

The Sweet Spot of the US Equity Market II: The Yield Curve and Stock Returns

Executive Summary

This short piece builds on research we published in 2013 (“The Sweet Spot of the US Equity Market: SMID”, first quarter, 2013). In that document, we described the performance of various market cap tranches of the Russell 3000, identifying an edge favoring medium-sized stocks over a range of market cycles. Herein, we update and expand on that analysis to explore the impact of rising/falling interest rates on the performance of the various capitalization tranches.

Background

The US equity market exhibits observable biases over shorter timeframes, alternately favoring one group of stocks over others. Our original insights piece on this topic identified a clear advantage inherent in medium-sized stocks over the test period (22yrs). The table below illustrates that truth with performance and statistics updated through year-end 2013.

Tranche (Mkt Cap Rank)	Maximum Minimum		#Stocks	% of R3000	Ann. Return
	Mkt Cap (\$millions)	Mkt Cap (\$millions)			
#1: 1-200	520,500	20,620	200	65%	9.4%
#2: 201-500	20,593	7,071	300	17%	10.8%
#3: 501-1000	7,069	2,492	500	10%	11.8%
#4: 1001-1500	2,490	1,129	500	4%	11.6%
#5: 1501-2000	1,128	545	500	2%	11.1%
#6: 2001-3000	543	15	1,000	1%	8.8%

Largest ↑
↓ Smallest

Source: PIA, FactSet, Frank Russell

We divided stocks into six tranches by market capitalization, approximating the divisions of the Russell indices:

- Tranche 1 (largest stocks 1-200) approximates the Russell Top 200, i.e. mega cap stocks;
- Tranches 2 (stocks 201-500) and 3 (stocks 501-1000) approximate the Russell Midcap;
- Tranches 4, 5 and 6 (stocks 1001-1500, 1501-2000 and 2001-3000 respectively) approximate the Russell 2000.
- Tranches 3-6 (stocks 501-3000) approximate the Russell 2500, the traditional “smid” benchmark.

The study period covers a range of market cycles, beginning 12/31/1991 (22 years of data). The table above confirms that the strongest returns have come from the third and fourth tranches (ranked 501-1000 and 1001-1500 by market cap),

with annualized returns of 11.8% and 11.6%, respectively, while the cap-weighted Russell 3000 returned 9.4% per annum.

A year ago, we questioned whether this was a temporary or time period-specific market cap bias. We evaluated rolling period returns to measure the consistency of this anomaly. The table below summarizes the batting averages of each tranche versus average returns, updated through 2013.

Tranche (Mkt Cap Rank)	Equal-Weighted Returns as of 12/31/2013			Batting Averages			
	Ann. Return	Std Dev	Rtn/Risk Ratio	Avg. Month	Rolling 1 yr	Rolling 3 yr	Rolling 5 yr
#1: 1-200	9.4%	15.0%	0.63	53%	48%	43%	39%
#2: 201-500	10.8%	16.6%	0.65	54%	62%	60%	51%
#3: 501-1000	11.8%	17.7%	0.67	55%	74%	77%	93%
#4: 1001-1500	11.6%	19.4%	0.60	53%	72%	74%	82%
#5: 1501-2000	11.1%	20.9%	0.53	53%	57%	56%	50%
#6: 2001-3000	8.8%	25.6%	0.34	45%	23%	30%	22%

Source: PIA, FactSet, Frank Russell

The addition of 2013 data did not change the long term results and observations: Tranches 3 and 4 outperform the average stock return in approximately three-quarters of the rolling three-year periods, and outperform 93% and 82% (respectively) of the rolling five-year periods. It is clear that medium-sized stocks (\$1-7 billion) have a persistent return advantage over their larger and smaller peers.

Hypothesis

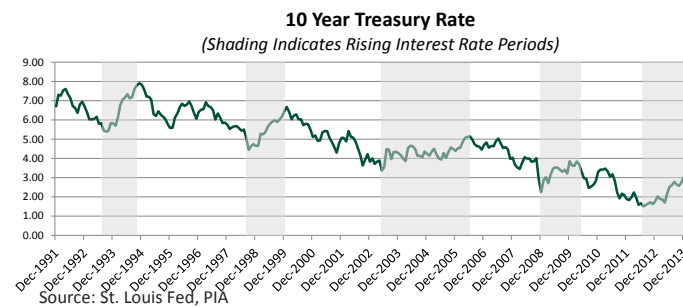
As a result of numerous discussions with clients and prospects as well as specific inquiries regarding the current macro environment. We were challenged to dig deeper into this data to study the impact of rising/falling interest rates on the performance of our identified market cap tranches. Do rising or falling rates favor/hinder market cap segments disproportionately?

