OFR MARKETS MONITOR

OFFICE OF FINANCIAL RESEARCH

June/July 2015
(data as of July 6)

A monthly review of financial market themes and developments

Uncertainty Increases in Greece, But Signs of Contagion Remain Limited

Developments in Greece, a sharp equity market correction in China, and Puerto Rico's announcement of a potential debt restructuring have driven risk sentiment in financial markets. The key market focus has been the negotiations between Greece and its official creditors to secure needed government financing. Uncertainty increased significantly in late June, when the Greek government broke off negotiations, called a referendum on the official creditors' proposal, established capital controls, and missed a payment to the International Monetary Fund (IMF). To date, there have been only moderate spillovers to other euro area periphery markets and safe-haven assets. Developments remain fluid; a more disorderly outcome in Greece than market participants expect may test the stability of broader euro area markets.

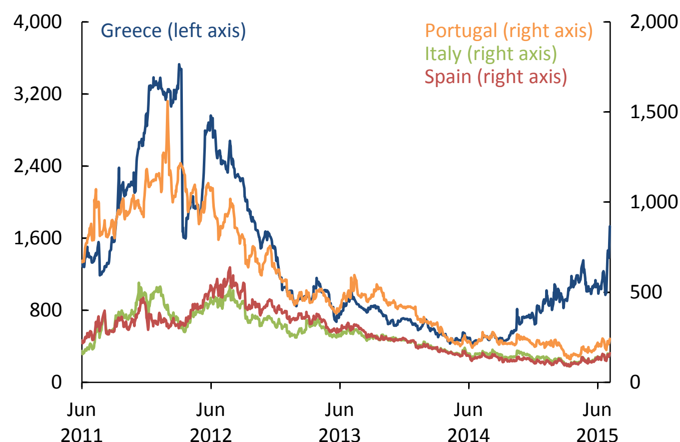
Developments since the May report

- Greece's negotiations with official creditors broke down; events remain fluid and the outcome uncertain.
- Puerto Rico's government signaled a potential restructuring of its debt, triggering a sharp sell-off of its bonds and underperformance of exposed bond insurers. Spillover to the broader municipal debt market was limited.
- Chinese equities posted a large sell-off, partially reversing their outsized rally and weighing on regional markets and commodities.
- Long-term advanced economy bond yields rose further in early June, before partially retracing amid uncertainty in Greece and Chinese equity declines.
- The latest meeting of the Federal Open Market Committee (FOMC) was perceived by market participants as dovish; analysts continue to expect the first interest rate hike to occur in September or December.

Greece broke off negotiations with creditors and introduced capital controls.

Market uncertainty over Greece increased significantly beginning in late June. The Greek government abruptly broke off negotiations with its official creditors to secure needed financing. The government announced a referendum, where Greek voters subsequently rejected the creditors' latest proposal. The existing Greek financial support program expired on June 30, and the government failed to make a €1.5 billion payment due to the IMF. The European Central Bank (ECB) capped the amount of emergency liquidity assistance (ELA) it provides to Greek banks, increased the haircut on collateral posted by those banks, and stressed that it stands ready to use all instruments to support its mandate. Amid reports of accelerating deposit withdrawals, Greece closed its banks and imposed capital controls in an effort to stem a depletion of

Figure 1. Recent spillovers from Greece have been limited
10-year government bond spreads over German Bunds (basis points)



Source: Bloomberg L.P.

This monitor reflects the OFR staff's best interpretation of financial market developments and views. It does not necessarily reflect a consensus of market participants and does not necessarily represent official positions or policy of the OFR or the U.S. Treasury. **Contributors:** Viktoria Baklanova, Ted Berg, Soumya Kalra, Daniel Maddy-Weitzman, Rebecca McCaughrin, Adam Minson, Thomas Piontek, Warren Reed, William Shi.

bank liquidity. Greek banks are reportedly nearing the limit of financing available from the ECB, meaning that even the limited withdrawals permitted under the current capital controls may be difficult to meet. Following the resignation of the Greek finance minister, the government resumed discussions with its creditors on a new financial support program. The government has a €3.5 billion payment due to the ECB on July 20.

