

## SIZING UP THE SIZE PREMIUM

Since Rolf Banz published his groundbreaking paper that identified the so-called “small stock effect” in 1981, the investment community has acknowledged the existence of a return premium afforded to smaller-capitalization stocks over their larger counterparts. Banz’s study demonstrated that between 1926 and 1980, the smallest quintile of the stocks on the New York Stock Exchange outperformed both large stocks and the overall market.

Between 1961 and 1980, the size premium earned an annualized return of a full 5%. From the time the Banz paper was published through the end of 2014, however, that premium shrank to closer to 1%. So is it possible that the size premium is a result of data mining or biases in the historical data, but does not hold in reality?

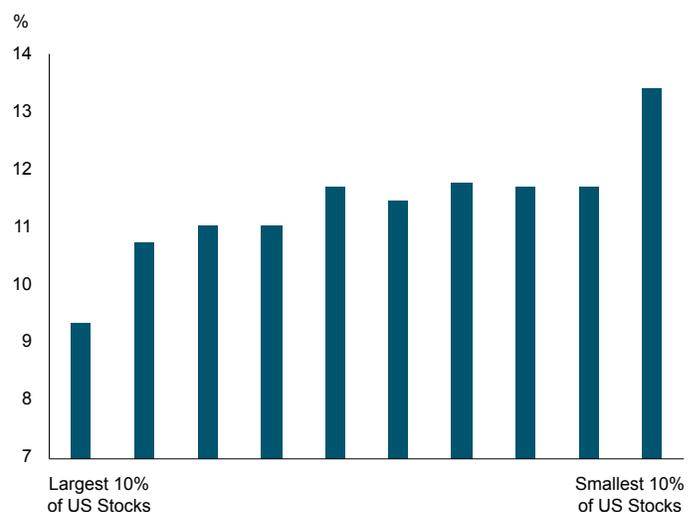
This paper explores this question, as well as some of the key theoretical arguments as to why a size premium should exist – and persist into the future. From a practical standpoint, we touch on considerations surrounding what we think is the most efficient way to access the size premium.

### The Size Premium Over Time

Looking over the period from 1926 through the end of 2014 – nearly a century of data – there has been an almost monotonic relationship between firm size and return, where smaller-capitalization stocks have earned higher returns. (See Exhibit 1).

When we narrow the time frame for analysis to the past 20 years, the pattern is not as smooth, as can be seen in Exhibit 2 on the next page. The smallest decile of US stocks still outperformed, but with more “noise” in between the extremes. This result is consistent with what we would expect when analyzing a shorter time period in which the data can be more idiosyncratic.

**Exhibit 1: Annualized Returns of US Stocks – Largest-to-Smallest-Capitalization Deciles**  
Jan. 1926–Dec. 2014



Sources: CRSP (Center for Research in Security Prices), Gerstein Fisher Research

<sup>1</sup> See for example Meese and Rogoff (1983).

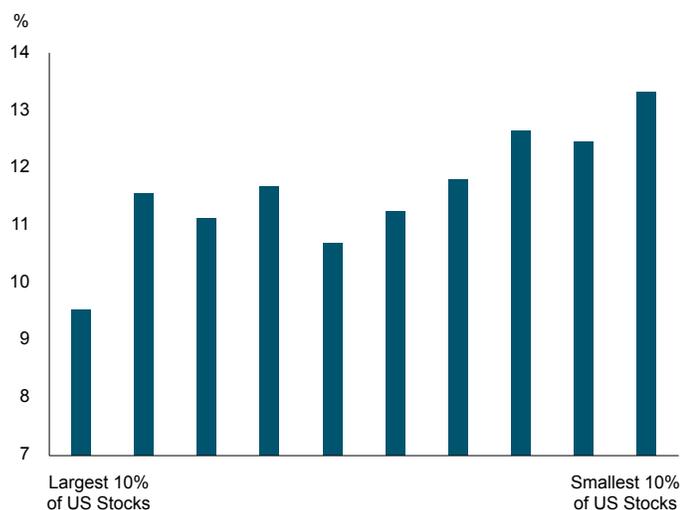
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## Exhibit 2: Annualized Returns of US Stocks – Largest-to-Smallest-Capitalization Deciles

