OFR MARKETS MONITOR
OFFICE OF FINANCIAL RESEARCH

January/February 2016
(data as of February 5)

A review of financial market themes and developments

Markets Weaken in Response to Concerns About Global Growth and Oil

Since the start of 2016, prices of equities and other risky assets have declined markedly. The proximate cause is an escalation of investor concerns about global growth and low oil prices. Global investors have been particularly sensitive to developments in China, due to its economic slowdown and the implications for global growth. As China's authorities grapple with its downturn and record capital outflows, their August 2015 currency shift and more recent developments have fueled market concerns about the effectiveness of Chinese economic policies and communications. Meanwhile, oversupply in the oil market since mid-2014 has pushed prices to their lowest levels in more than 10 years, eroding the creditworthiness of U.S. energy producers and contributing to a broad repricing of U.S. corporate credit risk. In analysis by the Office of Financial Research (OFR), credit risk is elevated in the wider U.S. nonfinancial business sector, a potential financial stability threat discussed in OFR's Financial Stability Report.

Developments since the November/December report

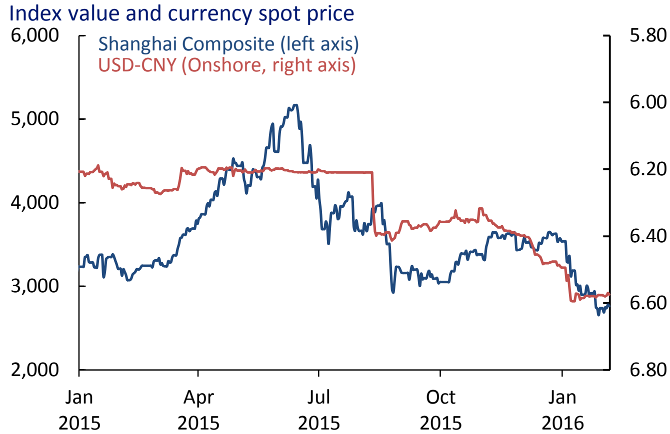
- Commodity prices fell further amid evidence of growing oversupply in oil markets and further weakness in global demand.
- Uncertainty about China's policymaking increased because of authorities' acceptance of greater currency depreciation and the failure of market circuit breakers to contain sharp declines in local equity markets.
- Global equity and corporate credit markets sold off sharply, and declines in emerging market currencies accelerated.
- The Federal Reserve began increasing interest rates as expected in December. It raised the federal funds target range 25 basis points. Global growth concerns and falling inflation since then have reduced market expectations of further rate hikes in 2016.
- The Bank of Japan unexpectedly cut its interest rate on excess reserves to negative 10 basis points in pursuit of its 2 percent inflation target.

China concerns resurged due to policy surprises, equity sell-offs, and record capital outflows.

Developments in China's currency policy and equity market declines triggered a global retreat in risk sentiment in January. This retreat ended the period of stability in Chinese markets that prevailed since the shift in China's currency policy last August (see the August Financial Markets Monitor). In January, market participants were again surprised as the People's Bank of China signaled greater tolerance for faster depreciation of the renminbi by setting the USD-CNY fixing rate higher than the previous day's close for successive sessions. The decision to let the currency weaken escalated concerns about the extent of China's capital outflows and economic slowdown which drove a sharp sell-off in local

Figure 1: Growth fears pushed Chinese stocks and currency lower

Index value and currency spot price



Note: The USD-CNY spot price is inverted to show a weakening currency alongside the declining equity index.
Source: Bloomberg L.P.

Contributors: Viktoria Baklanova, Ted Berg, Soumya Kalra, Daniel Maddy-Weitzman, Adam Minson, Thomas Piontek, William Shi, Daniel Stemp.

equities (Figure 1). Newly established circuit breakers in Chinese equity indexes and the expiration of a six-month ban on company insiders selling shares exacerbated the selling at the start of the year. The circuit breakers were removed after twice halting trading. The insider share-selling ban was extended indefinitely. These policy reversals contributed to global investor fears about the effectiveness of Chinese policymaking.

Chinese foreign exchange reserves declined by more than $200 billion in the last two months. Outflows for 2015 were about $500 billion, and were the first annual decline ever recorded. Total reserves are at their lowest since 2012 (Figure 2). The accelerating capital outflows bring a new challenge for Chinese policymakers, after years of strong capital inflows.

New evidence of supply-demand imbalance prompts further declines in oil prices.

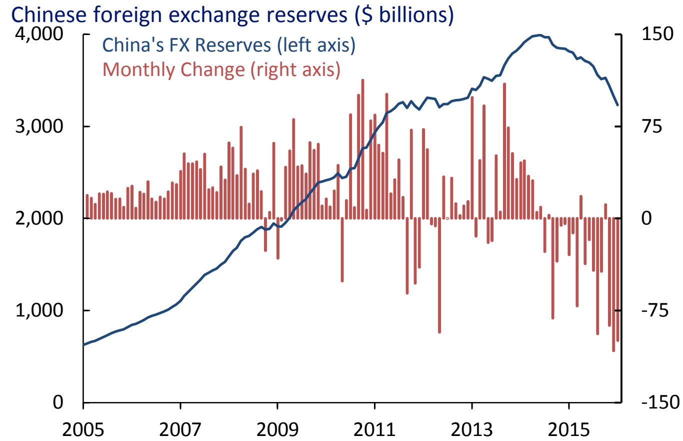
Crude oil prices have declined 14 percent since the start of the year and reached their lowest levels since 2004. Oil price volatility spiked to levels that last occurred during the global financial crisis (Figure 3). Market participants attributed the price action to further evidence of supply growth — the dominant factor in oil's decline since mid-2014. In recent months, analysts raised their projections for production by the Organization of Petroleum Exporting Countries and U.S. oil inventories rose. Also, analysts are now expecting U.S. production to remain near their current high levels. Concerns also rose about weakening demand from China and emerging markets.

Developments in China and energy prices triggered broad-based declines across global financial markets.

Year to date, global equity markets have had pronounced declines. Major stock indices have declined more than 20 percent from their 52-week highs (Figure 4). Listed U.S. companies are being affected by low oil prices and slowing foreign growth. Weak energy sector earnings have been a drag on overall S&P 500 earnings growth, but earnings in many other sectors have also been less than robust.

