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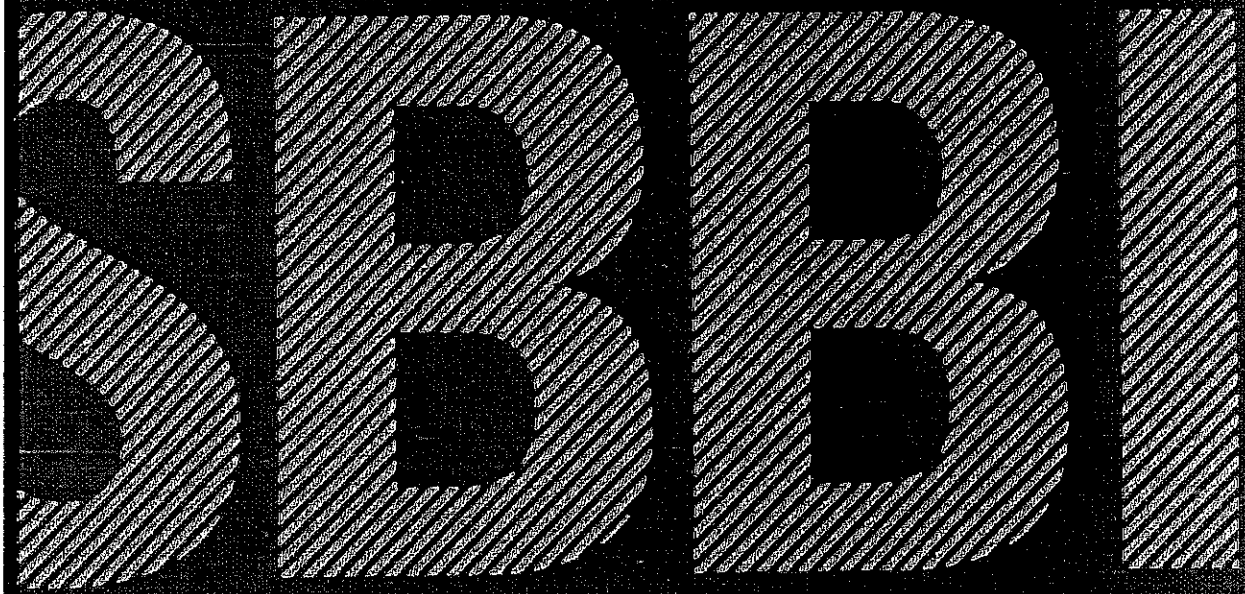
2015 Classic Yearbook

Market Results for
Stocks, Bonds, Bills, and Inflation
1926–2014



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Chapter 7

Company Size and Return

One of the most remarkable discoveries of modern finance is the finding of a relationship between company size and return.[1] Historically on average, small companies have higher returns than those of large ones. Earlier chapters of this book document this phenomenon for the smallest stocks on the New York Stock Exchange, or NYSE. The relationship between company size and return cuts across the entire size spectrum; it is not restricted to the smallest stocks. This chapter examines returns across the entire range of company size.

Construction of the Size Decile Portfolios

The portfolios used in this chapter are those created by the Center for Research in Security Prices, or CRSP, at the University of Chicago's Booth School of Business. CRSP has refined the methodology of creating size-based portfolios and has applied this methodology to the entire universe of NYSE/AMEX/NASDAQ-listed securities going back to 1926.

The NYSE universe excludes closed-end mutual funds, preferred stocks, real estate investment trusts, foreign stocks, American Depository Receipts, unit investment trusts, and Americus Trusts. All companies on the NYSE are ranked by the combined market capitalization of all their eligible equity securities. The companies are then split into 10 equally populated groups or deciles. Eligible companies traded on the NYSE, the NYSE MKT LLC (formerly known as the American Stock Exchange, or AMEX), and the NASDAQ Stock Market (formerly the NASDAQ National Market) are then assigned to the appropriate deciles according to their capitalization in relation to the NYSE breakpoints. The portfolios are rebalanced using closing prices for the last trading day of March, June, September, and December. Securities added during the quarter are assigned to the appropriate portfolio when two consecutive month-end prices are available. If the final NYSE price of a security that becomes delisted is a month-end price, then that month's return is included in the quarterly return of the portfolio. When a month-end NYSE price is missing, the month-end value is derived from merger terms, quotations on regional exchanges, and other sources. If a month-end value is not available, the last available daily price is used.

In October 2008, NYSE Euronext acquired the American Stock Exchange and rebranded the index as NYSE Amex. Later, in May 2012, it was renamed NYSE MKT LLC. For the sake of continuity, we refer to this index as AMEX, its historical name.

