

US Market Report

The Impact of Recent Fed Announcements on the US Equity Market

Analyzing Market Response Using the Barra US Equity Model

Jyh-Huei Lee, Jose Menchero, Frank Vallario

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Introduction

On May 1, 2013, the Federal Reserve announced it would continue its purchases of Treasuries and mortgage-backed securities “until the outlook for the labor market has improved substantially.”¹ Many observers saw this as a signal that the Fed would reduce its support for the long-term government bond market. In response, the yield on 10-year Treasuries began to rise sharply.

On June 19, 2013, Federal Reserve Chairman Ben Bernanke was more explicit, announcing the Fed’s intention to gradually scale down its Quantitative Easing. Bernanke stated: “If the subsequent data remain broadly aligned with our current expectations for the economy, we would continue to reduce the pace of purchases in measured steps through the first half of next year, ending purchases around midyear.”²

Immediately following the Fed announcement on June 19, long-term interest rates rose sharply and the US equity market suffered steep declines. More specifically, over the three-day period June 19-21, the yield on the 10-year Treasury increased by more than 30 basis points, while the MSCI USA Investable Market Index dropped by roughly 3.7 percent.

On July 10, at a conference sponsored by the National Bureau of Economic Research, Bernanke seemed to reverse course, stating that “highly accommodative monetary policy for the foreseeable future is what’s needed.”³ The markets reacted strongly to Bernanke’s comments with the US equity market rising by 1.37 percent on July 11 and the 10-year Treasury yield falling by 10 basis points.

In this Market Report, we analyze the market’s reaction to Chairman Bernanke’s recent announcements through the lens of the Barra US Equity Model (USE4). In particular, we find that some industry and style factors experienced very large returns immediately following the Fed announcements. Moreover, we find that in many cases the large moves can be explained by intuitive economic arguments.

¹ <http://www.federalreserve.gov/newsevents/press/monetary/20130501a.htm>.

² <http://www.federalreserve.gov/mediacenter/files/FOMCpresconf20130619.pdf>.

³ <http://www.federalreserve.gov/newsevents/testimony/tarullo20130711a.htm> and <http://www.cnbc.com/id/100877586>.

Interest Rates and Market Returns

In Figure 1, we plot the yield on the 10-year Treasury bond from May 1 through July 12, 2013. At the start of the period, we see that interest rates stood at about 1.65 percent. Following the May 1 Fed announcement, we observe a sudden increase in yields, followed by a more gradual rise over the next seven weeks. On the eve of the June 19 Bernanke speech, the 10-year yield stood at 2.2 percent, an increase of 55 basis points during a remarkably short window of time.

Immediately following the June 19 Bernanke speech, interest rates rose sharply for several consecutive days. Rates peaked above 2.7 percent in early July. On the day following the July 11 Fed announcement which reaffirmed a continuation of quantitative easing, interest rates dropped roughly 10 basis points, ending at 2.6 percent.

In Figure 1, we also plot the cumulative performance of the USE4 Country factor during the analysis window. The Country factor essentially represents the cap-weighted US equity market. Over the first three weeks of May, the equity market rallied while interest rates steadily rose. Over the next several weeks, up until the eve of the June 19 announcement, the US equity market was choppy but essentially flat. Following the June 19 announcement, we see that the US equity market dropped sharply while interest rates spiked. The US equity market began to recover starting June 24, and continued to rally until the end of the analysis window on July 12. Notably, the Country factor return was strongly positive immediately following Bernanke's July 10 speech, as interest rates plunged.

Figure 1: 10-year treasury yield and cumulative return for the USE4 World factor.

