Factors

Small Cap Advantage

December 13, 2015

The investing literature generally contends that small cap stocks outperform over time, and that this is due in part to their risk premium for being more volatile. Secondly, there is literature[1] documenting that factors such as market cap, value/growth, momentum, quality and liquidity oscillate and revert to the mean over time. I am curious as to the extent of possible advantage to investing according to these factors, and how one might do so.

I began this inquiry by looking at market cap. In looking for indexes that would represent large cap and small cap stocks as well as provide an extended time period that might reveal longer-term cycles, I decided upon the S&P 500 index (^GSPC) and the Russell 2000 (^Rut). Weekly prices since 7/3/1991 were downloaded from Yahoo Finance. The weekly percent change in their respective adjusted closing prices was calculated and a rolling twenty-five week simple moving average (SMA) was then calculated for each. On this weekly result, the small cap ^RUT was subtracted from the large cap ^GSPC. The result is charted on the following page.

At first glance there appears to be fairly regular oscillations. I found about twenty-one peaks or troughs with an average interval of about fifty-eight weeks for each cycle. The average weekly percent change of the SMA was .200% for the ^GSPC and .224% for the ^RUT, which is an 11% advantage.

A problem is apparent in trying to implement the apparent cyclicality. The cycle intervals are similar but not consistent enough to implement without a signal. And the signal for a cycle slightly over a year is based on an average extending back half a year. So the cycle could be half over before getting a signal.

In order to explore a more current signal, I then experimented with various exponential moving average (EMA) durations. Five periods is too busy to act upon. The second chart on the next page uses an EMA of ten weeks. The average weekly percent change of the EMA was .337% for the ^GSPC and .348% for the ^RUT, which is a 3% advantage.

In terms of the number of winning weeks, the ^RUT small cap beat 54% of the weeks for the SMA and the ^GSPC was ahead 52% of the weeks for the EMA.

So there is a slight edge in average results for the small cap index, but one is hard pressed to take advantage of it except for a long-term buy-and-hold.

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[1] Jason Hsu, Ph.D., "If Factor Returns Are Predictable, Why Is There an Investor Return Gap?", Fundamentals, Research Affiliates, November 2015.