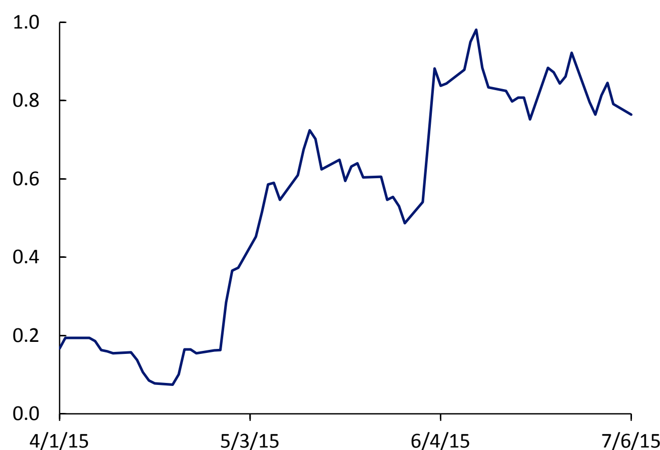
In contrast to the euro area debt crisis in 2010-12, markets have consistently priced in a greater probability of an orderly outcome for the euro area during this episode (Figure 1)**.** Since negotiations broke down, the market reaction has been fairly contained, though the initial price response was significant across some asset classes: core euro area and U.S. sovereign bond yields fell, euro periphery spreads widened, global equities edged lower, and the euro broadly depreciated against major currencies. But overall trading activity was relatively orderly and there have been no signs of aggressive de-risking or significant funding strains. The resilience of euro periphery bonds and broader risk assets was attributed to greater confidence in euro area financial backstops, particularly from the ECB's asset purchase program, as well as reforms in the euro periphery and a reduction in private sector financial exposures to Greece. A weakening in these points of confidence or a more disorderly outcome in Greece than market participants expect may test the stability of broader euro area markets.

Global long-term bond yields have trended higher since April, reversing months of declines…

Euro area bond yields rose sharply in early June, adding to the unwind of "QE trades" discussed in the May Financial Markets Monitor. The benchmark German 10-year government yield increased more than 90 basis points from its mid-April level of 0.07 percent before partially retracing, partly in response to flight-to-quality flows amid increased uncertainty in Greece (Figure 2). The initial sell-off in early June largely reflected a market correction after an extended rally pushed yields to record lows. Meanwhile, euro area economic activity, inflation, and inflation expectations have continued to improve, diminishing concerns about a prolonged deflation scenario.

Figure 2. The correction in long-term German bonds

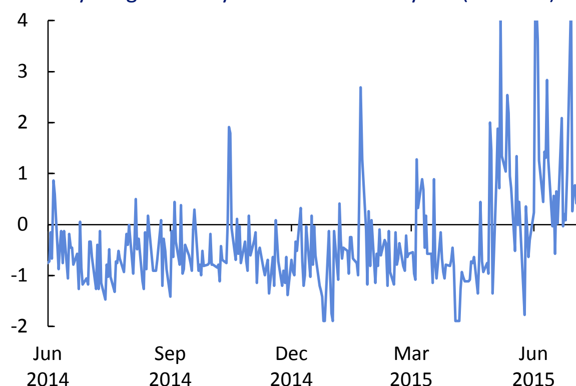
10-year German Bund yields (percent)



Source: Bloomberg L.P.

Figure 3. Highly volatile trading in German bonds

Intraday range for 10-year German Bund yield (Z-scores)

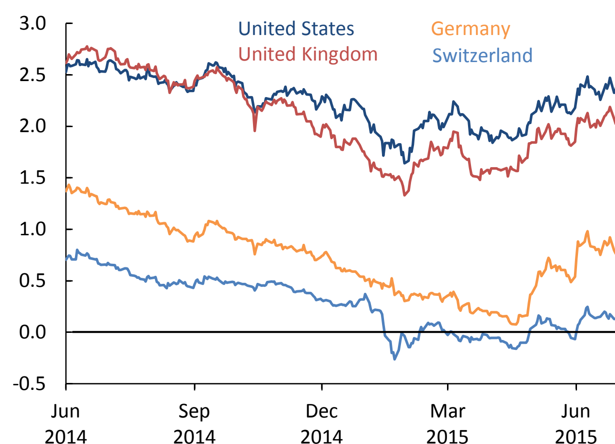


Note: Intraday range measured as the difference between the high and low levels of yield within each trading day. Z-score represents the distance from the ten-year average, expressed in standard deviations.

Source: Bloomberg L.P.

Figure 4: Long-term yields have risen, but remain historically low

10-year government bonds yields (percent)



Sources: Bloomberg L.P.

German bonds remained highly volatile in June, with yields trading in their largest intraday range on record (Figure 3). The volatility was attributed partly to the reduction of market liquidity during periods of stressed trading. As discussed in the 2014 OFR Annual Report, the fragility of liquidity in major bond markets warrants continued close scrutiny, because its amplifying effects could be damaging in the event of a large shock.