Figure 2: Record decline in Chinese foreign exchange reserves

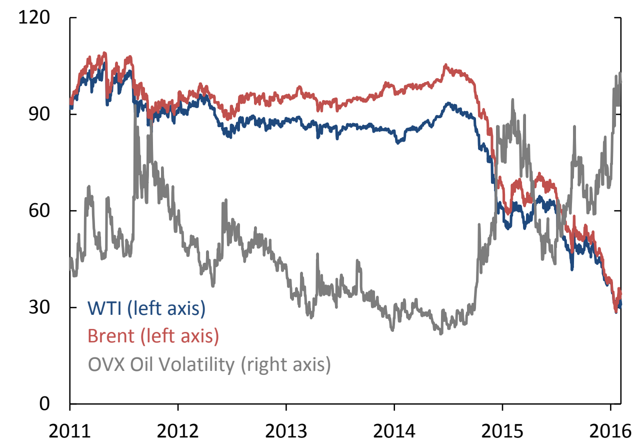
Chinese foreign exchange reserves ($ billions)



Sources: Bloomberg L.P., Haver Analytics

Figure 3. Oil volatility spiked as prices hit new lows

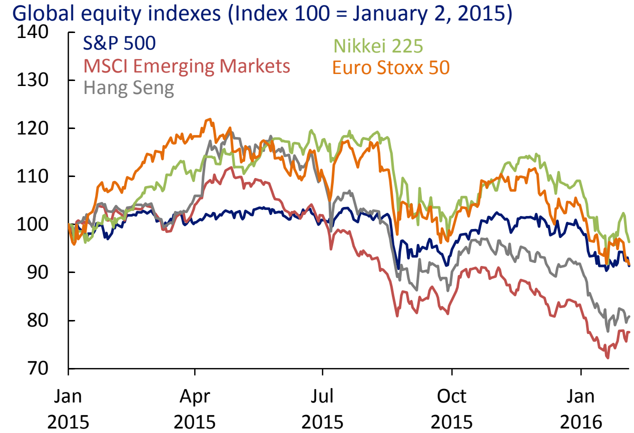
Crude oil prices ($US per barrel) and volatility (percent)



Source: Bloomberg L.P.

Figure 4: Global equity markets down sharply to start the year

Global equity indexes (Index 100 = January 2, 2015)



Source: Bloomberg L.P.

Excluding energy firms, S&P 500 earnings in the fourth quarter of 2015 are estimated to grow only 1.5 percent. Earnings including energy are estimated to decline 5 percent. In comparison, overall S&P 500 earnings grew at a 5 percent compounded annual rate from the fourth quarter of 2010 through the fourth quarter of 2014. Equity valuations could remain under pressure due to weakening fundamentals, as discussed in the 2015 OFR brief, "Quicksilver Markets."

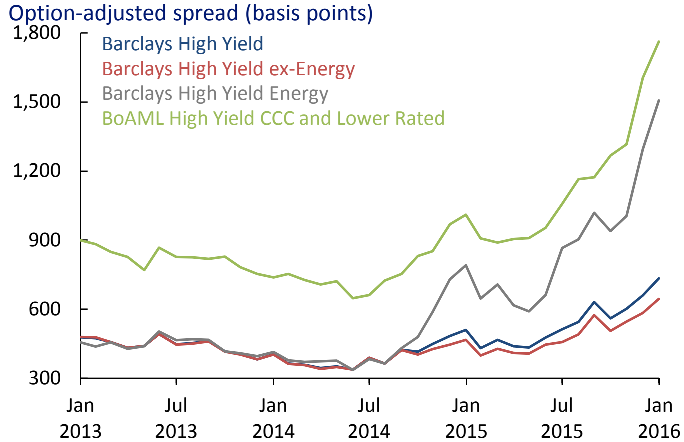
U.S. corporate bond spreads rose to multiyear highs, pricing in greater default risks in the energy sector and higher probability of a default cycle in the broader corporate debt market (see the OFR's 2015 Financial Stability Report). Although lower-rated and energy-linked spreads have widened the most, non-energy high-yield spreads widened to their highest levels since 2012 (Figure 5). The deterioration largely reflects the same energy and global growth factors affecting other markets. It also reflects the market reaction to the unusual suspension of investor withdrawals by a Third Avenue Management credit mutual fund.

Financial stress indexes surpassed levels of the August 2015 market sell-offs. Since the beginning of the year, financial conditions have tightened and financial stress indexes have risen markedly (Figure 6). The most notable changes in the index components have been the increased volatility in oil markets, continued appreciation of the dollar, and the widening in high-yield credit spreads.

Emerging market assets remain under pressure. Since the beginning of the year, emerging market currencies are 1.5 percent lower on average, led by 6-to-8 percent declines in commodity-sensitive currencies such as the Colombian peso, Russian ruble, and Mexican peso (Figure 7). Slowing growth and falling commodity prices continue to depress a broad set of emerging market asset prices. At the same time, idiosyncratic events have increased the political risk premium in countries such as Poland, South Africa, Turkey, and Brazil.

Figure 5: Sharp drop in energy prices weighed on corporate credit

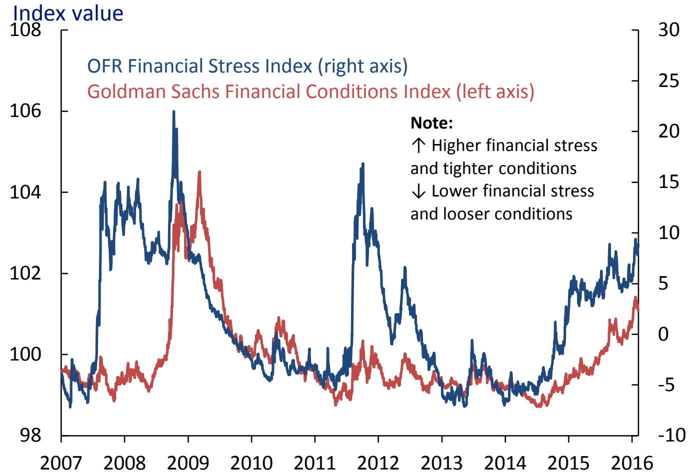
Option-adjusted spread (basis points)



Sources: Bloomberg L.P., Haver Analytics

Figure 6: Sell-off spurred tighter financial conditions

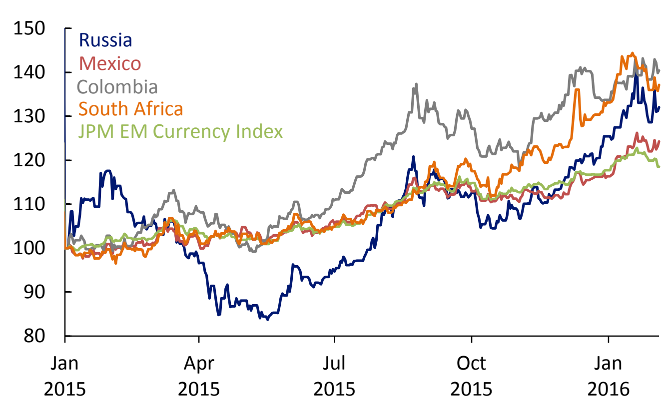
Index value



Sources: Bloomberg L.P., Haver Analytics, JPMorgan Chase & Co., OFR analysis

Figure 7: Pressure on emerging market currencies continued

(foreign exchange unit per $US, index 100 = January 2, 2015)



Note: The JPMorgan Chase & Co. EM Currency Index is inverted to provide the same interpretation as for the other currency indexes.

