

MSCI Risk Monitor: RiskMetrics Global

July 2013

Volatility and Correlation for Key Global Risk Drivers

About This Report

Under a standard RiskMetrics forecasting model, this monthly Risk Monitor reports on the evolution of risk forecasts for 12 key global risk factors.

The report examines changes in volatility and correlation behavior, and identifies days on which factor returns were surprising relative to the risk forecasts.

This Risk Monitor may be used to assess risk forecasts of the key factors specifically, or to provide context for the performance of risk forecasts on more general portfolios.

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- Short- versus long-term correlations page 3
- Summary of surprise days page 4
- Individual risk factor detail pages 5-10
- Risk factor descriptions page 11

Highlights

- There has been an upward trend in the number of return surprises over the past three months of 2013, with a total of 28 exceedances in June, compared with 20 in May and 15 in April (see page 4).
- Almost every risk factor saw a return surprise on June 19 after the comments by the US Federal Reserve announcing that Quantitative Easing may be reduced in 2013 and halted altogether in 2014 (see page 4). Equities and Crude Oil saw large negative returns after the announcement, and interest rates and volatility factors spiked. Eurodollar Vol and CDX NAIG were the only factors that did not show a return surprise, but even they saw large returns very close to a two standard deviation move (see pages 7 and 10).
- Increased volatility since the beginning of 2013 has been a broad theme. For example, in the February 2013 Risk Monitor, volatilities of several risk factors were at their lowest levels since the prior year. Looking at the June 2013 results, however, we see that except for Crude Oil, Euro, and the US Eurodollar Futures Rate, all other risk factors had higher average volatility forecasts than the prior year (see page 2).
- Correlation between rates and CDX spreads also showed increases, exceeding the long term value by more than one standard deviation (see page 3).

Forecast Volatility

Volatility Stats for EWMA (decay factor of 0.97)



1. Risk Forecast of Daily Absolute Changes in Rates (BPS) over Prior Month, Prior Three Months, and Prior Year (decay = 0.97)

	Prior Month				Prior Three Months				Prior Year			
	Return	Avg. Vol.	Min. Vol.	Max. Vol.	Return	Avg. Vol.	Min. Vol.	Max. Vol.	Return	Avg. Vol.	Min. Vol.	Max. Vol.
US Govt 2y	6.17	1.42	1.10	2.02	10.86	0.99	0.70	2.02	5.37	1.05	0.70	2.02
US Govt 10y	37.03	5.37	4.87	6.03	62.75	4.44	3.53	6.03	84.95	4.40	3.53	6.03
EUR Govt 2y	10.51	2.40	2.14	2.62	21.99	2.20	1.86	2.62	10.19	2.39	1.79	3.30
US 3m Eurodollar Fut 3m	2.35	0.59	0.49	0.78	-0.62	0.60	0.48	0.78	-15.99	0.80	0.48	1.40

Prior Month Date Range: June 01, 2013 – June 30, 2013.

Three-Month Date Range: April 01, 2013 – June 30, 2013.

One-Year Date Range: July 01, 2012 – June 30, 2013.

2. Risk Forecast of Daily Relative (Log) Changes over Prior Month, Prior Three Months, and Prior Year (decay = 0.97)

	Prior Month				Prior Three Months				Prior Year			
	Return	Avg. Vol.	Min. Vol.	Max. Vol.	Return	Avg. Vol.	Min. Vol.	Max. Vol.	Return	Avg. Vol.	Min. Vol.	Max. Vol.
CDX NAIG S18	10.25%	3.30%	2.72%	3.82%	-4.69%	2.75%	2.16%	3.82%	-39.92%	2.44%	1.92%	3.82%
CDX NAHY S18	12.58%	2.99%	2.37%	3.43%	-0.13%	2.42%	1.93%	3.43%	-37.32%	2.27%	1.74%	3.43%
USDEUR	-0.24%	0.51%	0.47%	0.55%	1.18%	0.49%	0.45%	0.55%	3.29%	0.53%	0.40%	0.68%
MSCI USA	-2.04%	0.82%	0.71%	0.91%	2.66%	0.75%	0.62%	0.91%	17.67%	0.77%	0.62%	1.05%
MSCI EM	-5.83%	0.88%	0.69%	1.17%	-8.81%	0.72%	0.56%	1.17%	-0.11%	0.78%	0.50%	1.22%
Eurodollar 3m Vol	20.40%	5.82%	5.11%	6.89%	2.00%	6.48%	5.11%	8.62%	38.17%	5.33%	3.75%	9.22%
VIX	3.56%	7.27%	6.92%	7.72%	24.15%	8.02%	6.92%	10.24%	0.36%	6.78%	4.86%	10.24%
WTI 1m	3.20%	1.22%	1.14%	1.29%	-0.65%	1.24%	0.98%	1.45%	15.04%	1.48%	0.97%	2.32%

Prior Month Date Range: June 01, 2013 – June 30, 2013.

Three-Month Date Range: April 01, 2013 – June 30, 2013.

One-Year Date Range: July 01, 2012 – June 30, 2013.

Correlation Changes

Long-term versus Short-term Correlation Structure



Top Right Matrix: Correlation of daily returns of the past three years.

Bottom Left Matrix: Correlation of daily returns of the past three months.

	US Govt 2y	US Govt 10y	EUR Govt 2y	US 3m Eurodollar Fut 3m	CDX NAIG S18	CDX NAHY S18	USDEUR	MSCI USA	MSCI EM	Eurodollar 3m Vol	VIX	WTI 1m
US Govt 2y		70%	13%	-4%	1%	1%	-3%	-1%	2%	-2%	-1%	-9%
US Govt 10y	82%		12%	-8%	-2%	-1%	0%	-1%	19%	1%	3%	-2%
EUR Govt 2y	27%	30%		-13%	-32%	-36%	41%	43%	24%	-10%	-35%	27%
US 3m Eurodollar Fut 3m	51%	34%	25%		32%	30%	-32%	-32%	-31%	23%	27%	-16%
CDX NAIG S18	20%	21%	17%	37%		88%	-38%	-78%	-48%	18%	69%	-42%
CDX NAHY S18	22%	21%	23%	36%	96%		-39%	-79%	-49%	20%	70%	-43%
USDEUR	-23%	-25%	9%	-23%	-10%	-12%		40%	48%	-17%	-32%	37%
MSCI USA	-26%	-20%	-7%	-26%	-84%	-83%	12%		52%	-15%	-81%	51%
MSCI EM	-55%	-43%	-29%	-39%	-43%	-46%	22%	52%		-16%	-40%	47%
Eurodollar 3m Vol	54%	48%	27%	73%	29%	31%	-25%	-17%	-33%		17%	-8%
VIX	17%	15%	4%	12%	66%	65%	-15%	-84%	-45%	6%		-38%
WTI 1m	-26%	-24%	-13%	-16%	-48%	-47%	15%	55%	38%	-25%	-47%	

Three-Month Date Range: April 01, 2013 – June 30, 2013.