Jan. 1995–Dec. 2014

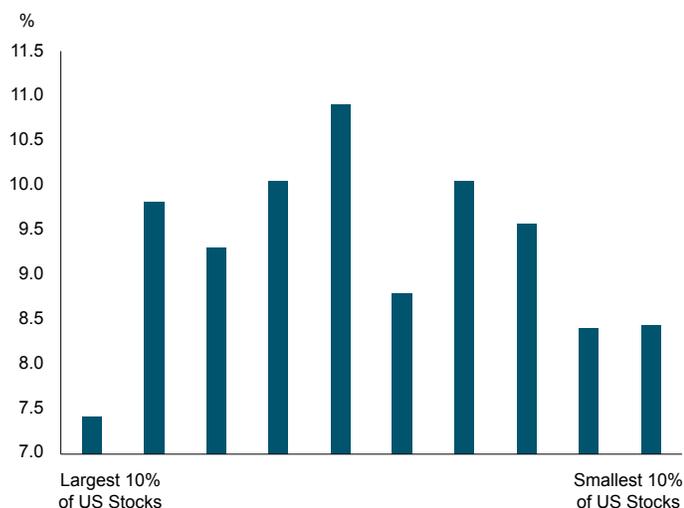


Sources: CRSP (Center for Research in Security Prices), Gerstein Fisher Research

Exhibit 3 examines the last 10 years of data. This chart reveals what we think is the shorter-term risk inherent in factor investing, particularly when investments are focused on a single factor. As seen in Exhibit 3, the smallest-cap stocks outperformed only the very largest stocks over this period.

## Exhibit 3: Annualized Returns of US Stocks – Largest-to-Smallest-Capitalization Deciles

Jan. 2005–Dec. 2014



Sources: CRSP (Center for Research in Security Prices), Gerstein Fisher Research

## Theoretical Arguments For the Size Premium

Some researchers have sought to expose the size premium as more of a myth than a verifiable and lasting phenomenon. Arguments against the existence of a true size premium include: the inaccuracy of returns; the possibility that the size premium is the result of data mining; the fact that small cap long-only indices ignore trading costs; and the fact that the size premium is much weaker after 1981.

While we acknowledge the validity of some of these points and we do agree that the size premium is weak, it is still positive and we believe it still makes sense for portfolios to be tilted toward small-cap stocks in spite of these arguments.

Let us first explore the theoretical argument for why the size premium exists. Kalesnik and Beck (2014) explain that if a large company splits into two smaller companies, size theory proponents would argue that expected returns increase, while the authors claim nothing has really changed.

In our view, one of the reasons for the existence of the size premium is that small companies do not have the same access to capital as large stocks, and typically have a higher cost of capital, thus requiring a higher rate of return. The “size premium” is not diversifiable, as there are periods during which small stocks underperform – particularly when capital is hard to come by. If a company splits in two pieces, each sub-company should have a more difficult time raising capital as the cash flows are divided by two. So dividing a firm in two would, we believe, increase expected returns, but expected risk should rise as well.

One can test the hypothesis of whether dividing firms in two (or more parts) increases expected returns. The academic literature finds evidence that spinoffs or divestitures lead to higher average returns or outperformance in the long run. [See for example, Cusatis et al (1993) and Desai and Jain (1997)].

## Biases in the Data

There are several relevant data quality issues related to the size premium. First, smaller firms are more likely to go bankrupt. Data from Eugene Fama and Kenneth French, however, accounts for delisting bias after 1965. From Ken French's website, data from January 1965 – April 2015 shows that SMB (the size factor) has an average return of 0.26% per month that is statistically different from zero ( $T=2.00$ ). Another related concern often raised is that trading costs may eat up any outperformance associated with the small cap premium. Keim (1999) addresses such issues and suggests that the small cap premium persists even after accounting for transaction costs.

There is more established evidence that the size premium is weaker after 1980. In our view, this is the biggest challenge to the existence and persistence of the size premium. The evidence over this short period still suggests that the size premium, while weaker, is still positive. Additionally, looking outside the United States, for most countries, the size premium is still positive.

Data mining is a concern for any quantitative, factor-based investment strategy, including value, profitability, momentum, and low volatility strategies. Data mining refers to the possibility that, if one manipulates data enough, one can essentially uncover the patterns one expects to see. The only mitigating factor here is that the data used to evaluate the size premium go back to the 1920s, for close to a 90-year sample period. On a related critique, Kalesnik and Beck (2014) claim the size premium is driven by a few months in the 1930s. We still find a statistically significant difference using data that starts in 1965, *and* we also find large SMB (size factor) returns for two months in the 2000s.

## Exhibit 4: Top Monthly Returns for Small Minus Big (SMB) Long/Short Portfolio Returns

Jan. 1990–May 2015

Date	SMB
May 1933	36.7%
Feb. 2000	22.0%
Sep. 1939	20.2%
Aug. 1932	14.3%
Jun. 2000	13.7%

Sources: CRSP (Center for Research in Security Prices), Gerstein Fisher Research

## Summary and Conclusion

We still believe in the size premium, and the evidence in our mind is still in favor of the existence of an exploitable size premium even after accounting for trading costs and other market frictions. While weaker than in the past, it is generally still positive. Even with a modest small cap premium, we believe there is a benefit in holding small cap stocks as a distinct tilt in an equity strategy for the diversification of returns that are different than those of larger-cap stocks.

Additionally, given that other factor premiums (momentum, asset growth, value and profitability) tend to be stronger among small capitalization stocks, we recommend taking multi-factor approach to investing in small cap to obtain small cap exposure.

## References

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