Base security returns are monthly holding period returns. All distributions are added to the month-end prices. Appropriate adjustments are made to prices to account for stock splits and dividends. The return on a portfolio for one month is calculated as the value weighted average of the returns for the individual stocks in the portfolio. Annual portfolio returns are calculated by compounding the monthly portfolio returns.

Aspects of the Company Size Effect

The company size phenomenon is remarkable in several ways. First, the greater risk of small-cap does not, in the context of the capital asset pricing model, fully account for their higher returns over the long term. In the CAPM only systematic, or beta risk, is rewarded; small-cap stock returns have exceeded those implied by their betas.

Second, the calendar annual return differences between small- and large-cap companies are serially correlated. This suggests that past annual returns may be of some value in predicting future annual returns. Such serial correlation, or autocorrelation, is practically unknown in the market for large-cap stocks and in most other equity markets but is evident in the size premium series.

Table 7-8: Size-Decile Portfolios of the NYSE/AMEX/NASDAQ Returns in Excess of Decile 1 (%)

Decile	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2	0.86	0.52	-0.04	-0.17	0.09	-0.09	-0.11	0.18	0.02	-0.30	0.12	0.39	
	68	60	42	34	45	44	38	47	46	42	51	49	
3	1.16	0.39	-0.04	-0.03	-0.12	-0.14	-0.13	0.36	-0.12	-0.33	0.45	0.34	
	65	58	42	33	40	38	44	54	42	38	49	52	
4	1.38	0.60	0.06	-0.20	0.09	-0.07	-0.19	0.28	0.03	-0.77	0.31	0.55	
	66	56	43	37	43	43	38	52	45	32	47	52	
5	2.11	0.62	-0.04	-0.15	-0.15	0.05	-0.14	0.28	0.02	-0.71	0.29	0.40	
	66	55	43	38	39	43	44	51	46	37	51	50	
6	2.39	0.46	-0.05	-0.04	0.30	-0.05	-0.24	0.47	0.11	-1.11	0.18	0.33	
	66	57	41	37	43	41	44	51	47	38	46	48	
7	2.99	0.61	-0.05	-0.09	0.16	-0.23	-0.17	0.21	0.23	-0.99	0.12	0.15	
	67	56	47	37	38	37	39	44	49	32	47	44	
8	4.06	0.64	-0.05	-0.34	0.36	-0.32	-0.01	0.13	0.05	-0.98	0.12	-0.05	
	66	51	46	34	37	41	41	41	47	37	41	41	
9	5.21	0.82	-0.24	-0.15	0.26	-0.30	-0.08	0.05	-0.05	-1.14	0.00	-0.64	
	65	48	41	34	38	37	38	46	43	36	39	39	
10	8.53	0.84	-0.05	-0.03	0.57	-0.47	0.45	-0.19	0.53	-1.38	-0.59	-1.33	
	81	45	46	36	38	38	41	34	44	32	33	35	

First row: Average excess return in percent Second row: Number of times excess return was positive (in 89 years)

Data from 1926–2014. Source: Morningstar and CRSP. Calculated (or Derived) based on data from CRSP US Stock Database and CRSP US Indices Database

Table 7-8 shows the returns of capitalization deciles 2-10 in excess of the return on decile 1; the excess returns are segregated into months. For each decile and for each month, the exhibit shows both the average excess return and the number of times the excess return was positive. These two statistics measure the seasonality of the excess return in different ways—the average excess return illustrates the size of the seasonality effect, while the number of positive excess returns shows its reliability.

Virtually all of the small-cap effect occurs in January, as the excess outcomes for small-company stocks are mostly negative in the other months of the year. Excess returns in January relate to size in a precisely rank-ordered fashion, and the January effect seems to pervade all size groups. Yet, simply demonstrating that the size premium is largely produced by the January effect does not refute the existence of such a premium.

Small-Cap Returns Are Unpredictable

Because investors cannot predict when small-cap returns will be higher than large-cap returns, it has been argued that they do not expect higher rates of return for small stocks. As was illustrated earlier in this chapter, even over periods of many years, investors in small stocks do not always earn returns that are higher than those of investors in large stocks. By simple definition, one cannot expect risky companies to always outperform less-risky companies; otherwise they would not be risky. Over the long-term, however, investors do expect small stocks to outperform large stocks.

The unpredictability of small-cap returns has given rise to another argument against the existence of a size premium: that markets have changed so that the size premium no longer exists. As evidence, one might observe the last 20 years of market data to see that the performance of large-cap stocks was basically equal to that of small-cap stocks. In fact, large-cap stocks have outperformed small-cap stocks in five of the last 10 years.