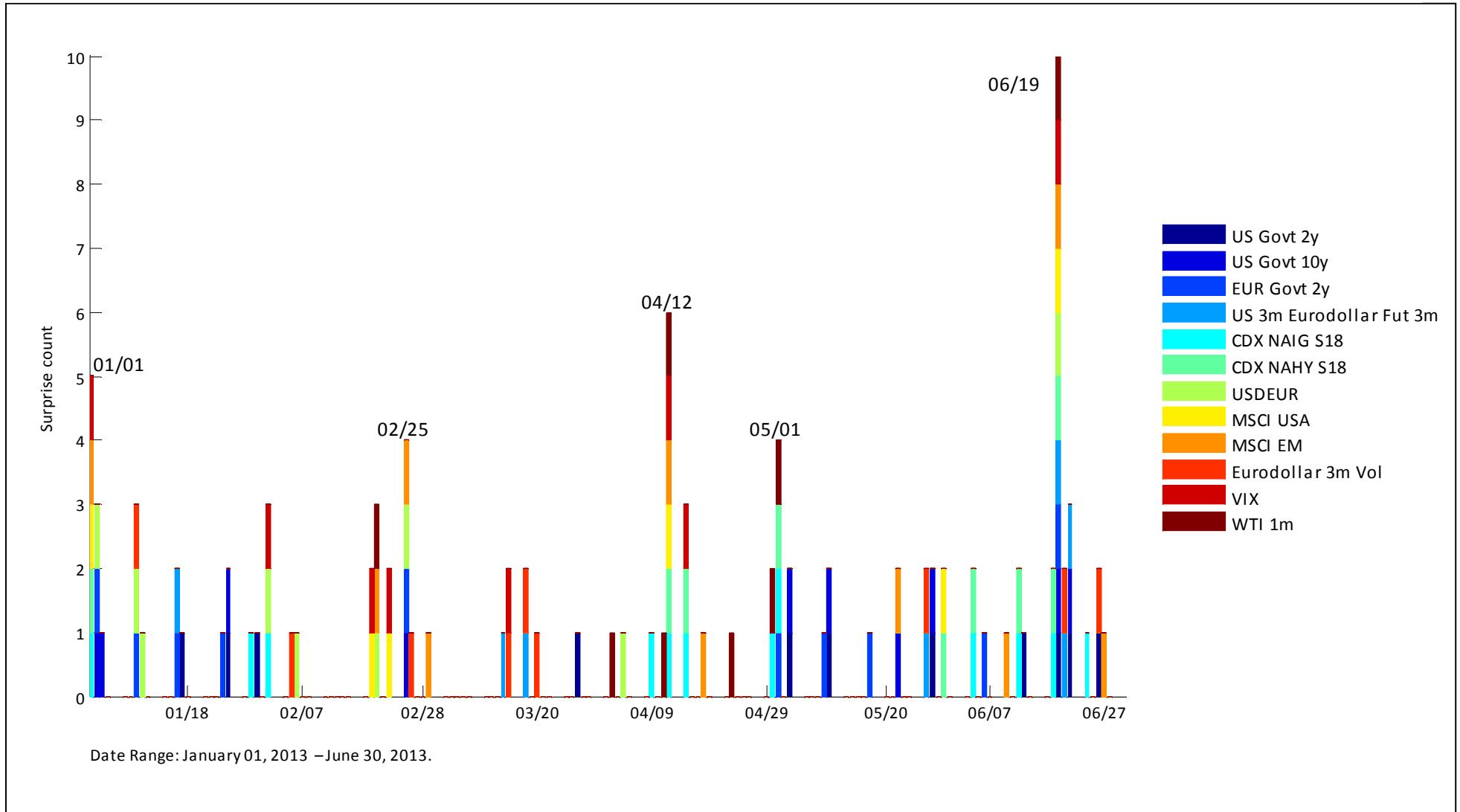
Three-Year Date Range: July 01, 2010 – June 30, 2013.

* Cells are highlighted according to the difference between the short-term (three-month) and long-term (three-year) correlation, normalized by the standard deviation of the short-term correlation. Green (red) highlighted cells indicate a recent correlation in excess of one standard deviation higher (lower) than the long-term value.