Analysis

To answer this question, we analyzed the returns of the various tranches within rising/falling interest rate regimes as defined by changes in the US 10-Year Treasury yield. The graph below shows the 10-Year interest rates over our test period (1992-2013). While the entire period was marked by generally declining interest rates, there are clear periods of

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rising rates (shaded areas) over shorter periods that can be instructive in the current environment.



Findings

The table below summarizes returns in periods of rising rates (like the current environment). Returns for each period are color-coded with green denoting the highest return, yellow for median and red for the lowest (with gradations between).

Rising Rate Periods		10yr rate		Market Cap Tranche					
Start	End	Start	End	1	2	3	4	5	6
Sep-1993	Nov-1994	5.4	7.9	0.2%	-1.3%	-0.9%	-0.8%	-1.8%	-1.1%
Sep-1998	Jan-2000	4.4	6.7	35.1%	34.7%	31.7%	33.8%	31.0%	36.5%
May-2003	Jun-2006	3.4	5.2	48.5%	69.1%	72.9%	75.4%	78.0%	70.4%
Dec-2008	Dec-2009	2.3	3.9	32.0%	37.5%	44.2%	44.0%	39.4%	70.2%
Jul-2012	Dec-2013	1.5	3.0	44.3%	44.8%	52.4%	54.0%	56.9%	55.5%
Avg Monthly Return - Rising Rates				1.2%	1.4%	1.6%	1.8%	1.9%	2.5%
Avg 3-Mo. Return - Rising Rates				3.9%	4.7%	5.3%	5.5%	5.7%	6.1%
Avg 12-Mo. Return - Rising Rates				18.0%	20.6%	22.3%	22.9%	22.9%	24.9%
Avg 12-Mo. Rtn - Rising Rates ex. 2009				16.3%	18.5%	19.8%	20.1%	20.4%	20.4%

Source: PIA, FactSet, Frank Russell

The smallest stocks (tranche 6) generate the best returns when interest rates are rising, while the largest (tranche 1) underperform. This seems intuitive given that rising rates typically occur in the initial, "risk on" phase of the economic cycle. The results are exactly the opposite in falling rate (late cycle) environments, as the table below illustrates.

Falling Rate Periods		10yr rate		Market Cap Tranche					
Start	End	Start	End	1	2	3	4	5	6
Dec-1991	Sep-1993	6.7	5.4	18.2%	28.8%	32.2%	39.9%	36.6%	39.1%
Nov-1994	Sep-1998	7.9	4.4	135.5%	91.2%	77.2%	59.7%	62.3%	37.3%
Jan-2000	May-2003	6.7	3.4	-27.3%	1.0%	7.2%	5.0%	11.5%	-20.8%
Jun-2006	Dec-2008	5.2	2.3	-26.5%	-36.1%	-29.7%	-30.9%	-38.8%	-41.7%
Dec-2009	Jul-2012	3.9	1.5	27.4%	34.5%	33.9%	32.7%	32.9%	19.1%
Avg Monthly Return - Falling Rates				0.5%	0.5%	0.6%	0.3%	0.2%	-0.5%
Avg 3-Mo. Return - Falling Rates				1.6%	1.5%	1.4%	1.2%	0.9%	-0.1%
Avg 12-Mo. Return - Falling Rates				6.7%	7.7%	8.0%	7.3%	6.6%	2.3%

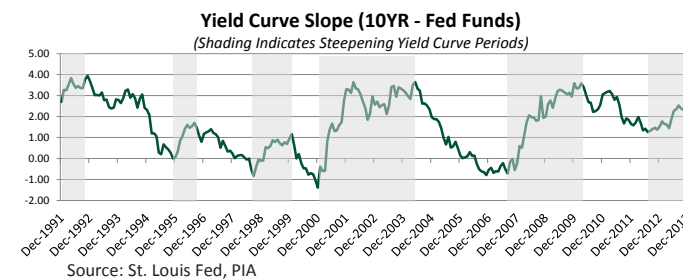
Source: PIA, FactSet, Frank Russell

We note that the "sweet spot" (tranches 3-4) perform well in both periods: When rates fall, medium-sized stocks lead and are competitive with small/micro caps when rates rise. If we exclude 2009 from our analysis, the return advantage of small/micro caps is negligible in rising interest rate periods.

