# **Business Valuation Resources**

Duff & Phelps, LLC Risk Premium Report 2007

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# **Risk Premium Report 2007**

## Roger Grabowski and David King

## **Biography**

Mr. Grabowski, ASA, is a Managing Director in the Duff & Phelps, LLC, valuation practice and formerly with Standard & Poor's Corporate Value Consulting. Mr. King, CFA, is National Technical Director of Valuation Services at Mesirow Financial Consulting, LLC. We want to thank David Turney for his assistance in assembling the exhibits presented herein and Emily Kastner with editing and quality control.

#### **Exhibits**

This report discusses market data presented in several accompanying tables. The following is a complete list of these tables.

Two sets of tables with data updated through December 31, 2006 accompany the discussion in Part I of this report. These are:

Exhibits A-1 through A-8 Equity risk premiums vs. company size (eight measures of size)

Exhibits B-1 through B-8 Premiums over CAPM vs. company size (eight measures of size)

Two sets of tables with data updated through December 31, 2006 accompany the discussion in Part II of this report. These are:

Exhibits C-1 through C-8 Relation between size and company risk (eight measures of size)

Exhibits D-1 through D-3 Equity risk premiums vs. company risk (three measures of risk)

Also, we have prepared two sets of tables that summarize the data presented in the above exhibits. These summary tables are not otherwise referenced in this report:

"Premiums over Long-Term Risk-free Rate" (3-page summary of exhibits A-1 through A-8 and D-1 through D-3)

"Premiums over CAPM" (2-page summary of exhibits B-1 through B-8)

#### Introduction

We have previously presented historical equity risk premiums for 25 size-ranked portfolios using eight alternate measures of company "size". Part I of this report describes the latest revision of our study that now includes historical data updated through the end of 2006. As with our earlier research, this study made use of the database of the Center for Research in Security Prices ("CRSP") at the Graduate School of Business at the University of Chicago together with Standard & Poor's *Compustat* database.

Part I of this report presents an update of data that we first published in several articles and for which we have published prior updates.<sup>2</sup> Part II presents data quantifying the relationship between rates of return, company size, and fundamental measures of company risk.<sup>3</sup>

# Part I: Historical Equity Risk Premiums and Company Size

We sort companies by size, breaking the New York Stock Exchange ("NYSE") universe into 25 size-ranked portfolios and adding American Stock Exchange ("AMEX") and National Association of Securities Dealers Automated Quotations ("NASDAQ") listed companies. These portfolios are limited to companies with a track record of profitable performance (we create a separate "high financial risk" portfolio composed of companies that are losing money, have high leverage, or are in bankruptcy). We use eight alternate measures of company "size", including fundamental financial characteristics such as sales and book value. The data shows a clear inverse relationship between size and historical rates of return.

A number of considerations have motivated us to pursue lines of research into historical equity returns using a) alternative measures of company size; b) methods of filtering the data to remove the effects of high financial risk; and c) elimination of companies without a proven record of performance.

#### What is Size?

Traditionally, researchers have used market value of equity as a measure of "size" in conducting historical rate of return research. For instance, this is the basis of the "small stock" return series published in *Stocks, Bonds, Bills and Inflation Valuation Edition* ("SBBI").<sup>4</sup> But there are various reasons for seeking alternative measures of size.

First, it has been pointed out in the financial literature that researchers may unwittingly introduce a bias when ranking companies by "market value." Market value is not just a function of "size"; it is also a function of the discount rate. Therefore, some companies will not be risky (high discount rate) because they are small, but instead will be "small" (low market value) because they are risky. Choosing a measure of size other than market value will help isolate the effects that are purely due to small size in the historical record.

<sup>&</sup>lt;sup>1</sup> Published as the Standard & Poor's Corporate Value Consulting *Risk Premium Report* for Reports titled 2002 to 2004 and as the Pricewaterhouse Coopers' and Price Waterhouse *Risk Premium Reports* for years before 2002.

<sup>&</sup>lt;sup>2</sup> "New Evidence on Size Effects and Equity Returns", *Business Valuation Review*, September 1996 (covering the period 1963-1994); "Size Effects and Equity Returns: An Update", *Business Valuation Review*, March 1997. Both articles are available at www.appraisers.org, go to "Business Valuation".

<sup>&</sup>lt;sup>3</sup> "New Evidence on Equity Returns and Company Risk", *Business Valuation Review*, September 1999 (revised March 2000). Both articles are available at <a href="https://www.appraisers.org">www.appraisers.org</a>.

<sup>&</sup>lt;sup>4</sup> Stocks, Bonds, Bills and Inflation Valuation Edition 2007, Morningstar (formerly Ibbotson Associates) 2007.

<sup>&</sup>lt;sup>5</sup> "A Critique of Size Related Anomalies," Jonathan Berk, Review of Financial Studies, vol. 8, no. 2 (1995).

Also, the market value of equity is an imperfect measure of the size of a company's operations. Companies with large sales or operating income may have a small market value of equity if they are highly leveraged.

The use of fundamental accounting measures (such as assets or net income) may have the practical applied benefit of removing the need to make a "guesstimate" of size for comparative purposes. For example, such data might eliminate certain circularities that may arise in applying size-based adjustments (where size is measured by market value of equity and one needs to know size to chose the adjustment) to a discount rate for determining the market value of a privately held business.

### **Description of the Data**

This study made use of the CRSP database together with Standard & Poor's Compustat database. The population of companies considered in our study was taken from the intersection of the CRSP universe and the Compustat universe (that is to say, our study is limited to firms that are covered by both databases). We excluded American Depository Receipts (ADRs) and non-operating holding companies from the data set. We also exclude financial service companies (SIC code = 6) because some of the financial data used in our study are difficult to apply to many companies in the financial sector (e.g. "sales" at a commercial bank) and financial institutions support a much higher ratio of debt to equity than is normal in other industries. Also, companies in the financial services sector were poorly represented during the early years of the Compustat database.

The Compustat database was established in 1963 and in this study we calculated historical returns for the period 1963 through 2006. Compustat data is available for some companies going back into the 1950s, but this earlier data only consists of back histories for companies that were added to Compustat in 1963 or later. We begin with 1963 data in order to avoid the obvious "selection bias" that would otherwise result.

For each year covered in our study, we considered only financial data for the fiscal year ending no later than September of the previous year. For example, in allocating a company to a portfolio to calculate returns for calendar year 1995, we consider financial data through the latest fiscal year ending September 1994 or earlier (depending on when the company's fiscal year ended).

For each year since 1963, we filtered the universe of companies to exclude the following:

- Companies lacking 5 years of publicly traded price history;
- Companies with sales below \$1 million in any of the previous five fiscal years;
- Companies with a negative 5-year-average EBITDA (earnings before interest, taxes, depreciation and amortization) for the previous five fiscal years.

Companies that pass this test have been traded for several years, have been selling at least a minimal quantity of product, and have been able to achieve some degree of positive cash flow from operations. This screening was a response to the argument that the "small cap" universe may consist of a disproportionate number of high-tech companies, start-up companies, and recent Initial Public Offerings, and that these unseasoned companies may be inherently riskier than companies with a track record of viable performance. The number of companies eliminated by these criteria varies from year to year over the sample period.

Once we eliminated the companies described above, we created a separate portfolio for companies with any one of the following characteristics:

- Companies identified by Compustat as in bankruptcy or in liquidation;
- Companies with 5-year-average net income available to common equity for the previous five years less than zero (either in absolute terms or as a percentage of the book value of common equity);
- Companies with 5-year-average operating income for the previous five years (defined as sales minus (cost of
  goods sold plus selling, general and administrative expenses plus depreciation)) less than zero (either in
  absolute terms or as a percentage of net sales);
- Companies with negative book value of equity at any of the previous five fiscal year-ends;
- Companies with debt-to-total capital of more than 80% (with debt measured in book value terms and total capital measured as book value of debt plus market value of equity).

These companies were excluded from our base set and placed in a separate portfolio which we refer to as the "high financial risk" portfolio. We sought in this manner to isolate the effects of high financial risk. Otherwise, the results might be biased for smaller companies to the extent that highly leveraged and financially distressed companies tend to have both high returns and low market values. It is possible to imagine financially distressed (or highly risky) companies that lack any of the above characteristics. It is also easy to imagine companies which have one of these characteristics but which would not be considered financially distressed. Nevertheless, we are confident that the resulting "high financial risk" portfolio is composed largely of companies whose financial condition is significantly inferior to the average, financially "healthy" public company.

The number of companies classified as "high financial risk" varied over the sample period. These companies represented approximately 25+% of the data set in recent years, but less than 5% in 1963. Certain technical changes in methodology have resulted in a greater number of companies falling into the "high financial risk" portfolio than in versions of this study published prior to 2000.

The exclusion of companies based on historical financial performance does not imply any unusual foresight on the part of hypothetical investors in these portfolios. In forming portfolios to calculate returns for a given year, we exclude companies on the basis of performance during previous years (e.g., average net income for the five prior fiscal years), rather than current or future years. For instance, to form portfolios for 1963, we take into account the average net income for the five fiscal years preceding September 1962. We repeat this procedure for each year from 1963 through the latest available year.

Altogether, we have either excluded or segregated certain types of companies on the basis of past financial performance or trading history. We adopted this approach in response to arguments that the inclusion of such companies might introduce a bias in favor of the size effect to the extent that such companies tend to have low market values. A critic unfamiliar with this history might question whether we are introducing a bias by excluding such companies. We have run alternate analyses in which no company is excluded or segregated on the basis of past history (that is, using all available non-financial companies) and the results are similar to those reported herein.

## **Ranking Companies by Size**

For the companies remaining in our base set, we formed portfolios of securities based upon relative size. Results for eight alternate measures of "size" are reported in the accompanying exhibits.

For each year, we formed portfolios by sorting all of the companies in the base set that traded on the NYSE. The size cutoffs (or "breakpoints") were chosen so as to divide the NYSE companies evenly into 25 groups. Once the breakpoints were chosen companies from the AMEX (available after 1962) and companies quoted on the

NASDAQ National Market System (available after 1972) were added to these portfolios. Since NASDAQ and AMEX companies are generally small relative to NYSE companies, their addition to the data set produces portfolios that are more heavily populated at the "small cap" end of the spectrum.<sup>6</sup>

The portfolios were rebalanced annually: that is, the companies were re-ranked and sorted at the beginning of each year. Portfolio rates of return were calculated using an equal-weighted average of the companies in the portfolio.

## **Correcting for "Delisting Bias"**

An article by Tyler Shumway provided evidence that the CRSP database omits delisting returns for a large number of companies. These returns are missing for the month in which a company is delisted from an exchange. Shumway collected data for a large number of companies that had been delisted for performance reasons (such as bankruptcy or insufficient capital). He found that investors incurred an average loss of about 30% after delisting. He further showed that delisting for non-performance reasons (such as mergers or changes of exchange) tended to have a neutral impact in the month that the delisting occurred.

We have incorporated the Shumway evidence into our rate of return calculations. In calculating rates of return, we have imputed a 30% loss in the month of delisting in all cases in which CRSP identified the reason for delisting as performance related, and also in all cases in which the reason for delisting was unknown.<sup>8</sup>

#### Measurement of the Historical Equity Risk Premium

The accompanying exhibits report average historical equity risk premiums for the period 1963 (the year that the *Compustat* database was inaugurated) through 2006. A longer-run average historical equity risk premium is often used as an indicator of the expected equity risk premium of a typical investor. Our measure of returns is based on dividend income plus capital appreciation and represents returns after corporate taxes (but before owner level taxes).

To estimate historical equity risk premiums, we first calculated an average rate of return for each portfolio over our sample period. Then, we subtracted the average income return earned on long-term Treasury bonds over the same period (using *SBBI* data) to arrive at an average historical equity risk premium.

### **Presentation of the Results**

In the accompanying exhibits we present summary data for companies ranked by various measures of size. The exhibits are as follows:

<sup>&</sup>lt;sup>6</sup> Some readers may wonder why we use NYSE breakpoints rather than ranking the entire NYSE/AMEX/NASDAQ universe. The consistent use of NYSE breakpoints avoids an apples-to-oranges mixing of pre-1972 (pre-NASDAQ) ranking criteria with post-1972 ranking criteria. Otherwise, for example, one would end up lumping "average" NASDAQ companies (in recent years) into the portfolios that contain much larger "average" NYSE companies (in earlier years) when calculating average returns for the mid-sized portfolios over the full sample period. The only logical alternatives are either to adopt our approach or to exclude NASDAQ companies altogether.

<sup>&</sup>lt;sup>7</sup> "The Delisting Bias in CRSP data", Tyler Shumway, *Journal of Finance*, March 1997.

This approach is consistent with updates that we have published since 1998. More recent evidence suggests that the average "delisting" loss is less than Shumway's original estimate. See "CRSP Delisting Returns", April 2001, white paper prepared by the Center for Research in Security Prices at <a href="http://gsbwww.uchicago.edu/research/crsp/news/downloads">http://gsbwww.uchicago.edu/research/crsp/news/downloads</a>.

#### Measures of Equity Size

Exhibit A-1: Market value of common equity (common stock price times number of common shares outstanding).

Exhibit A-2: Book value of common equity (does not add back the deferred tax balance).

Exhibit A-3: 5-year average net income for previous five fiscal years (net income before extraordinary items).

#### Measures of Company Size

Exhibit A-4: Market value of invested capital (market value of common equity plus carrying value of preferred stock plus long-term debt (including current portion) and notes payable)("MVIC").

Exhibit A-5: Total Assets (as reported on the balance sheet).

Exhibit A-6: 5-year average EBITDA for the previous five fiscal years (operating income before depreciation plus non-operating income).

Exhibit A-7: Sales (net).

Exhibit A-8: *Number of employees* (number of employees, either at year-end or yearly average, including part-time and seasonal workers and employees of consolidated subsidiaries; excludes contract workers and unconsolidated subsidiaries).

The exhibits include the following statistics:

- Average of the sorting criteria (e.g., average number of employees) for the latest year
- The number of companies in each portfolio in the latest year
- Beta calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see *SBBI Valuation Edition 2007 Yearbook* pp. 117-122 for a description of the "sum beta" method)
- Standard deviation of annual historical equity returns
- Geometric average historical equity return since 1963
- Arithmetic average historical equity return since 1963
- Arithmetic average historical equity risk premium over long-term Treasuries since 1963
- "Smoothed" average historical equity risk premium: the fitted premium from a regression with the average
  historical equity risk premium as dependent variable and the logarithm of the average sorting criteria as
  independent variable. (We present the coefficients and other statistics from this regression analysis in the top
  right hand corner of the exhibits.)
- Average carrying value of preferred stock plus long-term debt (including current portion) plus notes payable ("Debt") as a percent of MVIC since 1963

Each of exhibits A-1 through A-8 shows one line of data for each of the 25 size-ranked portfolios, plus a separate line for the "high financial risk" portfolio. In each case, the "high financial risk" statistics are drawn only from companies for which the ranking criterion (e.g., sales, number of employees, etc.) is available. This gives rise to slight variations among the exhibits for the statistics for this portfolio (not all *Compustat* data items are available for all companies in all years). Exhibit A-1 presents the most complete set of data for this category of companies.

For comparative purposes, we also report average returns from *SBBI* series for Large Companies, Small Companies, and Long-Term Government Bond Income Returns for the period 1963 through the latest year.

#### Some Observations on the Data

By whatever measure of size we use, the result is a clear inverse relationship between size and historical equity returns. However, when one sorts by a size measure other than market value, the relationship is slightly flattened (compare exhibits A-1 and A-4, which use market value, with the other exhibits). The average historical equity risk premiums for the smallest companies are generally lower when one sorts by criteria other than market value. For the 25 size-ranked portfolios with an "arithmetic equity risk premium" in excess of the average historical market risk premium (4.95% for 1963 through 2006), the premium incorporates a non-beta adjusted size premium.

The historical average Debt to MVIC ratio is approximately 30% for most size categories, regardless of the sorting criteria. This suggests that differences in leverage do not explain the small company effect in our sample. The leverage in the "high financial risk" portfolio is significantly higher than that of any of the other portfolios.

#### **Premiums over CAPM**

In the context of the Capital Asset Pricing Model ("CAPM"), the greater betas of the smaller companies explain some but not all of the higher average returns in these size-ranked portfolios. This can be verified by calculating a "Return in Excess of CAPM" using a methodology similar to that used in SBBI 2007 Yearbook (pp. 129-142 in the Classic Edition, pp. 129-143 in the Valuation Edition). An example of this calculation will illustrate the method. The following example uses data for Portfolio 19 of companies ranked by Book Value of Equity from exhibit B-2:

- A. Portfolio beta = 1.20
- B. Average historical market risk premium = 4.95% (historical large stock equity risk premium)
- C. Indicated CAPM premium  $(A \times B) = 5.94\%$
- D. Arithmetic average long-term Treasury income return = 7.14%
- E. Indicated CAPM return (C + D) = 13.08%
- F. Arithmetic average historical equity return = 16.88%
- G. Return in excess of CAPM (F E) = 3.83%.

The return in excess of CAPM is often called the "size premium" or "beta-adjusted size premium". The size premium is an empirically observed correction to the CAPM. This return in excess of CAPM of 3.83% compares to a premium over the overall market of 4.79% (F minus D minus B). In our exhibits we report betas calculated using the "sum beta" method applied to monthly portfolio return data. This method yields higher betas for smaller companies than would be obtained using ordinary least squares.

Exhibits B-1 through B-8 report calculations of premiums over CAPM for each portfolio for each of our eight measures of size. The exhibits report the following statistics:

• Average of the sorting criteria (e.g., average number of employees) for the latest year

- Beta calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see *SBBI Valuation Edition 2007 Yearbook*, pp. 117-122, for a description of the "sum beta" method)
- Arithmetic average historical equity return since 1963
- Arithmetic average historical equity risk premium over long-term Treasuries since 1963
- Indicated CAPM premium, calculated as the beta of the portfolio multiplied by the average historical market risk premium since 1963 (measured as the difference between SBBI Large Stock total returns and SBBI income returns on long-term Treasury bonds)
- Premium over CAPM, calculated by subtracting the "Indicated CAPM Premium" from the "Arithmetic Equity Risk Premium"
- "Smoothed" Premium over CAPM: the fitted premium from a regression with the historical "Premium over CAPM" as dependent variable and the logarithm of the average sorting criteria as independent variable

## **Practical Application of the Data**

This data can be used as an aid in formulating estimated required rates of return using objective measures of the "size" of a subject company. The historical equity risk premiums reported in exhibits A-1 through A-8 have not been adjusted to remove beta risk and, therefore, they should not be multiplied by a CAPM beta or otherwise included in a CAPM analysis. The data reported in exhibits B-1 through B-8 can be used in the context of a CAPM analysis.

A straightforward method of arriving at a discount rate would be a simple "build-up" approach using the historical equity risk premiums over the long-term risk-free rate presented in exhibits A-1 through A-8. These premiums incorporate the "small company" or "small stock" effect. One could match the sales or total assets of the subject company with the portfolios composed of companies of similar size. The smoothed premiums of these portfolios can then be added to the yield on long-term Treasury bonds as of the valuation date to obtain benchmarks for the required rate of return.

The "smoothed" average premium is the most appropriate indicator for most of the portfolio groups. At the largest-size and smallest-size ends of the range, the average historical equity risk premiums tend to jump off of the smoothed line, particularly for the portfolios ranked by size as measured by market value (exhibits A-1 and A-4). For the largest companies (the first portfolio), the observed historical relationship flattens out and the smoothed premium may be an inappropriate indicator. For the smallest companies in our range (portfolio 25), the smoothed average premium is likely the more appropriate indicator.

Sometimes one must estimate the required rate of return for a company that is significantly smaller than the average size of even the smallest of our 25 portfolios. In such cases, it may be appropriate to extrapolate the equity risk premium to smaller sizes using the slope and constant terms from the regression relationships that we use in deriving the "smoothed" premiums. In so doing, one must be careful to remember that the logarithmic relationship is base-10, and that the financial size data is in millions of dollars, such that the log of \$10 million is log(10), not log(10,000,000). Also, as a general rule one should be cautious about extrapolating a statistical relationship far beyond the range of the data used in the statistical analysis.

A brief example will illustrate the use of the regression equations in estimating an equity risk premium. Assume a company has book value of \$50 million. If we insert this figure into the regression relationship reported in exhibit A-2 ("Companies Ranked by Book Value of Equity"), we obtain the following estimate of the risk premium:

Smoothed Premium =  $18.143\% - 3.188\% \log (50) = 18.143\% - 3.188\% (1.699) = 12.73\%$ 

Use of a portfolio's average historical rate of return to calculate a discount rate is based (in part) upon the implicit assumption that the risks of the subject company are quantitatively similar to the risks of the average company in the subject portfolio. If the risks of the subject company differ materially from the average company in the subject portfolio, then an appropriate discount rate may be lower (or higher) than a return derived from the average equity risk premium for a given portfolio. Material differences between the expected returns for a subject company and a given portfolio of stocks may arise due to differences in leverage (the average Debt/MVIC of the portfolios are displayed in exhibits A-1 through A-8 and exhibits C-1 through C-8), operating risks (the average unlevered portfolio sum beta for the portfolios are displayed in exhibits C-1 through C-8) or other fundamental risk factors.

The premium over CAPM data presented in exhibits B-1 through B-8 can be used to make size adjustments to a discount rate derived using the CAPM. When used in this manner, the premium over CAPM would be added to the CAPM calculation. That is, the premium should not be multiplied by beta, but instead should be added to the sum of the risk-free rate and the product of beta times the aggregate market risk premium. This is similar to the methodology recommended in SBBI Valuation Edition 2007 Yearbook, p. 60-61.

The equity risk premiums reported here are historical averages since 1963. We report the average historical equity risk premium over the same period for the SBBI Large Company stocks (essentially the S&P 500). This average was 4.95% over the period 1963-2006. If one's estimate of the equity risk premium for the S&P 500 on a forward-looking basis were materially different from the average historical equity risk premium since 1963, it may be reasonable to assume that the other historical portfolio returns reported here would differ on a forward-looking basis by approximately a similar differential. For example, assume that your current estimate of the expected equity risk premium for Large Company stocks were 6.4%. The difference between the average historical risk premium since 1963 of 4.95% for Large Company stocks and the 6.4% forward-looking risk premium for Large Company stocks can be added to the average equity risk premium for the portfolio (observed or "smoothed") that matches to the size of the subject company to arrive at an adjusted forward-looking risk premium for the subject company. This forward-looking risk premium can then be added to the risk-free rate as of the valuation date to estimate an appropriate rate of return for the subject company. This reasoning does not apply to the premiums over CAPM since these are based on relative performance over the reported period.

#### **Estimating Required Rates of Returns: An Example**

In this section we will show how the data reported here can be used to estimate the required return on equity or discount rate for a hypothetical company. Assume the subject company has the following characteristics:

Market Value of Equity	\$120 million
Book Value of Equity	\$100 million
5-year Average Net Income	\$10 million
Market Value of Invested Capital	\$180 million
Total Assets	\$300 million
5-year Average EBITDA	\$30 million
Sales	\$250 million

<sup>&</sup>lt;sup>9</sup> This average historical equity risk premium is consistent with the estimated equity risk premium on a forward-looking basis at the beginning of 2007. For a more complete discussion of the differences between historical realized risk premiums and forward-looking estimates see "Equity Risk Premium", chapter one by Roger Grabowski and David King in *The Handbook of Business Valuation and Intellectual Property Analysis*, McGraw-Hill (2004) and chapter eight in *Cost of Capital Estimation and Applications* 3<sup>rd</sup> ed by Shannon Pratt and Roger Grabowski, Wiley (2007)

<sup>&</sup>lt;sup>10</sup> Supply side equity risk premium (arithmetic average) 1926-2006, Table 5-6, SBBI Valuation Edition 2007 Yearbook, p 98.