Risk Factor Surprise Days

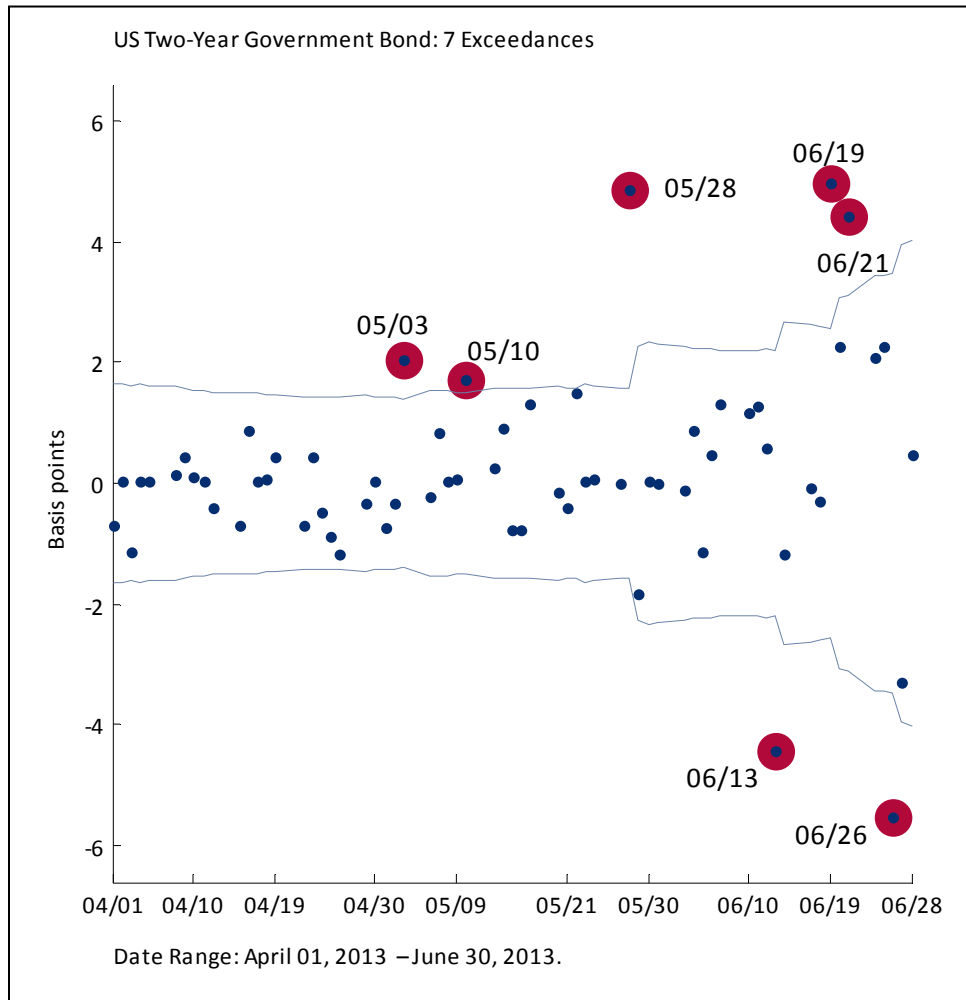


Daily Returns Exceeding Two Times Forecast Volatility

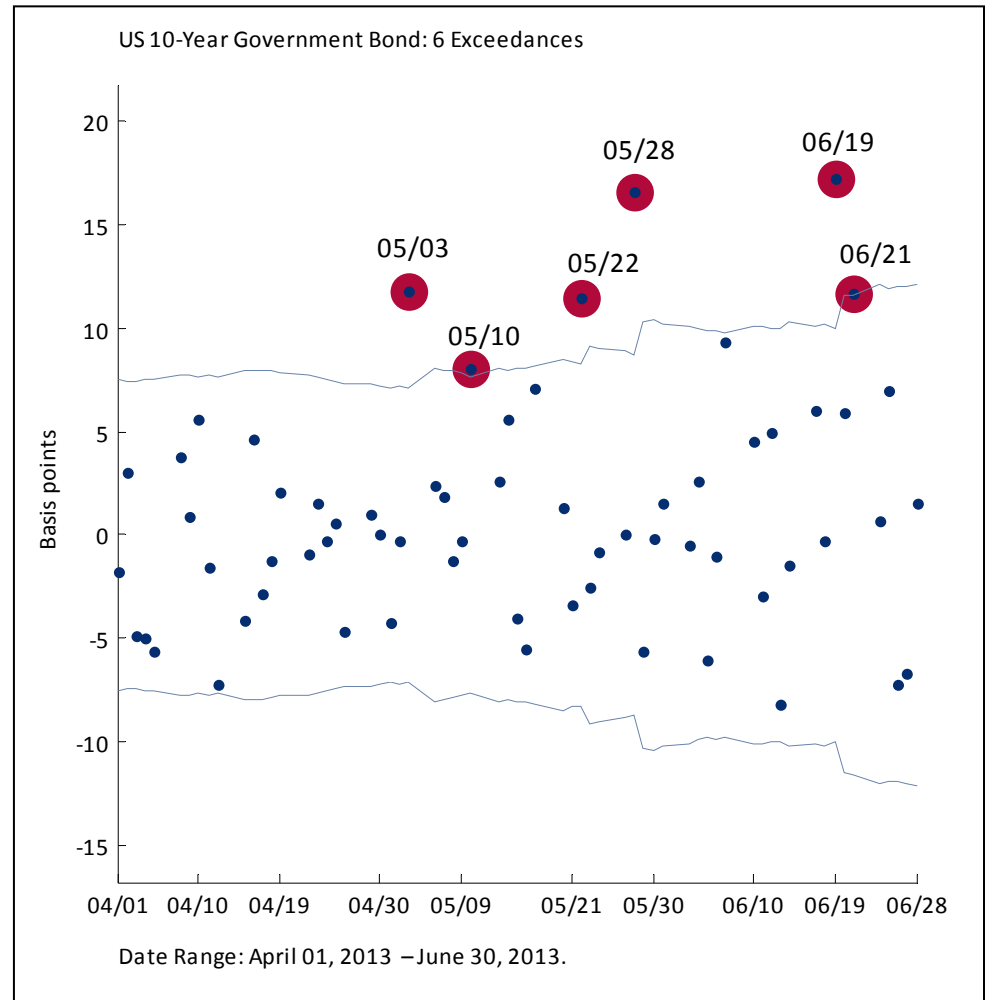


Daily Returns Exceeding Two Times Forecast Volatility

1. US Two-Year Government Bond

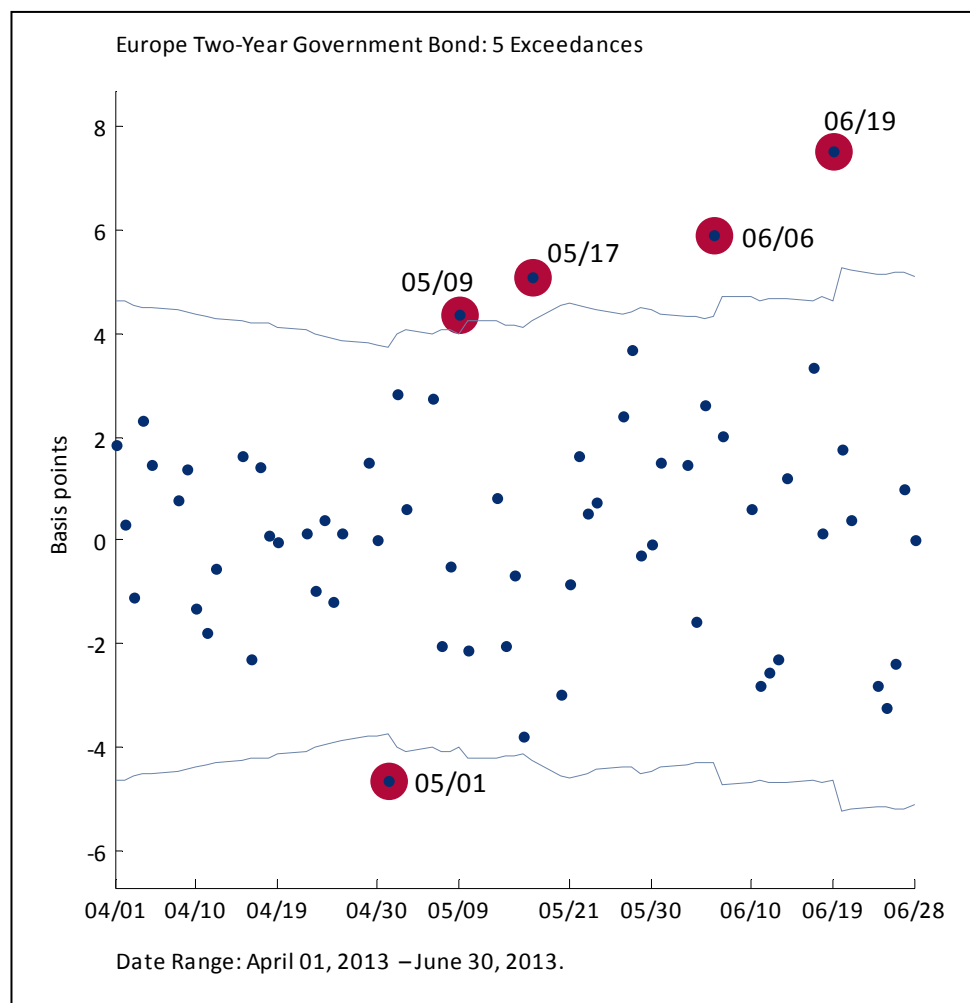


2. US 10-Year Government Bond

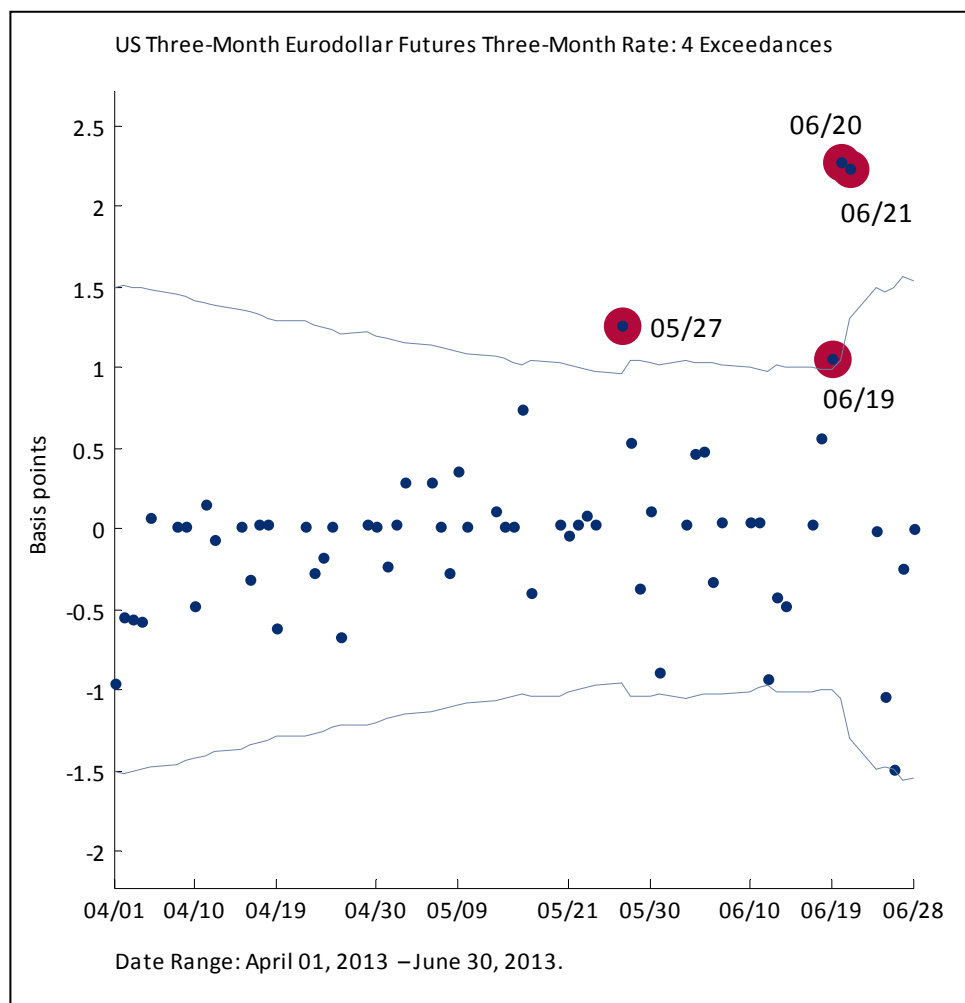


Daily Returns Exceeding Two Times Forecast Volatility

1. Europe Two-Year Government Bond

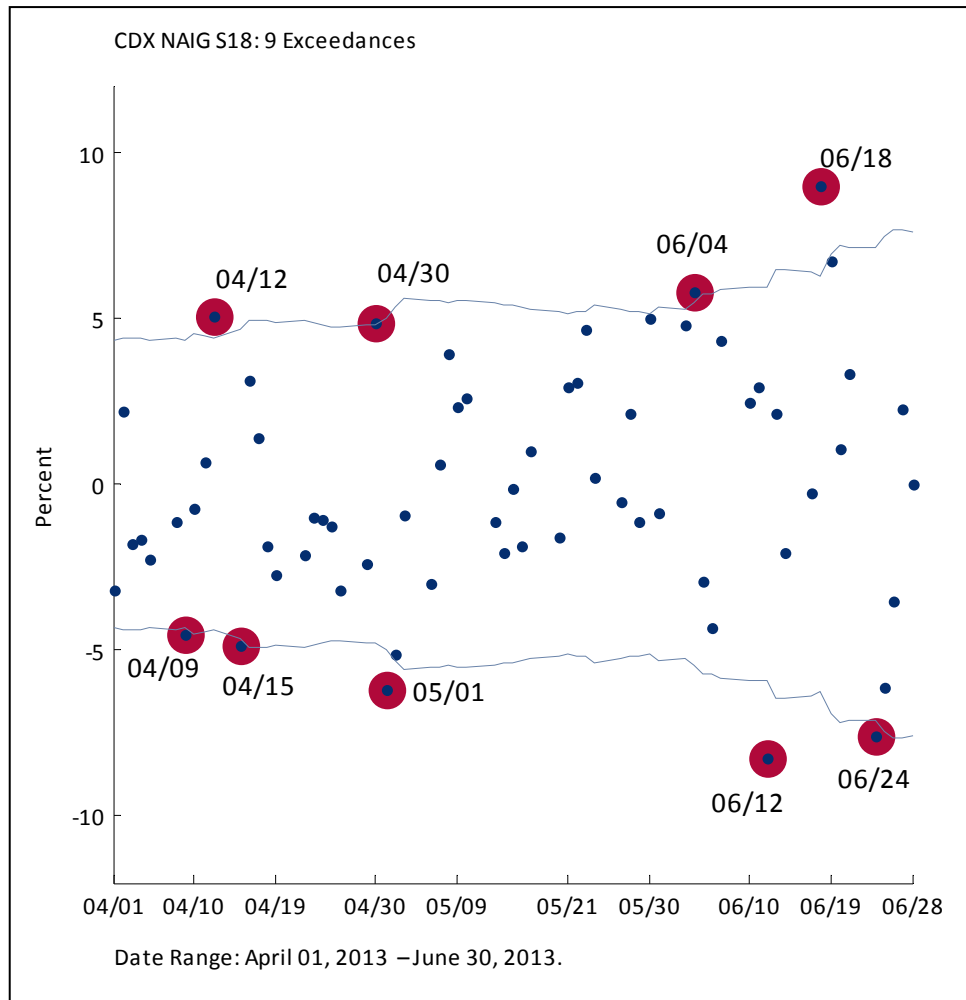


2. US Three-Month Eurodollar Futures Three-Month Rate

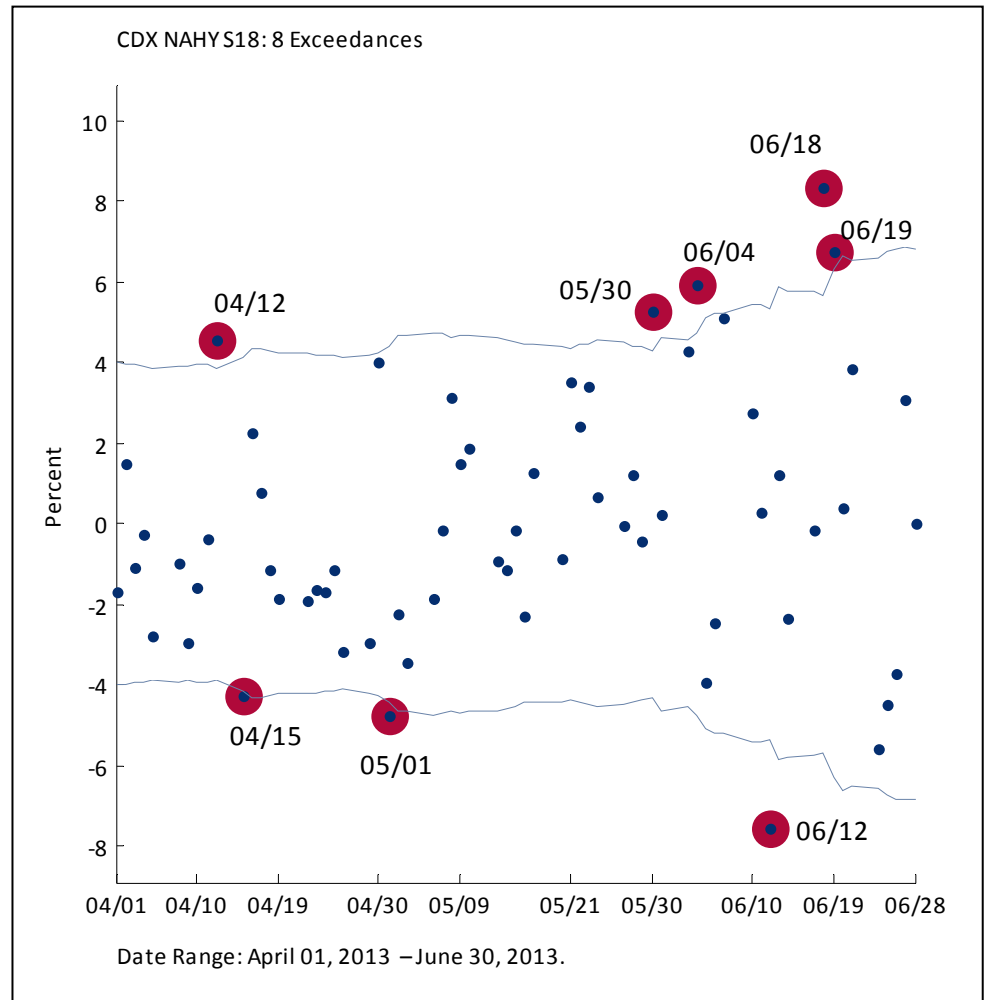