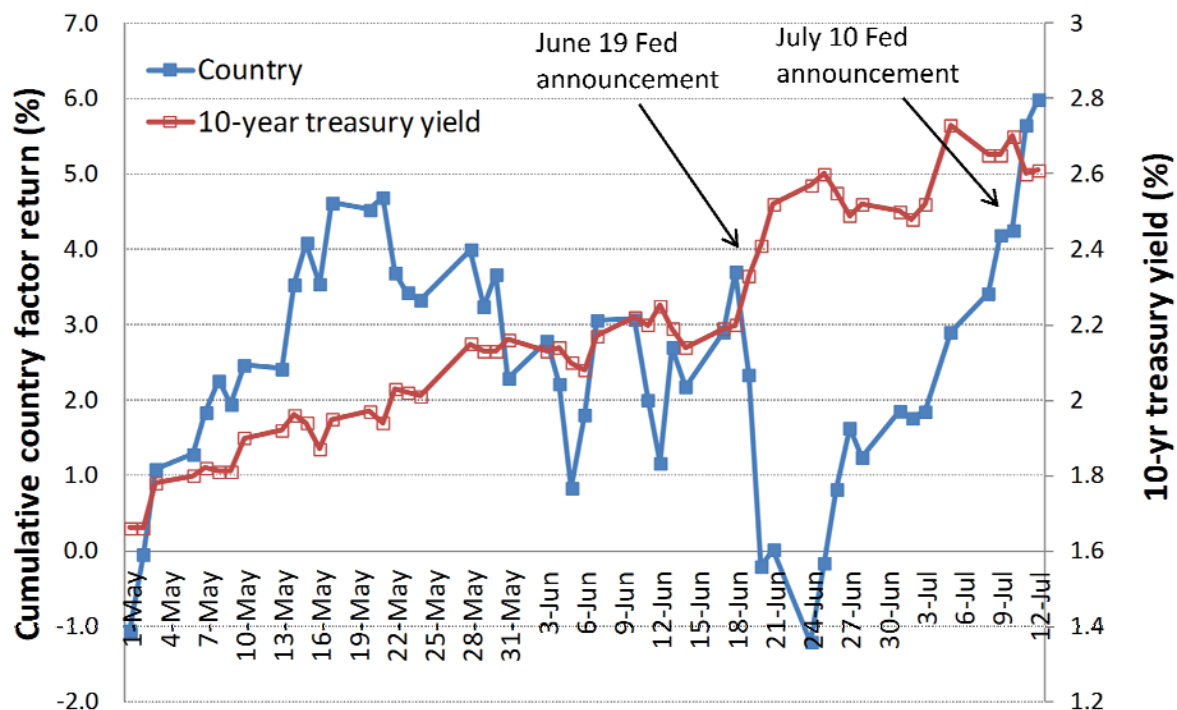


Figure 1 shows that the Country factor sometimes moves together with interest rates, and sometimes against them. This is not too surprising, since on any given day countless bits of news move the equity and bond markets. Nonetheless, it seems evident that on June 19 and June 20, the dominant news driving both the equity and the bond market was the Bernanke speech. On those dates, interest rates moved in strong opposition to the equity market. It also seems reasonable to conclude that on July 11, the day following the Bernanke announcement, the same factors were driving the equity and bond markets. On that day, we again see that interest rates and equity returns moved in strong opposition.

Industry Factor Returns

In this section, we examine the response of several USE4 industry factors to the Fed announcements. Industry factor returns represent the returns of dollar-neutral portfolios that capture the performance of the industry net of the market and styles.

Since the factors in our model have different levels of volatility, it is useful to adjust the returns to make them directly comparable across factors. We accomplish this by dividing the realized factor return by the predicted volatility, effectively stating the factor return as a risk-adjusted return, or z-score. In Table 1, we report the top five and bottom five daily industry factor returns on June 19-20, and July 11, sorted by the average standardized z-score.

Table 1: Daily industry factor returns, USE4 Model.

Industry	Return (%)			Z-score		
	19-Jun	20-Jun	11-Jul	19-Jun	20-Jun	11-Jul
Real Estate	-1.39	-1.42	1.46	-2.74	-2.46	2.19
Homebuilding	-2.07	-3.12	5.33	-1.50	-2.02	2.80
Beverages Tobacco	-0.76	-0.65	0.29	-1.88	-1.46	0.62
Household and Personal Products	-0.96	-0.74	-0.39	-1.95	-1.38	-0.72
Electric Utilities	-0.73	-0.90	0.50	-1.56	-1.74	0.84
:	:	:	:	:	:	:
Internet	0.48	0.14	0.07	1.80	0.48	0.25
Communications Equipment	0.43	0.95	0.48	0.78	1.55	0.78
Chemicals	0.88	0.42	-0.60	1.73	0.76	-1.00
Life Health & Multi-line Insurance	0.80	2.40	-1.09	1.41	3.54	-1.55
Banks	0.85	1.55	-2.00	2.40	3.60	-3.39
Country	-1.37	-2.55	1.40	-1.89	-2.98	1.59