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#### Build-Up Method

If we are using a "build-up" method, we want to determine a premium over the risk-free rate. The simplest approach is to turn to exhibits A-1 through A-8, and, for each of the eight size characteristics, locate the portfolio whose size is most similar to the subject company. For each guideline portfolio, the column labeled "Smoothed Average Equity Risk Premium" gives an indicated historical risk premium over the risk-free rate. Example 1 shows the premiums indicated for our hypothetical company.

Example 1

Equity Risk Premiums over Risk-f	ree Rate: Usi	ing Guidelir	ne Portfolios	<b>;</b>
				Premium
	Company	Relevant	Guideline	over Risk-
	Size	Exhibit	Portfolio	free
Market Value of Equity	\$120 mil.	A-1	25	13.8%
Book Value of Equity	\$100 mil.	A-2	24	11.3%
5-year Average Net Income	\$10 mil.	A-3	24	12.0%
Market Value of Invested Capital	\$180 mil.	A-4	25	13.5%
Total Assets	\$300 mil.	A-5	24	11.6%
5-year Average EBITDA	\$30 mil.	A-6	24	11.8%
Sales	\$250 mil.	A-7	24	11.5%
Number of Employees	200	A-8	25	12.7%
Mean premium over risk-free rate				12.3%
Median premium over risk-free rat	e			11.9%

These premiums can be added to the risk-free rate to derive an indicated required return on equity. In deriving the average historical equity risk premiums reported in exhibits A-1 through A-8, we have used *SBBI* income return on long-term Treasury bonds as our measure of the historical risk-free rate (7.14% for 1963 through 2006). Therefore, a 20-year Treasury bond yield is the most appropriate measure of the risk-free rate for use with our reported premiums.

With a risk-free rate as of the valuation date of 4.9% (say), the above premiums would indicate a required rate of return on equity ranging from 16.2% to 18.7%, with an average of 17.2%.

As an alternative, one can estimate premiums using the regression equations that underlie the smoothed premium calculations. These equations are reported on exhibits A-1 through A-8. To estimate a premium, we multiply the logarithm of "size" by the slope coefficient, and add the constant term, as described above. In practice this approach generally produces results that are very similar to those of the guideline portfolio approach presented above (unless one is extrapolating to a company that is much smaller than the average size for the 25th portfolio). Example 2 illustrates this approach for our hypothetical company.

Example 2

Equity Risk Premiums over Risk- Equations	rree Kate: C	sing Kegres	sion			
Equations	Company Size	Relevant Exhibit	Constant term	Slope term	log(Size)	Premium over Risk- free
Market Value of Equity	\$120 mil.	A-1	21.492%	-3.814%	2.079	13.6%
Book Value of Equity	\$100 mil.	A-2	18.143%	-3.188%	2.000	11.8%
5-year Average Net Income	\$10 mil.	A-3	14.653%	-2.920%	1.000	11.7%
Market Value of Invested Capital	\$180 mil.	A-4	20.953%	-3.547%	2.255	13.0%
Total Assets	\$300 mil.	A-5	18.621%	-2.891%	2.477	11.5%
5-year Average EBITDA	\$30 mil.	A-6	16.159%	-2.900%	1.477	11.9%
Sales	\$250 mil.	A-7	16.815%	-2.278%	2.398	11.4%
Number of Employees	200	A-8	17.424%	-2.114%	2.301	12.6%
Mean premium over risk-free rate	<b>;</b>					12.2%
Median premium over risk-free ra	ite					11.9%

One can adjust the observed premiums over the risk-free rate for differences in financial leverage between the average companies comprising the portfolio and the subject company. The company in the example has a Debt/MVIC = \$60 /\$180 = 33% which is slightly more leverage than the average of the companies comprising portfolio 25 of exhibits A-1 (30.67%) and A-4 (25.505%).<sup>11</sup>

But assume that the subject company had no debt in its capital structure. For example, we "unlever" the average levered risk premium in exhibit A-1, portfolio 25, as follows:

Unlevered realized risk premium = Levered realized risk premium / [1 + (D(1-t))/E]

where the average Debt to Equity ("D/E") ratio of the portfolio is based on the average Debt to MVIC for the portfolio since 1963 and the income tax rate, t, is the estimated federal plus effective state income tax rate for the companies comprising the portfolio companies. The income tax rate, t, we use is based on the average marginal federal corporate income tax rate for the tax bracket with the largest taxable income each year since 1963 plus an estimated weighted average state income tax rate.

We report unlevered average realized risk premiums for each of the eight size measures in exhibits C-1 through C-8. The unlevered average realized risk premium for portfolio 25 in exhibit C-1 equals 13.1%. This compares to the average levered realized risk premium of 16.23% (not smoothed) reported in exhibit A-1.

These unlevered realized risk premiums represent the rates of return on a debt-free basis; the unlevered realized risk premiums can be used for estimating required rates of return for companies with no debt. The unlevered realized risk premiums displayed in exhibits C-1 through C-8 are informative in that they generally indicate that the market views smaller companies' operations to be more risky than the operations of larger companies (i.e., unlevered risk premiums increase as size decreases).

<sup>11</sup> Debt equals MVIC (\$180 million) minus Market Value of Equity (\$120 million).

The unlevered realized risk premium can also be used as the first step in a relevering calculation where the subject company's debt level differs from the average debt level of the portfolio companies. To relever the realized risk premium, one can use the following formula:

Levered realized risk premium = Unlevered realized risk premium x [1 + (D(1-t))/E]

where the Debt to Equity ratio for the subject company is measured in terms of the carrying amount of Debt and the market value of equity for the subject company and the income tax rate, t, equals the marginal income tax rate for the subject company.<sup>12</sup>

#### CAPM

An alternative to the "build up" approach is the CAPM. One can adjust the indicated required return by adding a size premium. The size premium can be considered a correction to the textbook CAPM because empirically we observe that in the context of the CAPM, the higher betas of the small companies explain some but not all of the higher average historical equity returns in these portfolios. With this adjustment, the formula for required return becomes:

Required Return = Risk-free Rate + (Beta x Market Risk Premium) + Size Premium

The size premium can be measured using the "Premiums over CAPM" presented in exhibits B-1 through B-8. To estimate this size premium, we can turn to the exhibits and follow a procedure similar to what we used above when we determined premiums over the risk-free rate. Again, the simplest approach is to find the "Smoothed Premium over CAPM" of the guideline portfolios in a manner similar to example 1. Example 3 illustrates this approach for our hypothetical company.

....

<sup>&</sup>lt;sup>12</sup> See *SBBI Valuation Edition 2007 Yearbook*, pp 125 – 126. The unlevering and relevering of the realized risk premium will likely result in a different result than if one unlevers and relevers guideline company betas and adds the size premiums from exhibits B-1 through B-8, "Premium over CAPM".

Example 3

Premiums over CAPM: Using Gu	iideline Portfo	olios		
Market Value of Equity Book Value of Equity 5-year Average Net Income Market Value of Invested Capital Total Assets 5-year Average EBITDA	Company Size \$120 mil. \$100 mil. \$10 mil. \$180 mil. \$300 mil.	Relevant Exhibit B-1 B-2 B-3 B-4 B-5 B-6	Guideline Portfolio 25 24 24 25 24 24	Premium over CAPM 7.0% 4.9% 5.5% 6.6% 5.1% 5.4%
Sales	\$250 mil.	B-7	24	5.2%
Number of Employees	200	B-8	25	6.4%
Mean premium over CAPM Median premium over CAPM				5.8% 5.5%

If the indicated CAPM estimate before the size adjustment (Risk-free Rate + Beta x Market Risk Premium) is 11.0% (say), then the above size premiums indicate a required rate of return on equity ranging from 15.9% to 18.0%, with an average of 16.8%.

As an alternative, we can use the regression equations reported in exhibits B-1 through B-8 to estimate premiums over CAPM. Again, this is similar to the method presented in example 2 for determining premiums over the risk-free rate. Example 4 illustrates the results for our hypothetical company.

Example 4

Premiums over CAPM: Using	regression De	lancions				
	Company Size	Relevant Exhibit	Constant term	Slope term	log(Size)	Premium over CAPM
Market Value of Equity	\$120 mil.	B-1	13.006%	-2.948%	2.079	6.9%
Book Value of Equity	\$100 mil.	B-2	9.364%	-2.070%	2.000	5.2.%
5-year Average Net Income	\$10 mil.	B-3	7.181%	-1.857%	1.000	5.3%
Market Value of Invested Capi	tal \$180 mil.	B-4	11.886%	-2.534%	2.255	6.2%
Total Assets	\$300 mil.	B-5	9.492%	-1.802%	2.477	5.0%
5-year Average EBITDA	\$30 mil.	B-6	8.061%	-1.797%	1.477	5.4%
Sales	\$250 mil.	B-7	8.763%	-1.527%	2.398	5.1%
Number of Employees	200	B-8	10.139%	-1.687%	2.301	6.3%
Mean premium over CAPM						5.7%
Median premium over CAPM						5.4%

One can unlever the portfolio betas. For example, we "unlever" the portfolio beta in exhibit A-1, portfolio 24, as follows:

#### Unlevered portfolio beta = Levered portfolio beta / [1 + (D (1-t))/E]

where the average Debt to Equity ("D/E") ratio of the portfolio is based on the average Debt to MVIC for the portfolio since 1963 and the income tax rate, t, is the estimated federal plus effective state income tax rate for the companies comprising the portfolio companies. The income tax rate, t, we use is based on the average marginal federal corporate income tax rate for the tax bracket with the largest taxable income each year since 1963 plus an estimated weighted average state income tax rate.

We report unlevered portfolio betas for each of the eight size measures in exhibits C-1 through C-8. The unlevered portfolio beta for portfolio 25 in exhibit C-1 equals 1.05. This compares to the levered portfolio beta of 1.30 reported in exhibit B-1.

Unlevered betas are often called "asset betas" in the literature as they represent the risk of the operations of the business with the risk of financial leverage removed. The unlevered betas displayed in exhibits C-1 through C-8 are informative in that they generally indicate that the market views smaller companies' operations to be more risky than the operations of larger companies (i.e., unlevered betas increase as size decreases). While the unlevered portfolio betas are informative, they would not generally be appropriate to use in estimating the beta of a subject company. The convention for estimating the beta appropriate for a subject company is generally to use data for a recent period (i.e., last 60 months).

The unlevering formulae discussed above and used in exhibits C-1 through C-8 for unlevering the average realized risk premiums and portfolio betas for portfolios 1 through 25 and the relevering formulae discussed above assume that the business risk is fully borne by the equity capital; that is the variability of operating cash flows have a negligible effect on the risk of the debt capital. As a first approximation, this assumption appears reasonable for most of the companies comprising portfolios 1 through 25.

Application of the unlevering formulae to the high financial risk portfolio may be problematic for various reasons: the book value of debt may be a bad proxy for the market value of debt for many of these companies; debtholders have a greater share of the operating risk of the company for highly levered companies; and the ability to utilize tax shields for interest expense may be impaired for companies that are losing money.

## **Changes from Previously Published Versions of this Study**

Readers may be interested in the difference between the data presented herein and analogous data published in articles that appeared in 1996 and 1997 (cited above), a 1995 article ("The Size Effect and Equity Returns" *Business Valuation Review*, June 1995), as well as annual updates published on the Morningstar (formerly Ibbotson Associates') website since 1998:

- The 1995 article reported 30-year historical averages. We currently report averages since 1963.
- The 1995 article looked only at the market value of equity as a measure of size. We currently look at eight alternate measures of size.
- The current report includes Total Assets as one of the measures of size. This replaces a Book Value of Invested Capital measure that appeared in the 1996 and 1997 articles.
- The current report excludes newly listed companies, places many companies into a separate "high financial risk" portfolio, includes AMEX and NASDAQ companies, and includes only companies covered by *Compustat*. The 1995 article used all operating NYSE companies found in the CRSP database.

- The 1995 article used market-weighted averaging to calculate the portfolio rates of return. The current report uses equal-weighted averaging.
- The 1995 article used natural logarithms, while the current report uses base-10 logarithms. This makes no difference in the calculation of the "smoothed" premiums, but we have found that base-10 logs are easier to explain than natural logs.
- The 1995 and 1996 articles included financial companies. The current report excludes financial companies (though in our currently published versions of prior years' reports we exclude financial companies).
- The current report corrects for possible "delisting bias" in the CRSP database. The 1995, 1996, and 1997 articles did not make this adjustment (though in out currently published versions of prior years' reports we include this correction).
- The current report includes tables showing "Premiums over CAPM". Versions of this study before 2000 did not include these tables (though our currently published versions of prior years' reports include these data).
- Certain revisions in methodology (made for technical reasons) expanded the number of companies in the "high financial risk portfolio" relative to versions published before 2000 (though our currently published versions of prior years' reports incorporate this changed methodology).
- The current report changes the method of using financial data such that no data is considered for fiscal years ending less than three months before the formation of portfolios. Versions of this study prior to 2001 allowed use of financial data through the previous month end (though our currently published versions of prior years' reports incorporate this changed methodology).
- The current report uses the "sum beta" method applied to monthly returns to estimate portfolio betas. Versions before 2003 estimated betas using ordinary least squares with annual data (though our currently published versions of prior years' reports incorporate the "sum beta" methodology).
- The current report includes unlevered average risk premiums and sum betas for each portfolio. Versions of this study prior to 2005 did not include this data (though our currently published versions of prior years' reports include these data).
- The current report incorporates various corrections and other changes that have affected the CRSP and *Compustat* databases since the data in the earlier articles was generated.

# Part II: Historical Equity Risk Premiums and Company Risk

## **Background**

We previously published the results of research correlating historical equity returns (and historical equity risk premiums) directly with measures of company risk derived from accounting information. These may also be called "fundamental" measures of company risk to distinguish these risk measures from a stock market-based measure of equity risk such as beta. Part II of this report presents an update of this research. This study made use of the database of the Center for Research in Security Prices ("CRSP") at the Graduate School of Business at the University of Chicago together with Standard & Poor's *Compustat* database.

A variety of academic studies have examined the relationship between financial statement data and various aspects of business risk.<sup>14</sup> Research has shown that measures of earnings volatility can be useful in explaining credit ratings, predicting bankruptcy, and explaining the CAPM beta.

Part II of this report examines three separate measures of risk:

- Operating margin (the lower the operating margin, the greater the risk);
- Coefficient of variation in operating margin (the greater the coefficient of variation, the greater the risk);
- Coefficient of variation in return on equity (the greater the coefficient of variation, the greater the risk).

Coefficient of variation is the standard deviation divided by the mean. It measures volatility relative to the average value of the variable under consideration. This normalizes for differences in the magnitude of the subject variables.

In Part II we present two varieties of data. First, we display the relationship between measures of company size and the above-mentioned measures of company risk. We do so by presenting average risk measures for each of the size-ranked portfolios of companies that were used in exhibits A-1 through A-8 (as described in Part I of this report). Next, we document the relationship between these risk measures and historical rates of return. The results reported herein suggest a positive relationship; that is, the greater the risk as measured by historical accounting information, the greater the rate of return earned by equity investors.

We sort companies by the measure of risk, breaking the NYSE universe into 25 risk-ranked portfolios and adding AMEX and NASDAQ companies. These portfolios are limited to companies with a track record of profitable performance (we create a separate "high financial risk" portfolio composed of companies that are losing money, have high leverage, or are in bankruptcy). We use three alternate measures of company "risk", all based on fundamental financial characteristics. The data shows a clear relationship between risk and historical rates of return.

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<sup>&</sup>lt;sup>13</sup> "New Evidence on Equity Returns and Company Risk", *Business Valuation Review*, September 1999 (revised March 2000). These articles are available at www.appraisers.org.

<sup>&</sup>lt;sup>14</sup> A survey of the academic research can be found in *The Analysis and Use of Financial Statements*, 3<sup>rd</sup> edition, White et al., Wiley (2003), chapter 18.

#### Size and Risk

Traditionally, appraisers have used company "size" as a factor in determining discount rates for smaller companies. Small companies are believed to have higher required rates of return than large companies because small companies inherently are more risky. The historical data (as published in *SBBI* and our previous articles and data reported herein) verifies that small companies have, in fact, earned higher rates of return over long-run periods. Does the evidence support the claim that smaller companies inherently have greater risk? Our previous articles and reports have demonstrated that small companies exhibit greater risk as measured by two stock market-based indicators: beta and price volatility. The present study goes further by demonstrating that as company size decreases measures of risk calculated from financial statement data increase.<sup>15</sup>

It has been pointed out in the financial literature that researchers may be mixing a "size" effect with a "risk" effect when measuring company size by "market value". <sup>16</sup> Market value is not just a function of "size"; it is also a function of the discount rate. Therefore, some companies will not be risky (high discount rate) because they are small, but instead will be "small" (low market value) because they are risky. This motivated us to consider alternative measures of "size" in our previous articles and reports, where we looked at measures unrelated to market values such as Total Assets and Number of Employees. Part II of this report goes further in documenting indicators of risk in portfolios of stocks of small companies. It also goes beyond size and investigates the relation between equity returns and fundamental risk measures.

#### Is "size" correlated with market and fundamental risk measures?

Exhibits C-1 through C-8 display fundamental risk measures for portfolios formed by ranking public companies by "size". These exhibits report statistics for the same size-ranked portfolios as we described in Part I of this report.

Exhibit C-1 displays 25 portfolios with size measured by Market Value of Equity. The exhibit shows, for each portfolio, the average historical equity risk premium since 1963 (this repeats information reported in exhibit A-1). Also shown are five measures of risk corresponding to each portfolio:

- Beta (calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year);
- Unlevered sum beta;
- Average operating margin (since 1963);
- Average coefficient of variation of operating margin (since 1963); and
- Average coefficient of variation of return on book equity (since 1963).

We see that beta (both levered and unlevered) of the portfolios decrease (as expected) as market value of equity increases. We see that average operating margin increases as market value of equity increases. We see that average coefficient of variation of operating margin and average coefficient of variation of return on book equity decrease as market value of equity increases. Also, we see that generally the three fundamental measures of risk

<sup>&</sup>lt;sup>15</sup> A similar point was made by Barry Goodman in a presentation at the October 1997 American Society of Appraisers' Advanced Business Valuation Conference in San Francisco.

<sup>&</sup>lt;sup>16</sup> "A Critique of Size Related Anomalies," Jonathan Berk, Review of Financial Studies, vol. 8, no. 2 (1995)

<sup>&</sup>lt;sup>17</sup> In our work on "size" as reported in Part I of this report, we have determined that, in the context of the CAPM, the higher betas of the small companies explain some but not all of the higher average historical equity returns in these portfolios.

display increasing risk as size decreases, as the historical unlevered equity risk premium increases and as the unlevered beta increases. 18

Exhibits C-2 through C-6 display similar results for five other measures of size:

- Exhibit C-2: Size as measured by Book Value of Equity;
- Exhibit C-3: Size as measured by 5-year-average Net Income for previous five fiscal years;
- Exhibit C-4: Size as measured by Market Value of Invested Capital;
- Exhibit C-5: Size as measured by Total Assets;
- Exhibit C-6: Size as measured by 5-year-average EBITDA for previous five fiscal years.

Exhibit C-7 indicates that there is little differentiation in operating margin as size as measured by sales changes. The coefficient of variation of operating margin and return on book equity both indicate increasing risk as size decreases, as in the other exhibits.

Exhibit C-8 indicates that there is little differentiation in operating margin as size as measured by number of employees changes. The coefficient of variation of operating margin and return on book equity both indicate increasing risk as size decreases, as in the other exhibits.

## Why not just use measures of "size" as the measure of risk?

First, certain measures of size (such as market value of equity) may be imperfect measures of the risk of a company's *operations*. For example, a company with a large and stable operating margin may have a small and unstable market value of equity if it is highly leveraged. In this case the risk of the underlying operations is low while the risk to equity is high.

Second, while small size may indicate greater risk, some small companies have been able to maintain near economic monopolies by holding a geographic or market niche such that their riskiness is less than indicated by size. Alternatively, while larger "size" (as measured by sales, for example) may indicate less risk, some companies may be more risky than the average of companies with similar sales. For example, assume the subject company were expecting to emerge from reorganization following bankruptcy. The risk premium appropriate for this company may be more accurately imputed from the pro-forma operating profit (after removing non-recurring expenses incurred during the bankruptcy) than from its size as measured by sales (i.e., the subject company may be more risky than companies with similar sales volume).

Use of fundamental accounting measures of risk allows one to directly assess the riskiness of the subject company. For example, if one observes that the appropriate equity risk premium for the subject company when measuring risk by one or more fundamental risk measures is greater than the equity risk premium based on size measures, this may be a measure of the "investment specific risk" appropriate for the subject company.<sup>19</sup>

<sup>&</sup>lt;sup>18</sup> Were one to calculate the respective correlations, those statistics would relate average portfolio statistics (e.g. average size vs. average risk) rather than correlation statistics across individual companies. At the individual company level, the correlations are much lower.

<sup>&</sup>lt;sup>19</sup> Valuing a Business, 4<sup>th</sup> ed., Pratt et al, Mc-Graw-Hill (2000), p 181.

#### **Description of the Data**

In the empirical work presented in Part II, we use the same underlying data set as was used in forming the size-based portfolios that we describe in Part I. The reader can refer to Part I for a description of our methodology for excluding certain classes of companies based on corporate status, industry, trading history, and financial performance. Also, Part I includes a description of the criteria used in separating certain companies into a "high financial risk" portfolio based on indicators of poor earnings, bankruptcy, or high leverage. As in Part I, this study made use of the CRSP database, together with Standard & Poor's *Compustat* database.

As described in Part I, our data set excludes or segregates certain companies based on past financial performance or trading history. We have run alternate analyses in which no company is excluded or segregated on the basis of past history (that is, using all available non-financial companies), and the results are similar to those reported here.

## **Ranking Companies by Risk**

For the companies remaining in our base set, we formed portfolios of securities based upon relative risk. Results for the three alternate measures of "risk" are reported in the accompanying exhibits.

For each year, we formed portfolios by sorting all of the companies in the base set that traded on the NYSE. The risk cutoffs (or "breakpoints") were chosen so as to divide the NYSE companies evenly into 25 groups. Once the breakpoints were chosen, companies from the AMEX (available after 1962) and companies quoted on the NASDAQ National Market System (available after 1972) were added to these portfolios.

The portfolios were rebalanced annually: that is, the companies were re-ranked and sorted at the beginning of each year. Portfolio rates of return were calculated using an equal-weighted average return of the companies in the portfolio. As described in Part I, our calculation of rates of return includes a correction for the "delisting bias" in the CRSP database.

#### **Measurement of the Historical Equity Risk Premium**

The accompanying exhibits report average statistics for the period 1963 (the year that the *Compustat* database was inaugurated) through 2006. A long-run average historical equity risk premium is often used as an indicator of the expected return of a typical investor. Our measure of returns is based on dividend income plus capital appreciation, and so represents returns after corporate taxes (but before owner level taxes).

To estimate historical equity risk premiums, we first calculated an average rate of return for each portfolio over our sample period. Then, we subtracted the average income return earned on long-term Treasury bonds over the same period (using *SBBI* data) to arrive at an average historical equity premium.

## **Presentation of the Results**

In the accompanying exhibits we present summary data for companies ranked by various measures of risk. The exhibits are as follows:

Exhibit D-1: Operating Margin (operating income divided by sales; operating income is defined as sales minus (cost of goods sold plus selling, general, and administrative expenses plus depreciation)) calculated

as the mean operating income for the five prior years divided by the mean sales for the five prior years. Note that this composite ratio is usually very close to a simple average of the annual ratios of operating income to sales, except in extreme cases generally involving companies with high growth rates.

Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their mean operating margins for years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

Exhibit D-2: Coefficient of Variation of Operating Margin calculated as the standard deviation of operating margin over the prior five years divided by the mean operating margin for the same years, where operating margin is operating income as defined above divided by sales. Note that for calculating this coefficient, average operating margin is a simple average of the annual ratios of operating income to sales rather than the composite ratio used in exhibit D-1.

Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their coefficient of variation for the years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

Exhibit D-3 Coefficient of Variation of Return on Book Value of Equity calculated as the standard deviation of return on book equity for the prior five years divided by the mean return on book equity for the same years (where return on book equity is net income before extraordinary items minus preferred dividends divided by book value of common equity).

Companies were re-ranked annually: for example, for the year 2001 we sorted companies into portfolios according to their coefficient of variation for the years 1996-2000, and then calculated the market return for 2001. (More precisely, in this example the statistics would be calculated for the most recent five fiscal years ending on or before September 2000.)

These exhibits include the following statistics:

- The median of the sorting criteria for the latest year (e.g., the median average operating margin for the latest five years before 2003). Note: The reported average risk statistics in exhibits D-1, D-2, and D-3 are not the same numbers as reported in exhibits C-1 through C-8. In exhibits C-1 through C-8, the reported statistics are calculated for portfolios of companies grouped according to size and are averages since 1963. In exhibits D-1, D-2, and D-3, the reported statistics are calculated for portfolios grouped according to risk, independent of the "size" of the companies, and are not averages since 1963.
- Log (base-10) of the median of the sorting criteria
- The number of companies in each portfolio in the latest year
- Beta relative to the S&P 500 calculated using the "sum beta" method applied to monthly returns for 1963 through the latest year (see *SBBI Valuation Edition 2007 Yearbook*, pp. 117-122 for a description of the "sum beta" method)
- Standard deviation of historical annual equity returns
- Geometric average historical equity return since 1963
- Arithmetic average historical return since 1963

- Arithmetic average historical equity premium over long-term Treasuries since 1963
- "Smoothed" average historical equity risk premium: the fitted premium from a regression with the historical
  equity risk premium as dependent variable and the logarithm of the average sorting criteria as independent
  variable
- Average Debt as a percent of the MVIC since 1963

Each exhibit shows one line of data for each of the 25 risk-ranked portfolios, plus a separate line for the "high financial risk" portfolio. In each case, the "high financial risk" statistics are drawn only from companies for which the ranking criterion (e.g., five-year-average operating margin, etc.) is available. This gives rise to slight variations among the exhibits for the "high financial risk" statistics, because not all *Compustat* data items are available for all companies in all years.

For comparative purposes, we also report average returns from *SBBI* series for Large Companies, Small Companies, and Long-Term Government Bond Income Returns for the period 1963 through 2006.

By each measure of risk that we use, the result is a clear relationship between risk and historical equity returns. The portfolios of companies with higher risk have yielded higher rates of return.

The historical average Debt/MVIC ratio does not appear to be strongly correlated with either the level or the volatility of the operating margin (exhibits D-1 and D-2). This suggests that leverage does not explain the greater returns of the riskier portfolios. As expected, the leverage in the "high financial risk" portfolio is significantly greater than that of any of the other portfolios. The Debt/MVIC ratio may have moderate correlation with the volatility of return on book equity (exhibit D-3). Higher leverage may accordingly explain some of the higher returns exhibited by the riskier portfolios (by this measure of risk).

In our sample, the companies that are riskier according to accounting information (operating margins and coefficients of variation) have also exhibited greater risk according to stock market-based risk statistics (betas and standard deviations of annual returns).

#### **Practical Application of the Data**

The data presented here can be used as an aid in formulating estimated required rates of return using objective measures of the "risk" of a subject company.

A straightforward method of arriving at a benchmark discount rate would be a simple "build-up" approach, using the data to estimate a total equity risk premium. One could match, say, the operating margin of the subject company with the portfolio composed of stocks with a similar average operating margin. The smoothed premium for this portfolio can then be added to the yield on long-term Treasury bonds as of the valuation date, resulting in a benchmark required rate of return. The "smoothed" average premium is a more appropriate indicator than the actual historical observation for most of the portfolio groups. Examples 6 and 7 illustrate the application of this method for a hypothetical company.

	·····		·····			
Coefficient of Variation of Operating	_	_				
(Standard Deviation of Operating Ma	rgin)/(Avera	ge Operatin	g Margin)			
		2006	2005	2004	2003	2002
Net Sales		\$900	\$800	\$850	\$750	\$900
Operating Income		\$150	\$120	\$130	\$ 80	\$140
Operating Margin		16.7%	15.0%	15.3%	10.7%	15.6%
Standard Deviation of Op. Margin	2.3%					
Average Operating Margin	14.6%					
Coefficient of Variation	15.8%					
Coefficient of Variation of Return on	Book Value	of Equity:	<del></del>			
		of Equity:				
		of Equity:	2005	2004	2003	2002
(Standard Deviation of ROE)/(Averaş			2005 \$710	2004 \$630	2003 \$540	2002 \$500
(Standard Deviation of ROE)/(Average Book Value		2006	2002			
(Standard Deviation of ROE)/(Average Book Value Net Income b4 extraordinary items		2006 \$820	\$710	\$630	\$540	\$500
(Standard Deviation of ROE)/(Average Book Value Net Income b4 extraordinary items Return on Book Equity (ROE)		2006 \$820 \$110	\$710 \$ 80	\$630 \$ 90	\$540 \$ 40	\$500 \$100
Coefficient of Variation of Return on (Standard Deviation of ROE)/(Average Book Value Net Income b4 extraordinary items Return on Book Equity (ROE)  Standard Deviation of ROE Average ROE	ge of ROE)	2006 \$820 \$110	\$710 \$ 80	\$630 \$ 90	\$540 \$ 40	\$500 \$100

Example 5 shows, for a hypothetical company, the calculation of the mean (average) and standard deviation over the last five fiscal years of operating margin and return on book value of equity ("ROE"). The ratio of the standard deviation to the mean is the coefficient of variation. These risk metrics can be used in conjunction with exhibits D-1 through D-3 to estimate a premium over the risk-free rate. Example 6 illustrates the procedure.<sup>20</sup>

<sup>&</sup>lt;sup>20</sup> For simplicity, in example 6 we use the average of the operating margins over five years (14.6%), rather than a composite ratio of average operating income divided by average sales (the actual ranking criteria in exhibit D-1). Readers may verify that the composite ratio is similar (14.8%), indicating an identical guideline equity risk premium over the risk-free rate.

Example 6

Equity Risk Premiums over		_		Premium
	Company Indicator	Relevant Exhibit	Portfolio	over Risk- free
Operating Margin	14.6%	D-1	8	8.8%
CV(Operating Margin)	15.8%	D-2	15	9.4%
CV(ROE)	34.7%	D-3	14	8.9%
Mean premium over risk-fre	e rate			9.0%
Median premium over risk-fi				8.9%

The indicated equity risk premium can be added to the risk-free rate to get an estimate of the required rate of return on equity. Assuming a risk-free rate of 4.9% (say) and in isolation from other considerations, the results suggest a required return on equity in a range of 13.7% to 14.3%, with an average of 13.8%.

As an alternative, we can use the regression equations reported in exhibits D-1 through D-3 to estimate premiums over the risk-free rate (remember that the operating margin, coefficient of variation of operating margin and coefficient of variation of return on book value of equity are converted to logs (base-10) before multiplying by the regression coefficients).

Practical application of this data should not be conducted in isolation from other considerations about the subject company, its industry, or the general economic environment. For instance, a wholesale distributor might have thin operating margins compared to the average company on the NYSE, yet those margins might exhibit unusually low variation due to a particularly strong position in a stable market niche. Alternatively, a company's variation of operating income (calculated in the manner used in our study) might be uncharacteristically high due to an unusual event several years in the past. Appropriate knowledge of the company and its industry would give useful guidance in reconciling the historical equity risk premiums reported here and the historical equity risk premiums reported in Part I for portfolios of companies ranked by size. Size can be an important consideration in determining an appropriate discount rate.

The use of a portfolio's average historical rate of return to calculate a discount rate is based (in part) upon the implicit assumption that the risks of the subject company are quantitatively similar to the risks of the average company in the subject portfolio. If the risks of the subject company differ materially from the average company in the subject portfolio, then an appropriate discount rate may be lower (or higher) than a return derived from the average premium for a given portfolio. The data reported in exhibits C-1 through C-8 (where risk statistics are reported for each size category) may be helpful in making such a determination.

### Changes from Previously Published Versions of this Study (Part II)

- The current report includes average unlevered risk premiums and sum betas for each portfolio in exhibits C-1 through C-8. Prior versions did not include this data (though our currently published versions of prior years' reports include these data).
- Versions of our study published after 1999 have included the three separate measures of risk described in Part II of this report and presented in exhibits C-1 through C-8 and exhibits D-1 through D-3 (our currently published versions of prior years' reports include these data).

- Various changes in methodology over the last several years have affected the underlying database, and these are summarized at the end of Part I.
- In the current version of exhibits D-1 through D-3, we report medians of the sorting criteria for the most recent year, while versions before 2003 reported the average of the medians for all years since 1963 (though our currently published versions of prior years' reports incorporate this change).

				e of Equit age Since						***************************************	Fort Birt Brown Chief.	Exhibit A : Data through December 31, 2006
					1960							<u>-</u>
ata for	Year Endir	ng Decem	ber 31, 2	006							Data Smoothing with Regre	
											Dependent Variable: Average	
											Independent Variable: Log i	of Average Market Value of Equity
				<b>.</b> .	<b></b>				Smoothed			
ontfolio	Average		Number	Beta	Standard			Arithmetic	Average	Average		
Rank	Mkt Value	Average	as of	(SumBeta)	Deviation	Average		Equity Risk		Debt/	Regression	
by Size	(\$mils.)	Mkt Value	2006	Since 63	of Returns	Return	Return	Premium	Premium	MVIC	Constant Std Err of Y Est	21.492% 0.995%
_	07.500	4.00		2.02	16.68%	10.64%	11.90%	4.76%	2.45%	in cont		0.995% 87%
1	97,566	4.99	44	0.90	16.46%	10.88%	12,11%	4.97%	2.40% 4.51%	16.13% 22.56%	R Squared No of Observations	
2	28,450 17,118	4.45 4.23	35 39	0.93 0.97	16.21%	9.79%	10.98%	3.84%	5.35%	24.85%	Degrees of Freedom	25 23
3	12,554	4.10	41	0.97	16.25%	11,75%	12,92%	5.78%	5.86%	25.77%	Degrees or Freedom	23
5	9,494	3.98	38	0.98	15.89%	12.29%	13,43%	6.29%	6.32%	26.99%	X Coefficient(s)	-3.814%
5 6	9,494 7,551	3.88	36 36	1.03	16.54%	12.95%	14,15%	7.01%	6.70%	26.82%	Std Err of Coef.	0.305%
7	5,218	3.72	47	1.03	17.89%	13.45%	14.82%	7.68%	7.31%	27.37%	t-Statistic	-12.50
8	4,610	3.66	48	1.09	19.33%	12.50%	14.15%	7.01%	7.52%	25.84%	("Glaustin)	- 12.50
9	3,905	3.59	44	1.09	18.34%	13.89%	15.34%	8.20%	7.79%	25.14%	Smoothad Promium = 21	192% - 3.814% *Log(Market Valu
10	3,170	3.50	44	1.10	18.63%	12.99%	14.51%	7.37%	8.14%	24.89%	GINOUSEUS TESTALESS - ES.	POE/E - 2,014/6 Lightenhol Pola
11	2,757	3.44	42	1.10	18.18%	13.59%	15.06%	7.92%	8.37%	24.86%		
12	2,453	3.39	45	1.11	18.92%	13.55%	15.07%	7.93%	8.57%	25.41%		
13	2.115	3.33	46	1.10	20.79%	11.96%	13.87%	6.73%	8.81%	26.20%	Smoothed Prem	ium vs. Unadjusted Average L
14	1.866	3.27	49	1.14	19:30%	14.49%	16.12%	8.98%	9.02%	26.70%		
15	1,552	3.19	55	1.15	20.23%	13.79%	15.63%	8.49%	9.32%	26.25%	16%	
16	1,430	3.16	46	1.14	21.82%	15.50%	17.54%	10.40%	9.46%	25.63%	16%	
17	1,186	3.07	51	1.21	23.09%	15.14%	17.35%	10.21%	9.77%	26.28%		
18	1.016	3,01	58	1,21	22.51%	14.77%	16.97%	9,83%	10.03%	26.68%	14%	
19	900	2,95	64	1.24	24.07%	14.57%	16.99%	9.85%	10.23%	26.04%	100	
20	811	2.91	57	1,28	23.80%	15.37%	17.80%	10.66%	10.40%	26.98%	\$ mar.	¥ _a
21	685	2.84	73	1.27	23.55%	15,91%	18.18%	11.04%	10.68%	27.15%	dio*	MC_
22	557	2.75	71	1.28	24.15%	15.44%	17.93%	10.79%	11,02%	27.34%	38%	
23	389	2.59	112	1.24	24.31%	15.51%	18.01%	10.87%	11.62%	27.69%	ii)	***
24	277	2.44	111	1.28	24.82%	16.96%	19.50%	12.36%	12.18%	28.40%	6%	***
25	105	2.02	360	1.30	30:94%	19.86%	23.37%	16.23%	13,78%	30.67%	4%	
igh finan	cial risk		685	1.63	37.70%	16.64%	21.77%	14.63%		46.99%		-
											2%	
inge Sto	cks (libbotso	n SBBI data	)			10.86%	12.09%	4.95%			196	
mall Stor	cks (lbbotso	n SBBI data	)			15.03%	17.64%	10.50%				gal Warker Value of Equity 4.5 5.0
una-Tem	n Treasury h	nenena (lihbe	tson SRR	reten i		7.12%	7.14%				_	· ·

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-listorica	Equity Ri	sk Premiu	m: Avera	ge Since	1963			21110001110223			Equity Risk Premium Stud	ty: Data through December 31, 2006
lata for	Year Endir	na Decemi	ber 31, 2	2006							Data Smoothing with Reg	ression Analysis
											Dependent Variable: Aver	rage Premium
											Independent Variable: Los	g of Average Book Value of Equity
									Smoothed			
ortfolio	Average	Log of	Number	Beta	Standard	Geometric	Anthmetic	Arithmetic	Average	Average	1	
Rank	Book Val.	Average	as of	(SumBeta)	Deviation	Average	Average	Equity Risk	Equity Risk	Debt/	Regress	ion Output:
by Size	(\$mils.)	Book Val.	2006	Since '63	of Returns	Return	Return	Premium	Premium	MVIC	Constant	18.143%
· ·											Std Err of Y Est	0.755%
1	26,120	4,45	38	0.84	16,13%	11.24%	12.43%	5.29%	3.96%	26.94%	R Squared	87%
2	9,419	3.97	36	0.84	16.20%	11.19%	12.34%	5.20%	5.47%	31,39%	No. of Observations	25
3	6,589	3.82	37	0.89	16.44%	13.28%	14.45%	7.31%	5.97%	33.28%	Degrees of Freedom	23
4	4,505	3.65	36	0.91	16,56%	12.08%	13.28%	6.14%	6.49%	31.60%		
5	3,435	3.54	37	0.99	16.55%	12.63%	13.80%	6.66%	6.87%	30.03%	X Coefficient(s)	-3.188%
6	2,513	3.40	40	1.00	18.55%	12.34%	13.82%	6.68%	7.30%	30.69%	Std Err of Coef.	0.253%
7	2,114	3.33	43	0.99	16.30%	12.63%	13.80%	6.66%	7.54%	28.75%	t-Statistic	-12.60
8	1,720	3.24	40	1.05	16.37%	13.18%	14.33%	7.19%	7.83%	27.23%		
9	1,412	3.15	43	1.08	19.13%	14.23%	15.76%	8.62%	8.10%	27.66%	Smoothed Premium = 18	3,143% - 3,168% *Log(Book Value)
10	1,278	3.11	41	1.03	18.63%	13,49%	14,98%	7.84%	8.24%	29.13%		
11	1,151	3,06	43	1.09	18.69%	13.04%	14.57%	7.43%	8.38%	26.19%		
12	966	2.99	49	1.05	18.86%	14,96%	16.51%	9.37%	8.63%	29.75%		· · · · · · · · · · · · · · · · · · ·
13	892	2.95	43	1.12	18.54%	13.61%	15.12%	7.98%	8.74%	27.50%	Smoothed Prem	nium vs. Unadjusted Average
14	758	2.88	50	1.12	19.39%	14.08%	15.70%	8.56%	8.96%.	27.36%		
15	634	2.80	53	1.11	19.50%	14.75%	16.41%	9.27%	9.21%	27,55%	18%	
16	563	2.75	45	1,17	20.62%	14.79%	16.69%	9.55%	9.37%	27.58%	16%	
17	500	2.70	49	1.19	21.74%	14.85%	16.90%	9.76%	9.54%	25.80%		
18	458	2.66	57	1.24	20.95%	14.08%	15.98%	8.84%	9.66%	27.26%	14% - 😐	
19	385	2.59	65	1.20	21.37%	14.98%	16.88%	9.74%	9.90%	27.87%	E12%	•
20	346	2.54	52	1.23	22.42%	15.51%	17.60%	10.46%	10.05%	26.58%	\$	~ *
21	299	2.48	65	1.22	21.75%	14.85%	16.90%	9.76%	10.25%	27.21%	£10%	
22	246	2.39	82	1.25	24.38%	16.48%	18.98%	11.64%	10.52%	26.52%	Eggith.	
23	194	2.29	111	1.26	23.93%	15.16%	17.60%	10.46%	10.85%	27.27%	l m	* ***
24	140	2.15	120	1.30	24.97%	15.58%	18.25%	11.11%	11.30%	26.95%	8%	*****
25	59	1.77	381	1.33	31.23%	17.34%	21.04%	13.90%	12.50%	26.36%	4%	
igh finan	cial risk		685	1.62	37.30%	16.90%	21.90%	14.76%		47.78%	] *	
	oks (lbbotso)					10.86%	12.09%	4.95%			0%	
mail Stoc	cks (libbotsor	n SBBI data	)			15.03%	17.64%	10.50%			1.0 1.8 2.0 [ [co.of Sus	2.5 3.0 3.5 4.0 4 erage Book Value of Equity
_											LCG OF ANN	notes many sports or related.
nug-1 em	n Treasury In	ncome (libbo	ason SBB	( gata)		7.12%	7.14%				L	

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	les Ranke Equity Ris				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		,				Fourth Rick Promises Shahe f	Exhibit / Data through December 31, 2006
					903							-
ata for	rear Endin	ig Decem	per 31, 2	TULUS							Data Smoothing with Regress	
											Dependent Variable: Average	
											Independent Variable: Log of	Average Net Income
									Smoothed			
ortfolio	Average		Number	Beta	Standard			Arithmetic	Average	Average		
Rank	Net Inc.	Average		(SumBeta)	Deviation	Average			Equity Risk	Debt/	Regression	
by Size	(\$mils.)	Net Inc.	2006	Since 63	of Returns	Return	Return	Premium	Premium	MVIC	Constant	14.653%
											Std Err of Y Est	0.786%
1	4,409	3.64	37	0.80	16.28%	11.74%	12.94%	5.80%	4.01%	22.97%	R Squared	88%
2	1,041	3.02	36	0.84	15.25%	11.90%	12.93%	5.79%	5.84%	28.17%	No. of Observations	25
3	636	2.80	34	0.84	15.48%	12.69%	13.73%	6.59%	6.47%	30.80%	Degrees of Freedom	23
4	491	2.69	36	0.90	16.07%	13.10%	14.22%	7.08%	6.80%	30.54%		
5	350	2.54	41	0.94	17.13%	11.85%	13.15%	6.01%	7.22%	28.75%	X Coefficient(s)	-2.920%
6	271	2.43	41	0.97	17.69%	12.90%	14.24%	7,10%	7.55%	29.25%	Std Err of Coef.	0.229%
7	213	2.33	38	1.03	17.47%	13.15%	14.44%	7.30%	7,86%	27.48%	t-Statistic	-12.73
8	174	2.24	41	1.02	17.43%	14.29%	15.62%	8.45%	8.11%	26.96%		
9	142	2.15	42	1.06	16.68%	13.38%	14.59%	7.45%	8.37%	28.39%	Smoothed Premium = 14.65	3% - 2.920% * Lag(Net Income
10	117	2.07	45	1.07	19.40%	13.37%	14.92%	7.78%	8.62%	26.03%		
11	105	2.02	44	1.05	17.64%	14.13%	15.52%	8.38%	8.75%	27.06%		
12	90	1.96	43	1.05	18.81%	14.72%	16.23%	9.09%	8.94%	27.67%		
13	80	1.90	41	1.05	18.10%	14.55%	16.00%	8.86%	9.10%	27.08%	Smoothed Premium	n vs. Unadjusted Average
14	68	1.83	44	1.14	20.46%	14.32%	16.17%	9.03%	9.31%	26.08%	1 -	
15	58	1.76	51	1.14	21.65%	13.47%	15.49%	8.35%	9.50%	26.10%	18%	
16	51	1.71	48	1.19	21.55%	16.25%	18.18%	11:04%	9.66%	26.07%	16%	
17	46	1.66	52	1.18	21.07%	14.67%	16.59%	9.45%	9.80%	25,33%		
18	39	1,59	57	1.23	22.93%	15.59%	17.88%	10.74%	10.01%	25.14%	14%	
19	31	1.50	60	1.26	23.04%	15,09%	17.42%	10.28%	10.28%	26.29%	5.0%	
20	28	1.44	59	1,19	21.83%	16,02%	18.04%	10.90%	10.44%	26.85%	10x	
21	23	1.36	77	1.21	23.30%	15.80%	18,10%	10.96%	10.70%	26.78%	610%	er. ber
22	18	1.25	77	1.24	22.85%	16.29%	18.49%	11.35%	11.00%	26.71%	Anges.	
23	13	1.10	108	1.28	23.77%	16.46%	18.83%	11,69%	11.43%	25.83%	a	** **
24	8	0.92	152	1.28	24,29%	15.59%	18.12%	10.98%	11.97%	27.56%	6%	* ***
25	3	0.47	352	1.38	31.36%	17.81%	21.67%	14.53%	13.27%	27.71%	4%	
igh financ	iał risk		685	1.63	37.70%	16.64%	21.77%	14.63%		46.99%	1 1	
***************************************							*****************		*******************************		1 2%	
arge Stoc	ks (libbotson	SBBI data	}			10.86%	12.09%	4.95%			l ==	
	ks (lbbatson					15.03%	17.64%	10.50%			0.0 0.5 1.0 1.5	2.0 2.6 3.0 3.5
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•									rage Net Income
nn Term	Treasury In	rnma fibhr	teon SAR	i data).		7.12%	7.14%				1	

