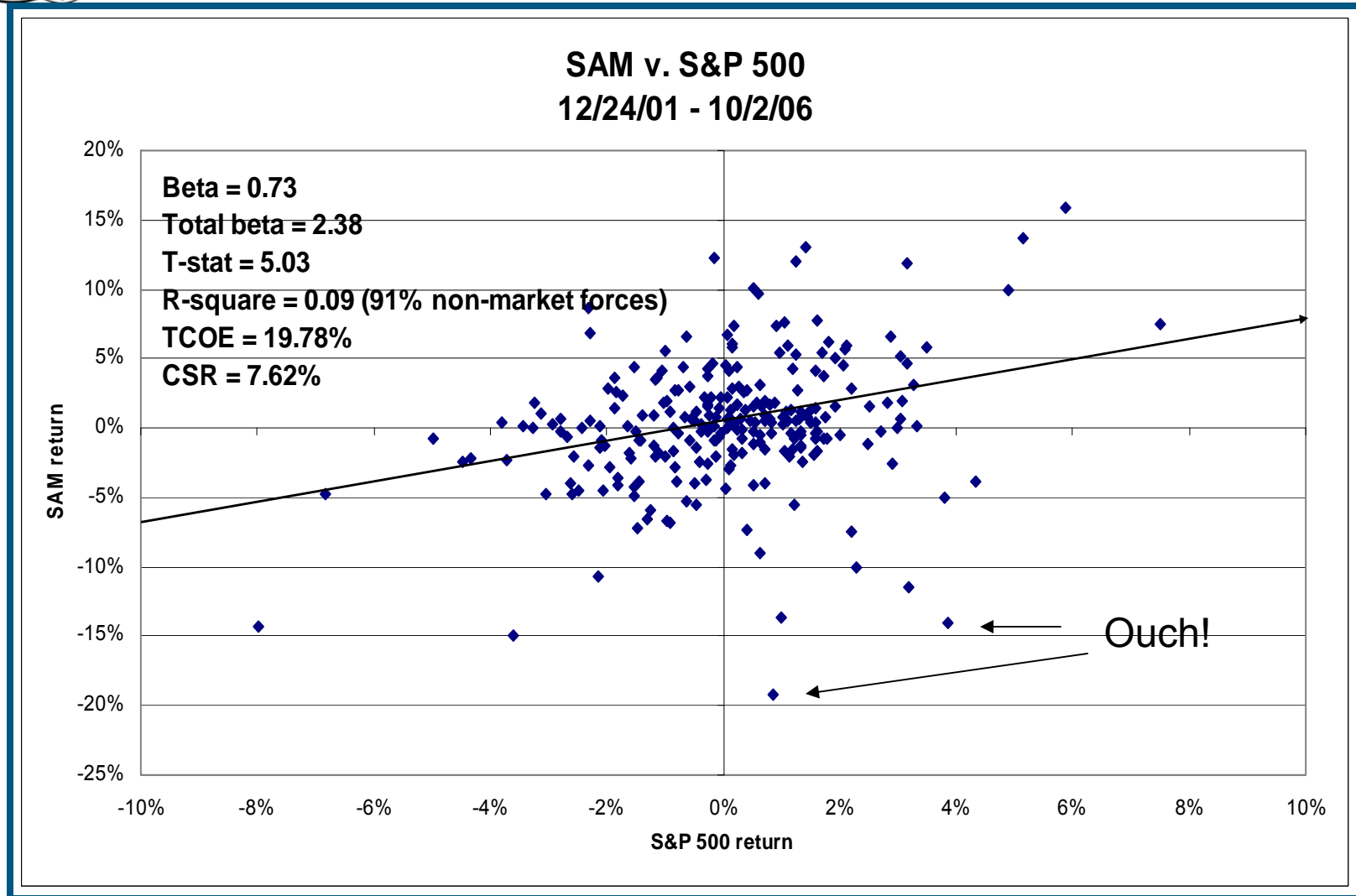
6. Length of look-back period

7. Proxy for market

Items we have always needed

Choices we have rarely explicitly made!

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Current Update in Valuation **SAM (Boston Beer)**

SAM v. S&P 500
12/24/01 - 10/2/06

Beta = 0.73
Total beta = 2.38
T-stat = 5.03
R-square = 0.09 (91% non-market forces)
TCOE = 19.78%
CSR = 7.62%

SAM return

S&P 500 return

Ouch!