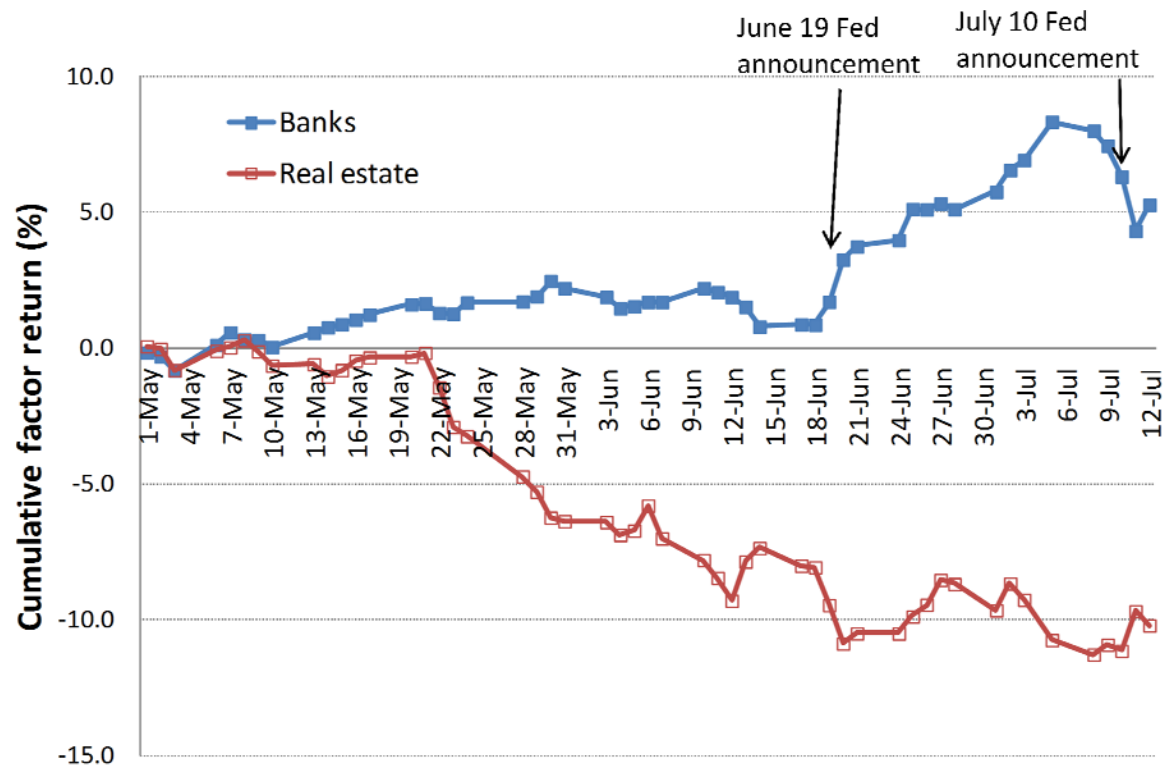
Note: Industries were sorted by average z-scores of June 19 and June 20. Z-scores were obtained using risk forecasts from the Barra USE4D model.

We see that the two worst-performing industry factors on June 19 and June 20 were Real Estate and Homebuilding. This is an intuitive result, given the sharp rise in long-term interest rates following the Fed announcement. That is, an increase in mortgage rates is usually detrimental to the housing market. We also see that these factors rebounded strongly on July 11 as interest rates plunged.

In Table 1, we see that the two top-performing industry factors on June 19 and June 20 were Banks and Insurance. For Banks, this sharp rise may reflect the increased future profitability due to higher long-term interest rates. For Insurance, many firms deliberately kept the duration of their fixed income assets lower than the corresponding duration of their liabilities. In this case, the insurance companies would benefit from a rise in interest rates. Also note that Banks and Insurance dropped sharply on July 11, in response to lower interest rates.

It is also interesting to investigate how these factors performed over the longer analysis window. In Figure 2, we plot the cumulative performance to Real Estate and Banks for the analysis period May 1 to July 12. During this period of rapidly rising interest rates, we see that Banks performed extremely well, rising by more than 5 percent. By contrast, Real estate plunged by more than 10 percent over the same window.

Figure 2: Cumulative returns for the USE4 Banks and Real Estate factors.



Style Factor Returns

The Barra US Equity Model (USE4) contains 12 style factors. The returns to the style factors represent the returns of dollar-neutral portfolios that have unit exposure to the style in question, and zero exposure to all other industry and style factors.

In Table 2, we report returns of the USE4 style factors on June 19-20, and July 11. We see that the Dividend Yield factor performed very poorly over June 19-20. This is reasonable, as higher interest rates

made long-term bonds relatively more attractive than high dividend stocks, thus causing a decline in factor performance. On July 11, by contrast, Dividend Yield strongly rebounded.

We also see in Table 2 that the Beta factor performed poorly over June 19-20, but rebounded on July 11. In other words, the Beta factor tended to move with the equity market. This is reasonable, since the Beta factor portfolio has long positions in high-beta stocks and short positions in low-beta stocks.