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				e of Inves		1			,,,				Exhibit A
				age Since	1963								udy: Data through December 31, 2006
ata for \	rear Endin	g Decem	ber 31, 2	1006								Smoothing with Re	
											Dep	endent Variable: Av	erage Premium
											Inde	pendent Variable: L	og of Average MVIC
									Smoothed		1		
Portfolio	Average	Log of	Number	Seta	Standard	Geometric	Arithmetic	Arithmetic	Average	Average	}		
Rank	MVIC	Average	as of	(SumBeta)	Deviation	Average	Average	Equity Risk	Equity Risk	Debti	ĺ	Regres	ision Output:
by Size	(\$mils.)	MViC	2006	Since '63	of Returns	Return	Return	Premium	Premium	MVIC	Con	stant	20.953%
											Std	Em of Y Est	0.846%
1	116,519	5.07	43	0.85	16.00%	10.74%	11.92%	4.78%	2.98%	22.67%		tuared	89%
2	35,900	4.56	35	0.86	18.88%	10:50%	11.77%	4.63%	4.80%	30.73%	No.	of Observations	25
3	22,691	4.36	34	0.89	15.32%	10,94%	11.99%	4.85%	5.50%	31.94%	Deg	rees of Freedom	23
4	17,435	4.24	39	0.95	16.33%	11.86%	13.03%	5.89%	5.91%	31.31%			
5	12,529	4.10	39	0.95	16.23%	12.71%	13.88%	6.74%	6.42%	29.80%		efficient(s)	-3.547%
6	9,539	3.98	43	1.00	16.78%	13.09%	14.34%	7.20%	6.84%	29.05%		Err of Coef.	0.258%
7	7,335	3.87	37	1.04	18.07%	13.71%	15.05%	7.91%	7.24%	28.13%	t-Sta	itistic	-13.77
8	5,795	3.76	45	1,06	18,15%	13.39%	14.82%	7.68%	7.61%	27.96%			
9	4,742	3.68	44	1.09	17.66%	12.13%	13.54%	6.40%	7.91%	27.30%	Smo	othed Premium = :	20.953% - 3.547% *Log(MVIC)
10	4,254	3.63	46	1.07	19.03%	13.84%	15.45%	8:31%	8.08%	27.90%			
11	3,511	3.55	42	1.09	19.61%	13.17%	14.86%	7.72%	8.38%	27.83%			
12	3,280	3.52	43	1.10	18.68%	13.41%	14.99%	7.85%	8.48%	28.67%			
13	2,765	3.44	42	1.12	19.65%	13.39%	15.08%	7.94%	8.75%	26.26%	20%	JSmoothed Pren	nium vs. Unadjusted Average
14	2,339	3.37	48	1.17	20.73%	14:25%	16.05%	8.91%	9.00%	26.39%			
15	2,163	3.34	44	1.16	20.37%	14.09%	15.88%	8.74%	9.12%	27.17%	18%		
16	1,763	3.25	53	1.22	22.15%	14.71%	16.90%	9.76%	9.42%	26.97%	18%	•	
17	1,554	3.19	56	1.21	20.45%	14.42%	16.29%	9.15%	9.63%	25.52%		=	
18	1,291	3,11	59	1.23	22.76%	15,35%	17.61%	10,47%	9,92%	26.87%	14%	_	
19	1,144	3,06	53	1.24	23.40%	14.31%	16.59%	9.45%	10.11%	27.81%	50 2%		*
20	1,007	3.00	69	1.22	22.54%	15.05%	17.22%	10.08%	10.30%	27.32%	5	*`	The state of the s
21	912	2.96	61	1.28	24.37%	15.61%	18.08%	10.94%	10.45%	27.27%	20%		
22	703	2.85	85	1.30	24.10%	14.95%	17.37%	10.23%	10.86%	27.99%	₩ ₩		
23	510	2.71	85	1.25	24.30%	16.60%	19.07%	11.93%	11.35%	27.03%			***
24	329	2.52	165	1.32	25.15%	15.70%	18.36%	11.22%	12.02%	27.26%	8%		
25	123	2.09	346	1.30	30.46%	19,42%	23.00%	15.86%	13.55%	25.05%	4%		* *
igh financ	ial risk		685	1.63	37.70%	16.64%	21.77%	14.63%		46.99%	2%		
											'"		
	ks (Ibbotson					10.86%	12.09%	4.95%			0%		
mall Stoc	ks (lbbotson	SBBI data	}			15.03%	17.64%	10.50%			1.0	1.5 2.0 2.5 Log of Ave	3.0 3.5 4.0 4.5 5.0 ± erage Market Invested Capital
non-Team	Treasury In	come (lbbc	tson SBB	i data).		7.12%	7.14%						

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	ies Ranke					×						Exhibit /
				ige Since	963						Equity Risk Premium Study: Da	-
ala for '	Year Endir	ig Decem	ber 31, 2	006							Data Smoothing with Regression	n Analysis
											Dependent Variable: Average F	remium
											Independent Variable: Log of Ti	otal Assets
									Smoothed			
ortfolio	Average	Log of	Number	Beta	Standard	Geometric	Arithmetic.	Arithmetic	Average	Average		
Rank.	Assets	Average	as of	(SumBeta)	Deviation	Average	Average	Equity Risk	Equity Risk	Debt/	Regression O	
by Size	(\$mils.)	Assets	2006	Since '63	of Returns	Return	Return	Premium	Premium	MVIC	Constant	18.621%
											Std Err of Y Est	0.924%
1	82,410	4.92	37	0.82	16.59%	11.78%	13.02%	5.88%	4.41%	32.55%	R Squared	82%
2	27,872	4.45	34	0.86	16.43%	11.25%	12.47%	5.33%	5.77%	38.00%	No. of Observations	25
3	18,735	4.27	34	0.84	16.16%	12.41%	13.53%	6.39%	6.27%	35.86%	Degrees of Freedom	23
4	13,315	4.12	37	0.92	17.22%	12.73%	14.04%	6.90%	6.70%	34.04%		
5	9,231	3.97	37	0.92	16.31%	13.47%	14.61%	7.47%	7.16%	32.71%		2.891%
6	7,012	3.85	38	0.99	17.29%	13.19%	14.48%	7.32%	7.50%	31.51%		0.281%
7	5,564	3.75	35	1.00	16.42%	13.86%	15.03%	7.89%	7.79%	30.58%	t-Statistic	-10.27
8	4,247	3.63	39	1.03	17.27%	12.99%	14.27%	7.13%	8.13%	31.72%		
9	3,738	3.57	37	1.07	18:42%	12.78%	14.23%	7.09%	8.29%	31.89%	Smoothed Premium = 18.6215	% - 2.891% *Log(Assets)
10	3,253	3.51	40	1.08	19,33%	12.97%	14.65%	7.51%	8.47%	31.39%		
11	2,763	3.43	42	1.10	19.86%	14.74%	16.50%	9.36%	8.70%	30.29%		
12	2,360	3.37	42	1.13	20.12%	12.92%	14.66%	7.52%	8.87%	29.06%	Smoothed Promius	ı vs. Unadjusted Average
13	2,051	3.31	43	1.10	19.34%	14.75%	16.37%	9.23%	9.05%	29.04%	20%	1 Va. Ottadjoaled Average
14	1,735	3.24	53	1.12	19,33%	15.35%	16.96%	9.82%	9.26%	28.37%	18%	
15	1,536	3.19	48	1.16	19.89%	14.69%	16.40%	9.26%	9.41%	27.86%	1876	
16	1,285	3.11	50	1.21	20.10%	15.98%	17.71%	10.57%	9.63%	26.20%	18%	
17	1,165	3.07	47	1.24	23.97%	16.55%	19.01%	11.87%	9.76%	27.45%	14%	
18	980	2.99	49	1:19	20.28%	15.09%	16.91%	9.77%	9.97%	27.93%		
19	853	2.93	66	1.20	20.69%	13.75%	15.63%	8.49%	10.15%	28.06%	E 12%	
20	701	2.85	64	1.23	24.84%	14.66%	17.16%	10.02%	10,39%	27.16%	£10%	_
21	569	2.76	84	1.24	21.85%	15.47%	17.55%	10.41%	10.66%	26.40%		EN.#
22	480	2.68	76	1.29	24.63%	14.94%	17.45%	10.31%	10.87%	26.42%	- se Eguity	a succession of the succession
23	380	2.58	84	1.28	23.30%	16.11%	18.38%	11.24%	11.16%	25.45%	6%	
24	275	2.44	142	1.29	26.93%	15.73%	18.72%	11.58%	11.57%	24.67%	4%	*
25	104	2.02	398	1.34	29.44%	18.08%	21.50%	14.36%	12.79%	21.16%	470	
gh finan	ial risk		685	1.63	37.70%	16.64%	21.77%	14.63%		46.99%	2%	
											1 0%	
	ks (Ibbotsor					10.86%	12.09%	4.95%			1.0 1.5 2.0 2.5 3.0	3.5 4.0 4.5 5.0
nall Stoc	ks (lbbatson	SBBI data	)			15.03%	17.64%	10.50%			l .	otal Assets
_		71.4				~	** - 161				1	
ud-t eut	Treasury In	come (lbbc	sson SBB	ı data)	,	7.12%	7,14%				1	

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				age EBITE age Since							Franky Rick Premium Shuh	Exhibit / Data through December 31, 2006
					:000						Data Smoothing with Regn	· · · · · · · · · · · · · · · · · · ·
ata for	Year Endin	ig necemi	oersi, z	UUU								
											Dependent Variable: Avera	
											Independent Variable: Log	of Average EBITUA
		1	**	C.4	C4	Geometric	Eurista un calla	4	Smoothed		1	
Portfolio	Average		Number	Beta				Arithmetic	Average	Average	Regressik	
Rank	EBITDA	Average EBITDA	as of 2006	(SumBeta)	Deviation of Returns	Average Return	Return		Equity Risk Premium	Debt/ MVIC	Constant	16.159%
by Size	(\$mils.)	COHUM	2000	Suice on	O) ACCURING	remi	Keran	L:Gustan	riemaunii	MAIĆ	Std Err of Y Est	0.942%
1	10,591	4.02	36	0.82	16.34%	12.05%	13.25%	6.11%	4.49%	26.44%	R Squared	62%
2	3,136	3.50	37	0.82	15.04%	11,44%	12.44%	5.30%	6.02%	32,41%	No. of Observations	25
3	2,248	3.35	33	0.88	16.21%	13.04%	14.18%	7.04%	6.44%	32.70%	Degrees of Freedom	23
4	1,548	3.19	34	0.94	16.80%	12.77%	13.98%	6.84%	6.91%	32.49%	2 September 11 Total III	20
5	1.056	3.02	37	0.89	16.42%	13.87%	15.05%	7,91%	7.39%	31.38%	X Coefficient(s)	-2.900%
6	831	2.92	35	0.96	17.59%	12.99%	14.32%	7.18%	7.69%	31.20%	Std Err of Coef.	0.288%
7	667	2.82	38	1.01	16.54%	13.03%	14.23%	7.09%	7.97%	29.30%	t-Statistic	-10.08
8	523	2.72	45	1.07	18.02%	13.58%	15.01%	7.87%	8.27%	27.99%		
9	426	2.63	42	1.03	17,49%	12.13%	13.42%	6.28%	8.53%	28.17%	Smoothed Premium = 16.	159% - 2.900% *Log(EBITDA)
10	377	2.58	39	0.99	17.62%	13.43%	14.77%	7.63%	8.69%	28.74%		
11	325	2.51	41	1.03	18.92%	14.08%	15.68%	8.54%	8.88%	29,12%		
12	294	2.47	40	1,10	19.97%	15.41%	17.17%	10.03%	9.00%	27.95%		
13	232	2.37	48	1.11	20.41%	16.14%	17.89%	10.75%	9.30%	28.40%	Smoothed Prem	ium vs. Unadjusted Average
14	211	2.32	43	1:13	20.07%	14.77%	16:54%	9.40%	9.42%	28.55%	1 ""	
15	190	2.28	55	1.13	19.77%	14.36%	16.11%	8.97%	9.55%	27.13%	14%	
16	149	2.17	47	1.18	20.73%	15.67%	17.49%	10.35%	9.86%	27.38%	1 1 •	
17	139	2.14	50	1.19	21.20%	15.92%	17.82%	10.68%	9.94%	26.61%	12%	_
18	118	2.07	50	1.21	22.06%	13.88%	16.02%	8.88%	10.15%	26.08%		
19	106	2.03	56	1.24	22.13%	16.52%	18.59%	11.45%	10.28%	27.69%	90% - 1	*
20	91	1.96	52	1.24	23.64%	14.54%	17.00%	9.86%	10.48%	27.95%	1 5	
21	78	1.89	71	1.22	21.82%	15.28%	17.31%	10.17%	10,67%	26.73%	£8%	***
22	58	1.76	91	1.19	22.46%	16.34%	18.51%	11.37%	11.05%	26.40%	Annual Care	***
23	48	1.66	106	1.27	24.95%	16,71%	19.30%	12.16%	11.34%	27.12%	W-"	
24	31	1.50	116	1.32	24.92%	16,20%	18.80%	11.66%	17.82%	26.43%	4%	
25	12	1.08	414	1.37	30.46%	17.15%	20.78%	13.84%	13.02%	24.03%	4	
ligh finan	áal risk		685	1.63	37.70%	16.64%	21.77%	14.63%		46,99%	2%	
		AMAY 1				40.0001	10.600	1.000				
	arge Stocks (libbotson SBBI data) 10.86% 12.09% 4.95% mail Stocks (libbotson SBBI data) 15.03% 17.64% 10.50%							0.00 0.60 1.00 1.50	2.00 2.50 3.00 3.50 4.00 4.			
imati Stoc	ks (ibbotson	SBBI data	)			15.03%	17.64%	10.50%				7.00 2.50 3.00 3.50 4.00 4. Average EBITCA
<del>-</del>			cnn			7.12%	7.14%				1	<del>-</del>
Jun-16th	Treasury In	EXHIBITION	rzou 200	(SHIN)		1.12%	1.1476		·			

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	l Equity Ris Year Endir				1963						Equity Risk Premium Stud Data Smoothing with Regri Dependent Variable: Avera	
											Independent Variable: Log	of Average Sales
				Beta	<b>~</b>	Geometric	A	Arithmetic	Smoothed	4		
ortfolio	Average		Number		Deviation				Average Equity Risk	Average Debt/	Danvessis	on Output:
Rank	Sales (\$mils.)	Average Sales	as of 2005	(SumBeta) Since '63	of Returns	Average Return	Return		Equity rask Premium	MVIC	Constant	т Сирок. 16.815%
by Size	(\$mas.)	Sales	4000	Since 03	OF KERDING	Recar	remiii	rienium	rienaun	MIV+C	Std Err of Y Est	0.964%
	71,497	4.85	35	0.93	17.56%	11.75%	13.17%	6.03%	5.76%	25.77%	R Squared	72%
1 2	23,797	4.38	36	0.93	17.98%	12.35%	13.77%	6.63%	5.70%	27.26%	No. of Observations	25
3	14,895	4.17	36	0.99	16.49%	13.69%	14.66%	7.72%	7.31%	29.01%	Degrees of Freedom	23
-	10,851	4.17	36 36	1.02	17.32%	14.52%	15.80%	8.66%	7.62%	29.94%	Degrees or meedom	23
4 5	8,568	3.93	35	1.02	17.01%	12.83%	14.09%	6.95%	7.86%	31.18%	X Coefficient(s)	-2.278%
6	6,554	3.82	36	0.99	17.24%	14.81%	16.07%	8.93%	7.50% 8.12%	30.29%	Std Err of Coef.	0.295%
7	5,199	3.72	39	1.09	18.68%	14.21%	15.71%	8.57%	8.35%	28.44%	t-Statistic	-7.72
8	4,552	3.66	39	1.05	17.95%	12.75%	14.14%	7.00%	8.48%	30.75%	i Statistic	-1.12
9	3,593	3.56	42	1.09	20.03%	12.95%	14.69%	7.55%	8.72%	29.92%	Connection Operation = 16	815% - 2.278% * Log(Sales)
10	3,393	3.49	41	1.06	19.17%	14.59%	18.13%	8.99%	8.86%	29.24%	Sinooned Freindeit - 10.	010% - 1.270% Logidales/
11	2,461	3.39	45	1.15	20.83%	14.60%	16.50%	9.36%	9.09%	29.59%	<del></del>	
12	2,154	3.33	41	1.13	20.33%	16.37%	18.20%	11.06%	9.22%	30.25%	***************************************	
13	1,851	3.27	49	1.15	21.02%	15.11%	17.01%	9.87%	9.37%	30.01%	Smoothed Premi	ium vs. Unadjusted Average
14	1.641	3.21	50	1.10	18.44%	15.46%	16.89%	9.75%	9.49%	29.06%	20%	
15	1,462	3.16	54	1.14	21.74%	14.56%	16.61%	9.47%	9.60%	28.91%	18%	
16	1.228	3.09	53	1.15	20.27%	14.55%	16.32%	9.18%	9.78%	29.36%		
17	1,040	3.02	61	1.13	20.88%	15.54%	17.47%	10.33%	9.94%	30.11%	16%	
18	919	2.96	63	1.21	20.00%	13.06%	15.05%	7.91%	10.06%	29.48%	14%	
19	767	2.89	54	1.23	22.18%	14.90%	17.00%	9.86%	10.24%	28.98%	\$2%	
20	685	2.84	58	1.15	21.24%	16.17%	18.03%	10.69%	10.36%	28.55%	22%	
21	550	2.74	90	1.13	22,62%	14.89%	17.06%	9.92%	10.57%	27.77%	20%	
22	434	2.64	81	1.24	23.83%	14.25%	16.68%	9.54%	10.81%	27,66%	₹	
23	326	2.51	100	1.27	25.55%	16.94%	19.64%	12.50%	11.09%	26,77%	in the state of th	
24	224	2.35	135	1.29	24.70%	15.71%	18.26%	11.12%	11.46%	25.26%	6%	
25	91	1.96	347	1.32	28.33%	17,49%	20.68%	13.54%	12,35%	21.92%	l	
ligh finan	www.com.com.com.com.com	(.00	685	1.63	37.70%	16.64%	21.77%	14.63%	12.0076	46.99%	4%	
- 10 1cm	and the						,		•		1 2% }	
ame Stor	ks (libbotson	SBBI data	1			10.86%	12.09%	4.95%			<sub>                                    </sub>	
mail Stocks (libbotson SBBI data) 15.03% 17.64% 10.50%									1	30 35 40 45 50		
.,	and (indoeder)		r								1.0 1.0 2.0 2.9	3.0 3.5 4.0 4.5 5.0 Log of Swies
ana Tam	Treasury In	onzia (tibba	tenn CDD	data)		7.12%	7.14%				<b>‡</b>	

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		ng Decemi		age Since							"	Data through December 31, 2006
	reat Citos	ið narann		mne							Data Smoothing with Regre	salan Assimia
and fire View			Des Oi, 2	2000							Dependent Variable: Avera	
-46-Ti											Independent Variable: Log	
- AF-Ti-									Smoothed		independent variable, Logi	n wastede Eurbolase
	Average	i aa af	Number	Beta	Standard	Geometric	Arithmetic	Arithmetic	Average	Average		
	Number of		as of	(SumBeta)	Deviation	Average			Equity Risk	Debt/	Regressio	n Didnet
	Employees		2006	Since '63		Return	Return	Premium	Premium	MVIC	Constant	17.424%
y 540 x	Cripo yeas		2,000	ON ICC OC	0,70000	· casair.	, (C-211)	. 14-1114711	1 TOPPONT	MAIO	Std Err of Y Est	0.966%
1	257,161	5.41	35	1.03	19,01%	11.01%	12.66%	5.52%	5.99%	25,31%	R Squared	72%
2	88.945	4.95	39	1.00	17.41%	12.78%	14.09%	6.95%	6.96%	25.45%	No. of Observations	25
3	56,823	4.75	36	1.04	18.16%	13.31%	14.73%	7.59%	7.37%	26.83%	Degrees of Freedom	23
ă	43,149	4.63	34	1.07	17.38%	13.71%	14.97%	7.83%	7.63%	25.45%	wagious ori recom	2.0
5	32,869	4.52	43	1.07	18.85%	14.94%	18.52%	9.38%	7.88%	26.56%	X Coefficient(s)	-2.114%
6	25.588	4.41	39	1.08	19.22%	14.07%	15,64%	8.50%	8.11%	26.31%	Std Err of Coef.	0.274%
7	21,450	4.33	44	1.09	18.49%	12.17%	13.68%	6.54%	8.27%	26.64%	t-Statistic	-7.71
8	16,314	4.21	45	1.13	19.28%	13.62%	15,27%	8.13%	8.52%	28.22%		
9	13.724	4.14	42	1.14	21.02%	15.74%	17.63%	10.49%	8.68%	29.47%	Smoothed Premium = 17.4	124% - 2.114% *Log(Employees)
10	11,246	4.05	47	1,14	20.76%	13.43%	15.26%	8.12%	8.86%	29.79%		,,
11	9,932	4.00	46	1,19	20.92%	14.89%	16.83%	9.69%	8.97%	29.50%		
12	8,295	3.92	46	1.12	20.86%	16.12%	17.99%	10.85%	9.14%	28.62%	<u> </u>	
13	7,211	3.86	60	1.11	19.53%	13.74%	15.47%	8.33%	9.27%	29.06%	Smoothed Premi	um vs. Unadjusted Average
14	5,883	3.77	54	1.16	21.67%	14.15%	16,17%	9.03%	9.46%	29.93%	20%	
15	5,399	3.73	50	1.16	20.87%	13.84%	15.76%	8.62%	9.53%	30.11%	18%	
16	4,742	3.68	52	1.15	20.49%	15.98%	17.77%	10.63%	9.65%	28.71%		
17	3,982	3.60	54	1.22	20.67%	13:38%	15.36%	8.22%	9.81%	29.98%	18%	
18	3,668	3.56	54	1.18	20.54%	13.91%	15.80%	8.66%	9.89%	29.91%	_ H*   _	
19	2,837	3.45	78	1.15	21.84%	14.59%	16.58%	9.44%	10.12%	28.39%	\$ 12%   **	
20	2,410	3,38	78	1.17	23.68%	15.73%	17,99%	10.85%	10.27%	28.29%	12%	n * K
21	1,712	3.23	87	1.16	22.31%	15.84%	17.90%	10.76%	10.59%	28.17%		
22	1,367	3.14	86	1.18	21.87%	16.50%	18.49%	11.35%	10.80%	27.39%	3 **	
23	972	2.99	126	1.21	22.21%	15.81%	17.94%	10.80%	11.11%	28.54%	5%	
24	533	2.73	179	1.24	24.28%	16.56%	18.94%	11.80%	11.66%	26.85%	4%	
25	172	2.24	193	1,28	27.65%	17.25%	20.32%	13,18%	12.70%	22.44%	<u> </u>	
h financ	cial risk		681	1.63	37.61%	16.87%	21,98%	14.84%		46.96%	2%	
											2%	
		n SBBI data				10.86%	12.09%	4.95%			20 25 30 3.5	4.0 4.5 5.0 5.8
all Stoc	:ks (libbotsor	n SBBI data)	)			15.03%	17.64%	10.50%			Log of I	lumber of Employees
<del></del>		ncome (!bbo	coo			7.12%	7.14%					