Source: Bloomberg L.P.

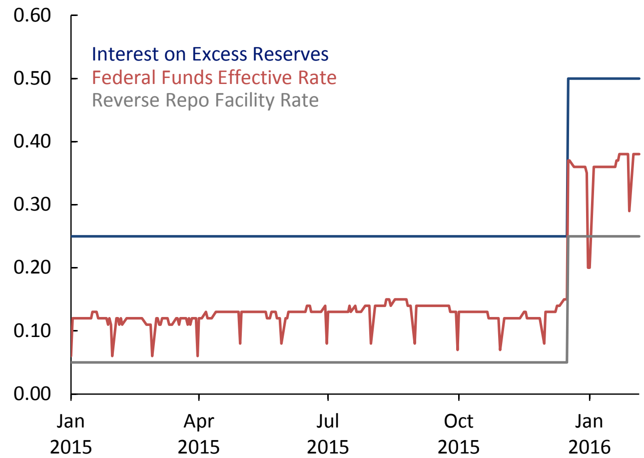
The Federal Reserve raised the federal funds target range and reinforced expectations for a gradual pace of rate hikes.

At its December 2015 policy meeting, the Federal Open Market Committee (FOMC) increased the federal funds target range to 0.25 percent to 0.50 percent. This increase was the first in almost 10 years. The market reaction has been orderly. The effective fed funds rate has largely traded within the new range, guided by the Federal Reserve rates for its reverse repo facility and excess reserves (Figure 8). Other short-term market rates also have moved higher since mid-December (Figure 9). Overnight Treasury general collateral financing (GCF) repurchase agreement rates spiked at year-end, driven by dealer balance-sheet contraction. In January, GCF rates receded to more stable levels as funding conditions returned to normal. The three-month USD London Interbank Offered Rate (LIBOR), which had been rising since the end of October, also stabilized in mid-January.

The market-implied path of the Federal Reserve's policy rate flattened further (Figure 10). Market participants saw the January FOMC statement as more accommodative than the December statement. They interpreted the statement as reflecting increased downside risks to the outlook for U.S. growth and inflation. Futures markets imply that market participants now expect the FOMC to raise rates just 25 basis points in 2016. By contrast, the median FOMC forecast in December projected 100 basis points in increases during 2016.

Figure 8: Effective federal funds rate trading in new target range

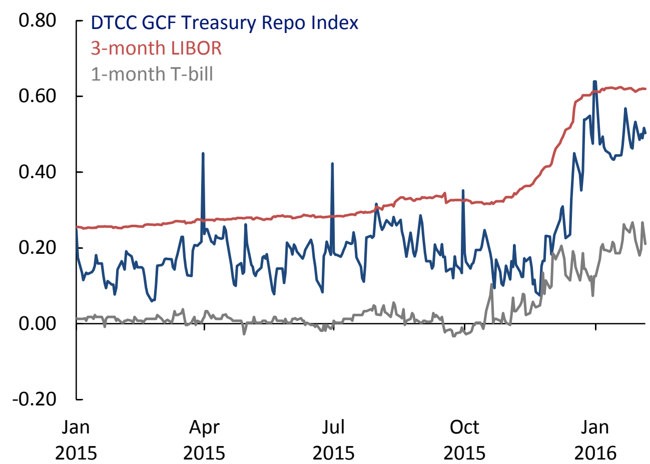
Overnight interest rates (percent)



Source: Bloomberg L.P.

Figure 9: Funding rates rose and stabilized following Fed rate hike

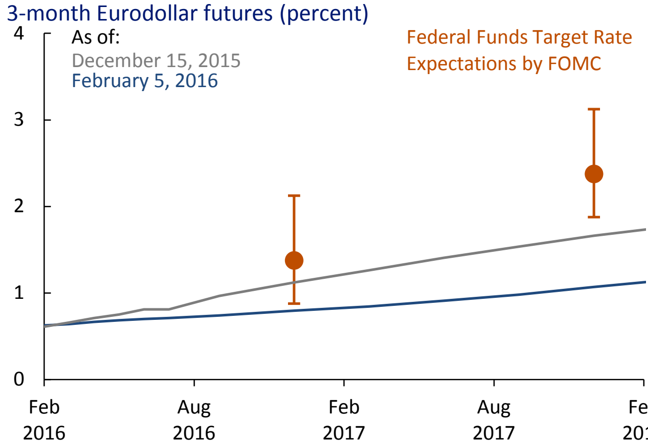
Short-term interest rates (percent)



Source: Bloomberg L.P.

Figure 10: Market-implied path of Fed Policy Rate flattened further

3-month Eurodollar futures (percent)



Note: FOMC expectations are from the 12/16/2015 meeting.

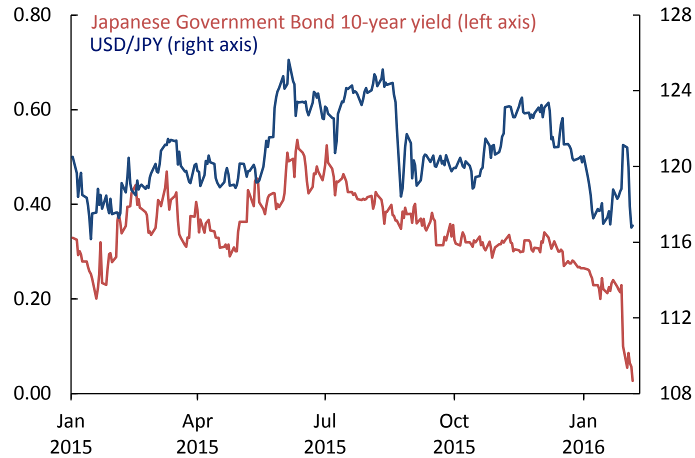
Sources: Bloomberg L.P., Federal Reserve Board

The Bank of Japan surprised markets by adopting a negative interest rate.

The Bank of Japan adopted a negative interest rate on new excess reserves at its January meeting. The move was significant and unexpected. The central bank explained that the further declines in oil prices and uncertainty stemming from the Chinese economy have made raising the country's very low inflation rate more difficult. Bank of Japan officials had earlier said that they would not introduce negative policy rates. Following the news, the Japanese yen depreciated sharply, but has since retraced. The 10-year Japanese government bond yield fell 10 basis points, a six standard deviation move (Figure 11) and recently reached negative levels. In addition to communications from the Bank of Japan and Federal Reserve in January being more accommodative than expected, markets also are pricing in further easing by the European Central Bank at its March policy meeting.

Figure 11: Japanese yen and yields fell after Bank of Japan rate cut

Percent and currency spot price



Source: Bloomberg L.P.

