



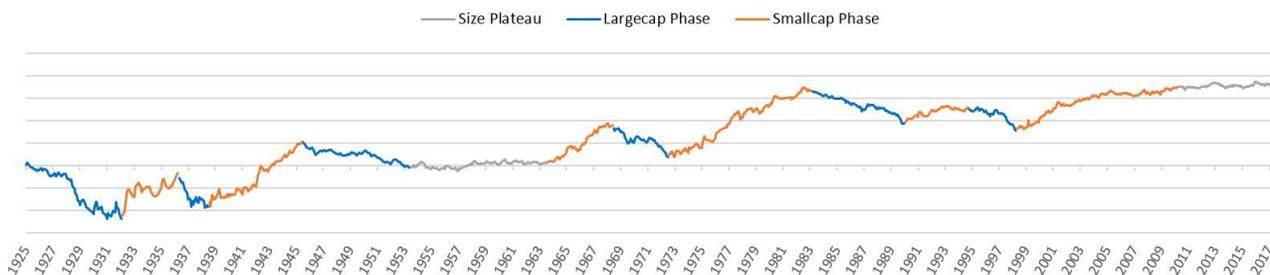
RESEARCH

The Cycle of Size

The last decade has been a size plateau, but in a large- or small-cap phase, the cost of making the wrong bet is high

Small-cap stock returns surpassed the S&P 500 in the past century. But the path of outperformance was not a simple uptrend. Instead, it went through ebbs and flows (chart 1). On average the rotation in size happened every six years. Small-cap phases stretched from four years to twelve years and were longer and stronger than large-cap phases.

Chart 1 - Size Rotations Since 1926
(Value Difference between Small- and Large-cap Portfolios in Logarithmic Scale)



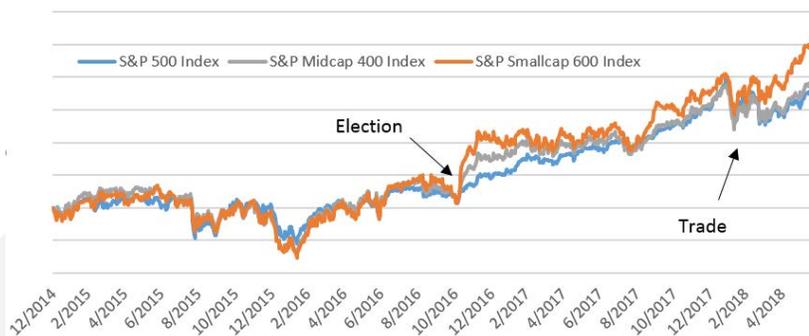
The difference between two portfolios that both started on 12/31/1925 with an initial investment of \$100,000, in logarithmic scale. Note that neither the value of the initial investment nor the start date affects the result.
Data: 1926-1988 - Ibbotson large- and small-cap series; 1989-2018Q2 - the S&P 500 Index and the S&P 600 Index.

There were also prolonged periods with no significant size action. In the ten years following June 1954, small- and large-caps moved together, and there's only an annualized 1.4% pro-small return difference. The last decade has been stuck in a size plateau as well. From 2011Q1 to 2018Q2, the edge small caps had over large caps was 1.8% on an annualized basis. These were superficial leads compared to the averaged mid-teen deltas in both pro-small and pro-large phases. When size starts to shift, the cost of getting off on the wrong foot is high.

Phase	From	To	Length (Yr)	Return Difference (annualized)
Large	Dec-1925	Feb-1933	7.2	13.7%
Small	Feb-1933	Apr-1937	4.2	30.4%
Large	Apr-1937	Jul-1939	2.2	19.4%
Small	Jul-1939	Jun-1946	6.9	23.9%
Large	Jun-1946	May-1954	7.9	7.8%
Plateau	May-1954	Jul-1964	10.2	1.4%
Small	Jul-1964	Jun-1969	4.9	18.0%
Large	Jun-1969	Jul-1973	4.1	14.0%
Small	Jul-1973	Feb-1984	10.6	15.3%
Large	Feb-1984	Jan-1991	6.9	10.7%
Small	Jan-1991	Sep-1995	4.7	7.7%
Large	Sep-1995	Apr-1999	3.6	15.6%
Small	Apr-1999	Mar-2011	11.9	8.4%
Plateau	Mar-2011	Jun-2018	7.2	1.8%
Average Large			5.3	14%
Average Small			7.2	17%

Data: 1926-1988 - Ibbotson large- and small-cap series;
1989-2018Q2 - the S&P 500 Index and the S&P 600 Index.