Daily Returns Exceeding Two Times Forecast Volatility

1. CDX NAIG S18

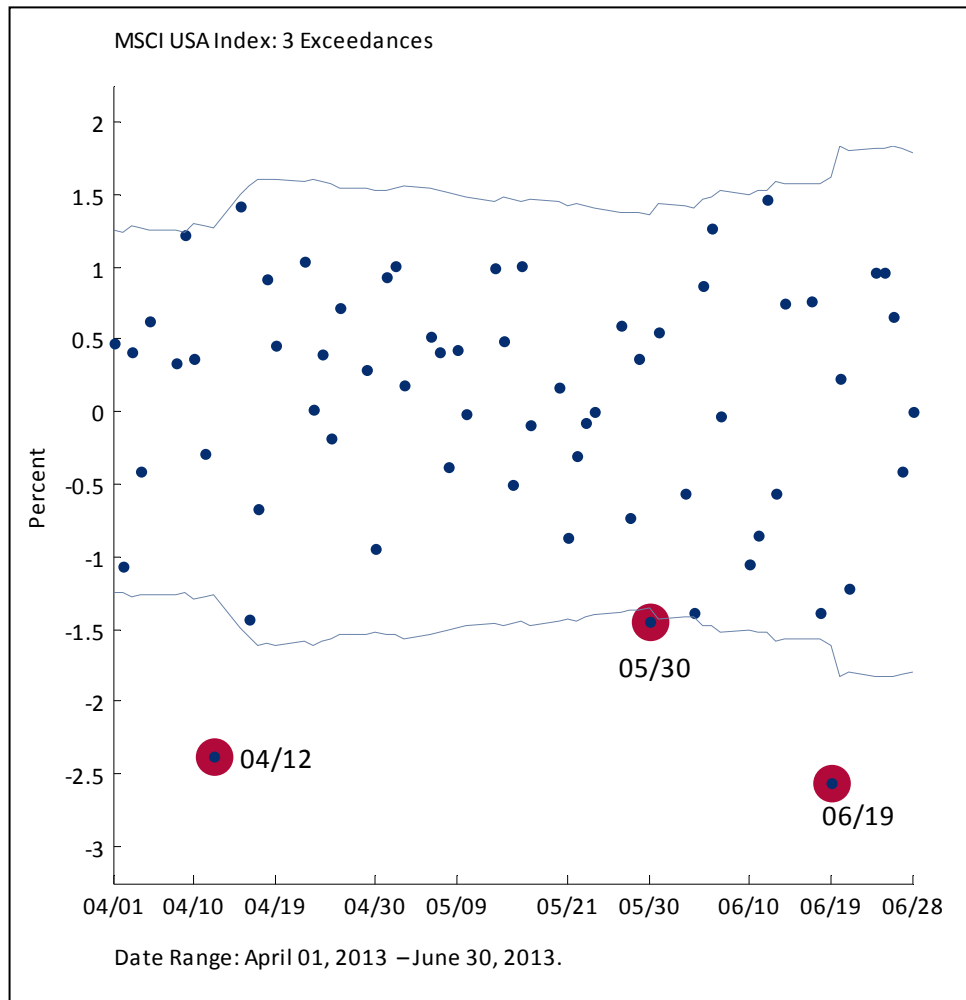


2. CDX NAHY S18

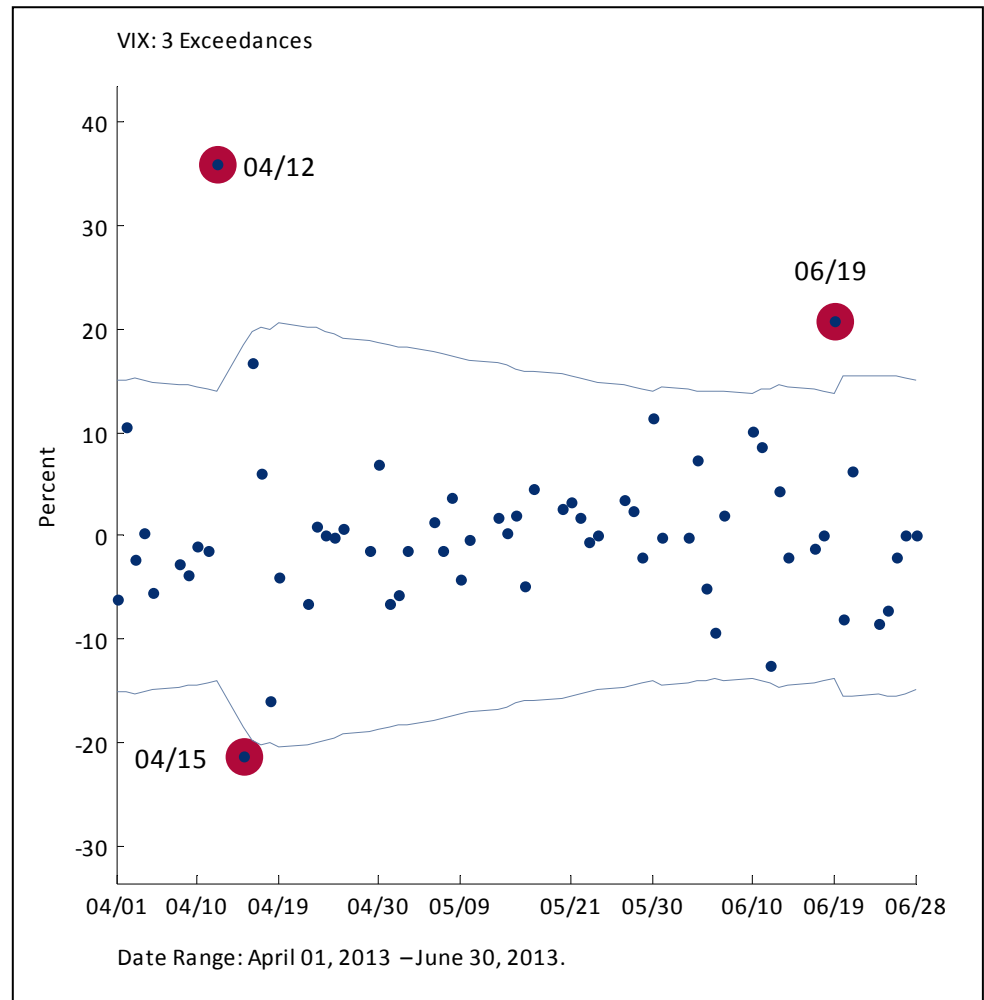


Daily Returns Exceeding Two Times Forecast Volatility

1. MSCI USA Index

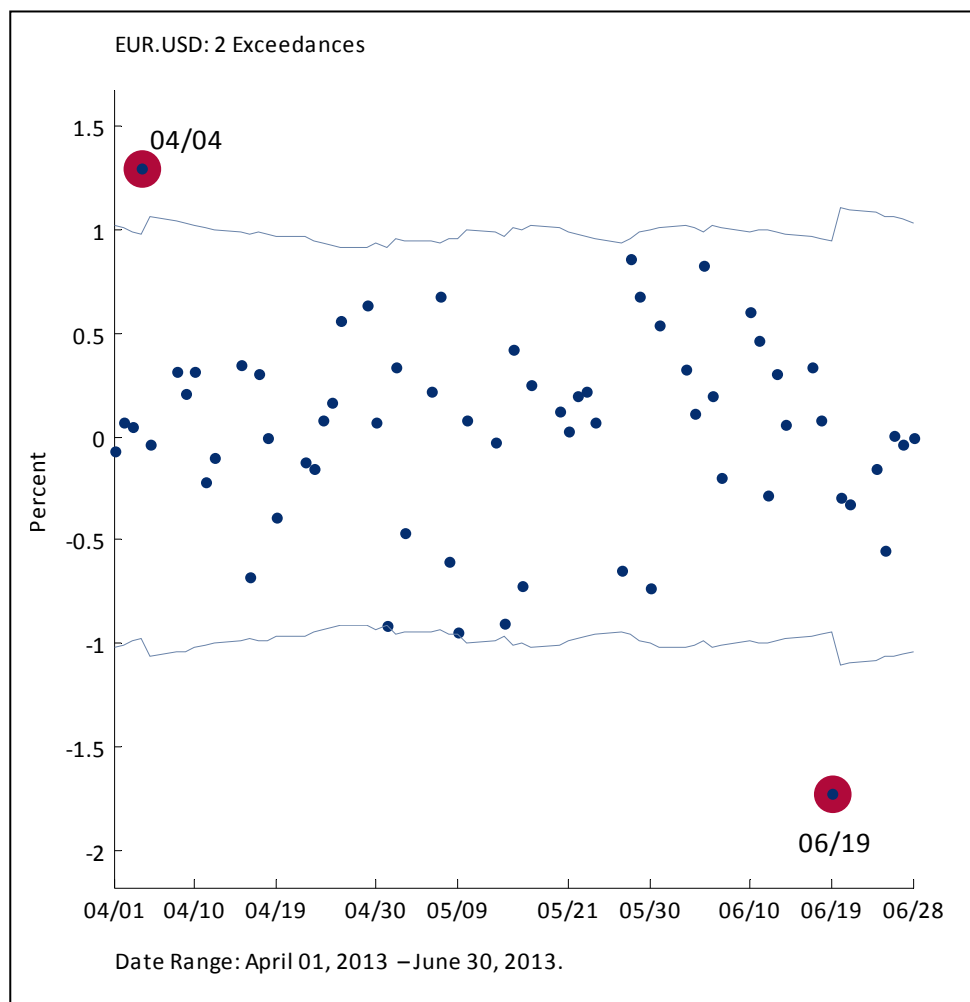


2. VIX

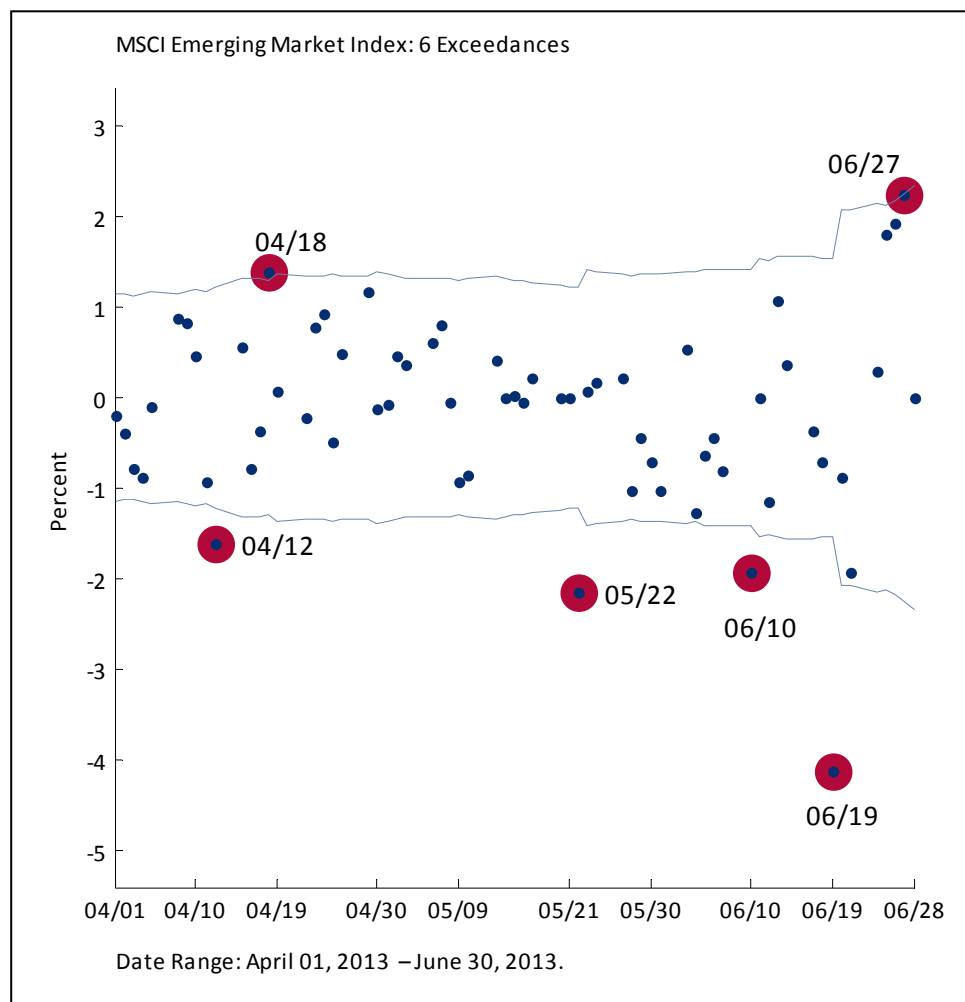


Daily Returns Exceeding Two Times Forecast Volatility

1. EUR.USD

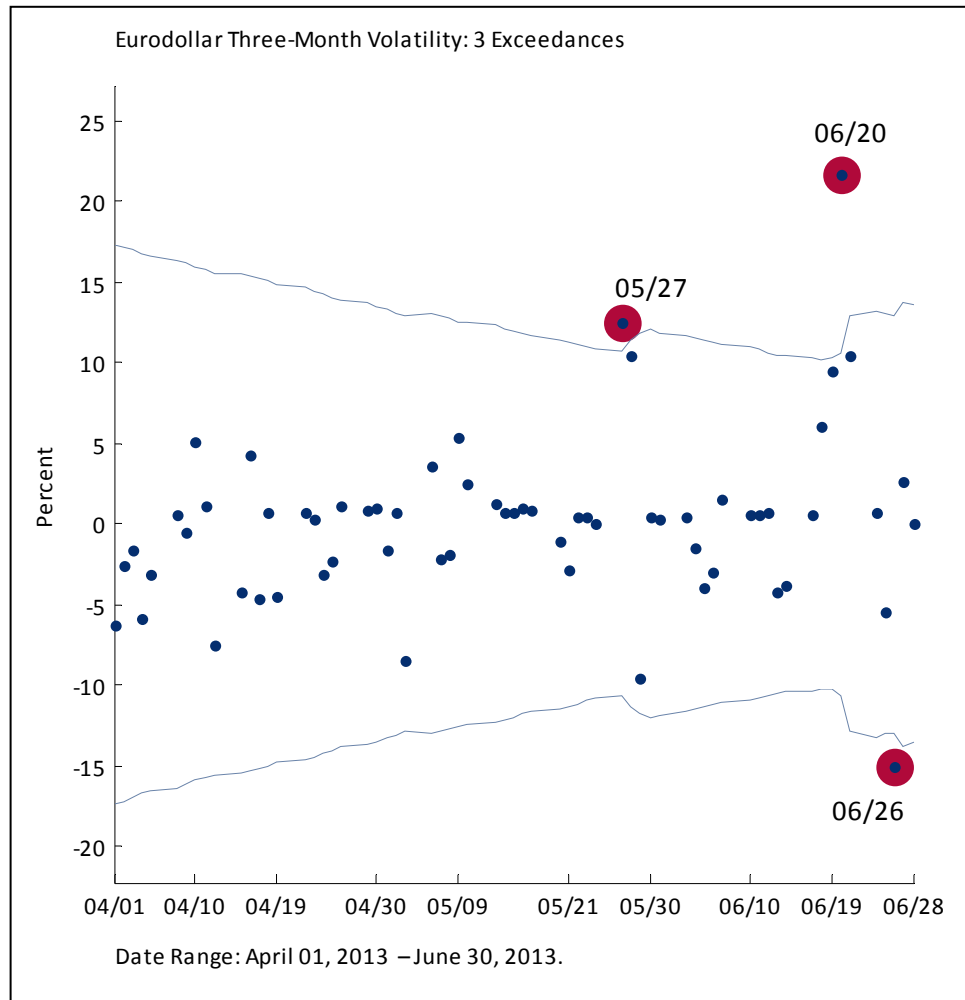


2. MSCI Emerging Market Index

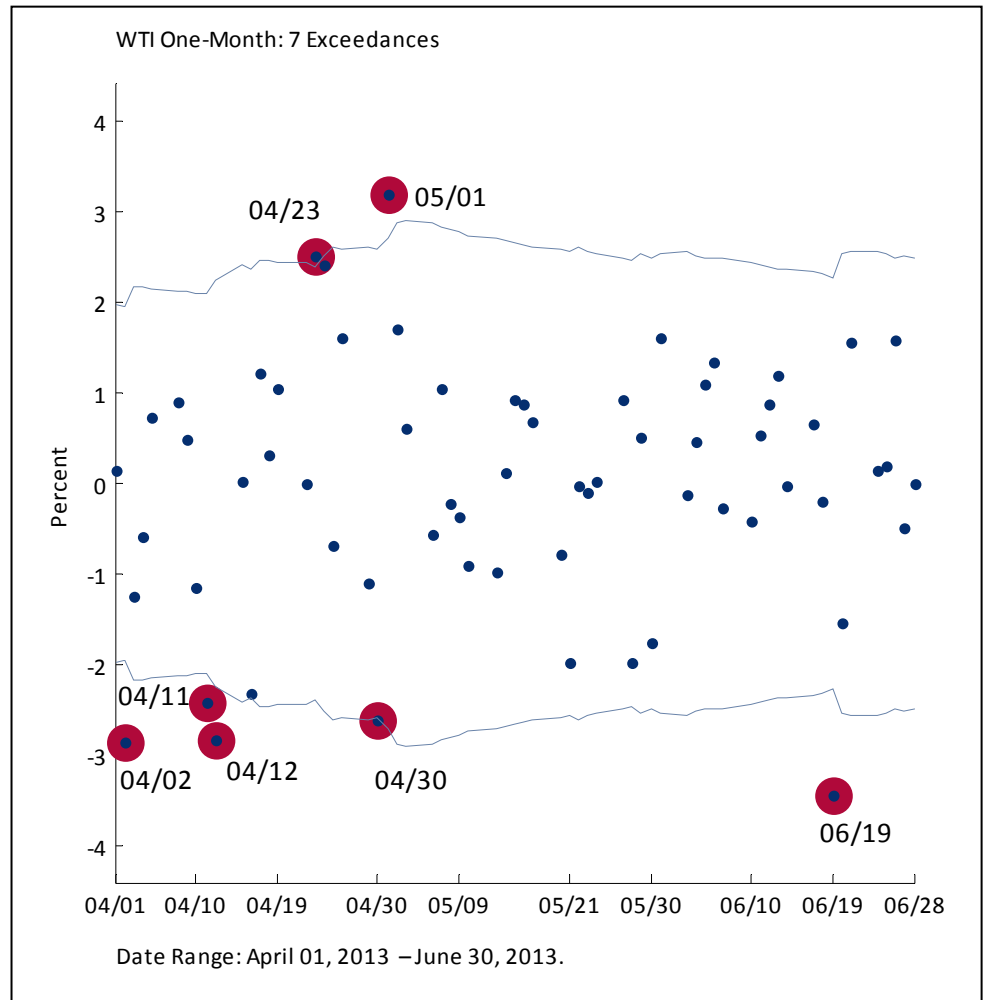


Daily Returns Exceeding Two Times Forecast Volatility