FEATURE: Hedge Fund Exposure to Credit Markets

(data as of September 30, 2015)

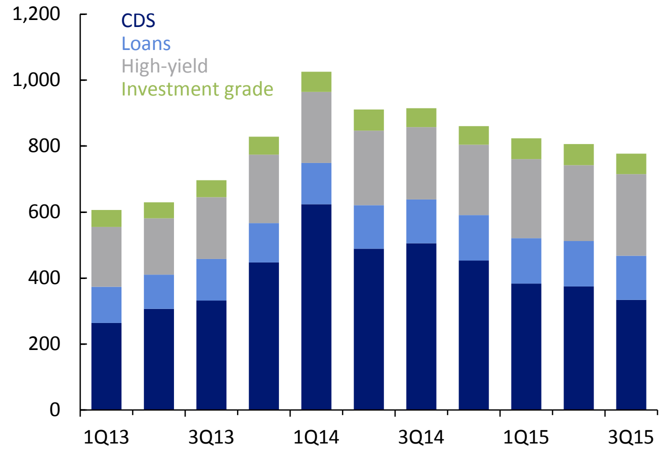
Reports in December of substantial investor redemptions at certain funds that manage high-yield credit portfolios intensified concerns about credit quality and market liquidity. The redemptions hit both mutual funds, notably Third Avenue Management's Focused Credit Fund, and hedge funds, notably Stone Lion Capital Partners.[1] These events highlighted the liquidity mismatch risks inherent in some asset management activities. Liquidity mismatch occurs when funds promise prompt, including daily, liquidity to investors while investing in relatively illiquid assets, such as certain high yield bonds and leveraged loans. It is important to note that the large majority of hedge funds, unlike mutual funds, do not offer daily redemption terms to investors.[2]

In this feature, we examine hedge fund exposures to credit markets and the use of leverage by these funds, using non-public Form PF data.

OFR analysis shows that, not surprisingly, several individual hedge funds have material net long positions in credit markets. More importantly, several such funds are much larger and more highly leveraged than the funds noted above that recently had redemptions.

Credit market exposures data available for analysis in Form PF include long and short holdings of corporate bonds (including high-yield, investment grade, non-convertible, and convertible bonds), loans, and credit derivatives (single name credit default swaps [CDS], index CDS, and exotic CDS).

Figure 12: Notional credit exposures, long value ($ billions)

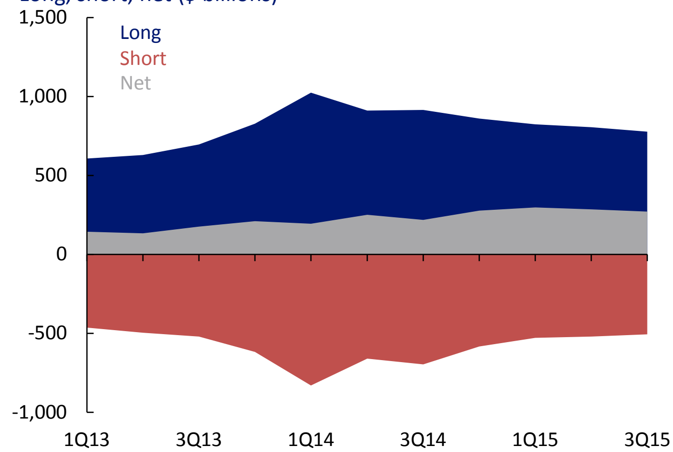


Note: CDS includes single name, index, and exotic

Sources: SEC Form PF, OFR analysis

Figure 13: Notional credit exposures

Long, short, net ($ billions)



Sources: SEC Form PF, OFR analysis

We limited our focus to the largest hedge funds, a group of more than 1,600 funds managed by advisors required to file Form PF quarterly.[3] As of the third quarter of 2015, these hedge funds had a total long exposure of $777 billion, comprising $309 billion of bonds, $134 billion of loans, and $334 billion of credit derivatives (Figure 12). These positions were largely offset by short exposures totaling $506 billion, comprising $46 billion of bonds, $2.5 billion of loans, and $458 billion of credit derivatives. The net exposure, or the aggregate long minus the aggregate short position, was $271 billion (Figure 13).[4] This exposure is relatively small compared to the overall U.S. corporate bond market ($8.2 trillion) and to the total gross assets of these hedge funds ($5 trillion).

[1] See Rob Copeland, "Stone Lion Capital Partners Suspends Redemptions in Credit Hedge Funds," *Wall Street Journal*, December 11, 2015.

[2] Hedge funds use redemption restrictions, such as initial lockups and redemption notice periods, to manage investor redemption risk. Measures, such as gates, suspensions and side pockets are additional tools available to hedge funds.

[3] Large hedge fund advisors must file quarterly Form PF reports detailing portfolio exposures for each "qualifying" hedge fund that an advisor manages. Broadly speaking, qualifying hedge funds are funds that have at least $500 million in net assets under management (individually or in combination with any feeder funds and parallel funds).

[4] With respect to credit derivative exposures, a long CDS exposure constitutes selling default protection and a short CDS exposure constitutes buying default protection.

However, several hedge funds had material net long positions. To better analyze this group, we segmented the Form PF hedge fund data into a smaller group of funds with net long exposures (based on corporate bond and loan positions) that approximate 50 percent or more of a fund's net assets. We excluded any funds with net assets of less than $500 million.

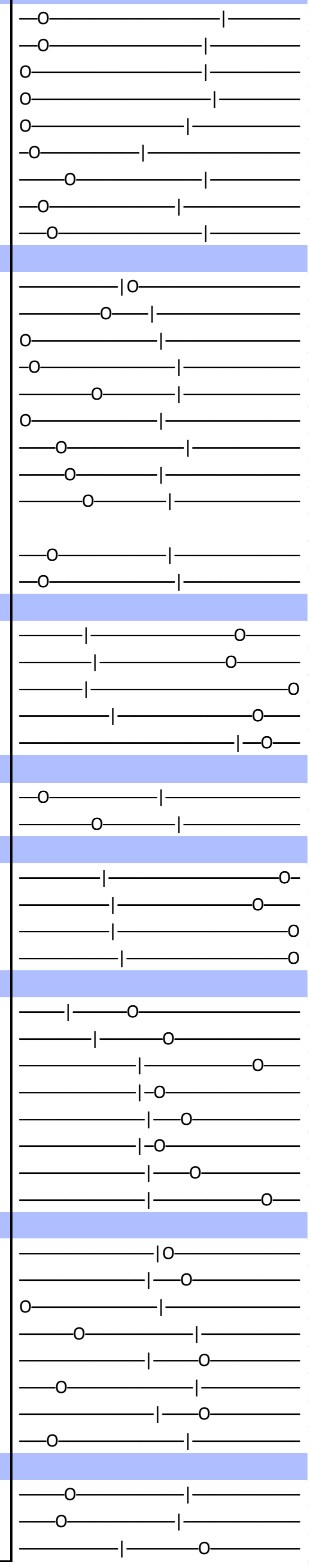
This filter resulted in slightly more than 100 funds that manage approximately $180 billion in total net assets and $435 billion in total gross assets. These funds had a net long exposure to corporate bonds and loans of $188 billion and a net short exposure to credit derivatives of $17 billion. Overall, these funds had relatively low leverage. The median leverage ratio (gross assets divided by net assets) of 1.3 for the sample was below the overall median ratio of 1.9 for the broader universe of hedge funds. However, the 95th percentile leverage ratio for the sample was almost 5, and the five most leveraged funds in the sample had a simple average leverage ratio of 10.4.[5]