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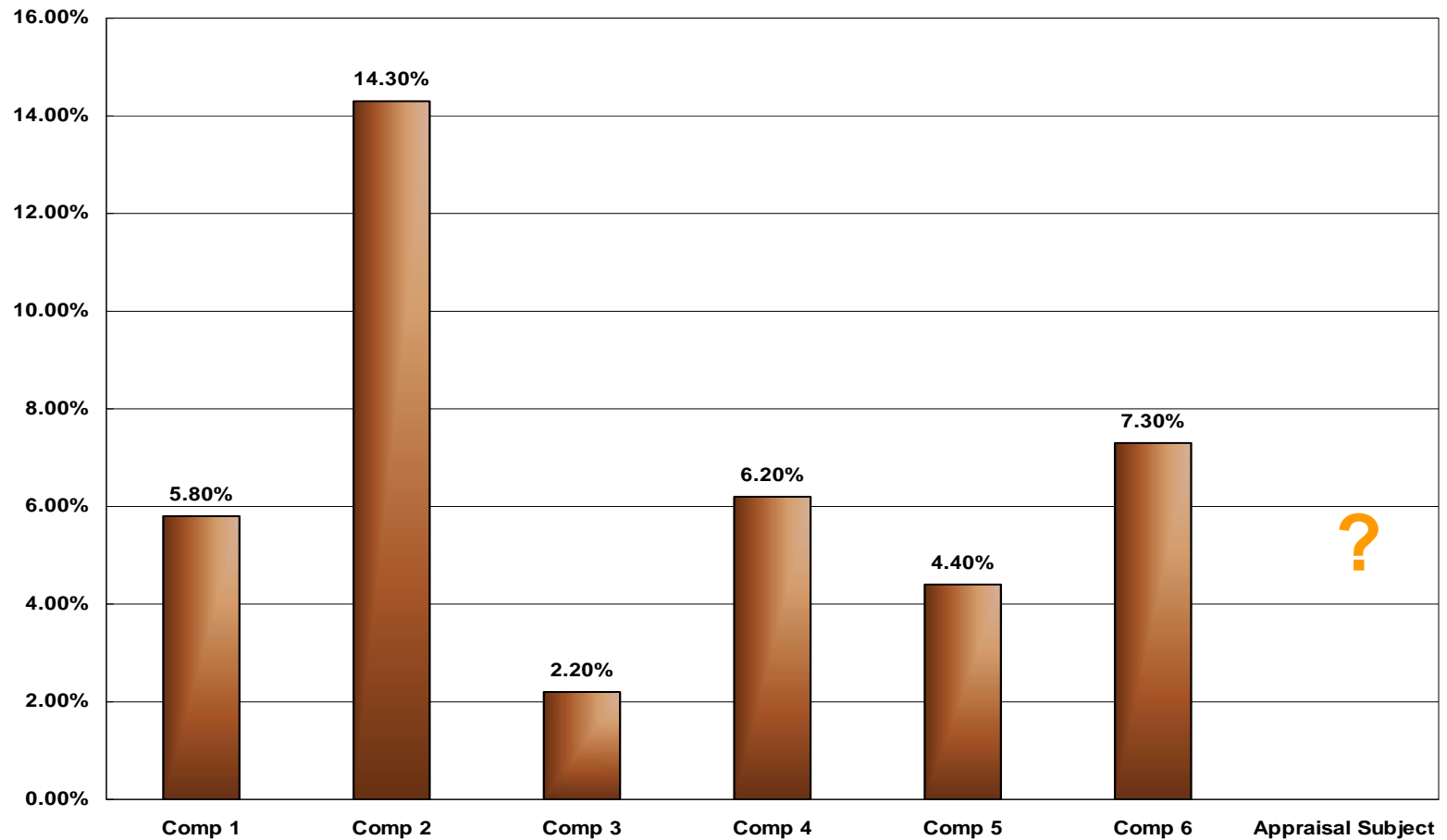
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Step 1: Compute Benchmark CSRPs (i.e., for SAM)

Step 2: Identify CSR "Drivers"

- Sources: 10-Ks, 10-Qs, Press Releases, Company Websites.

- Match sources to look-back period.