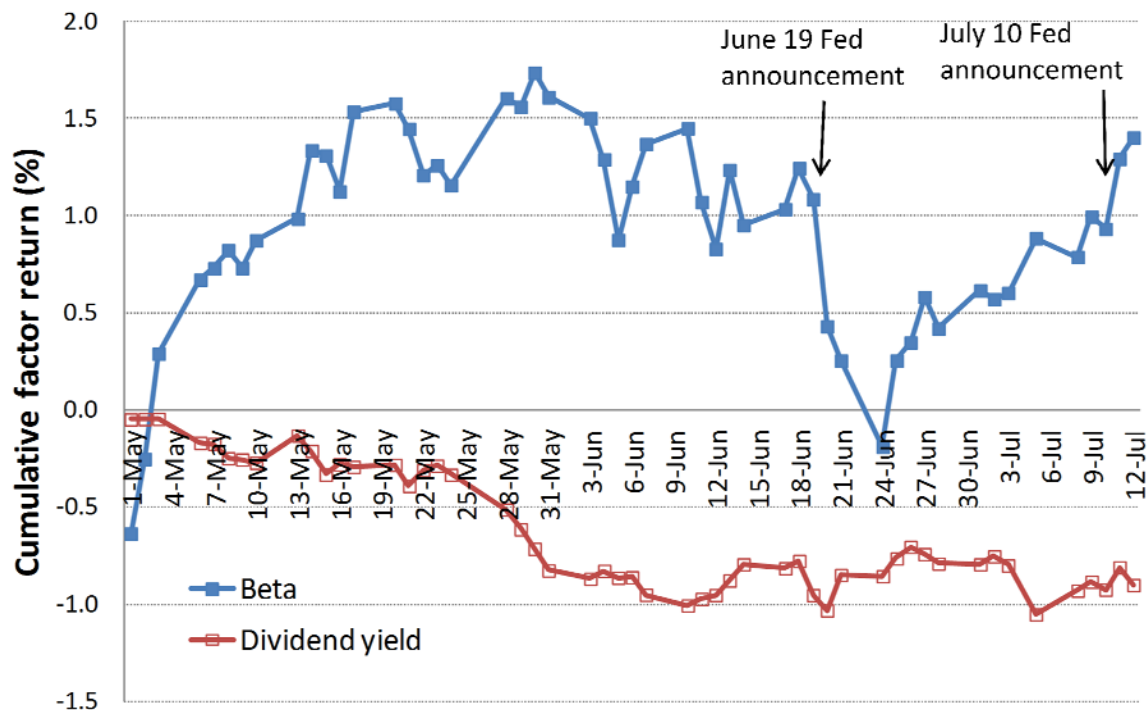
Table 2: Daily style factor returns, Barra USE4 Model.

Style	Return (%)			Z-score		
	19-Jun	20-Jun	11-Jul	19-Jun	20-Jun	11-Jul
Dividend Yield	-0.18	-0.08	0.11	-2.27	-0.93	1.18
Beta	-0.16	-0.65	0.36	-0.64	-2.30	1.23
Leverage	-0.06	-0.13	-0.09	-1.01	-1.80	-1.19
Residual Volatility	0.01	-0.38	0.34	0.06	-2.50	2.14
Size	-0.05	-0.23	0.23	-0.40	-1.68	1.52
Nonlinear Beta	0.02	-0.08	0.07	0.46	-1.49	1.33
Nonlinear Size	-0.05	-0.08	-0.01	-0.37	-0.56	-0.05
Momentum	-0.02	-0.13	-0.14	-0.15	-0.76	-0.85
Book-To-Price	-0.02	0.07	0.05	-0.34	0.90	0.64
Growth	0.01	0.04	0.04	0.23	0.72	0.66
Earnings Yield	0.04	0.14	0.10	0.42	1.31	0.84
Liquidity	0.13	0.10	-0.05	1.24	0.86	-0.42

Note: Style factors were sorted by average Z-scores of June 19 and June 20. Z-scores were obtained using risk forecasts from the Barra USE4D Model.

Figure 3 shows the cumulative factor returns of Dividend Yield and Beta during the analysis window of May 1 to July 12. Over this period of sharply rising interest rates, we see that the Dividend Yield factor steadily declined. By contrast, the Beta factor rose sharply over the same time period. Further note the similarity in return profile for the Beta factor in Figure 3 and the Country factor in Figure 1.

Figure 3: Cumulative returns for Dividend Yield and Beta factors, Barra USE4 Model.



Conclusion

In this Market Report, we used the Barra US Equity Model (USE4) to analyze the market's reaction to recent Fed announcements regarding monetary policy and quantitative easing. We investigated the window May 1 to July 12, 2013, a period of sharply rising long-term interest rates. We examined the daily factor returns from USE4 to gain insight into the market's reaction to the Fed announcements. Our analysis revealed that the Real Estate industry was negatively affected, whereas Banks benefited. Additionally, we saw that over the analysis window the Dividend Yield factor suffered as higher interest rates made long-term bonds relatively more attractive than high dividend yield stocks. The performance of the Beta factor over this period reflected the overall positive performance of the equity market.

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¹ As of September 30, 2012, as published by eVestment, Lipper and Bloomberg on January 31, 2013