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	es Ranked by Equity Risk P							remium ove	Equity Risk Premium Study: Data through Decemb	Exhibit B
				1903					, , ,	er 31, 2006
ata for Y	ear Ending D	ecember 3	11, 2006						Data Smoothing with Regression Analysis	
									Dependent Variable: Premium over CAPM	
									Independent Variable: Log of Average Market Valu	e of Equity
								Smoothed		
ortfolio	Average	Log	Seta	Arithmetic	Arithmetic	Indicated	Premium	Premium		
Rank	Mkt Value	of	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression Output:	
y Size	(Smils.)	Size	Since '63	Return	Premium	Premium	CAPM	CAPM	Constant 13,006%	
									Std Err of Y Est 0.992%	
1	97,566	4.99	0.90	11.90%	4.76%	4.46%	0.30%	-1.70%	R Squared 80%	
2	28,450	4,45	0.93	12.11%	4.97%	4.58%	0.38%	-0.12%	No. of Observations 25	
3	17,118	4,23	0.97	10.98%	3.84%	4.80%	-0.95%	0.53%	Degrees of Freedom 23	i
4	12,554	4.10	86.0	12.92%	5.78%	4.84%	0.94%	0.92%		
5	9,494	3.98	0.96	13.43%	6.29%	4.77%	1.52%	1.28%	X Coefficient(s) -2.948%	
6	7.551	3.88	1.03	14.15%	7.01%	5.07%	1.93%	1.58%	Std Err of Coef. 0.304%	
7	5,218	3.72	1.02	14.82%	7.68%	5.02%	2.66%	2.05%	t-Statistic -9.69	
8	4,610	3.66	1.09	14.15%	7.01%	5.40%	1.61%	2.21%		
9	3,905	3.59	1.09	15.34%	8.20%	5.38%	2.83%	2.42%	Smoothed Premium = 13.006% - 2.948% *Log(	Warket Value
10	3,170	3.50	1.10	14.51%	7.37%	5.44%	1.93%	2.69%		
11	2,757	3,44	1.10	15.06%	7.92%	5.42%	2.50%	2.86%		
12	2,453	3.39	1.11	15.07%	7.93%	5.48%	2.44%	3.01%	Smoothed Premium vs. Unadjusted	а
13	2,115	3.33	1.10	13.87%	6.73%	5.43%	1.30%	3.20%		<b>'</b> I
14	1,866	3.27	1.14	16.12%	8.98%	5.65%	3.33%	3.36%	12% Average	
15	1,552	3.19	1.15	15.63%	8.49%	5.67%	2.83%	3.60%	10%	-
16	1,430	3.16	1.14	17.54%	10.40%	5.63%	4.77%	3.71%		Į.
17	1,186	3.07	1.21	17.35%	10.21%	5.98%	4.23%	3.94%	8%  -	
18	1,016	3.01	1.21	16.97%	9.83%	5.98%	3.85%	4.14%	S S S S S S S S S S S S S S S S S S S	
19	900	2.95	1.24	15,99%	9.85%	6.14%	3.71%	4.30%	5 6%	ŀ
20	811	2.91	1.28	17.80%	10.66%	6.32%	4.34%	4.43%	8 4%	l l
21	685	2.84	1.27	18.18%	11.04%	6.28%	4.76%	4,65%		1
22	557	2.75	1.28	17.93%	10.79%	6.31%	4.48%	4.91%	28	
23	389	2.59	1.24	18.01%	10.87%	6.16%	4.71%	5.37%	unitro	
24	277	2.44	1.28	19.50%	12.36%	6.35%	6.01%	5.81%	478	
25	105	2.02	1.30	23.37%	16.23%	6.45%	9.78%	7.04%	-2%	~
h financi			1.63	21.77%	14.63%	8.05%	6.58%		1	
		·							4%	
me Stoci	s (libbotson SBE	i data)		12.09%	4.95%				1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5	5.0 5.5
	s (libbotson SBB			17.64%	10.50%				Log of Average Market Value of Equity	
		,							Terrena	
o-Term	Treasury Income	e (ibbotson S	SBBI data)	7.14%					1	

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	es Ranked by							remium over	Equity Risk Premium Study, Data	Exhibit B
	Equity Risk Pr			1903						
ata for 1	Year Ending D	ecember 3	31, 2005						Data Smoothing with Regression	
									Dependent Variable: Premium ov	
									Independent Variable: Log of Ave	rage Book Value of Equity
								Smoothed		
ortfolio	Average	Log	Beta	Arithmetic	Anthmetic	Indicated	Premium	Premium		
Rank	Book Val.	of	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression Output:	
by Size	(\$mils.)	Size	Since 63	Return	Premium	Premium	CAPM	CAPM	Constant	9.364%
									Std Err of Y Est	0.771%
1	28,120	4.45	0,84	12.43%	5.29%	4.14%	1.16%	0.15%	R Squared	74%
2	9,419	3.97	0.84	12.34%	5.20%	4.17%	1.03%	1.14%	No. of Observations	25
3	6,589	3.82	0.89	14.45%	7.31%	4.39%	2.92%	1.46%	Degrees of Freedom	23
4	4,505	3.65	0.91	13.28%	6.14%	4.51%	1.63%	1.80%	***************************************	
5	3,435	3.54	0.99	13.80%	6.66%	4.89%	1.78%	2.04%		070%
6	2,513	3.40	1.00	13.82%	6.68%	4.93%	1.75%	2.32%		258%
7	2,114	3.33	0.99	13.80%	6.86%	4.92%	1.74%	2.48%	t-Statistic	-8.01
8	1,720	3.24	1.05	14.33%	7.19%	5.21%	1.98%	2.67%		
9	1,412	3.15	1.08	15.76%	8.62%	5.34%	3.28%	2.84%	Smoothed Premium = 9.364% -	2.070% * Log(Book Value)
10	1,278	3.11	1.03	14.98%	7.84%	5.07%	2.76%	2.93%		
11	1,151	3.06	1.09	14.57%	7.43%	5.42%	2.01%	3.03%		
12	966	2.99	1.05	16.51%	9.37%	5.20%	4.17%	3.18%	Smoothed Premium vs	Manager and According
13	892	2.95	1.12	15.12%	7.98%	5.54%	2.44%	3.26%	12% Smoothed Premion Vs	. Unadjusted Average
14	758	2.88	1.12	15.70%	8.56%	5.53%	3.03%	3.40%	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
15	634	2.80	1.11	16.41%	9.27%	5.50%	3.77%	3.56%	10%	
16	563	2.75	1.17	16.69%	9.55%	5.80%	3.75%	3.67%		
17	500	2.70	1.19	16.90%	9.76%	5.87%	3.89%	3.78%	2 8%	
18	458	2.66	1.24	15.98%	8.84%	6.14%	2.70%	3.86%	S. S	
19	385	2.59	1.20	16.88%	9.74%	5.92%	3.83%	4.01%	3 **	
20	346	2.54	1.23	17.60%	10.46%	6.06%	4.40%	4.11%	2% Land Market 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
21	299	2,48	1.22	16.90%	9.76%	6.05%	3.71%	4.24%	§ * * <u>*</u>	*
22	246	2.39	1.25	18.98%	11.84%	6.21%	5.63%	4.42%	E 2%	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
23	194	2.29	1.26	17.60%	10.46%	6.22%	4.23%	4.63%	€ <sub>0%</sub>	
24	140	2.15	1.30	18.25%	11.11%	6.42%	4.69%	4.92%	***	
25	59	1.77	1.33	21.04%	13.90%	6.60%	7.30%	5.70%	-2%	
gh financ	ial risk		1,62	21.90%	14.76%	8.03%	6.73%			
M				********					4%	
arge Stock	ks (libbotson SBB	i data)		12.09%	4.95%				1.0 1.5 2.0 2.5 3.	
	ks (libbotson SBB			17.64%	10.50%				Log of Average Bo	ow Awine of Ednith
+	.,	···,								
na-Term	Treasury Income	(libbotson !	SBBI data)	7.14%						

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	es Ranked by							remium over	and the second contract of the second contrac
	Equity Risk Pr			1963					Equity Risk Premium Study: Data through December 31, 2006
ata for Y	ear Ending D	ecember 3	1, 2006						Data Smoothing with Regression Analysis
									Dependent Variable: Premium over CAPM
									Independent Variable: Log of Average Net Income
								Smoothed	
ortfolio	Average	Log	Seta	Arithmetic	Arithmetic	Indicated	Premium	Premium	
Rank	Net Inc.	of	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression Output:
ry Size	(\$mils.)	Size	Since '63	Return	Premium	Premium	CAPM	CAPM	Constant 7.181%
									Std Err of Y Est 0.745%
1	4,409	3.64	0.80	12.94%	5.80%	3.97%	1.83%	0.41%	R Squared 76%
2	1,041	3.02	0.84	12.93%	5.79%	4.15%	1.63%	1.58%	No. of Observations 25
3	636	2.80	0.84	13.73%	6.59%	4.16%	2.43%	1.98%	Degrees of Freedom 23
4	491	2.69	0.90	14.22%	7.08%	4.46%	2.61%	2.18%	-
5	350	2,54	0.94	13,15%	6.01%	4,63%	1.38%	2.46%	X Coefficient(s) -1.857%
6	271	2.43	0.97	14.24%	7.10%	4.79%	2.31%	2.66%	Std Err of Coef. 0.218%
7	213	2.33	1.03	14.44%	7.30%	5.10%	2.20%	2.86%	t-Statistic -8.54
8	174	2.24	1.02	15,62%	8.48%	5.06%	3.42%	3.02%	
9	142	2,15	1.06	14.59%	7.45%	5.26%	2.19%	3.18%	Smoothed Premium = 7.181% - 1.857% * Log(Net Income)
10	117	2.07	1.07	14.92%	7.78%	5.30%	2.48%	3.34%	
11	105	2.02	1.05	15.52%	8.38%	5.22%	3.16%	3.43%	
12	90	1.96	1.05	16.23%	9.09%	5.18%	3.91%	3.55%	
13	80	1.90	1.05	16.00%	8.86%	5.22%	3.64%	3.65%	Smoothed Premium vs. Unadjusted Average
14	68	1.83	1.14	16.17%	9.03%	5:63%	3.40%	3.78%	12.0
15	58	1.76	1.14	15.49%	8.35%	5.63%	2.72%	3.90%	19%
16	51	1.71	1,19	18.18%	11.04%	5.88%	5.17%	4.00%	
17	46	1.66	1.18	16.59%	9.45%	5.84%	3.62%	4.10%	× 8%   *
18	39	1.59	1.23	17.88%	10.74%	6.10%	4.64%	4.23%	% % % % % % % % % % % % % % % % % % %
19	31	1.50	1.26	17.42%	10.28%	6.24%	4,04%	4.40%	2 00
20	28	1.44	1.19	18.04%	10.90%	5.88%	5.02%	4.50%	8 4%
21	23	1.36	1.21	18.10%	10.96%	5.98%	4.98%	4.67%	
22	18	1.25	1.24	18,49%	11.35%	6.13%	5.22%	4.86%	un 274
23	13	1.10	1.28	18.83%	11.89%	6.36%	5.34%	5.13%	l & ox
24	 8	0.92	1.28	18.12%	10.98%	6:35%	4.63%	5.48%	47
25	3	0.52	1.38	21.67%	14.53%	6.85%	7.68%	6,30%	J -2% -
ah financi		9.45	1.63	21.77%	14.63%	8.05%	6.58%	9,30,78	1
ger structive	HOI I IOA	······································	1.03	41.7178	14,0076	0.U.J /8	U.2076		4%
ana Ctanh	s (libbotson SBB	t duto)		12.09%	4.95%				0.0 0,5 1.0 1.5 2.0 2.5 3.0 3.5 4
	is (libbotson SBB			17.64%	10.50%				Log of Average Net Income
rani STOCK	s (wooson 506	n numit)		17.04%	10.00%				
a Tarm	Treasury Income	. fikhoteco s	(etch ISSS	7.14%					
4-163111	LIBRARY & HEADING	a forementación e	SOCIONAL SAME	2 , 3 44 70					1

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	es Ranked by Equity Risk Pi							······································	Equity Risk Premium Study: Data thr	acon Dagembar 31 2000
				1000					, , ,	
ata for Y	ear Ending Do	ecember 3	11, 2006						Data Smoothing with Regression And	
									Dependent Variable: Premium over C	
									Independent Variable: Log of Averag	e MVIC
								Smoothed		
ortfolio	Average	Log	Seta	Arithmetic	Anthmetic	Indicated	Premium	Premium		
Rank	MVIC	əf	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression Output	
by Size	(\$mils.)	Size	Since '63	Return	Premium	Premium	CAPM	CAPM	Constant	11.886%
									Std Err of Y Est	0.907%
\$	116,519	5.07	0.85	11.92%	4.78%	4.19%	0.59%	-0.95%	R Squared	79%
2	35,900	4.56	0.86	11,77%	4.63%	4.26%	0.37%	0.34%	No. of Observations	25
3	22,691	4.36	0.89	11.99%	4.85%	4.40%	0.45%	0.85%	Degrees of Freedom	23
4	17,435	4.24	0.95	13.03%	5.89%	4.71%	1.18%	1.14%		
5	12,529	4.10	0.95	13.88%	6.74%	4.72%	2.02%	1.50%	X Coefficient(s) -2.534	
6	9,539	3.98	1.00	14.34%	7.20%	4.95%	2.25%	1.80%	Std Err of Coef. 0.276	
7	7,335	3.87	1.04	15.05%	7.91%	5.12%	2.79%	2.09%	t-Statistic -9.1	8
8	5,795	3.76	1.06	14.82%	7.68%	5.27%	2.42%	2.35%		
9	4,742	3.68	1.09	13.54%	6.40%	5.39%	1.00%	2.57%	Smoothed Premium = 11.886% - 2	1.534% * Log(MVIC)
10	4,254	3.63	1.07	15.45%	8.31%	5.27%	3.04%	2.69%		
11	3,511	3.55	1.09	14.86%	7.72%	5.40%	2.32%	2.90%		
12	3,280	3.52	1,10	14.99%	7.85%	5.45%	2.41%	2.98%	Smoothed Premium vs. U	nadiciated Access
13	2,765	3.44	1.12	15.08%	7.94%	5.56%	2.37%	3.16%	12% STROOMED PTERMUNT VS. U	naujusted Average
14	2,339	3.37	1.17	16:05%	8.91%	5.79%	3.12%	3.35%		
15	2,163	3.34	1.16	15.88%	8.74%	5.73%	3.01%	3.43%	10%	
16	1,783	3.25	1.22	16.90%	9.76%	6.03%	3.73%	3.65%	l I "	
17	1,554	3.19	1.21	16.29%	9.15%	5.98%	3.17%	3.80%	3 8%	
18	1,291	3.11	1.23	17.61%	10.47%	6.09%	4.38%	4.00%	8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	
19	1,144	3.06	1.24	16.59%	9.45%	6.15%	3.29%	4.14%	2 "	
20	1,007	3.00	1.22	17.22%	10.08%	6.04%	4.04%	4.28%	6 4%	
21	912	2.96	1.28	18.08%	10.94%	6.33%	4.60%	4.38%	*****	<b>.</b>
22	703	2.85	1.30	17.37%	10:23%	6.42%	3.81%	4.67%	1900 unsured	~
23	510	2.71	1.25	19.07%	11.93%	6.19%	5.74%	5.02%	& a*	B'M. H
24	329	2.52	1.32	18.36%	11.22%	6.53%	4.69%	5.51%	-~	
25	123	2.09	1.30	23.00%	15.86%	6.43%	9.43%	6.59%	-2%	
gh financi	al risk		1.63	21.77%	14.63%	8.05%	6.58%			
· · · · · · · · · · · · · · · · · · ·									4%	4.0
arge Stock	s (libbotson SBB	it data)		12.09%	4.95%			Ì	1.0 2.0 3.6 Log of Average Market Value o	4.0 5.0 6
nall Stock	s (ibbotson SBB	# data)		17.64%	10.50%				Folt of Local alide Mister Adding o	: miveosed Capital
		•								

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Compani	es Ranked by	/ Total As	sets				ŧ	remium ove	r CAPM	Exhibit B
listorical	Equity Risk P	remium: A	verage Since	9 1963					Equity Risk Premium Study: Da	ita through December 31, 2006
	ear Ending D								Data Smoothing with Regressic	on Analysis
			.,						Dependent Variable: Premium	over CAPM
									Independent Variable: Log of A	
								Smoothed		
ortfolio	Average	Log	Beta	Arithmetic	Arithmetic	Indicated	Premium	Premium		
Rank	Assets	of	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression O	utput
by Size	(\$mils.)	Size	Since '63	Return	Premium	Premium	CAPM	CAPM	Constant	9.492%
.,	4								Std Err of Y Est	0.919%
1	82,410	4.92	0.82	13.02%	5.88%	4.06%	1.82%	0.63%	R Squared	64%
2	27,872	4.45	0.86	12.47%	5.33%	4.25%	1.09%	1.48%	No. of Observations	25
3	18,736	4.27	0.84	13.53%	6.39%	4.14%	2.25%	1.79%	Degrees of Freedom	23
4	13,315	4,12	0.92	14.04%	6.90%	4.57%	2.33%	2.06%	_	
5	9,231	3.97	0.92	14,61%	7.47%	4.55%	2.92%	2.35%	X Coefficient(s)	1.802%
6	7,012	3.85	0.99	14.46%	7,32%	4.88%	2.44%	2.56%	Std Err of Coef.	0.280%
7	5,564	3.75	1.00	15.03%	7.89%	4.96%	2.93%	2.74%	t-Statistic	-6.43
8	4,247	3.63	1.03	14.27%	7.13%	5.11%	2.02%	2.95%		
9	3,738	3.57	1.07	14.23%	7.09%	5.28%	1,81%	3.05%	Smoothed Premium = 9,492%	- 1.802% *Log(Invested Cap
10	3,253	3.51	1.08	14.65%	7.51%	5.32%	2.18%	3.16%		
11	2,703	3.43	1,10	16,50%	9.36%	5.44%	3.92%	3.31%		
12	2,360	3.37	1,13	14.66%	7.52%	5.59%	1.93%	3.41%	Consider a December	vs. Unadjusted Average
13	2,051	3.31	1.10	16.37%	9.23%	5.43%	3.80%	3.52%	5/100thed Premium	vs. Unaujusted Average
14	1,735	3.24	1.12	16.96%	9:82%	5.52%	4.30%	3.66%		
15	1,536	3.19	1.16	15.40%	9.26%	5.74%	3.52%	3.75%	10%	
16	1.285	3,11	1.21	17.71%	10.57%	6.00%	4.56%	3.89%		
17	1,165	3.07	1.24	19.01%	11.87%	6.12%	5.75%	3.97%	≥ 8% .	
18	980	2.99	1.19	16.91%	9.77%	5.90%	3.87%	4.10%	*	
19	853	2.93	1.20	15.63%	8.49%	5.94%	2.55%	4.21%		
20	701	2.85	1.23	17,16%	10.02%	6.10%	3.93%	4.36%	8 47	*
21	569	2.76	1.24	17.55%	10.41%	6,11%	4,30%	4.53%	Premium over CAPM	***
22	480	2.68	1.29	17.45%	10.31%	6.38%	3.94%	4.66%	E 2%	
23	380	2.58	1.28	18.38%	11.24%	6.34%	4.90%	4.84%	å 0%	
24	275	2.44	1.29	18.72%	11:58%	6.37%	5.21%	5.10%	"	
25	104	2.02	1.34	21.50%	14.36%	6.63%	7.72%	5.86%	] -2% -	
igh financ	al risk		1,63	21.77%	14.63%	8.05%	6.58%		4 4	
				12.09%	4.95%				1,0 20 3.0	4.0 5.0 6
	s (libbotson SBS								Lag of Averag	e Total Assets
mail Stock	us (libbotson SBE	si data)		17.64%	10,50%					
nna-Tarm	Treasury Income	nosteddil e	SARI datali	7.14%						
1 04 1 1 20 1 M	TOGGULA BECOME	· Choopean		7.1-7/d			*************		<u> </u>	

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	es Ranked by							remium ove		Exhibit 8
	Equity Risk Pı			1963					Equity Risk Premium Study: Data thn	-
ala for Y	ear Ending De	ecember 3	31, 2006						Data Smoothing with Regression And	
									Dependent Variable: Premium over C	
									Independent Variable: Log of Averag	e EBITDA
								Smoothed	- Control of the Cont	
ortfolio	Average	Lóg	Beta	Arithmetic	Arithmetic	Indicated	Premium	Premium		
Rank	EBITDA	of	(SumBeta)	Average	Equity Risk	CAPM	over	over	Regression Output:	
y Size	(\$mils.)	Size	Since 63	Return	Premium	Premium	CAPM	CAPM	Constant	8.061%
									Std Err of Y Est	0.904%
1	10,591	4.02	0.82	13.25%	6.11%	4.08%	2.03%	0.83%	R Squared	65%
2	3,136	3.50	0.80	12.44%	5.30%	3.97%	1.33%	1.78%	No. of Observations	25
3	2,248	3.35	88.0	14.18%	7.04%	4.37%	2.67%	2.04%	Degrees of Freedom	23
4	1,548	3.19	0.94	13.98%	6.84%	4.67%	2.17%	2.33%		
5	1,056	3.02	0.89	15.05%	7.91%	4.38%	3.53%	2.63%	X Coefficient(s) -1.797	
8	831	2.92	0.96	14.32%	7.18%	4.76%	2.42%	2.81%	Std Err of Coef. 0.276	
7	667	2.82	1.01	14.23%	7.09%	5.01%	2.08%	2.99%	t-Statistic -6.5	0
8	523	2.72	1.07	15.01%	7.87%	5.28%	2.59%	3.18%		
9	426	2.63	1.03	13.42%	6.28%	5.12%	1.16%	3.34%	Smoothed Premium = 8.061% - 1.1	797% * Log(EBITDA)
10	377	2,58	0.99	14,77%	7.63%	4.91%	2.73%	3.43%		
11	325	2.51	1,03	15.68%	8.54%	5.11%	3.43%	3.55%		
12	294	2:47	1.10	17.17%	10.03%	5.45%	4.58%	3.63%	Smoothed Premium vs. U	
13	232	2.37	1.11	17.89%	10.75%	5.47%	5.28%	3.81%	5mootned Premium vs. U	nadjusted Average
14	211	2.32	1.13	16.54%	9.40%	5.57%	3.83%	3.89%		
15	190	2.28	1.13	16,11%	8.97%	5.58%	3.39%	3.97%	18%	
16	149	2.17	1.18	17.49%	10.35%	5.83%	4.53%	4.16%		
17	139	2.14	1.19	17.82%	10.68%	5.88%	4.80%	4.21%	2 8%	
18	118	2.07	1.21	16.02%	8.88%	5.97%	2.91%	4.34%	8% 6% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8% 8%	
19	106	2.03	1.24	18.59%	11.45%	6.11%	5.34%	4.42%	0 ""	
20	91	1.96	1.24	17.00%	9.86%	6.14%	3.72%	4.54%		
21	78	1.89	1.22	17.31%	10.17%	6.04%	4.12%	4.66%	§	
22	58	1.76	1.19	18.51%	11,37%	5.89%	5.48%	4.90%	Lunga 2%	*
23	46	1.66	1.27	19.30%	12.16%	6.28%	5.88%	5.07%	å 0%	
24	31	1.50	1.32	18.80%	11.66%	6.55%	5.11%	5.37%	2,0	
25	12	1.08	1.37	20.78%	13,64%	6.79%	6.85%	6.12%	.2%	
gh financi	al risk		1.63	21.77%	14.63%	8.05%	6.58%			
************	· · · · · · · · · · · · · · · · · · ·				·····				4%	
rae Stock	s (Ibbatson SBB	il data)		12.09%	4.95%			İ	0.0 1.0 2.0	3.0 4.0
	s (libbotson SBB			17.64%	10.50%				Log of Average EB	ET LAN
		,								
no-Term	Treasury Income	thhotson :	SBB) data)	7.14%						