Long-term government bond yields in the United States have also risen since mid-April, though with less volatility than in the euro area (Figure 4). As discussed in the April Markets Monitor, strong relative value flows — reflecting trading strategies designed to exploit perceived mispricings or anomalies in global markets — have tightened the links among major long-term bond yields, increasing the correlation among them.

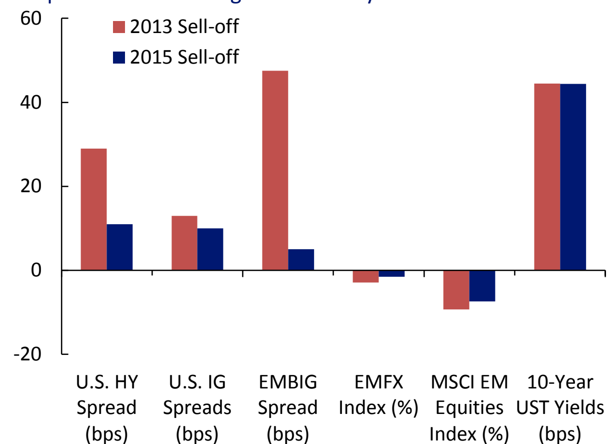
…with limited spillover to riskier asset classes.

Emerging market and other risk assets were fairly insulated from the April-June rise in U.S. Treasury yields. The sell-off during the so-called "taper tantrum" in mid-2013 was more pronounced than the recent episode, despite similarly sized increases in long-term U.S. Treasury yields (Figure 5). Emerging market sovereign bond spreads widened only marginally, in contrast to the underperformance during the taper tantrum. Similarly, emerging market mutual fund flows registered only modest outflows (mostly from China-focused funds), in contrast to the sizable outflows during the 2013 correction. Over the same period, U.S. corporate bond spreads also widened less than during the taper tantrum.

The more limited spillover in 2015 reportedly owes to the different factors behind the two episodes. The taper tantrum reflected an abrupt shift in expected Federal Reserve asset purchases. By contrast, the rise in U.S. Treasury yields during the latest episode has not been accompanied by a significant change in U.S. monetary policy expectations.

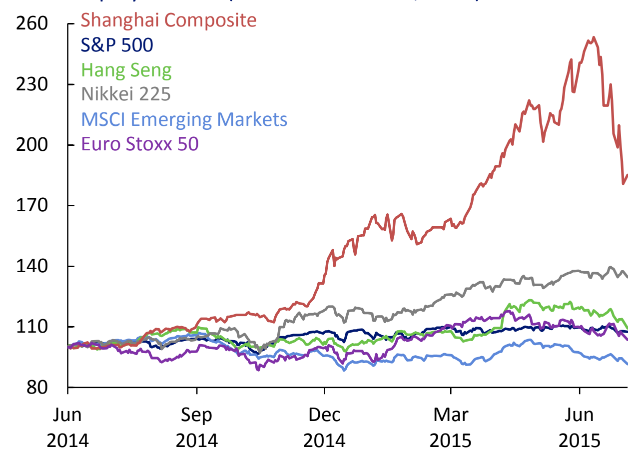
The standout in emerging markets remains China's extraordinary equity volatility (Figure 6). China's benchmark equity indexes had risen more than 150 percent in the 12 months leading to their peak in mid-June, driven by surging margin lending (Figure 7), increased foreign investor access to Chinese equity markets, and Chinese investors' reallocation of funds

Figure 5. Risk assets more resilient to 2015 Treasury correction
Asset performance during U.S. Treasury bond corrections



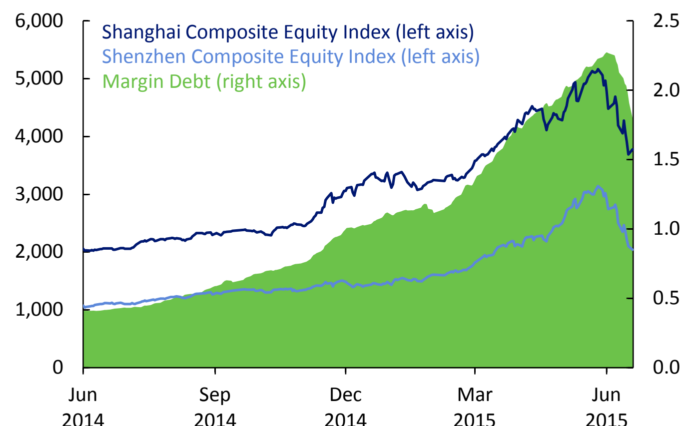
Note: Performance during 42 trading days from beginning of sell-off. 2013 sell-off dates from May 22. 2015 sell-off dates from April 17.
Sources: Bloomberg L.P., Haver Analytics, OFR analysis

Figure 6. China's extraordinary equity rally and sell-off
Global equity indexes (Index 100 = June 1, 2014)



Source: Bloomberg L.P.