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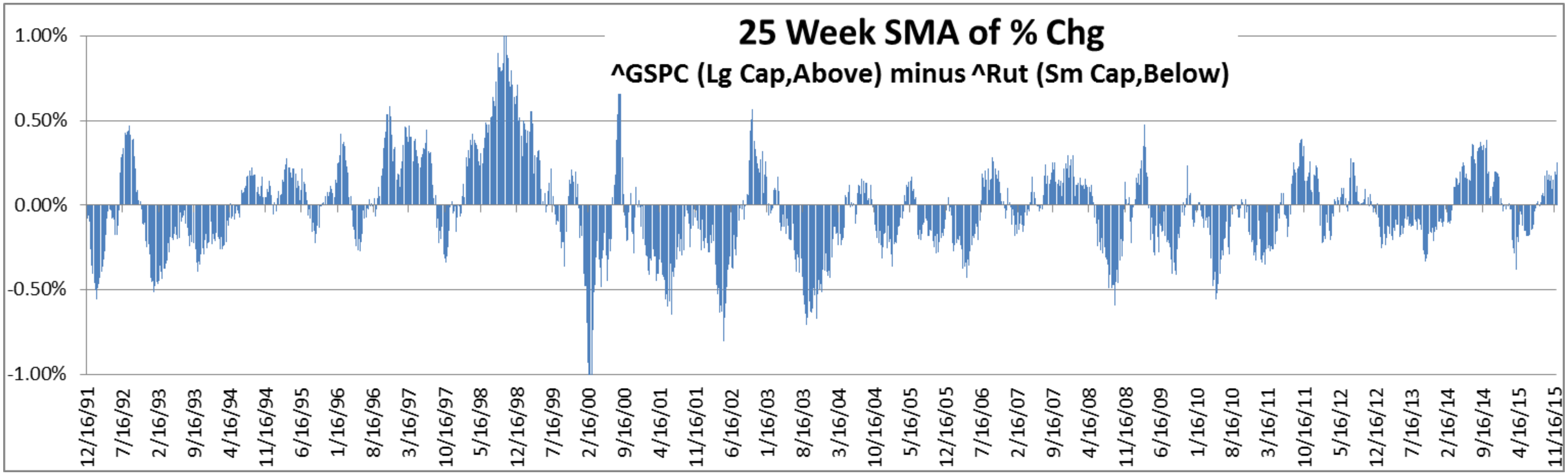
25 Week SMA of % Chg
^GSPC (Lg Cap,Above) minus ^Rut (Sm Cap,Below)
1.00%
0.50%
0.00%
-0.50%
-1.00%
12/16/91
7/16/92
2/16/93
9/16/93
4/16/94
11/16/94
6/16/95
1/16/96
8/16/96
3/16/97
10/16/97
5/16/98
12/16/98
7/16/99
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4/16/01
11/16/01
6/16/02
1/16/03
8/16/03
3/16/04
10/16/04
5/16/05
12/16/05
7/16/06
2/16/07
9/16/07
4/16/08
11/16/08
6/16/09
1/16/10
8/16/10
3/16/11
10/16/11
5/16/12
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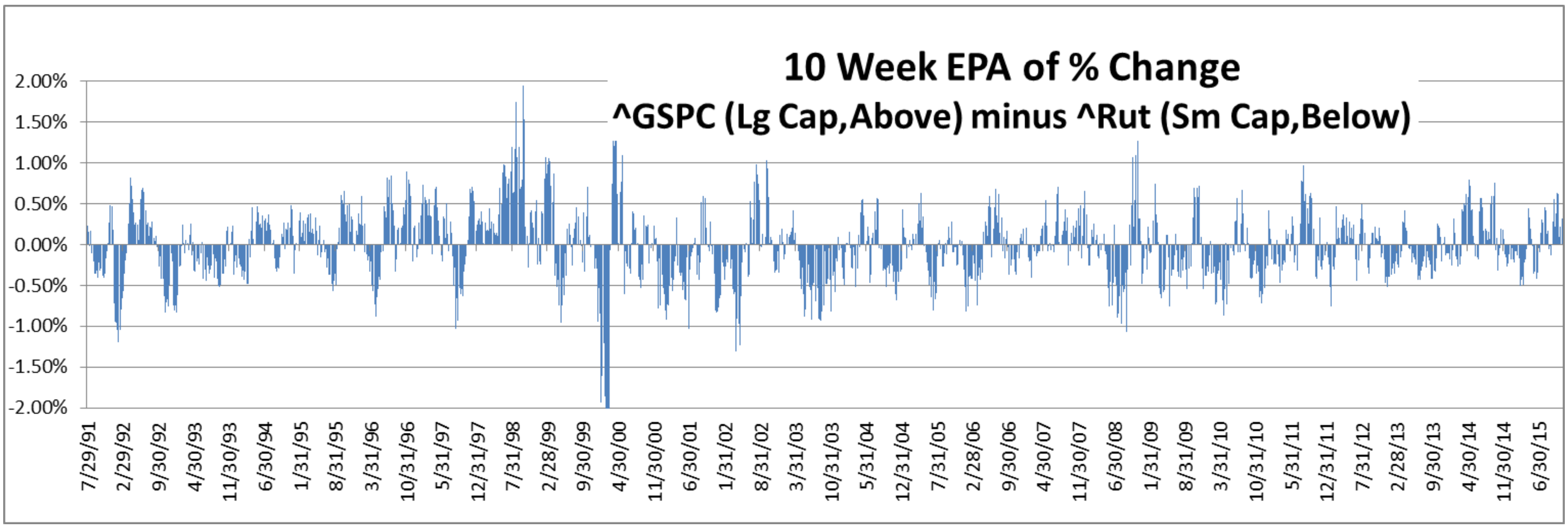
7/16/13
2/16/14
9/16/14
4/16/15
11/16/15


10 Week EPA of % Change
^GSPC (Lg Cap,Above) minus ^Rut (Sm Cap,Below)
2.00%
1.50%
1.00%
0.50%
0.00%
-0.50%
-1.00%
-1.50%
-2.00%
7/29/91
2/29/92
9/30/92
4/30/93
11/30/93
6/30/94
1/31/95
8/31/95
3/31/96
10/31/96
5/31/97
12/31/97
7/31/98
2/28/99
9/30/99
4/30/00
11/30/00
6/30/01
1/31/02
8/31/02
3/31/03
10/31/03
5/31/04
12/31/04
7/31/05
2/28/06
9/30/06
4/30/07
11/30/07
6/30/08
1/31/09
8/31/09
3/31/10
10/31/10
5/31/11
12/31/11
7/31/12
2/28/13
9/30/13
4/30/14
11/30/14
6/30/15