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	es Ranked by Equity Risk Pr			1000				remium over	Equity Risk Premium Study: Dat	Exhibit B
				1903					1	
ata for Y	ear Ending De	ecember 3	1, 2006						Data Smoothing with Regression	
									Dependent Variable: Premium o	
									Independent Variable: Log of Av	erage Sales
								Smoothed		
ortfalia	Average	Log	Beta	Arithmetic	Anthmetic	Indicated	Premium	Premium		
Rank	Sales	οf	(SumBeta)	Average	Equity Risk	CAPM	over	OVET	Regression Ou	
by Size	(\$mils.)	Size	Since '63	Return	Premium	Premium	CAPM	CAPM	Constant	8.763%
									Std Err of Y Est	0.994%
1	71,497	4.85	0.93	13.17%	6.03%	4.61%	1.42%	1.35%	R Squared	52%
2	23,797	4.38	0.96	13.77%	6.63%	4.77%	1.87%	2.08%	No. of Observations	25
3	14,895	4.17	0.99	14.86%	7.72%	4.90%	2.83%	2.39%	Degrees of Freedom	23
4	10,851	4:04	1.02	15.80%	8.66%	5.02%	3.64%	2.60%		
5	8,568	3.93	1.02	14.09%	6.95%	5.04%	1.91%	2.76%		.527%
6	6,554	3.82	0.99	16.07%	8.93%	4.89%	4.05%	2.94%		.304%
7	5,199	3.72	1.09	15.71%	8.57%	5.40%	3.17%	3.09%	t-Statistic	-5.02
8	4,552	3.66	1.05	14,14%	7.00%	5.20%	1.80%	3.18%		
9	3,593	3.56	1.09	14.69%	7.55%	5.39%	2.17%	3,33%	Smoothed Premium = 8.763%	- 1.527% * Log(Sales)
10	3,117	3.49	1.06	16.13%	8.99%	5.27%	3.72%	3.43%		
11	2,461	3,39	1.15	16.50%	9,36%	5.70%	3.67%	3.58%		
12	2,154	3.33	1.13	18.20%	11.06%	5.61%	5.45%	3.67%	Smoothed Premium v	s. Unadjusted Average
13	1,851	3.27	1.15	17.01%	9.87%	5.70%	4.17%	3.77%	12%	s. Onaujusteu Average
14	1,641	3.21	1,10	16.89%	9.75%	5.43%	4.32%	3.85%		
15	1,462	3.16	1.14	18.61%	9.47%	5.62%	3.85%	3.93%	10%	
16	1,228	3.09	1.15	16.32%	9.18%	5.68%	3.50%	4.05%		
17	1,040	3.02	1,13	17.47%	10.33%	5.60%	4.72%	4.16%	] ≥ <sup>8%</sup>	
18	919	2.96	1.21	15.05%	7.91%	5.99%	1.92%	4.24%	N. 45 6%	
19	767	2.89	1.23	17.00%	9.86%	6.11%	3.75%	4.36%		<b>.</b> . •
20	685	2.84	1.15	18.03%	10.89%	5.71%	5.18%	4.43%	8 4%	*
21	550	2.74	1.22	17.06%	9.92%	6.04%	3.88%	4.58%	25 dy	*
22	434	2.64	1.24	16.68%	9.54%	6.13%	3.41%	4.74%	E - '	* * * * * * * * * * * * * * * * * * * *
23	326	2.51	1.27	19.64%	12,50%	6.28%	6.23%	4.93%	å 0%	
24	224	2.35	1.29	18.26%	11.12%	6.38%	4.75%	5.18%		
25	91	1.96	1.32	20.68%	13.54%	6.52%	7.01%	5.77%	2%	
gh financi	al risk		1.63	21.77%	14.63%	8.05%	6.58%		l	
										3.5 4.0 4.5 5
rge Stock	s (libbotson S88	il data)		12.09%	4.95%				Log of Aver	
	s (lbbotson SBB			17.64%	10.50%					
ng-Term	Treasury Income	(libbotson !	SBBI data)	7.14%						

	ies Ranked by							remium over		Exhibit B-
	Equity Risk Pr			3 1963					Equity Risk Premium Study: Data through Decemi	rer 31, 2006
ata for \	Year Ending Di	ecember 3	1, 2006						Data Smoothing with Regression Analysis Dependent Variable: Premium over CAPM Independent Variable: Log of Average Employees	
ortfolio Rank by Size 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Average Number of Employees 257, 161 88,945 56,623 43,149 32,869 25,588 21,450 16,314 13,724 11,246 9,932 8,295 7,211 5,883 5,399 4,742	Log of Size 5.41 4.95 4.75 4.63 4.52 4.41 4.33 4.21 4.14 4.00 3.92 3.86 3.77 3.73 3.58	Beta (SumBeta) Since '63 1.03 1.09 1.04 1.07 1.08 1.09 1.13 1.14 1.14 1.19 1.12 1.11 1.15 1.16	Arithmetic Average Return 12.66% 14.09% 14.73% 15.52% 15.64% 15.27% 17.63% 15.26% 16.83% 17.99% 15.17% 15.76%	Arithmetic Equity Risk Premium 5.52% 6.95% 7.59% 7.83% 8.50% 6.54% 8.13% 10.49% 8.12% 9.659% 10.85% 8.33% 9.03% 8.62%	Indicated CAPM Premium 5.19% 4.95% 5.15% 5.31% 5.35% 5.41% 5.58% 5.62% 5.62% 5.62% 5.52% 5.52% 5.52% 5.73%	Premium over CAPM 0.42% 2.00% 2.43% 2.52% 1.13% 2.55% 4.87% 2.49% 2.88% 2.88% 2.88% 4.92%	Smoothed Premium over CAPM 1.01% 1.79% 2.12% 2.32% 2.52% 2.70% 2.83% 3.16% 3.30% 3.39% 3.53% 3.53% 3.53% 3.53% 3.53% 3.53% 3.53% 3.54%	Regression Output	6 6 5 3 3
17	3,982	3.60	1.22	15.36%	8.22%	6.03%	2.19%	4.06%	_ 8%	
18	3,668	3.56	1,18	15.80%	8.66%	5.84%	2.82%	4.12%	Was CAPM	
19	2,837	3.45	1.15	16.58%	9.44%	5.67%	3,77%	4.31%	0 00	
20	2,410	3.38	1.17	17.99%	10.85%	5.80%	5.05%	4.43%	849	
21	1,712	3.23	1.16	17.90%	10.76%	5.74%	5.02%	4.68%		
22	1,367	3.14	1.18	18.49%	11.35%	5.83%	5.51%	4.85%	unicus 2%	_
23	972	2.99	1.21	17.94%	10.80%	6.00%	4.80%	5.10%	& <u></u>	<b>=</b>
24	533	2.73	1.24	18.94%	11.80%	6.15%	5.65%	5.54%	U74	
25	172	2.24	1.28	20.32%	13.18%	6.35%	6.83%	6.37%	-2%	
th financ		4.43	1.63	21.98%	14.84%	8.06%	6.78%	U.U. 76	="	
rge Stoc nall Stoc	ks (libbotson SBB ks (libbotson SBB Treasury Income	l data)		12.09% 17.64% 7.14%	4.95% 10.50%		20.7078	, , , , , , , , , , , , , , , , , , , ,	4%	5.5

## Companies Ranked by Market Value of Equity: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfoi	io Statistics fo	r 2006	l					Portfolio	Statistics for 1	963-2006	
Portfolio	Average	Log		Average	Average	Average	Average	Beta	Average	Average	Average	
Rank	Mkt Value	of	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Unlevered	Operating	CV(Operating	Average
by Size	(Smës.)	Size	<b>លី ក៏អាវាន</b>	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE
1	97,566	4.99	44	4.8%	16,13%	19.2%	4.3%	0.90	0.82	15.6%	9.8%	15.2%
2	28,450	4.45	35	5.0%	22.56%	29.1%	4.3%	0.93	0.80	13.1%	10.7%	18.3%
3	17,118	4.23	39	3.8%	24.85%	33.1%	3.3%	0.97	0.82	13.4%	11.4%	18.7%
4	12,554	4.10	41	5.8%	25.77%	34.7%	4.9%	0.98	0.82	12.7%	12.2%	19.4%
5	9,494	3.98	38	6.3%	26.99%	37.0%	5.2%	0.96	0.80	12.7%	13.3%	20.6%
6	7,551	3.88	36	7.0%	26.82%	36.7%	5.8%	1,03	0.85	13.4%	12.7%	19.2%
7	5,218	3.72	47	7.7%	27.37%	37.7%	6:4%	1.02	0.84	12.8%	13.8%	21,4%
8	4,610	3.68	48	7.0%	25.84%	34.8%	5.9%	1.09	0.92	12.3%	13.5%	20.7%
9	3,905	3.59	44	8.2%	25.14%	33.6%	6.9%	1.09	0.92	12.2%	14.2%	21.9%
10	3,170	3.50	44	7.4%	24.89%	33.1%	6.2%	1.10	0.93	12.0%	13.9%	22.1%
11	2,757	3.44	42	7.9%	24.86%	33.1%	6.7%	1.10	0.93	11.8%	15.0%	21.6%
12	2,453	3.39	45	7.9%	25.41%	34.1%	6.7%	1.11	0.94	11.6%	14.8%	20.5%
13	2,115	3.33	46	6.7%	26.20%	35,5%	5.5%	1.10	0.92	11.1%	14.9%	20.8%
14	1,866	3.27	49	9.0%	26.70%	36.4%	7.5%	1.14	0.95	11.1%	15.3%	22.3%
15	1,552	3.19	55	8.5%	26.25%	35.6%	7.1%	1.15	0.96	11.0%	17.2%	23.4%
16	1,430	3.16	46	10.4%	25.63%	34.5%	8.8%	1.14	0.96	10.3%	17.9%	24.7%
17	1,186	3.07	51	10.2%	26.28%	35.6%	8.6%	1.21	1.01	10.0%	18.3%	26.1%
18	1,016	3.01	58	9.8%	26.66%	36.4%	8.2%	1.21	1.01	9.7%	20.5%	28.8%
19	900	2.95	64	9.9%	26.04%	35.2%	8.3%	1.24	1.04	9.4%	20.9%	27.3%
20	817	2.91	57	10.7%	26.98%	36.9%	8.9%	1.28	1.06	9.1%	23.8%	31.2%
21	685	2.84	73	11.0%	27.15%	37.3%	9.2%	1.27	1.06	8.6%	23.2%	31.5%
22	557	2.75	71	10.8%	27.34%	37.6%	9.0%	1.28	1.06	8.3%	25.0%	35.2%
23	389	2.59	112	10.9%	27.69%	38.3%	9.0%	1.24	1.03	7.9%	27.2%	35.5%
24	277	2.44	111	12.4%	28.40%	39.7%	10.2%	1.28	1.05	7.6%	29.0%	39.4%
25	105	2.02	360	16.2%	30.67%	44.2%	13.1%	1.30	1.05	6,2%	42.3%	57.0%

Note: CV/X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blended income tax rate used is 45.7 %.

## Companies Ranked by Book Value of Equity: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfol	io Statistics fo	r 2006						Portfolio	Statistics for 19		
Portfolio	Avérage	Lóg		Average	Average	Average	Average	Beta	Average	Average	Average	
Rank	Book Value	of	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Unlevered	Operating	CV(Operating	Average
by Size	(\$mils.)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE
1	28,120	4.45	38	5.3%	26.94%	36.9%	4.4%	0.84	0.70	13.2%	12.9%	20.3%
2	9.419	3.97	36	5.2%	31.39%	45.8%	4.2%	0.84	0.67	14.1%	12.0%	17.4%
3	6.589	3.82	37	7.3%	33.26%	49.9%	5.8%	0.89	0.70	12.2%	12.0%	19.9%
4	4,505	3.65	36	6:1%	31.60%	46.2%	4.9%	0.91	0.73	12.5%	12.7%	22.4%
5	3,435	3.54	37	6,7%	30.03%	42.9%	5.4%	0.99	0.80	12.9%	13.0%	22.1%
8	2.513	3.40	40	6.7%	30.69%	44.3%	5.4%	1.00	0.80	12.6%	13.3%	22.2%
7	2,114	3.33	43	6.7%	28.75%	40.4%	5.5%	0.99	0.82	13.0%	13.5%	22.5%
В	1,720	3.24	40	7.2%	27.23%	37.4%	6.0%	1.05	0.87	12.7%	14.2%	22.7%
9	1.412	3.15	43	8.6%	27.66%	38.2%	7.1%	1.08	0.89	12.6%	14.3%	21.4%
10	1,278	3.11	43	7.8%	29.13%	41.1%	8.4%	1.03	0.84	12.0%	14.7%	20.5%
11	1,151	3,06	43	7.4%	28.19%	39.3%	6.1%	1.09	0.90	11.8%	14.9%	24.3%
12	966	2.99	49	9.4%	29.75%	42.4%	7.6%	1.05	0,85	11.9%	14.4%	21.2%
13	892	2,95	43	8.0%	27.50%	37.9%	6.6%	1.12	0.93	11.5%	16.2%	23.1%
14	758	2.88	50	8.5%	27.36%	37.7%	7.1%	1.12	0.93	10.9%	15.7%	21.9%
15	634	2.80	53	9.3%	27.55%	38.0%	7.7%	1.11	0.92	11.1%	15.7%	23.3%
16	563	2.75	45	9.5%	27.58%	38.1%	7.9%	1.17	0.97	10.2%	17.8%	25.6%
17	500	2.70	49	9.8%	25.80%	34.8%	8.2%	1.19	1.00	10.7%	17.0%	24.6%
18	458	2.66	57	8.8%	27.26%	37.5%	7.3%	1.24	1.03	10.1%	19.5%	26.4%
19	385	2.59	65	9.7%	27.87%	38.6%	8.1%	1.20	0.99	10.0%	19.4%	28.5%
20	346	2.54	52	10.5%	26.58%	36.2%	8.7%	1.23	1.02	9:3%	21.0%	30.0%
21	299	2.48	65	9.8%	27.21%	37.4%	8.1%	1.22	1.02	9.3%	22.7%	32.2%
22	246	2.39	82	11.8%	26.52%	36.1%	9.9%	1.25	1,05	8.6%	24.2%	30.8%
23	194	2.29	111	10.5%	27.27%	37.5%	8.7%	1.26	1.04	8.7%	24.0%	34.4%
24	140	2.15	120	11.1%	26.95%	36.9%	9:3%	1.30	1.08	6.1%	26.4%	36.6%
25	59	3 77	381	13.9%	26.36%	35.8%	11.6%	1.33	1.12	7.2%	37.8%	51.3%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blended income tax rate used is 45.7 %.

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# Companies Ranked by Net Income: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfol	io Statistics fo	r 2006							Statistics for 1		
Portfolio	Average	Log		Average	Average	Average	Average	Seta .	Average	Average	Average	
Rank	Net income	of	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Unlevered	Operating	CV(Operating	Average
by Size	(\$mils.)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE)
1	4,409	3.64	37	5.8%	22.97%	29.8%	5.0%	0.80	0.69	15.0%	10.4%	15.5%
2	1,041	3.62	36	5.8%	28.17%	39.2%	4.8%	0.84	0,69	14.2%	10,4%	15.3%
3	636	2.80	34	6.6%	30.80%	44.5%	5.3%	0.84	0.68	12.5%	11.7%	18.5%
4	491	2.69	36	7.1%	30.54%	44.0%	5.7%	0.90	0.73	12.5%	12.0%	17.8%
5	350	2.54	41	6.0%	28.75%	40.4%	4.9%	0.94	0.77	12.8%	12.6%	19.4%
6	271	2.43	41	7.1%	29.25%	41.3%	5.8%	0.97	0.79	12.8%	12.1%	19.6%
7	213	2.33	38	7.3%	27:48%	37.9%	5.1%	1.03	0.86	12.3%	13.5%	20.8%
8	174	2.24	41	8.5%	26.96%	36.9%	7.1%	1.02	0.85	12.6%	13.5%	20.1%
9	142	2.15	42	7.4%	26.39%	35.8%	6.2%	1.06	0.89	11.5%	14.2%	20.2%
10	117	2.07	45	7.8%	26.03%	35.2%	6.5%	1.07	0.90	12.8%	13.4%	19:2%
11	105	2.02	44	8.4%	27.06%	37.1%	7.0%	1.05	0.88	11.5%	15.0%	21.2%
12	90	1.96	43	9.1%	27.67%	38.2%	7.5%	1.05	0.87	11.2%	13.9%	20.2%
13	80	1.90	41	8.9%	27.08%	37.1%	7.4%	1.05	88.0	10.9%	14.8%	19.8%
14	68	1.83	44	9.0%	26.08%	35.3%	7.6%	1.14	0.95	10.8%	14.1%	19.9%
15	58	1.76	51	8.4%	26.10%	35.3%	7.0%	1.14	0.95	10.6%	15.6%	22.5%
16	51	1.71	48	11.0%	26.07%	35.3%	9.3%	1.19	1.00	10.1%	17.8%	24.8%
17	46	1.66	52	9.5%	25.33%	33.9%	8.0%	1.18	1.00	10.0%	18.2%	25.3%
18	39	1.59	57	10.7%	25.14%	33.6%	9.1%	1.23	1.04	9.8%	19.3%	25.9%
19	31	1.50	60	10.3%	26.29%	35.7%	8,6%	1.26	1.06	9.6%	20.4%	26.4%
20	28	1.44	59	10.9%	26.85%	36.7%	9.1%	1.19	0.99	9.2%	20.5%	27.8%
21	23	1.36	77	11.0%	26.78%	36.6%	9.1%	1.21	1.01	9.0%	21.6%	28.0%
22	18	1.25	77	11.4%	28.71%	36.4%	9.5%	1.24	1.03	8.7%	22.8%	31.7%
23	13	1.10	108	11.7%	25.83%	34.8%	9.8%	1.28	1.08	8.5%	25.3%	36.1%
24	8	0.92	152	11.0%	27.56%	38.0%	9.1%	1.28	1.06	7.8%	28.7%	38.5%
25	3	0.47	352	14.5%	27.71%	38.3%	12.0%	1.38	1.15	6.0%	47.7%	70.7%

Note: CV/X) = Standard deviation of X divided by mean of X calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates.

The average blended income tax rate used is 45.7 %.

## Companies Ranked by Market Value of Invested Capital: Comparative Risk Characterístics Data for Year Ending December 31, 2006

	Portfo	io Statistics fo	r 2006	1					Portfolio	Statistics for 19	963-2006	
Portfolio	Average	Log		Average	Average	Average Debt to Market	Average	Beta	Average Unievered	Average	Average CV(Operating	
Rank	MVIC	of	Number	Equity Risk	Debt to		Unlevered	(SumBeta)	Beta	Operating		Average
by Size	(\$mils.)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since 63	Deta	Margin	Margin)	CV(ROE)
1	116,519	5.07	43	4.8%	22.67%	29.3%	4.1%	0.85	0.73	16.2%	10.2%	15.7%
2	35,900	4.58	35	4.6%	30.73%	44.4%	3.7%	0.86	0.69	15.6%	10.8%	17.8%
3	22,691	4.35	34	4.9%	31.94%	46.9%	3.9%	0.89	0.71	14.1%	11.8%	19.1%
4	17,435	4.24	39	5.9%	31.31%	45.6%	4.7%	0.95	0.76	12.7%	11.8%	20:2%
5	12,529	4.10	38	6.7%	29.80%	42.5%	5.5%	0.95	0.78	12.4%	12.4%	20.8%
6	9,539	3.98	43	7.2%	29.05%	41.0%	5.9%	1.00	0.82	12.9%	13.0%	21.8%
7	7,335	3.87	37	7.9%	28.13%	39.1%	6.5%	1.04	0.85	12.6%	13.9%	21.0%
8	5,795	3.78	45	7.7%	27.96%	38.8%	5.3%	1,06	0.88	11.9%	13.6%	21.4%
9	4,742	3,68	44	6.4%	27.30%	37.6%	5.3%	1.09	0.90	12.3%	13.8%	22.3%
10	4,254	3.63	46	8.3%	27.90%	38.7%	5.9%	1.07	0.88	12.2%	15.4%	21.9%
11	3,511	3.55	42	7.7%	27.83%	38.6%	6.4%	1.09	0.90	11.8%	14.7%	21.0%
12	3,280	3.52	43	7.9%	28.67%	40.2%	6.4%	1.10	0.90	11.7%	14.4%	22.6%
13	2,765	3.44	42	7.9%	26.26%	35.6%	6.6%	1.12	0.94	11.1%	15.3%	22.9%
14	2,339	3,37	48	8.9%	26.39%	35.8%	7.5%	1.17	0.98	10.4%	15.7%	21.4%
15	2,163	3.34	44	8.7%	27.17%	37.3%	7.3%	1.16	0.96	10.4%	16.8%	23.5%
16	1,783	3.25	53	9.8%	26.97%	36.9%	8.1%	1.22	1.01	9.8%	17.4%	25.0%
17	1,554	3.19	56	9.2%	25.52%	34.3%	7.7%	1.21	1.02	9.8%	19.0%	27.3%
18	1,291	3.11	59	10.5%	26.87%	36.7%	8.7%	1.23	1.03	9.3%	19.7%	27.4%
19	1,144	3.06	53	9.4%	27.81%	38.5%	7.8%	1.24	1.03	9.3%	21.6%	28.1%
20	1,007	3.00	69	10.1%	27.32%	37.6%	8.4%	1.22	1.01	9.3%	21.7%	29.1%
21	912	2.96	61	10.9%	27.27%	37.5%	9.1%	1.28	1.06	8.8%	23.3%	32.0%
22	703	2.85	86	10.2%	27.99%	38.9%	8.4%	1.30	1.07	8.5%	24.6%	33.0%
23	510	2.71	85	11.9%	27.03%	37.0%	9.9%	1.25	1.04	7.9%	26.2%	36.1%
24	329	2.52	165	11.2%	27.26%	37.5%	9.3%	1.32	1.10	7.7%	26.8%	38.7%
25	123	2.09	348	16.9%	25.05%	33.4%	13.4%	1.30	1.10	6.5%	41.2%	53.4%

Note: CV/X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blanded income tax rate used is 45.7 %.

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## Companies Ranked by Total Assets: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfo	lio Statistics fo	r 200 <del>6</del>	1					Portfolio	Statistics for 1	963-2006	
Portfolio	Average	Log		Average	Average	Average	Average	Beta	Average	Average	Average	
Rank	Assets	of	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Unlevered	Operating	CV(Operating	Average
by Size	(\$mils:)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE)
1	82,410	4.92	37	5.9%	32.55%	48.3%	4.7%	0.82	0.65	13.0%	13.4%	20.9%
2	27,872	4,45	34	5.3%	38.00%	61.3%	4.0%	0.86	0.64	14.0%	13.1%	20.6%
3	18,736	4.27	34	6.4%	35:86%	55.9%	4.9%	0,84	0.64	12.1%	12.5%	19.9%
4	13,315	4.12	37	6.9%	34,04%	51.6%	5.4%	0.92	0.72	11.8%	11.6%	21.4%
5	9,231	3.97	37	7.5%	32.71%	48.6%	5.9%	0.92	0.73	11.5%	12.2%	22.0%
6	7,012	3.85	38	7.3%	31.51%	46.0%	5.9%	0.99	0.79	12.0%	13.8%	23.1%
7	5,584	3.75	35	7.9%	30.58%	44.0%	6.4%	1.00	0.81	11.3%	14.9%	22.5%
8	4,247	3.63	39	7.1%	31.72%	46.5%	5.7%	1.03	0.82	11.9%	14.1%	22.3%
9	3,738	3.57	37	7.1%	31.89%	46.5%	5.7%	1.07	0.85	11.6%	15.4%	23.7%
10	3,253	3,51	40	7.5%	31.39%	45.7%	6.0%	1.09	0.86	11.0%	15.5%	24.2%
11	2,703	3.43	42	9.4%	30.29%	43.4%	7.6%	1.10	0.89	11.1%	14.8%	22.7%
12	2,360	3.37	42	7.5%	29.06%	41.0%	6.2%	1.13	0.92	10.3%	16.1%	23.6%
13	2,051	3.31	43	9.2%	29.04%	40.9%	7.6%	1.10	0.90	10.7%	16.5%	23.5%
14	1,735	3.24	53	9.8%	28.37%	39.6%	8.1%	1.12	0.92	9.7%	16.1%	24.1%
15	1,536	3.19	45	9.3%	27.86%	38.6%	7.7%	1.16	0.96	9.2%	18.7%	26.7%
16	1,285	3.11	50	10.6%	26.20%	35.5%	8.9%	1.21	1.02	9.2%	17.9%	25,7%
17	1,165	3,07	47	11.9%	27.45%	37.8%	9.8%	1.24	1.03	9.4%	18.5%	26.5%
18	980	2.99	49	9.8%	27.93%	38.7%	8.1%	1.19	0.98	9.6%	18.4%	26.3%
19	853	2.93	56	8:5%	28.06%	39.0%	7.0%	1.20	0.99	9.5%	19.7%	27.8%
20	701	2.65	64	10.0%	27.16%	37.3%	8.3%	1.23	1.02	9.0%	21.0%	28.9%
21	569	2.76	84	10:4%	26.40%	35.9%	8.7%	1.24	1.03	8.8%	22.7%	31.0%
22	480	2.68	76	10.3%	26.42%	35.9%	8.6%	1.29	1.08	8.5%	23.0%	33.1%
23	380	2.58	84	11.2%	25.45%	34.1%	9.5%	1.28	1.08	8.3%	25.1%	35.3%
24	275	2.44	142	11.6%	24.67%	32.8%	9.8%	1.29	1.09	8.1%	26.3%	36.4%
25	104	2.02	398	14.4%	21.16%	26.8%	12.5%	1.34	1.17	7.5%	37.9%	48.4%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates.