In short, many of these credit-focused hedge funds are much larger and much more leveraged than comparable mutual funds that face regulatory restrictions on traditional balance sheet leverage and on the amount of illiquid assets held. Further, the combination of leverage and less liquid asset holdings may create vulnerabilities that can threaten financial stability.[6]

[5] Form PF is confidential, nonpublic data. Therefore, Form PF information provided above is aggregated, rounded, and/or masked to avoid potential disclosure of proprietary information of individual Form PF filers.
[6] See Office of Financial Research, *2015 Financial Stability Report*, Washington pp. 15-16 for a discussion on market liquidity risk.

Selected Global Asset Price Developments

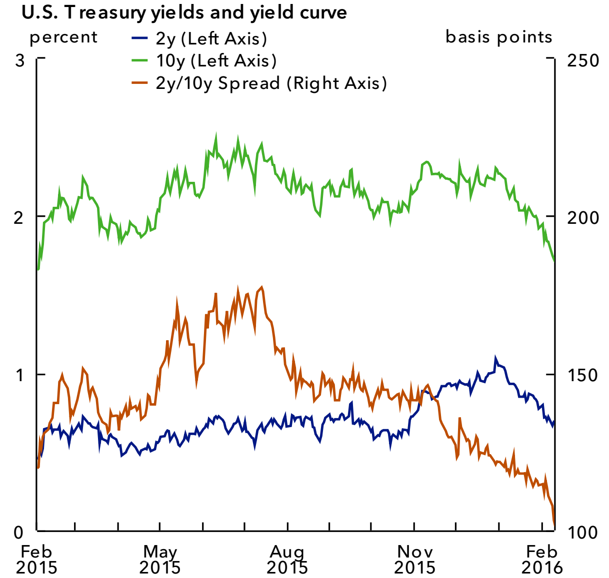
	LATEST LEVEL (2/5/2016)	30-DAY CHANGE (bps or %)	30-DAY CHANGE (standard deviations)*	YTD CHANGE (bps or %)	12-MONTH RANGE**
EQUITIES					
S&P 500	1880	-6.8%	-1.7	-8%	
U.S. KBW Bank Index	61	-13.9%	-2.1	-16%	
Russel 2000	986	-11.2%	-2.1	-13%	
Nasdaq	4363	-10.8%	-1.7	-13%	
Euro Stoxx 50	2879	-9.4%	-1.8	-12%	
Shanghai Composite	2763	-15.9%	-1.4	-22%	
Nikkei 225	16820	-8.5%	-1.5	-12%	
Hang Seng	19288	-9.0%	-1.3	-12%	
FTSE All World	242	-6.2%	-1.5	-8%	
RATES					
U.S. 2-Year Yield	0.72%	-29	-1.1	-33	
U.S. 2-Year Swap Rate	0.82%	-32	-1.1	-36	
U.S. 10-Year Yield	1.84%	-40	-1.4	-43	
U.S. 10-Year Swap Rate	1.75%	-39	-1.3	-44	
U.S. 30-Year Yield	2.67%	-33	-1.3	-35	
U.S. 2y10y Spread	111	-11	-0.6	-11	
U.S. 5Y5Y Inflation Breakeven	1.62%	-24	-1.0	-19	
U.S. 5Y5Y Forward Rate	2.59%	-26	-0.8	-26	
Germany 10-Year Yield	0.30%	-24	-1.1	-33	
Japan 10-Year Yield	0.03%	-23	-1.3	-24	
U.K. 10-Year Yield	1.56%	-32	-1.2	-40	
Euro area 5Y5Y Inflation Breakeven	1.52%	-12	-1.2	-16	
FUNDING					
1M T-Bill Yield	0.21%	1	0.1	9	
DTCC GCF Treasury Repo	0.50%	2	0.2	-14	
3M Libor	0.62%	0	0.1	1	
Libor-OIS Spread	23	0	0.0	0	
EURUSD 3M CCY Basis Swap	-21	-1	0.0	-2	
U.S. MBS					
FNMA Current Coupon	2.62%	-37	-1.3	-38	
FHLMC Primary Rate	3.72%	-29	-1.3	-29	
CREDIT					
CDX Investment Grade 5-Year CDS Spread	110	19	1.4	21	
CDX High Yield 5-Year CDS Spread	529	45	0.4	55	
CDX Itraxx Euro 5-Year CDS Spread	107	25	1.7	30	
U.S. 5-Year Sovereign CDS Spread	20	3	0.4	3	
IMPLIED VOLATILITY					
VIX Index	23	21%	0.9	28%	
V2X Index	30	15%	0.6	36%	
VDAX Index	28	13%	0.6	34%	
MOVE Index	82	14%	0.8	20%	
3M2Y Swaption Volatility	63	12%	0.6	13%	
3M10Y Swaption Volatility	82	10%	0.8	12%	
DB G10 FX Volatility Index	11	9%	0.8	13%	
JPM EMFX Volatility Index	13	12%	0.8	10%	
FOREIGN EXCHANGE & COMMODITIES					
U.S. Dollar Index***	97	-2.4%	-1.0	-2%	
EUR/USD	1.12	3.8%	1.3	3%	
USD/JPY	117	-1.8%	-0.6	-3%	
GBP/USD	1.45	-1.2%	-0.5	-2%	
USD/CHF	0.99	-1.8%	-0.5	-1%	
Brent Crude	34	-9.8%	-1.5	-12%	
Gold	1173	8.9%	1.8	11%	
S&P GSCI Commodities Index	292	-5.1%	-0.9	-6%	
EMERGING MARKETS					
JPM EMFX Index	65	0.1%	0.2	-1%	
MSCI Emerging Market Equity Index	740	-3.8%	-0.6	-7%	
CDX EM 5-Year CDS Spread	375	12	0.2	18	



* 30-Day 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

Select U.S. Interest Rates

U.S. Treasury yields and yield curve

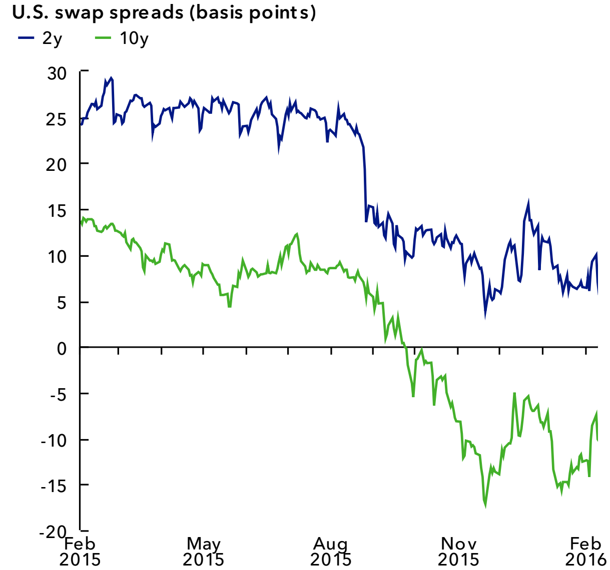


Source: Bloomberg L.P.