Findings – Part Deux

We asked ourselves if interest rate changes were the right indicator for the shifting equity leadership. Economic cycles are typically characterized by the shape of the yield curve or, more specifically, whether the yield curve is steepening (early cycle, dovish Fed policy) or flattening (late cycle, Fed tighten-

ing, maturing economy). The next graph illustrates the slope of the yield curve over time as measured by the spread between 10-Year Treasuries and the Fed Funds Rate.



The table below summarizes returns for periods when the yield curve is steepening (shaded areas above).

Steepening Curve		10yr - FedFunds		Market Cap Tranche					
Start	End	Start	End	1	2	3	4	5	6
Nov-1995	Aug-1996	0.0	1.7	8.3%	6.8%	9.3%	10.8%	11.1%	8.3%
Sep-1998	Feb-2000	-0.8	0.7	35.6%	39.8%	38.0%	45.3%	41.7%	43.2%
Dec-2000	May-2004	-1.4	3.6	-13.9%	13.1%	22.7%	29.3%	50.1%	60.8%
Aug-2007	Apr-2010	-0.7	3.4	-11.5%	-15.2%	-0.2%	4.2%	-10.2%	8.8%
Jul-2012	Dec-2013	1.3	2.8	44.3%	44.8%	52.4%	54.0%	56.9%	55.5%
Avg Monthly Return - Rising Spreads				0.7%	1.0%	1.2%	1.3%	1.3%	1.6%
Avg 3-Mo. Return - Rising Spreads				3.0%	3.8%	4.4%	4.7%	4.9%	5.8%
Avg 12-Mo. Return - Rising Spreads				6.3%	7.9%	10.4%	10.7%	11.0%	13.0%
Avg 12-Mo. Rtn - Rising Spreads ex. 2009				4.2%	5.3%	7.5%	7.6%	8.1%	8.5%

Source: PIA, FactSet, Frank Russell

The return advantage of small/micro caps (tranche 6) is even larger in these early cycle periods, even when we exclude 2009 from the analysis. The table below illustrates the impact of a flattening yield curve on the various market cap segments. As we might expect, these late cycle periods favor medium-sized stocks while smaller stocks underperform.

Flattening Yield Curve		10yr - FedFunds		Market Cap Tranche					
Start	End	Start	End	1	2	3	4	5	6
Nov-1992	Nov-1995	3.9	0.0	51.1%	53.4%	54.8%	54.6%	43.6%	41.3%
Aug-1996	Sep-1998	1.7	-0.8	58.7%	32.4%	21.3%	12.4%	15.8%	1.2%
Jan-2000	Dec-2000	1.2	-1.4	2.3%	12.6%	15.0%	5.5%	0.6%	-31.5%
May-2004	Nov-2006	3.6	-0.8	34.0%	48.4%	42.7%	47.7%	44.1%	35.7%
Mar-2010	Jul-2012	3.6	1.3	21.3%	23.6%	22.7%	20.3%	21.6%	7.7%
Avg Monthly Return - Falling Spreads				0.9%	1.0%	1.0%	0.9%	0.8%	0.4%
Avg 3-Mo. Return - Falling Spreads				2.3%	2.3%	2.2%	2.0%	1.7%	0.4%
Avg 12-Mo. Return - Falling Spreads				13.1%	14.5%	14.1%	13.6%	12.6%	8.1%

Source: PIA, FactSet, Frank Russell

Summary

The shape and trend of the yield curve has historically been a strong indicator of where we are in the economic cycle. In early, expansionary phases, risk is rewarded, and small stocks generate hyper-returns. 2013 is a good example of this as the smallest 1000 stocks in the Russell 3000 averaged returns of over 46% while the Russell 3000 index rose 33.5%. Given that most investors expect rates to continue to rise, should we expect more of the same? The danger to that hypothesis is that the current spread between long and short term interest rates is near historic highs (see graph above). The yield curve should begin to flatten as the Fed tapers or stops quantitative easing altogether, allowing short term rates to rise. As the curve flattens, small/micro caps lag significantly. In either scenario, the sweet spot (medium-sized stocks) stays sweet.