The average blended income tax rate used is 45.7 %.

## Companies Ranked by EBITDA: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfo	lio Statistics fo	r 2006						***************************************	Statistics for 19		
Portfolio	Average	Log		Average	Average	Average	Average	Beta	Average	Average	Average	
Rank	EBITDA	of	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Linlevered	Operating	CV(Operating	Average
by Size	(\$mils.)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE
1	10,591	4.02	36	6.1%	26.44%	36.0%	5.1%	0.82	0.69	14.0%	11.8%	18.7%
2	3,136	3.50	37	5.3%	32.41%	48.0%	4.2%	0.80	0,64	13.9%	11.9%	19.2%
3	2.248	3.35	33	7.0%	32.70%	48.6%	5.8%	0.88	0.70	12.4%	11.4%	19.8%
4	1,548	3.19	34	6.8%	32.49%	48.1%	5.4%	0.94	0.75	12.0%	12.2%	21.6%
5	1,056	3.02	37	7.9%	31.38%	45.7%	6.3%	0.89	0.71	12.4%	12.3%	21.4%
6	831	2.92	35	7.2%	31.20%	45.3%	5.8%	0.96	0.77	12.3%	13.2%	22.2%
7	667	2.82	38	7.1%	29.30%	41.4%	5.8%	1.01	0.83	12.1%	13.6%	20.8%
8	523	2.72	45	7.9%	27.99%	38.9%	6.5%	1.07	0.88	12.7%	13.8%	21.0%
9	426	2.63	42	6.3%	28.17%	39.2%	5.2%	1.03	0.85	11,7%	14.5%	21.5%
10	377	2.58	39	7.6%	28.74%	40.3%	6.3%	0.99	0.81	12.1%	13.8%	21.7%
11	325	2.51	41	8.5%	29.12%	41.1%	7.0%	1.03	0.84	11.5%	14.4%	20.4%
12	294	2.47	40	10.0%	27.95%	38.8%	8.3%	1.10	0.91	11.3%	15.3%	22.7%
13	232	2.37	48	10.7%	28.40%	39.7%	8,8%	1.11	0.91	10.7%	16.0%	22.1%
14	211	2.32	43	9.4%	28.55%	40.0%	7.7%	1.13	0.93	10.4%	15.6%	23.3%
. 15	190	2.28	55	9.0%	27.13%	37.2%	7.5%	1.13	0.94	10.4%	16.0%	22.2%
16	149	2.17	47	13.4%	27.38%	37.7%	8.6%	1.18	0.98	9.5%	17.5%	24.1%
17	139	2.14	50	10.7%	26.61%	36.3%	8.9%	1.19	0.99	9.5%	18.6%	25.8%
18	118	2.07	50	8.9%	26.08%	35.3%	7.5%	1.21	1.01	9.5%	19.3%	26.2%
19	106	2.03	56	11.4%	27.69%	38.3%	9.5%	1.24	1.62	9.5%	19.8%	26.9%
20	91	1.96	52	9:9%	27.95%	38.8%	8.1%	1.24	1.02	9.2%	21.2%	28.4%
21	78	1.89	71	10.2%	26.73%	36.5%	8.5%	1.22	1.02	8.9%	21.7%	29.2%
22	58	1,76	91	11.4%	26.40%	35.9%	9.5%	1,19	1.00	8.8%	21.9%	29.4%
23	46	1.66	106	12.2%	27.12%	37.2%	10.1%	1.27	1,06	8.2%	25.4%	35.2%
24	31	1,50	116	11,7%	26:43%	35.9%	9.8%	1.32	1.11	8:0%	28.1%	38.8%
25	12	1:08	414	13.6%	24.03%	31.6%	11.6%	1.37	1.17	6.5%	41.9%	53,6%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates. The average blendard income tax rate used is 45.7 %.

## Companies Ranked by Sales: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfol	io Statistics fo	r 2006						Portfolio	Statistics for 19	963-2006	
Portfolio Rank	Average Sales	Log of	Number	Average Equity Risk	Average Debt to	Average Debt to Market	Average Unlevered	Seta (SumBeta)	Average Unlevered	Average Operating	Average CV(Operating	Average
by Size	(\$mils.)	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since 163	Beta	Margin	Margin)	CV(ROE
1	71,497	4.85	35	6.0%	25.77%	34.7%	5.1%	0.93	0.78	9.2%	13.6%	21.1%
2	23,797	4.38	36	6.6%	27.26%	37.5%	5.5%	5.96	0.80	8.2%	14.4%	23.6%
3	14,895	4:17	36.	7.7%	29.01%	40.9%	6.3%	0.99	0.81	9.3%	13.5%	22.5%
4	10,851	4.04	36	8.7%	29.94%	42.7%	7.0%	1.02	0.82	10.0%	12.8%	20.1%
5	8,568	3.93	35	7.0%	31.18%	45.3%	5.6%	1.02	0.82	9.9%	14.3%	23.4%
6	6 554	3.82	36	8.9%	30.29%	43.4%	7.2%	0.99	9,80	9.8%	14.9%	24.6%
7	5,199	3.72	39	8.6%	28.44%	39.7%	7.0%	1.09	0.90	10.1%	14.6%	21.7%
8	4,552	3.66	39	7.0%	30.75%	44.4%	5.6%	1.05	0.65	9.5%	15.4%	21.7%
9	3,593	3.56	42	7.6%	29.92%	42.7%	61%	1.09	0.86	9.5%	15.3%	24.0%
10	3,117	3.49	41	9.0%	29.24%	41.3%	7.3%	1.06	0.87	9.8%	15.9%	22.6%
11	2,461	3.39	45	9.4%	29.59%	42.0%	7.6%	1.15	0.94	9.6%	15:8%	22.0%
12	2.154	3.33	41	11.1%	30.25%	43.4%	9.0%	1.13	0.92	9.5%	16.7%	24.4%
13	1,851	3.27	49	9.9%	30.01%	42.9%	8.0%	1.15	0.93	9.5%	17.5%	25.0%
14	1,641	3.21	50	9.7%	29.06%	41.0%	8.0%	1.10	0.90	9.6%	18.1%	25.4%
15	1,462	3.16	54	9.5%	28.91%	40.7%	7.8%	1.14	0.93	9.7%	18.4%	25.9%
16	1,228	3.09	53	9.2%	29.36%	41.6%	7.5%	1.15	0.94	10.1%	17.7%	25.2%
17	1,040	3.02	61	10.3%	30.11%	43.1%	8.4%	1.13	0.92	10.0%	18.8%	26.6%
18	919	2.96	63	7.9%	29.48%	41.8%	5.4%	1.21	0,99	10.1%	18.8%	26.9%
19	767	2.89	54	9.9%	28.98%	40.8%	8.1%	1.23	1.01	9.3%	20.5%	28.7%
. 20	685	2.84	58	10.9%	28.55%	40.0%	9.0%	1.15	0.95	9.6%	20.1%	27.5%
21	550	2.74	90	9.9%	27.77%	38.4%	8.2%	1.22	1.01	9.5%	21.8%	31.0%
22	434	2.64	81	9.5%	27.66%	38.2%	7.9%	1.24	1.03	9.4%	22.2%	32.2%
23	326	2.51	100	12.5%	26.77%	36.6%	10.4%	1.27	1.06	9.6%	24.4%	33.3%
24	224	2.35	135	11.1%	25.26%	33.8%.	9.4%	1.29	1.09	8.7%	27.3%	36.9%
25	91	1.96	347	13.5%	21.92%	28 1%	11 7%	1.32	1.14	8.9%	38.5%	49 3%

Note: CV[X] = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted average effective state tax rates.

The average blanded income tax rate used is 45.7 %.

Companies Ranked by Employees: Comparative Risk Characteristics Data for Year Ending December 31, 2006

	Portfoii	io Statistics fo	r 2006						Portfolio	Statistics for 19	963-2006	
Pertfolio	Average	Log		Average	Average	Average	Average	Seta	Average	Average	Average	
Rank	Number of	O.	Number	Equity Risk	Debt to	Debt to Market	Unlevered	(SumBeta)	Unlevered	Operating	CV(Operating	Average
by Size	Employees	Size	of Firms	Premium	MVIC	Value of Equity	Risk Premium	Since '63	Beta	Margin	Margin)	CV(ROE
1	257,161	5.41	35	5.5%	25.31%	33.9%	4.7%	1.03	0.87	8.3%	12.5%	19.9%
2	88,945	4.95	39	7.0%	25.45%	34.1%	5.9%	1.00	0.84	8.6%	12.1%	20.7%
3	56,823	4.75	36	7.6%	26.83%	36.7%	6.3%	1.04	0.87	9.2%	13.5%	23.2%
4	43,149	4.63	34	7.8%	25.45%	34.1%	6.6%	1.07	0.90	9.5%	14.3%	23.0%
5	32,869	4.52	43	9.4%	26.56%	36.2%	7.8%	1.07	0.90	9.5%	14.5%	23.0%
6	25,588	4.41	38	8.5%	26.31%	35.7%	7.1%	1.0B	0.90	9.2%	14.4%	22.3%
7	21,450	4.33	44	6.5%	26.64%	38.3%	5.5%	1.09	0.91	9.3%	15.5%	23.7%
8	18,314	4.21	45	8.1%	28.22%	39.3%	6.7%	1.13	0.93	9.4%	16.1%	25.0%
9	13,724	4.14	42	10.5%	29.47%	41.6%	8.5%	1,14	0.93	9.2%	16.6%	25.5%
10	11,246	4.05	47	8.1%	29.79%	42.4%	6.6%	1,14	0.92	9.4%	17.0%	25.7%
11	9,932	4.00	46	9.7%	29.50%	41.8%	7.9%	1.19	0.97	8.9%	18.4%	25.9%
12	8,295	3.92	46	10.8%	28.62%	40.1%	8.9%	1.12	0.92	9.6%	16.2%	24.0%
13	7,211	3.86	60	8.3%	29.06%	41.0%	6,8%	1.11	0.91	9.7%	17.2%	25.2%
14	5,883	3.77	54	9.0%	29.93%	42.7%	7.3%	1.16	0.94	9.7%	17.6%	24.4%
15	5,399	3.73	50	8.6%	30.11%	43.1%	7.0%	1.16	0.94	9.4%	18.5%	26.1%
15	4,742	3.68	52	10.6%	28.71%	40.3%	8.7%	1.15	0.95	9.6%	19.0%	28.0%
17	3,982	3.60	54	8.2%	29.98%	42.8%	6.7%	1.22	0.99	9:2%	21.2%	29.9%
18	3,668	3.58	54	8.7%	29.91%	42.7%	7.0%	1.18	0.96	9.2%	21.4%	30.0%
19	2,837	3.45	78	9.4%	28.39%	39.7%	7.8%	1.15	0.94	9.4%	21.2%	29.2%
20	2,410	3.38	78	10.9%	28.29%	39.4%	8.9%	1.17	0.96	9.5%	20.7%	28.8%
21	1,712	3.23	87	10.8%	28.17%	39.2%	8.9%	1.16	0.96	9.8%	22.4%	30.1%
22	1,367	3.14	86	11.3%	27.39%	37.7%	9.4%	1.18	0.98	9:7%	23.1%	31.9%
23	972	2.99	126	10.8%	28,54%	39.9%	8.9%	1.21	1.00	9.7%	25.9%	36.3%
24	533	2.73	179	11.8%	26.85%	36.7%	9.8%	1.24	1,04	9.4%	28.6%	38.3%
25	172	2.24	193	13.2%	22.44%	28.9%	11.4%	1.28	1.11	9.8%	37.5%	47.8%

Note: CV(X) = Standard deviation of X divided by mean of X, calculated over 5 fiscal years. For Portfolios 1-25, calculation uses statutory federal tax rates plus weighted everage effective state tax rates.

The average blended income tax rate used is 45.7 %.

		ed by Ope		age Since 1	neo	·					Courte Diels Gramium Study	Exhibit D- Data through December 31, 2006
					802						4	•
ata for	Year Endi	ng Decemi	ber 31, 2	2006							Data Smoothing with Regres	
											Dependent Variable: Average	
											Independent Variable: Log of	f Median Operating Margin
									Smoothed			
ortfolia	Median		Number	Beta		Geometric		Arithmetic	Average	Average	ogenerate the control of the control	
Rank	Operating	Median		(SumBeta)	Deviation	Average			Equity Risk	Debt/	Regression	
by Size	Margin	Op Margin	2006	Since '63	of Returns	Return	Return	Premium	Premium	MVIC	Constant	2.707%
											Std Err of Y Est	1.146%
1	36.7%	-0.44	64	0.82	16:69%	13.27%	14.45%	7.31%	5.85%	30.22%	R Squared	79%
2	28.4%	-0.55	61	0.77	16.20%	10.95%	12.11%	4.97%	6.65%	34.10%	No. of Observations	25
3	23.9%	-0.62	51	0.81	15,90%	12.43%	13.57%	6.43%	7.20%	32.37%	Degrees of Freedom	23
4	21.1%	-0.67	51	0.95	16.57%	12.55%	13.78%	6.64%	7.58%	26.88%		
5	19.1%	-0.72	58	5.98	17.28%	13,49%	14.79%	7.65%	7.89%	22.48%	X Coefficient(s)	-7.21 <del>6%</del>
6	17.7%	-0.75	54	1.12	18.75%	13.49%	15.00%	7.86%	8.13%	19.07%	Std Err of Coef.	0.784%
7	16.1%	-0.79	77	1.14	19.47%	14.54%	16.12%	8.98%	8.42%	18.45%	t-Statistic	-9.21
8	14.4%	-0.84	56	1,13	19.01%	12.97%	14.57%	7.43%	8.78%	19.99%		
9	13.5%	-0.87	63	1.20	19.84%	15.73%	17.41%	10.27%	8.97%	20.87%	Smoothed Premium = 2.70	7% - 7.216% *Log(Operating Mar
10	12.5%	-0.90	67	1.20	21.21%	14.65%	16.58%	9.44%	9.22%	21.42%		
11	11.8%	-0.93	50	1.22	20.80%	12.48%	14.36%	7.22%	9.41%	22.45%		
12	11.0%	-0.96	60	1.19	21,18%	14.23%	16.11%	8.97%	9.62%	22.64%	p	
13	10.5%	-0.98	53	1.21	22.05%	14.95%	17.00%	9.86%	9.78%	22.64%	Smoothed Premiu	m vs. Unadjusted Average
14	10.0%	-1.00	61	1.20	22.50%	15.45%	17.68%	10.52%	9.94%	23.62%	25%	
15	9.2%	-1.03	55	1.23	23.83%	14.88%	17.22%	10.08%	10.17%	24.58%	18%	
16	8.7%	-1.06	63	1.18	22.36%	16.03%	18.20%	11.06%	10.37%	26.32%		į.
17	8.3%	-1.08	65	1.27	23.95%	16.57%	19.03%	11.89%	10.52%	26.63%	18%	
18	7.7%	-1.12	63	1.27	24.42%	16.06%	18.61%	11,47%	10.75%	27.60%	E 14%	
19	7.1%	~1.15	59	1.30	24.79%	17.18%	19.75%	12.61%	11.00%	29.05%	2 12%	i
20	6.6%	-1.18	64	1,27	25.99%	16.13%	18.92%	11.78%	11.25%	30.93%	12%	7. w
21	5.8%	-1.23	100	1.26	25.70%	17.14%	19.78%	12.64%	11,62%	30.97%		
22	4.9%	-1.31	85	1.30	28.11%	15.91%	19.14%	12.00%	12.16%	31.70%	April 1874	* * X* * *
23	4.1%	-1.39	88.	1.30	25.73%	17,57%	20.29%	13.15%	12.75%	33.41%	6%	**
24	3.3%	-1.48	72	1.32	27.95%	17.85%	20.98%	13.84%	13.38%	33.30%	4%	*
25	1.9%	-1.71	116	1.29	27.22%	16.45%	19.56%	12.42%	15.07%	32.54%		1
igh finan			685	1.63	37.70%	16,64%	21.77%	14,63%		46.99%	2%	
***********	·	***************************************						······································	***************************************		0%	<u> </u>
aroe Sto	cks (libbotso	n SBBI data	)			10.86%	12.09%	4.95%			-1.8 -1.6 -1.4 -1.2 -1	1.0 -0.8 -0.6 -0.4 -0.2 0.0
		n SBBI data				15.03%	17.64%	10.50%			Log of Medi	ian Operating Margin
			,									
on-Tam	n Treasury I	oroma tibbo	deen CRE	it data)		7.12%	7.14%					

	iles Ranked								-		g	Exhibit D
	l Equity Risk			Since 1963								dy: Data through December 31, 2006
ata for	Year Ending	December 3	1,2006								Data Smoothing with Reg	ression Analysis
	-										Dependent Variable: Ave	rage Premium
											Independent Variable: Lo	g of Median CV(Operating Margin)
									Smoothed			
ortfolio		Log of	Number	Beta	Standard	Geometric	Arithmetic	Arithmetic	Average	Average		
Rank	Median	Median		(SumBeta)	Deviation	Average	Average	Equity Risk		Debt/	Regress	sion Output:
y Size	CV(Opine%)		2006	Since '63	of Returns	Return	Return		Premium	MVIC	Constant	12.811%
											Std Err of Y Est	0.732%
1	181.6%	0.26	164	1.48	31.80%	15.49%	19.46%	12.32%	13.87%	26.47%	R Squared	85%
2	87.6%	-0.06	111	1.44	29.09%	17.06%	20.47%	13.33%	12.58%	29.29%	No. of Observations	25
3	63.2%	-0.20	86	1.39	27.50%	15.15%	18.28%	11.14%	11.99%	29.89%	Degrees of Freedom	23
4	52.4%	-0.28	97	1.35	27.16%	15.69%	18.70%	11.56%	11.56%	29.26%		
5	43.6%	-0.36	85	1.32	26:02%	15.62%	18.48%	11.34%	11.33%	28.33%	X Coefficient(s)	4.100%
6	38.1%	-0.42	57	1,30	25.42%	16,15%	18.85%	11.71%	11.09%	28.51%	Std Err of Coef.	0.362%
7	34 0%	-0.47	70	1.25	23.56%	15.39%	17.80%	10.66%	10.89%	28.31%	t-Statistic	11.33
8	30.3%	-0.52	64	1.26	24.25%	16,07%	18.49%	11.35%	10.88%	27.75%		
9	27.6%	-0.56	65	1.20	22.60%	16.31%	18.53%	11.39%	10.52%	27.43%	Smoothed Premium = 1	2.811% + 4.100% *Log(CV Op. Mar
10	25.1%	-0.60	56	1.14	21.46%	16.38%	18.30%	11.16%	10.35%	27.12%		
11	23.1%	-0.64	58	1.17	21.28%	15.33%	17.24%	10,10%	10,20%	27.06%		
12	21.0%	-83.8-	65	1.16	20.20%	16.01%	17,78%	10.64%	10.03%	27.92%	,	
13	18.4%	-0.74	59	1,14	20.64%	14,56%	16.41%	9.27%	9.79%	27.09%	Smoothed Pre	ernium vs. Unadjusted Average
14	16.7%	-0.78	59	1.11	21.66%	14.76%	16,71%	9.57%	9.63%	26.36%	20%	
15	15.1%	-Q.82	55	1.12	20.24%	15.74%	17,54%	10,40%	9.44%	25.42%		
16	13.8%	-0.86	52	1.07	19.61%	13.64%	15.30%	8.16%	9.29%	26.34%	18%	
17	12.7%	-0.90	55	1.01	17.86%	15.88%	17.21%	10.07%	9.13%	25.68%	16%	
18	11.4%	0.94	47	1.01	18.98%	15.36%	15.87%	9.73%	8.94%	25.47%	14%	_
19	10.2%	-0.99	57	0.99	18.27%	14.83%	16.28%	9.14%	8.74%	25.25%	§	
20	9.4%	-1.03	50	0.99	17.89%	13.94%	15.32%	8.18%	8.60%	24,32%	12%	
21	8.1%	-1.09	51	0.91	16.50%	14.05%	15,23%	8.09%	8.34%	25.04%	£10%	and the same of th
22	7.1%	-1.15	41	0.90	15.39%	13.33%	14.39%	7.25%	8.10%	25.88%		-
23	6.0%	-1.22	53	6.90	16.62%	12.96%	14.18%	7.04%	7.81%	25.65%		
24	4.6%	-1.33	46	0.83	15.84%	12.90%	14.00%	6.86%	7.34%	25.00%	i 1	
25	3.1%	-1:51	53	0.82	15.44%	12.56%	13.63%	6.49%	6.63%	23.30%	4%	
h finan	cial risk		685	1.63	37.75%	16.64%	21,77%	14.63%		47.01%	2%	
~-	cks (libbotson S	COD dates				10.86%	12.09%	4.95%			0%	······
							17.64%	10.50%			-2.0 -1.5 -	-1.0 -0.5 0.0 (
1211 510	cks (libbotson S	con data)				15.03%	17.64%	10.50%			Log of Me	dias CV(Operating Income)
Tare	n Treasury Inco	mn (thhotonn i	eppt dob-	A		7.12%	7.14%				_	
na- i eit	1 Heastify Inct	tine trospeson	oppi Cara	·	,,,	5.1278	7,1470				L	