Figure 7. Margin lending has fueled China's equity rally
Chinese equity prices (Index) and margin debt (RMB trillions)



Source: Haver Analytics

from real estate markets to equities due to the decline in Chinese property prices.

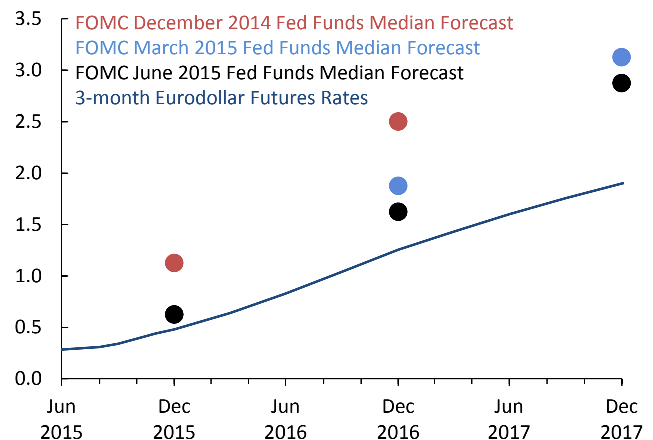
Throughout the rally, Chinese equities have been highly volatile, and they experienced an extremely sharp sell-off in recent weeks. Since mid-June, the main indexes have fallen 30 to 40 percent as market participants expressed skepticism about the sustainability of prevailing prices. Following the latest bout of selling pressure, the central bank cut its benchmark lending rate to a record low and lowered reserve requirement ratios for some banks, while regulatory authorities implemented a number of extraordinary measures. These efforts did not stop the sharp sell-off, and trading activity was suspended on a large number of companies. The correction has weighed on regional equity exchanges and commodities markets, raising concerns about spillovers to broader markets.

The Federal Reserve reinforced expectations for a gradual tightening cycle.

Market participants largely interpreted the latest meeting of the FOMC as dovish. The FOMC's projected path of policy rates continued to decline toward market-implied expectations. The median FOMC interest rate forecast for 2016 and 2017 was adjusted downward, while the median 2015 forecast was unchanged (Figure 8). During the post-meeting press conference, Federal Reserve Chair Yellen emphasized the gradual expected pace of the approaching tightening cycle. Most market analysts continue to expect the first rate hike at either the September or December FOMC meetings, with the market-implied probability of a September rate hike estimated at 20-30 percent.

Disparity across U.S. short-term funding rates continued in June. The General Collateral Finance (GCF) repo rate, the benchmark rate for short-term secured funding, continued to deviate from the effective federal funds rate (Figure 9). In other evidence of disparities in short-term interest rates, quarter-end pressures led to a further divergence between GCF repo and other triparty rates. Signs of illiquidity have also increased, evidenced by decreasing turnover of Treasury bills, widening bid-ask spreads, and declining volumes of Treasury securities financed in the GCF repo market. Financial market utilities and other participants are seeking ways to address the effects of reduced dealer-intermediated liquidity, such as by expanding their counterparties and central clearing of repo.

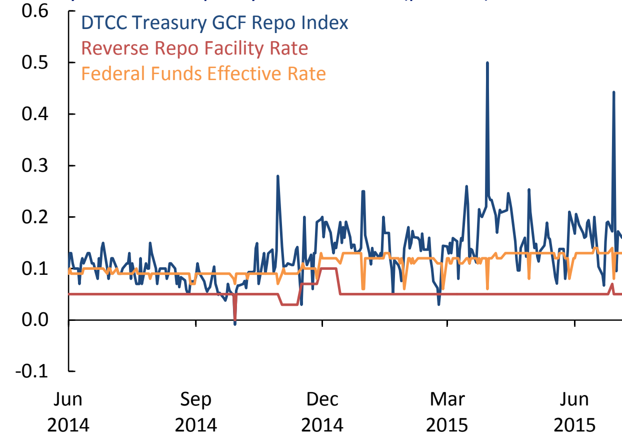
Figure 8. FOMC signals gradual interest rate trajectory (percent)



Source: Bloomberg L.P.