U.S. Treasury term premium (basis points)

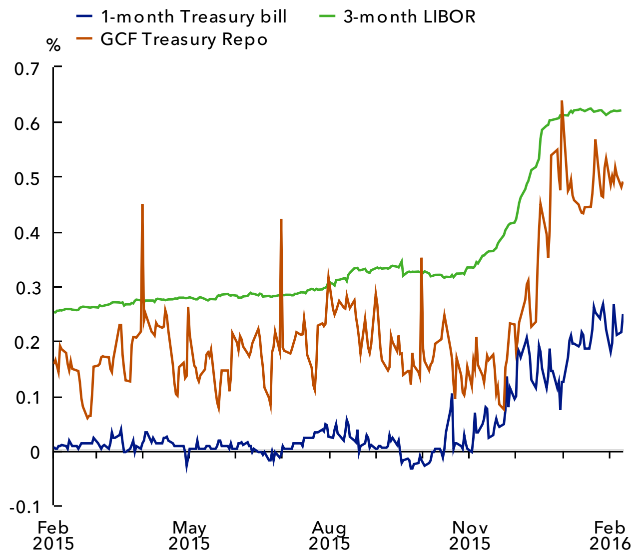
Notes: Adrian, Crump, & Moench model
Source: Bloomberg L.P.

U.S. swap spreads (basis points)



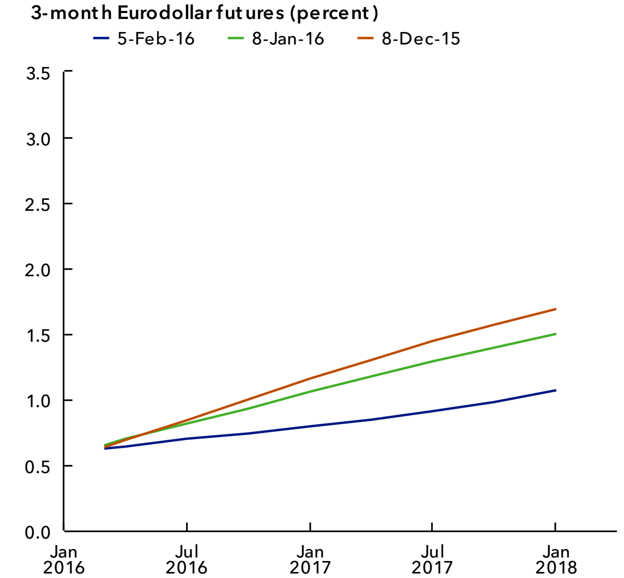
Source: Bloomberg L.P.

Short-term market rates (percent)



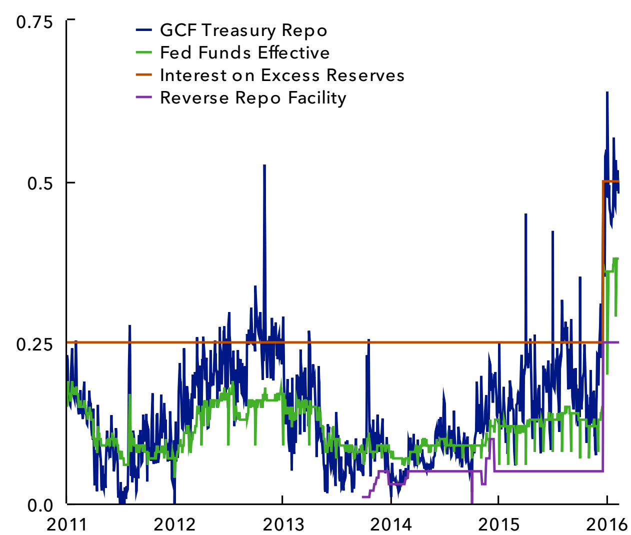
Source: Bloomberg L.P.

3-month Eurodollar futures (percent)



Source: Bloomberg L.P.

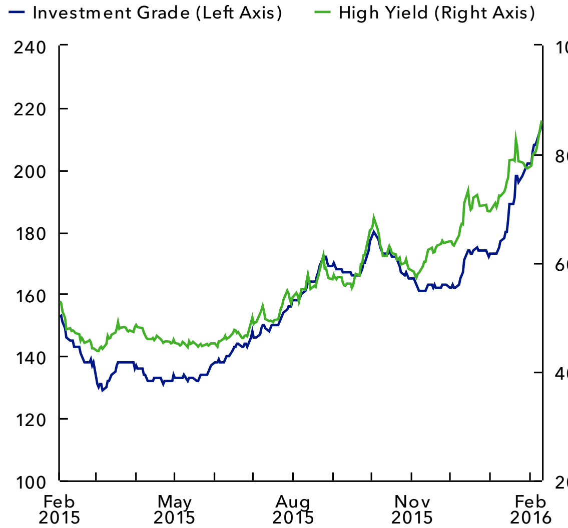
Money market and policy interest rates (percent)



Source: Bloomberg L.P.

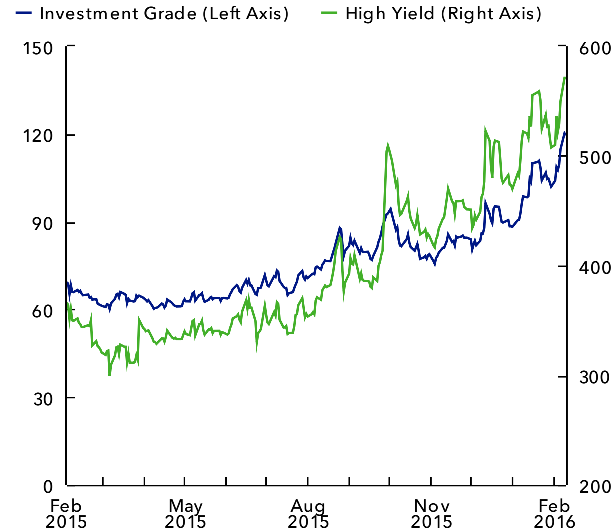
U.S. Corporate Debt Markets

U.S. corporate bond option-adjusted spreads (basis points)