Chart 2 - Small-caps Appear to Benefit from Protectionism



No single variable is responsible for triggering the size rotations, as economic factors are all intertwined. In the past, small phases were coincident with rising 10-year Treasury rates, but the relationship broke off as rates became ultra-low (see Appendix II). Most recently, the protectionist rhetoric appears to have boosted small-caps relative to their mid- and large-peers (chart 2).

Appendix.

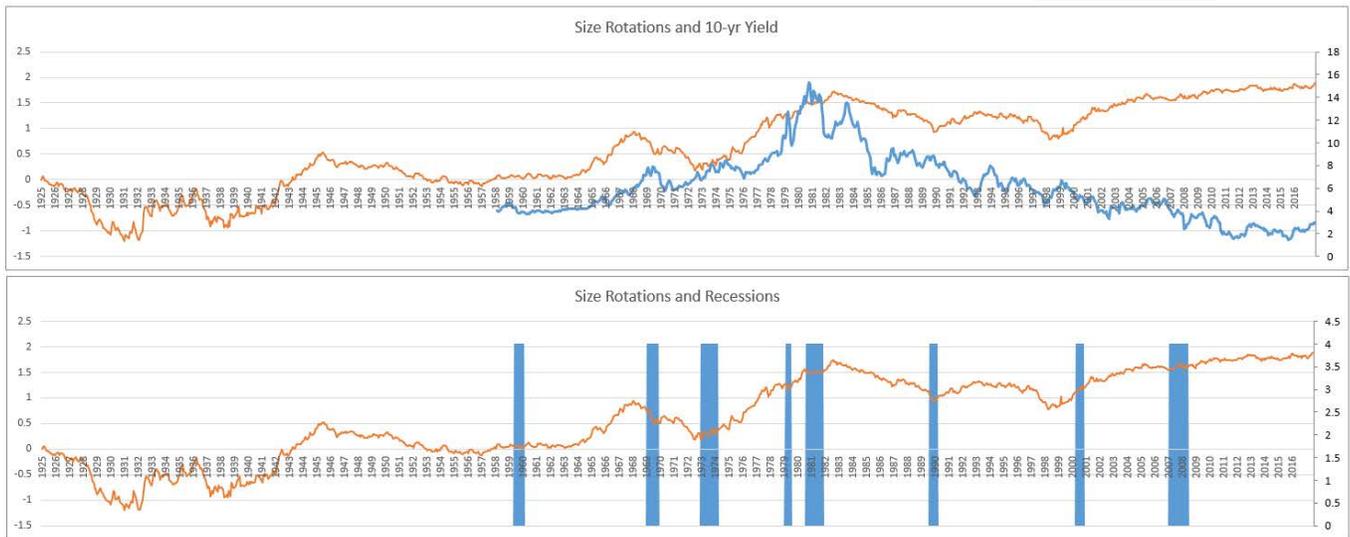
I. Technical Details.

Data: 1926-1988 - Ibbotson large- and small-cap series;
1989-2018Q2 - the S&P 500 Index and the S&P 600 Index.

Chart: The difference between two portfolios that both started on 12/31/1925 with an initial investment of \$100,000, in logarithmic scale (see below). Note that neither the value of the initial investment nor the start date affects the result.

Logarithmic scale allows for the direct comparison of a series' behavior at different points in time. On a logarithmic scale, the same vertical distance, no matter where it is measured on the graph, represents the same percentage change in the series.

II. Size Rotations vs. Rates and Recessions.



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