1. Eurodollar Three-Month Volatility



2. WTI One-Month



Appendix

Risk Factor Definitions



CDX NAIG S18: Five-year North American Investment Grade - Series 18 CDS Index Spread Level. For the current on-the-run series, this is equal to the top level spread, but for historical correlation and volatility calculations, we construct a theoretical top-level spread from the 125 index constituents, and add the historical observed index – constituent basis. This is done to extend a reasonable history before March 20, 2012, when Series 18 first started trading.

CDX NAHY S18: Five-year North American High Yield - Series 18 CDS Index Spread Level. For the current on-the-run series, this is equal to the top level spread, but for historical correlation and volatility calculations, we construct a theoretical top level spread from the 100 index constituents, and add the historical observed index – constituent basis. This is done to extend a reasonable history before May 15, 2012, when Series 18 first started trading.

EUR.USD: Euro/USD Foreign Exchange Rate.

Eurodollar Three-Month Volatility: Implied volatility time series of three months at-the-money options on Eurodollar interest rate futures.

Europe Two-year Government Bond: Euro Two-Year Zero Rate, constructed by MSCI from on-the-run German Treasury bonds.

MSCI Emerging Market Index: Time series of MSCI Emerging Market Equity Index using end-of-day closing prices.

MSCI USA Index: Time series of MSCI USA equity index using end-of-day closing prices.

US 10-year Government Bond: US Government 10-Year Zero Rate, constructed by MSCI from on-the-run US Treasury bonds.

US Three-Month Eurodollar Futures Three-Month Rate: Interest rate of a three-month interest rate futures calculated by MSCI based on CME Eurodollar futures quotes on three-month deposits.

US Two-year Government Bond: US Government Two-Year Zero Rate, constructed by MSCI from on-the-run US Treasury bonds.

VIX: Time series of the CBOE Market Volatility Index using end-of-day closing prices.

WTI One-Month Crude Oil: One-Month CME light sweet crude oil time series. One-Month tenor constructed as a Constant Maturity Future time series by interpolating the first two near-term CL futures contracts.

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

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