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		ed by CV			~							Exhibit
				rage Since	1963						Equity Risk Premium Study: I	Data through December 31, 2006
ita for	Year End	ing Decen	nber 31,	2006							Data Smoothing with Regres	sion Analysis
		-									Dependent Variable: Average	Premium
											Independent Variable: Log of	Median CV(ROE)
									Smoothed			
ortfolio		Log of	Number	Beta	Standard	Geometric	Arithmetic	Arithmetic	Average	Average		
Rank	Median	Median	as of	(SumBeta)	Deviation	Average	Average	Equity Risk	Equity Risk	Debt/	Regression	Output:
by Size	CV(ROE)	.CV(ROE).	2006	Since '63	of Returns	Return	Return	Premium	Premium	MVIC	Constant	10.156%
•											Std Err of Y Est	0.741%
1	817.3%	0.91	110	1.46	31.36%	14.87%	18.82%	11.68%	12.65%	34.73%	R Squared	77%
2	273.1%	0.44	112	1.40	28.82%	15.65%	19.06%	11.92%	11.35%	33,31%	No. of Observations	25
3	178.3%	0.25	73-	1.38	29.52%	15.07%	18.44%	11.30%	10.83%	31.51%	Degrees of Freedom	23
4	137.3%	0.14	76	1.34	25.24%	14,56%	17.26%	10.12%	10.53%	30.89%	ļ	
5	109.9%	0.04	88	1.33	26.39%	15,73%	18.58%	11.44%	10.27%	29.33%	X Coefficient(s)	2.734%
6	91.1%	-0.04	74	1.30	24.47%	14.42%	16,98%	9.84%	10:05%	28.18%	Std Err of Coef.	0.314%
7	78.2%	-0.11	70	1.26	24.22%	13,35%	15.91%	8.77%	9.86%	28.33%	t-Statistic	8.70
8	66.4%	-0.18	62	1.24	24.18%	14.03%	16.43%	9.29%	9.67%	27.29%		
9	59.0%	-0.23	47	1.25	22.55%	15.33%	17.50%	10.36%	9.53%	26.55%	Smoothed Premium = 10.15	56% + 2.734% *Log(CV ROE)
10	52.5%	-0.28	61	1.22	23.00%	15.19%	17.47%	10.33%	9.39%	25.39%		
11	47.4%	-0.32	54	1,16	22.03%	16.15%	18,14%	11.00%	9.27%	25.43%		
12	42.5%	-0.37	73	1.12	19,54%	13.31%	14.93%	7.79%	9.14%	25.86%		
13	39.0%	-0.41	51	1.13	19.55%	14.36%	16,03%	8.89%	9.04%	24.42%	Smoothed Premi	um vs. Unadjusted Average
14	35:6%	-0:45	74	1,10	19.44%	15.12%	16.59%	9:55%	8.93%	25.09%	20%	
15	32.6%	-0.49	58	1.10	20.76%	13.51%	15.40%	8.26%	8.83%	24.12%		
16	29.8%	-0.53	52	1.09	19.97%	14.00%	15.81%	8.67%	8.72%	25.29%	18%	
17	27.4%	-0.56	54	1.03	16.06%	14,14%	15.57%	8.43%	8.62%	24.59%	16%	
18	24.4%	-0.61	59	1.06	18.54%	14.14%	15.57%	8.43%	8.48%	24.90%	14%	
19	21.8%	-0.66	51	0.96	18.16%	13.31%	14.73%	7.59%	8.35%	25.27%	£ ""	
20	19.4%	-0.71	50	19,0	17.71%	13.65%	14,97%	7.83%	8.21%	25.80%	12% 6. 10%	* *
21	17.0%	-0.77	86	0.91	16.03%	14.31%	15.44%	8.30%	8.05%	26.34%	£10%	and the same of th
22	14.7%	-0.83	60	0.87	16.02%	13.84%	14.77%	7.63%	7.88%	27.09%	And 8%	**
23	12.1%	-0.92	58	0.86	15.42%	13.89%	14.91%	7.77%	7.65%	25.96%	§	
24	9.9%	-1,00	62	0.84	16.29%	13.72%	14.89%	7.75%	7.42%	24.89%	6% *	
25	5.5%	-1.26	61	0.79	15.28%	12.59%	13.62%	6,48%	6.71%	23.33%	4%	
ligh finar	cial risk		685	1,61	36.92%	15.86%	20.81%	13.67%		45.87%	2%	
		n SBBI dat				10.86%	12.09%	4.95%			0%	
mall Sto	cks (Ibbotso	ın SBBI datı	3)			15.03%	17.64%	10.50%			-1.5 -1.0 -0.5	0.0 0.5 1.0
											Lag of	Median CV(ROE)
ong-Ten	n Treasury	income (lbb	otson SB	Bi data)		7.12%	7.14%					

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### Premiums over Long-Term Riskless Rate

Historical Equity Risk Premiums: Averages Since 1963 Data for Year Ending December 31, 2006

Summary Schedule (1 of 3)

	Mark	et Value of E	auity	Boo	k Value of E	arity.	5-Year	Average Net	Income	Market Value of Invested Capital			
Portfolio Rank by	Average	Arithmetic Average	Smoothed Average	Average	Arithmetic Average	Smoothed Average	Average	Arithmetic Average	Smoothed Average	Average	Arithmetic Average	Smoothed Average	
Size	(\$mils.)	Premium	Premium	(\$mils.)	Premium	Premium	(\$mils.)	Premium	Premium	(\$mils.)	Premium	Premium	
1	97,566	4.8%	2.5%	28,120	5.3%	4.0%	4,409	5.8%	4.0%	116,519	4.8%	3.0%	
2	28,450	5.0%	4.5%	9,419	5.2%	5.5%	1,041	5.8%	5.8%	35,900	4.6%	4.8%	
3	17,118	3.8%	5.3%	6,589	7.3%	6.0%	636	6.6%	6.5%	22,691	4.9%	5.5%	
4	12,554	5.8%	5.9%	4,505	6.1%	6.5%	491	7.1%	6.8%	17,435	5.9%	5.9%	
5	9,494	6.3%	6.3%	3,435	6.7%	6.9%	350	6.0%	7.2%	12,529	6.7%	6.4%	
6	7,551	7.0%	6.7%	2,513	6.7%	7.3%	271	7.1%	7.6%	9,539	7.2%	6.8%	
7	5,218	7.7%	7.3%	2,114	6.7%	7.5%	213	7.3%	7.9%	7,335	7.9%	7.2%	
8	4,610	7.0%	7.5%	1,720	7.2%	7.8%	174	8.5%	8.1%	5,795	7.7%	7.6%	
9	3,905	8.2%	7.8%	1,412	8.6%	8.1%	142	7.4%	8.4%	4,742	6.4%	7.9%	
10	3,170	7.4%	8.1%	1,278	7.8%	8.2%	117	7.8%	8.6%	4,254	8.3%	8.1%	
11	2,757	7.9%	8.4%	1,151	7.4%	8.4%	105	8.4%	8.7%	3,511	7.7%	8.4%	
12	2,453	7.9%	8.6%	966	9.4%	8.6%	90	9.1%	8.9%	3,280	7.9%	8.5%	
13	2,115	6.7%	8.8%	892	8.0%	8.7%	80	8.9%	9.1%	2,765	7.9%	8.7%	
14	1,866	9.0%	9.0%	758	8.6%	9.0%	68	9.0%	9.3%	2,339	8.9%	9.0%	
15	1,552	8.5%	9.3%	634	9.3%	9.2%	58	8.4%	9.5%	2,163	8.7%	9.1%	
16	1,430	10.4%	9.5%	563	9.6%	9.4%	51	11.0%	9.7%	1,783	9.8%	9.4%	
17	1,186	10:2%	9.8%	500	9.8%	9.5%	46	9.5%	9.8%	1,554	9.2%	9.6%	
18	1,016	9.8%	10.0%	458	8.8%	9.7%	39	10.7%	10.0%	1,291	10.5%	9.9%	
19	900	9.9%	10.2%	385	9.7%	9.9%	31	10.3%	10.3%	1,144	9.4%	10.1%	
20	811	10.7%	10.4%	346	10.5%	10.0%	28	10.9%	10.4%	1,007	10.1%	10.3%	
21	685	11.0%	10.7%	299	9.8%	10.2%	23	11.0%	10.7%	912	10.9%	10.5%	
22	557	10.8%	11.0%	246	11.8%	10.5%	18	11.4%	11.0%	703	10.2%	10.9%	
23	389	10.9%	11.6%	194	10.5%	10.8%	13	11.7%	11.4%	510	11.9%	11.3%	
24	277	12.4%	12.2%	140	11.1%	11.3%	8	11.0%	12.0%	329	11.2%	12.0%	
25	105	16.2%	13.8%	59	13.9%	12.5%	3	14.5%	13.3%	123	15.9%	13.5%	
Constant			0.2149			0.1814			0.1465			0.2095	
Slope			-0.0381	1		-0.0319			-0.0292			-0.0355	

### Premiums over Long-Term Riskless Rate

Historical Equity Risk Premiums: Averages Since 1963 Data for Year Ending December 31, 2006

Summary Schedule (2 of 3)

		Total Assets	i.	5-Yea	r Average E	BITOA	***************************************	Sales		Num	ber of Emplo	vees
Portfolio		Anthmetic	Smoothed	ľ	Arithmetic	Smoothed		Arithmetic	Smoothed		Arithmetic	Smoothed
Rank by	Average	Average	Average	Average	Average	Average	Average	Average	Average	1	Average	Average
Size	(\$mils.)	Premium	Premium	(\$mils.)	Premium	Premium	(\$mils.)	Premium	Premium	Average	Premium	Premium
1	82,410	5.9%	4.4%	10,591	6.1%		71,497	6.0%	5.8%	257,161	5.5%	6.0%
2	27,872	5.3%	5.8%	3,136	5.3%	6.0%	23,797	6.6%	6.8%	88,945	7.0%	7.0%
3	18,736	6.4%	6.3%	2,248	7.0%	6.4%	14,895	7.7%	7.3%	56,823	7.6%	7.4%
4	13,315	6.9%	6.7%	1,548	6.8%	6.9%	10,851	8.7%	7.6%	43,149	7.8%	7.6%
5	9,231	7.5%	7.2%	1,056	7.9%	7.4%	8,568	7.0%	7.9%	32,869	9.4%	7.9%
6	7,012	7.3%	7.5%	831	7.2%	7.7%	6,554	8.9%	8.1%	25,588	8.5%	8.1%
7	5,564	7.9%	7.8%	667	7.1%	8.0%	5,199	8.6%	8.3%	21,450	6.5%	8.3%
8	4,247	7.1%	8.1%	523	7.9%	8.3%	4,552	7.0%	8.5%	16,314	8.1%	8.5%
9	3,738	7.1%	8.3%	426	6.3%	8.5%	3,593	7.6%	8.7%	13,724	10.5%	8.7%
10	3,253	7.5%	8.5%	377	7.6%	8.7%	3,117	9.0%	8.9%	11,246	8.1%	8.9%
11	2,703	9.4%	8.7%	325	8.5%	8.9%	2,461	9.4%	9.1%	9,932	9.7%	9.0%
12	2,360	7.5%	8.9%	294	10.0%	9.0%	2,154	11,1%	9.2%	8,295	10.8%	9.1%
13	2,051	9.2%	9.0%	232	10.7%	9.3%	1,851	9.9%	9.4%	7,211	8.3%	9.3%
14	1,735	9.8%	9:3%	211	9.4%	9.4%	1,641	9.7%	9.5%	5,883	9.0%	9.5%
15	1,536	9.3%	9.4%	190	9.0%	9.6%	1,462	9.5%	9.6%	5,399	8.6%	9.5%
16	1,285	10.6%	9.6%	149	10.4%	9.9%	1,228	9.2%	9.8%	4,742	10.6%	9.7%
17	1,165	11.9%	9.8%	139	10.7%	9.9%	1,040	10.3%	9.9%	3,982	8.2%	9.8%
18	980	9.8%	10.0%	118	8.9%	10.1%	919	7.9%	10.1%	3,668	8.7%	9.9%
19	853	8.5%	10.1%	106	11.4%	10.3%	767	9.9%	10.2%	2,837	9.4%	10.1%
20	701	10.0%	10.4%	91	9.9%	10.5%	685	10.9%	10.4%	2,410	10.9%	10.3%
21	569	10.4%	10.7%	78	10.2%	10.7%	550	9.9%	10.6%	1,712	10.8%	10.6%
22	480	10.3%	10.9%	58	11.4%	11.1%	434	9.5%	10.8%	1,367	11.3%	10.8%
23	380	11.2%	11.2%	46	12.2%	11.3%	326	12.5%	11.1%	972	10.8%	11.1%
24	275	11.6%	11.6%	31	11.7%	11.8%	224	11.1%	11.5%	533	11.8%	11.7%
25	104	14.4%	12,8%	12	13.6%	13.0%	91	13.5%	12.4%	172	13.2%	12.7%
Constant			0.1862	definition of the state of the		0.1616			0.1682			0.1742
Slope			-0.0289	-		-0.0290	-		-0.0228			-0.0211

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### Premiums over Long-Term Riskless Rate

Historical Equity Risk Premiums: Averages Since 1963 Data for Year Ending December 31, 2006

Summary Schedule (3 of 3)

	Opera	ting Income Ma	<u>argin</u>	CV(Ope	rating Income I	vlargin)		CV(ROE)		
Portfolio Rank by	# ************************************	Arithmetic Average	Smoothed Average	- Anthony of the Anth	Arithmetic Average	Smoothed Average		Arithmetic Average	Smoothed Average	
Size	Average	Premium	Premium	Average	Premium	Premium	Average	Premium	Premium	
1	36.7%	7.3%	5.8%	181.6%	12.3%	13.9%	817.3%	11.7%	12.7%	
2	28.4%	5.0%	6.7%	87.6%	13.3%	12.6%	273.1%	11.9%	11.3%	
3	23.9%	6.4%	7.2%	63.2%	11.1%	12.0%	176.3%	11.3%	10.8%	
4	21.1%	6.6%	7.6%	52.4%	11.6%	11.7%	137.3%	10.1%	10.5%	
5	19.1%	7.7%	7.9%	43.6%	11.3%	11.3%	109.9%	11.4%	10.3%	
6	17.7%	7.9%	8.1%	38.1%	11.7%	11.1%	91.1%	9.8%	10.0%	
7	16.1%	9.0%	8.4%	34.0%	10.7%	10.9%	78.2%	8.8%	9.9%	
8	14.4%	7.4%	8.8%	30,3%	11.4%	10.7%	66.4%	9.3%	9.7%	
9	13.5%	10.3%	9.0%	27.6%	11.4%	10.5%	59.0%	10.4%	9.5%	
10	12.5%	9.4%	9.2%	25.1%	11.2%	10.4%	52.5%	10.3%	9.4%	
11	11.8%	7.2%	9.4%	23.1%	10.1%	10.2%	47.4%	11.0%	9.3%	
12	11.0%	9.0%	9.6%	21.0%	10.6%	10.0%	42.5%	7.8%	9.1%	
13	10.5%	9.9%	9.8%	18.4%	9.3%	9.8%	39.0%	8.9%	9.0%	
14	10.0%	10.5%	9.9%	16.7%	9.6%	9.6%	35.6%	9.6%	8.9%	
15	9.2%	10.1%	10.2%	15.1%	10.4%	9.4%	32.6%	8.3%	8.8%	
16	8.7%	11.1%	10.4%	13.8%	8.2%	9.3%	29.8%	8.7%	8.7%	
17	8.3%	11.9%	10.5%	12.7%	10.1%	9.1%	27.4%	8.4%	8.6%	
18	7.7%	11.5%	10.8%	11.4%	9.7%	8.9%	24.4%	8.4%	8.5%	
19	7.1%	12.6%	11.0%	10.2%	9.1%	8.7%	21.8%	7.6%	8.3%	
20	6.6%	11.8%	11.2%	9.4%	8.2%	8.6%	19.4%	7.8%	8.2%	
21	5.8%	12.6%	11.6%	8.1%	8.1%	8.3%	17.0%	8.3%	8.1%	
22	4.9%	12.0%	12.2%	7.1%	7.2%	8.1%	14.7%	7.6%	7.9%	
23	4.1%	13.2%	12.8%	6.0%	7.0%	7.8%	12.1%	7.8%	7.6%	
24	3.3%	13.8%	13.4%	4.6%	6.9%	7.3%	9.9%	7.7%	7.4%	
25	1.9%	12.4%	15.1%	3,1%	6.5%	6.6%	5.5%	6.5%	6.7%	
nstant			0.0271			0.1281			0.1016	
pe			-0.0722			0.0410			0.0273	

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### **Premiums over CAPM**

Historical Equity Risk Premiums: Averages Since 1963 Data for Year Ending December 31, 2006

Summary Schedule (1 of 2)

	Mark	et Value of E	quity	Bool	k Value of E	Quity	5-Year	verage Net	Income	Market Va	Market Value of Invested Capital		
			Smoothed			Smoothed			Smoothed			Smoothed	
Portfolio	1	Premium	Premium		Premium	Premium		Premium	Premium		Premium	Premium	
Rank by	Average	Over	over	Average	Over	over	Average	Over	over	Average	Over	over	
Size	(\$mils.)	CAPM	CAPM	(\$mils.)	CAPM	CAPM	(\$mils_)	CAPM	CAPM	(\$mils.)	CAPM	CAPM	
1	97,566	0.3%	-1.7%	28,120	1.2%	0.2%	4,409	1.8%	0.4%	116,519	0.6%	-1.0%	
2	28,450	0.4%	-0.1%	9,419	1.0%	1.1%	1,041	1.6%	1.6%	35,900	0.4%	0.3%	
3	17,118	-1.0%	0.5%	6,589	2.9%	1.5%	636	2.4%	2.0%	22,691	0.5%	0.8%	
4	12,554	0.9%	0.9%	4,505	1.6%	1.8%	491	2.6%	2.2%	17,435	1 2%	1.1%	
5	9,494	1.5%	1.3%	3,436	1.8%	2.0%	350	1.4%	2.5%	12,529	2.0%	1.5%	
6	7,551	1.9%	1.6%	2,513	1.8%	2.3%	271	2.3%	2.7%	9,539	2.2%	1.8%	
7	5,218	2.7%	2.0%	2,114	1.7%	2.5%	213	2.2%	2.9%	7,335	2.8%	2.1%	
8	4,610	1.6%	2.2%	1,720	2.0%	2.7%	174	3.4%	3.0%	5,795	2.4%	2.3%	
9	3,905	2.8%	2.4%	1,412	3.3%	2.8%	142	2.2%	3.2%	4,742	1.0%	2.6%	
10	3,170	1.9%	2.7%	1,278	2.8%	2.9%	117	2.5%	3.3%	4,254	3.0%	2.7%	
11	2,757	2.5%	2.9%	1,151	2.0%	3.0%	105	3.2%	3.4%	3,511	2.3%	2.9%	
12	2,453	2.4%	3.0%	966	4.2%	3.2%	90	3.9%	3.5%	3,260	2.4%	3.0%	
13	2,115	1.3%	3.2%	892	2.4%	3.3%	80	3.6%	3.6%	2,765	2.4%	3.2%	
14	1,866	3:3%	3.4%	758	3.0%	3.4%	68	3.4%	3.8%	2,339	3.1%	3.3%	
15	1,552	2.8%	3.6%	634	3.8%	3.6%	58	2.7%	3.9%	2,163	3.0%	3.4%	
16	1,430	4.8%	3.7%	563	3.8%	3.7%	51	5.2%	4.0%	1,783	3.7%	3.6%	
17	1,186	4.2%	3.9%	500	3.9%	3.8%	46	3.6%	4.1%	1,554	3.2%	3.8%	
18	1,016	3.9%	4.1%	458	2.7%	3.9%	39	4.6%	4.2%	1,291	4.4%	4.0%	
19	900	3.7%	4.3%	385	3.8%	4.0%	31	4.0%	4.4%	1,144	3.3%	4.1%	
20	811	4.3%	4.4%	346	4.4%	4.1%	28	5.0%	4.5%	1,007	4.0%	4.3%	
21	685	4.8%	4.6%	299	3.7%	4.2%	23	5.0%	4.7%	912	4.6%	4.4%	
22	557	4.5%	4.9%	246	5.6%	4.4%	18	5.2%	4.9%	703	3.8%	4.7%	
23	389	4.7%	5.4%	194	4.2%	4.6%	13	5.3%	5.1%	510	5.7%	5.0%	
24	277	6.0%	5.8%	140	4.7%	4.9%	8	4.6%	5.5%	329	4.7%	5.5%	
25	105	9.8%	7.0%	59	7.3%	5.7%	3	7.7%	6.3%	123	9.4%	6.6%	
Constant			0.1301			0.0936			0.0718			0.1189	
Stope			-0.0295	1		-0.0207			-0.0186	i		-0.0253	

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### **Premiums over CAPM**

Historical Equity Risk Premiums: Averages Since 1963 Data for Year Ending December 31, 2006

Summary Schedule (2 of 2)

		Total Assets	i	5-Yea	r Average E	BITDA		Sales		Num	Number of Employees			
			Smoothed			Smoothed			Smoothed			Smoothed		
Portfolio		Premium	Premium	İ	Premium	Premium		Premium	Premium		Premium	Premium		
Rank by	Average	Over	over	Average	Over	over	Average	Over	over	ļ	Over	over		
Size	(\$mils.)	CAPM	CAPM	(\$mils.)	CAPM	CAPM	(\$mils.)	CAPM	CAPM	Average	CAPM	CAPM		
1	82,410	1.8%	0.6%	10,591	2.0%	0.8%	71,497	1.4%	1.4%	257,161	0.4%	1.0%		
2	27,872	1.1%	1.5%	3,136	1.3%	1.8%	23,797	1.9%	2.1%	88,945	2.0%	1.8%		
3	18,736	2.2%	1.8%	2,248	2.7%	2.0%	14,895	2.8%	2.4%	56,823	2.4%	2.1%		
. 4	13,315	2.3%	2.1%	1,548	2.2%	2.3%	10,851	3.6%	2.6%	43,149	2.5%	2.3%		
- 5	9,231	2.9%	2.3%	1,056	3.5%	2.6%	8,568	1.9%	2.8%	32,869	4.1%	2.5%		
. 6	7,012	2.4%	2.6%	831	2.4%	2.8%	6,554	4.0%	2.9%	25,588	3.2%	2.7%		
7	5,564	2.9%	2.7%	667	2.1%	3.0%	5,199	3.2%	3.1%	21,450	1.1%	2.8%		
8	4,247	2.0%	3.0%	523	2.6%	3.2%	4,552	1.8%	3.2%	16,314	2.5%	3.0%		
9	3,738	1.8%	3.1%	426	1.2%	3.3%	3,593	2.2%	3.3%	13,724	4.9%	3.2%		
10	3,253	2.2%	3.2%	377	2.7%	3.4%	3,117	3.7%	3.4%	11,246	2.5%	3.3%		
11	2,703	3.9%	3.3%	325	3.4%	3.5%	2,461	3.7%	3.6%	9,932	3.8%	3.4%		
12	2,360	1.9%	3.4%	294	4.6%	3.6%	2,154	5.4%	3.7%	8,295	5.3%	3.5%		
13	2,051	3.8%	3.5%	232	5.3%	3.8%	1,851	4.2%	3.8%	7,211	2.8%	3.6%		
14	1,735	4.3%	3.7%	211	3.8%	3.9%	1,641	4.3%	3.9%	5,883	3.3%	3.8%		
15	1,536	3.5%	3.8%	190	3.4%	4.0%	1,462	3.9%	3.9%	5,399	2.9%	3.8%		
16	1,285	4.6%	3.9%	149	4.5%	4.2%	1,228	3.5%	4.0%	4,742	4.9%	3.9%		
17	1,165	5.7%	4.0%	139	4.8%	4.2%	1,040	4.7%	4.2%	3,982	2.2%	4.1%		
18	980	3.9%	4.1%	118	2.9%	4.3%	919	1.9%	4.2%	3,668	2.8%	4.1%		
19	853	2.5%	4.2%	106	5.3%	4.4%	767	3.7%	4.4%	2,837	3.8%	4.3%		
20	701	3.9%	4.4%	91	3.7%	4.5%	685	5.2%	4.4%	2,410	5.1%	4.4%		
21	569	4.3%	4.5%	78	4.1%	4.7%	550	3.9%	4.6%	1,712	5.0%	4.7%		
22	480	3.9%	4.7%	58	5.5%	4.9%	434	3.4%	4.7%	1,367	5.5%	4.8%		
23	380	4.9%	4.8%	46	5.9%	5.1%	326	6.2%	4.9%	972	4.8%	5.1%		
24	275	5.2%	5.1%	31	5.1%	5.4%	224	4.7%	5.2%	533	5.6%	5.5%		
25	104	7.7%	5.9%	12	6.9%	6.1%	91	7.0%	5.8%	172	6.8%	6.4%		
Constant			0.0949			0.0806			0.0876			0.1014		
Stope			-0.0180			-0.0180			-0.0153			-0.0169		

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