- Ignore macro-economic and industry factors since Beta (systematic risk) captures these factors

    – Be aware of what your model has "captured prior to CSR"

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Step 3: Compare, Contrast & Weight

CSR Factors	Most Risk	Moderate Risk	Less Risk	Least Risk
Product Line Diversification	BB	HOOK SAM		BUD TAP PMID
Brewery Locations (owned)	BB	HOOK	SAM TAP	BUD PMID
Brewery Locations (under contract)	BB HOOK	PMID	SAM TAP	BUD
Distributors	HOOK		BB PMID	BUD TAP SAM
Geographic distribution of sales	BB	HOOK	PMID	BUD TAP SAM
Suppliers	No Meaningful Differences			

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Use with BUM too: SIC code 3564

- **Total Cost of Equity (TCOE) =**
    - » Risk-free rate (R_f) =   4.66%
    - » + Equity risk premium (ERP) =   5.00%
    - » + Industry premium =   -0.85%
    - » + Size premium (SP) =   <u>5.82%</u>
    - » <u>   </u> 14.63%
    - » + **CSRP =**   <u>?%</u>
    - » <u>   </u> **?%**

Wouldn't you like to know the TCOEs and CSRPs for each of the guideline companies used in either the BUM or modified CAPM methods?

BPM provides the answers!

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The BPM and Daubert Criteria

Criteria	BPM	Factor Models
Subject to testing?	Yes	No
Peer Review/Publication?	**Yes**: 1) Referenced in **AICPA** textbook written by G. Trugman, <u>Understanding Business Valuation</u>; 2) Referenced in **PPC's** 19th Annual Guide to Business Valuations; 3) **ASA CAVS** seminar; 4) E-book in collaboration with **Morningstar**; 4) Numerous **endorsements/testimonials**	Yes, but **what is to peer review?**
Known or potential rate of error?	Yes	No
Widespread acceptance?	**Working on it;** Use of Calculator	Yes

Total Cost of Equity and Public Company Specific Risk Calculator™

Calculate total cost of equity and public company-specific risk as benchmarks for private company valuations

BPM
Butler Pinkerton Model™

Below are the results of your calculation. You may print a copy for your records, click "download" to save a Microsoft Excel-compatible version, or click "email" to send yourself an electronic copy of the calculation in both HTML and Microsoft Excel-compatible formats.

‹ back | new calculation | 🔲 download | ✉ email

Risk Free Rate:	5.00%
Equity Risk Premium:	6.00%
Effective Date:	3/18/2008 (261 weeks)

Ticker	HB	GE	BUD
Company Name	Hillenbrand Industries Inc.	General Electric Company	Anheuser-Busch Companies, Inc.
Size Premium	1.27%	-0.36%	-0.36%
Weekly Standard Deviation	2.92%	2.30%	1.84%
Levered Beta	0.68	0.88	0.42
Correlation Coefficient (R)	0.38	0.62	0.37
Total Beta	1.80	1.42	1.13
Total Cost of Equity	**15.80%**	**13.51%**	**11.79%**
Company Specific Risk Premium	**5.45%**	**3.58%**	**4.64%**

Additional Regression Statistics:

Constant	-0.001	0.000	-0.001
Coefficient of Determination (R²)	0.14	0.39	0.14
T-Stat	6.55	12.75	6.38
Level of Statistical Significance	99.0%	99.0%	99.0%
Degrees of Freedom	258	258	258

Summary Statistics for Sample	Beta	Total Beta	Total Cost of Equity	CSRP
Count	3	3	3	3
Minimum	0.42	1.13	11.79%	3.58%
25th Percentile	0.55	1.27	12.65%	4.11%
Median	0.68	1.42	13.51%	4.64%
Mean	0.66	1.45	13.70%	4.56%
75th Percentile	0.78	1.61	14.65%	5.05%
Maximum	0.88	1.80	15.80%	5.45%
Standard Deviation	0.23	0.34	2.01%	0.94%
Mean plus 2 Standard Deviations	1.12	2.12	17.72%	6.43%

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The "Takeaways"

- All companies have company-specific risk (CSR).
  - Do not start your build-up of CSR at 0%.
  - Never go negative. 0% is an artificially low starting point.

- **Total beta trumps all other betas** – Little, if any, need to "correct" total beta or beta (when used with total beta)
  - Captures 100% of disclosed risks
  - Relatively stable
  - Same reference point we use to value private companies
  - Empirical benchmarks for TCOE!

- **Empirical support:**

     - **TCOE = Risk-free rate + Total Beta*ERP**

     - **CSRP = (Total Beta – Beta)*ERP – SP.**

- **Refer to frequently asked questions at www.bvmarketdata.com.**

- **New Approach:** Combination BPM and Factor Models empowers the appraiser to make choices to arrive at defensible conclusions!