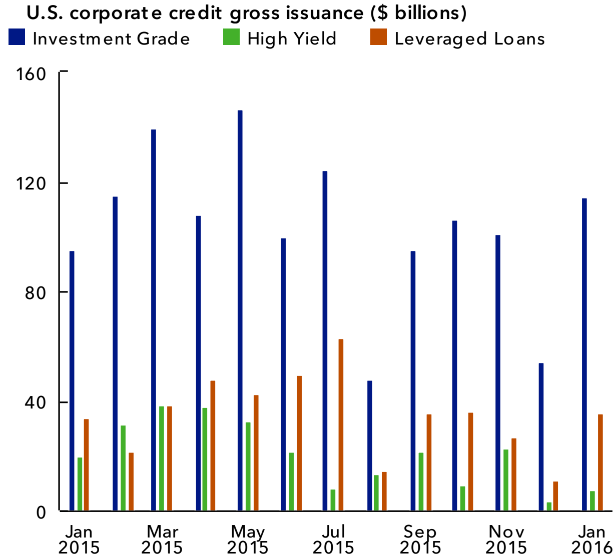
Source: Haver Analytics

U.S. corporate CDS indexes (basis points)



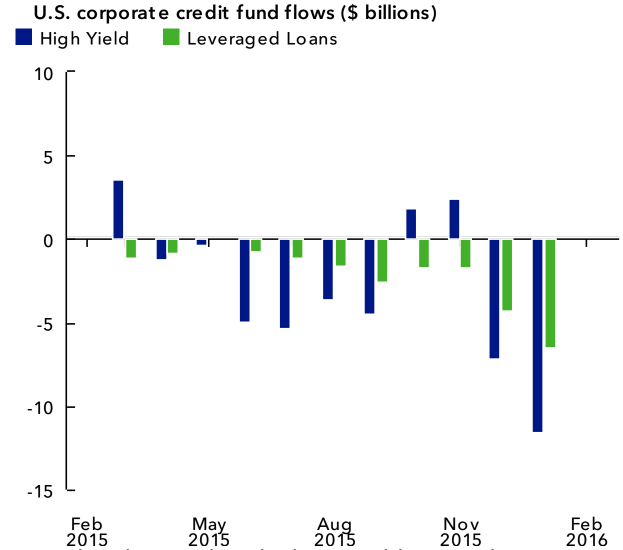
Notes: Five-year maturity CDS Index
Source: Bloomberg L.P.

U.S. corporate credit gross issuance ($ billions)



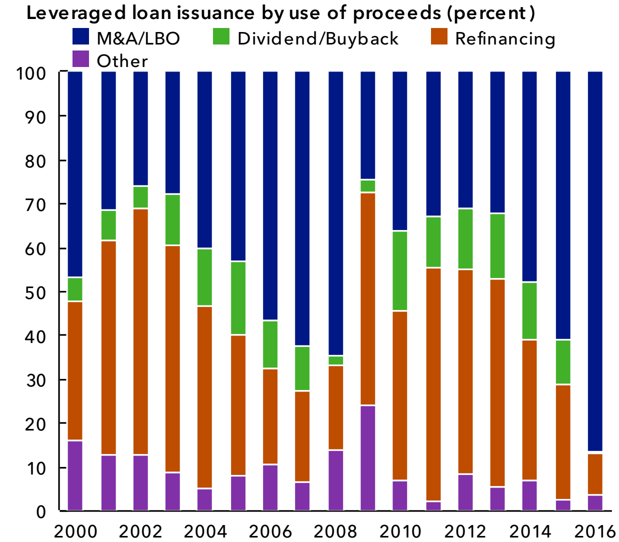
Source: Securities Industry and Financial Markets Association, Standard & Poor's Leveraged Commentary & Data

U.S. corporate credit fund flows ($ billions)



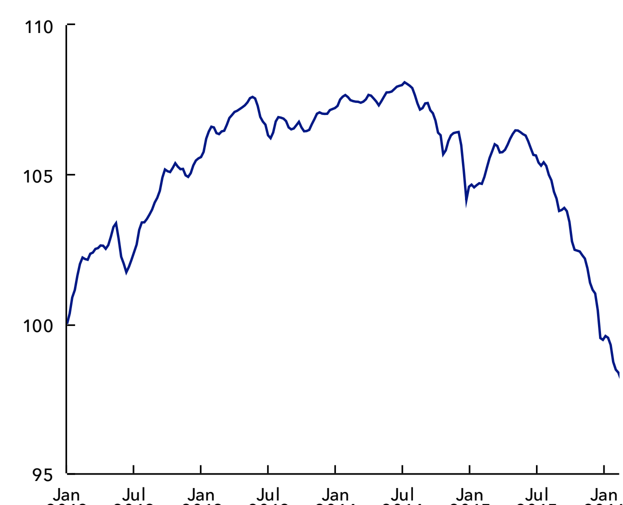
Notes: Flows data are released with one month lag. Latest data point is December 2015.
Source: Haver Analytics

Leveraged loan issuance by use of proceeds (percent)



Notes: 2016 is year-to-date as of February 5th.
Source: S&P LCD, OFR Analysis

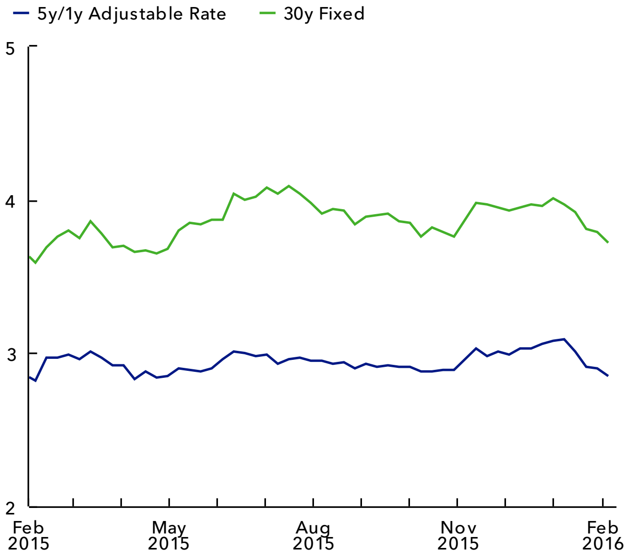
Leveraged loan price activity



Notes: S&P Leveraged Loan Index. Index 100=Jan. 1st 2012
Source: Bloomberg L.P.