Figure 9. Treasury GCF repo volatility continues

Money market and policy interest rates (percent)



Source: Bloomberg L.P.

Selected Global Asset Price Developments

	LATEST LEVEL (7/6/2015)	1M CHANGE (bps or %)	1M CHANGE (standard deviations)*	YTD CHANGE (bps or %)	12-MONTH RANGE**
EQUITIES					
S&P 500	2069	-1.2%	-0.4	0%	
U.S. KBW Bank Index	77	-0.7%	-0.2	4%	
Russel 2000	1247	-1.1%	-0.3	4%	
Nasdaq	4992	-1.5%	-0.4	5%	
Euro Stoxx 50	3365	-4.1%	-0.8	7%	
Shanghai Composite	3776	-24.8%	-2.2	17%	
Nikkei 225	20112	-1.7%	-0.3	15%	
Hang Seng	25236	-7.4%	-1.1	7%	
FTSE All World	278	-2.0%	-0.6	1%	
RATES					
U.S. 2-Year Yield	0.59%	-12	-0.4	-8	
U.S. 2-Year Swap Rate	0.85%	-11	-0.3	-5	
U.S. 10-Year Yield	2.29%	-12	-0.4	11	
U.S. 10-Year Swap Rate	2.41%	-9	-0.3	12	
U.S. 30-Year Yield	3.08%	-3	-0.1	33	
U.S. 2y10y Spread	169	0	0.0	19	
U.S. 5Y5Y Inflation Breakeven	2.26%	10	0.4	12	
U.S. 5Y5Y Forward Rate	3.13%	-4	-0.1	37	
Germany 10-Year Yield	0.76%	-8	-0.3	22	
Japan 10-Year Yield	0.48%	-2	0.0	15	
U.K. 10-Year Yield	2.01%	-7	-0.2	25	
Euro area 5Y5Y Inflation Breakeven	1.85%	8	0.9	12	
FUNDING					
1M T-Bill Yield	0.00%	-1	0.1	-1	
DTCC GCF Treasury Repo	0.18%	-1	-0.2	-7	
3M Libor	0.28%	0	0.1	3	
Libor-OIS Spread	14	0	0.0	0	
3M Eurodollar Sep 2016 Mid Yield	0.35%	-10	-0.2	-31	
EURUSD 3M CCY Basis Swap	-23	-3	-0.1	-8	
U.S. MBS					
FNMA Current Coupon	3.05%	-7	-0.2	22	
FHLMC Primary Rate	4.08%	21	1.0	25	
CREDIT					
CDX Investment Grade 5-Year CDS Spread	70	4	0.3	3	
CDX High Yield 5-Year CDS Spread	353	7	0.1	-4	
CDX Itraxx Euro 5-Year CDS Spread	79	11	0.7	16	
U.S. 5-Year Sovereign CDS Spread	16	0	-0.1	-1	
IMPLIED VOLATILITY					
VIX Index	17	20%	0.9	-11%	
V2X Index	30	19%	0.9	14%	
VDAX Index	27	13%	0.6	37%	
MOVE Index	86	-3%	-0.3	25%	
3M2Y Swaption Volatility	60	-4%	-0.3	-12%	
3M10Y Swaption Volatility	89	1%	0.0	21%	
DB G10 FX Volatility Index	10	-3%	-0.3	9%	
JPM EMFX Volatility Index	9	-7%	-0.6	-17%	
FOREIGN EXCHANGE & COMMODITIES					
U.S. Dollar Index***	96	0.0%	0.0	7%	
EUR/USD	1.11	-0.5%	-0.2	-9%	
USD/JPY	123	-2.4%	-0.8	2%	
GBP/USD	1.56	2.2%	0.9	0%	
USD/CHF	0.94	0.3%	0.1	-5%	
Brent Crude	57	-11.7%	-2.0	-10%	
Gold	1170	-0.1%	-0.1	-1%	
S&P GSCI Commodities Index	413	-4.7%	-0.8	-1%	
EMERGING MARKETS					
JPM EMFX Index	73	-0.4%	-0.1	-6%	
MSCI Emerging Market Equity Index	943	-3.9%	-0.7	-1%	
CDX EM 5-Year CDS Spread	303	1	0.0	-32	

* One month change standard deviations based on monthly data from January 1994 or earliest available thereafter.

** Trailing 12-month range. Latest (O); Mean (|).

*** Dollar index from Bloomberg (ticker: DXY); averages the exchange rates between the U.S. Dollar and major world currencies.

Sources: Bloomberg L.P., OFR analysis