

SMALL STOCKS VS. LARGE: IT'S HOW LONG YOU HOLD THAT COUNTS

By Sherman Hanna and Peng Chen

Based on the historical record, small stocks have not been inferior to large stocks in terms of real, after-inflation growth for holding periods of 15 years or more. But for holding periods under 15 years, there is a trade-off between risk and return.

One of the most vigorous ongoing debates today concerns the long-term performance of small stocks compared to large stocks.

Many long-term investors turn to small stocks for the more aggressive portion of their portfolios, seeking higher returns, although at higher levels of risk (volatility). But the most recent long-running bull market has largely favored large-cap stocks, and has served to intensify the debate.

In addition, some studies have questioned whether small stocks really have outperformed large stocks over the long term. One noted investment study claimed that small stocks did not outperform large stocks if only one time period (1975-1983) is excluded. This argument, however, is based on the averages over one very long time period. Most individuals, though, invest over particular time periods, 25 or 30 years, for example. In addition, for most individuals, investing is on a periodic basis.

In this study, we compared small stocks to large stocks by determining the average and minimum amounts an investment would have grown to for both a one-time investment and periodic investments over different time periods from 1926 to 1996. We used the real (after-inflation) rates of return, since for long-term investors this is most meaningful for evaluating an investment portfolio. The returns were drawn from the Ibbotson Associates "1997 Stocks, Bonds, Bills and Inflation Yearbook," which provides historical data from 1926 through year-end 1996 for both large- and small-cap stocks. (In this data series, large-cap stocks consist of the S&P 500, while small-cap stocks are stocks with market capitalizations that match the bottom 20% of those listed on the New York Stock Exchange.)

For the performance comparison, we looked at all possible consecutive holding periods between 1926 and 1996; we then determined the growth of both a one-time investment of \$1, and an annual investment of \$1 (in constant after-inflation dollars, invested at the beginning of each year) for each holding period.

Table 1 summarizes the results for a one-time investment of \$1 at the beginning of the holding period. It reports the average and the minimum ending values that \$1 would have grown to for each holding period; holding periods range from one year to 40 years. For example, if you invested \$1 in large-cap stocks over any five-year time period between 1926 and 1996, on average you would have seen it grow to \$1.47 in real (after-inflation) dollars; if you invested over the worst five-year time period, you would have seen it shrink to \$0.61 in real dollars.

Table 1 shows that average accumulation of small stocks is higher than the average accumulation for large stocks for every possible holding period. And that advantage is substantial for long holding periods—for example, the average accumulation for small stocks for 40 years is \$60.63 compared to the large stock average of \$15.95.

One might assume that the higher average return would come at a cost of greater risk with small stocks. For holding periods under 15 years, this holds true—the minimum accumulation for holding periods under 15 years is lower

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TABLE 1. SMALL VS. LARGE: AFTER-INFLATION GROWTH OF \$1 (1926-1996)

Holding Period (Yrs)	No. of Periods	Small Stocks: Real Growth of \$1			Large Stocks: Real Growth of \$1			% of Times Small Beat Large (%)
		Hold. Period Average (\$)	Hold. Period Minimum (\$)	% of Times < Inflation (%)	Hold. Period Average (\$)	Hold. Period Minimum (\$)	% of Times < Inflation (%)	
1	71	1.14	0.41	29.6	1.09	0.63	32.4	56.3
5	67	1.84	0.26	17.9	1.47	0.61	20.9	58.2
10	62	2.96	0.68	9.7	2.19	0.68	11.3	66.1
15	57	5.19	0.94	3.5	3.20	0.92	7.0	78.9
20	52	8.62	2.17	0.0	4.50	1.18	0.0	94.2
25	47	14.11	3.36	0.0	6.26	1.98	0.0	97.9
30	42	24.36	5.88	0.0	8.73	3.59	0.0	95.2
35	37	39.95	13.44	0.0	11.79	5.59	0.0	100.0
40	32	60.63	23.80	0.0	15.94	9.20	0.0	100.0

for small stocks than it is for large stocks. However, for holding periods greater than 18 years, small stocks beat large stocks over 90% of the time, and for holding periods longer than 32 years, small stocks always outperformed large stocks.

Table 2 is similar to Table 1, and shows the average and minimum after-inflation growth of a \$1 annual investment in small stocks and large stocks for each holding period.

The table shows that the average growth of a \$1 annual investment for small stocks is higher than the average for large stocks for every possible holding period. The advantage is substantial for long holding periods.

Small stocks again are riskier than large stocks for shorter holding

periods, with lower minimum ending values for holding periods of under 13 years. However, for holding periods of 19 years or more, small stocks beat large stocks over 90% of the time. And for holding periods longer than 29 years, small stocks always outperformed large stocks.

CONCLUSION

The results here indicate that, based on the historical record, small stocks have not been inferior to large stocks in terms of real, after-inflation growth for holding periods of 15 years or more.

On the other hand, for holding periods under 15 years, there is a trade-off between risk and return for large versus small stocks.

For holding periods of 33 years and over, based on the historical record since 1926, small stocks completely dominate large stocks by any measure.

Whether this pattern will persist in the future is, of course, subject to debate. However, it seems plausible that small stocks can provide a reasonable way for long-term investors to obtain a higher return. Clearly, time horizon is a crucial issue.

Individual investors may also face a challenge in replicating the Ibbotson small stock category. Although there are many index funds that match the S&P 500, there are far fewer small stock index funds, particularly ones that match the Ibbotson index. ♦

TABLE 2. SMALL VS. LARGE: AFTER-INFLATION GROWTH OF \$1 INVESTED ANNUALLY (1926-1996)

Holding Period (Yrs)	No. of Periods	Small Stocks: Real Growth of \$1 Annual Inv			Large Stocks: Real Growth of \$1 Annual Inv			% of Times Small Beat Large (%)
		Hold. Period Average (\$)	Hold. Period Minimum (\$)	% of Times < Inflation (%)	Hold. Period Average (\$)	Hold. Period Minimum (\$)	% of Times < Inflation (%)	
1	71	1.14	0.41	29.6	1.09	0.63	32.4	56.3
5	67	7.48	1.66	17.9	6.34	3.06	19.4	58.2
10	62	20.24	5.28	4.8	15.92	6.21	11.3	67.7
15	57	42.01	11.31	1.8	29.96	10.94	10.5	70.2
20	52	79.08	21.95	0.0	51.01	18.64	5.8	92.3
25	47	136.47	42.57	0.0	80.86	28.45	0.0	100.0
30	42	238.28	71.35	0.0	120.40	46.17	0.0	100.0
35	37	395.86	167.30	0.0	165.63	84.19	0.0	100.0
40	32	652.18	268.27	0.0	218.53	135.83	0.0	100.0