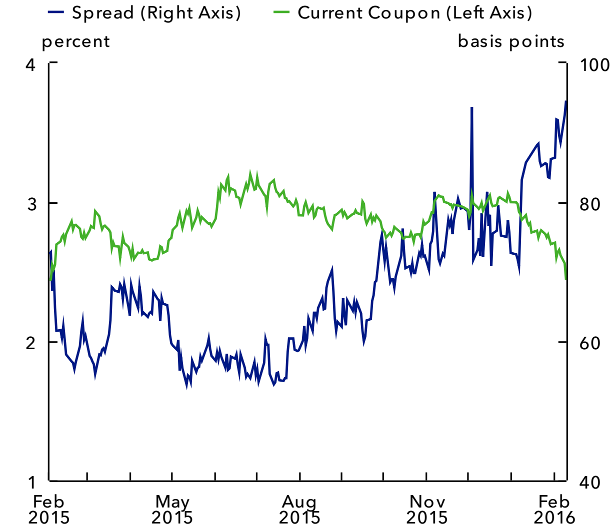
Primary and Secondary Mortgage Markets

Primary mortgage rates (percent)



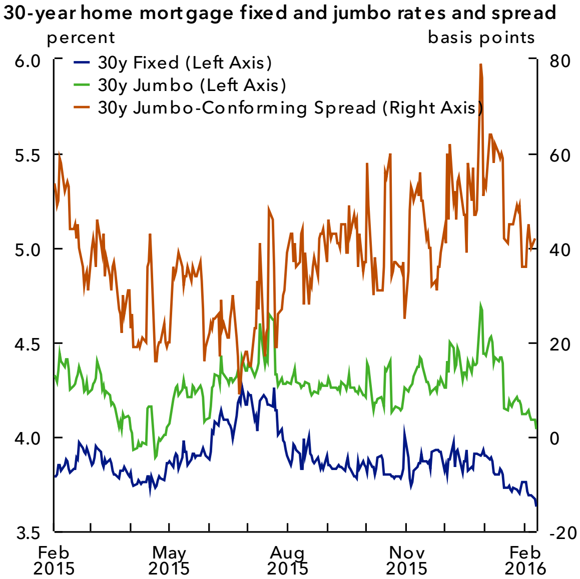
Source: Bloomberg L.P.

MBS yield and option-adjusted spread to U.S. Treasury securities



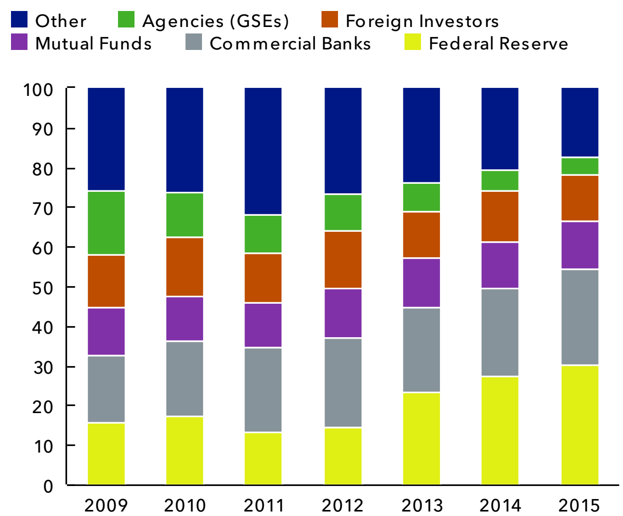
Source: Bloomberg L.P.

30-year home mortgage fixed and jumbo rates and spread



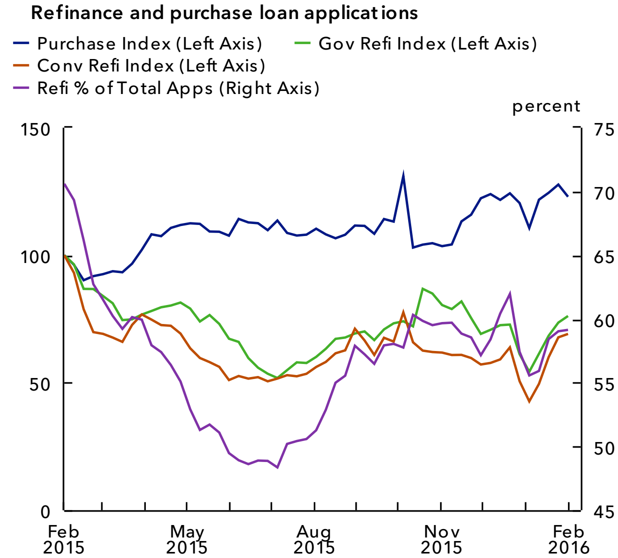
Source: Bloomberg L.P.

Agency MBS holdings by investor



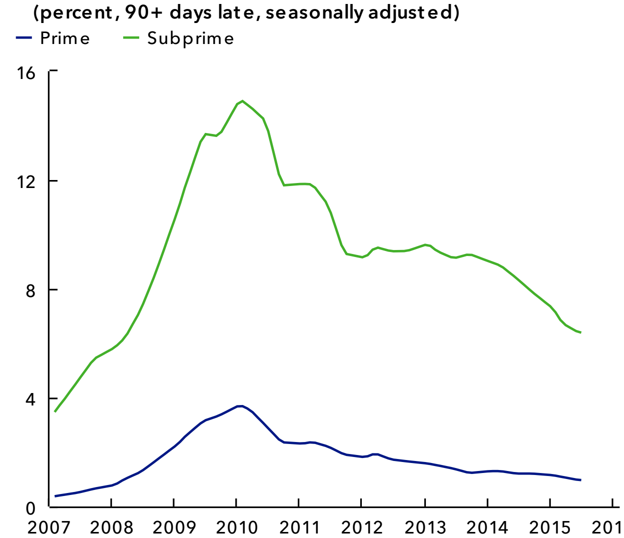
Notes: 2015 is as of Q3 2015
Source: Inside Mortgage Finance

Refinance and purchase loan applications



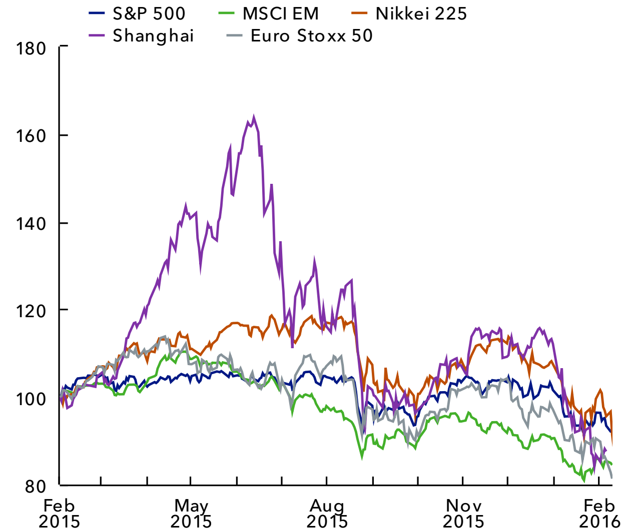
Notes: Index 100 = February 01, 2015
Source: Bloomberg L.P.

Conventional mortgage severe delinquencies (percent, 90+ days late, seasonally adjusted)



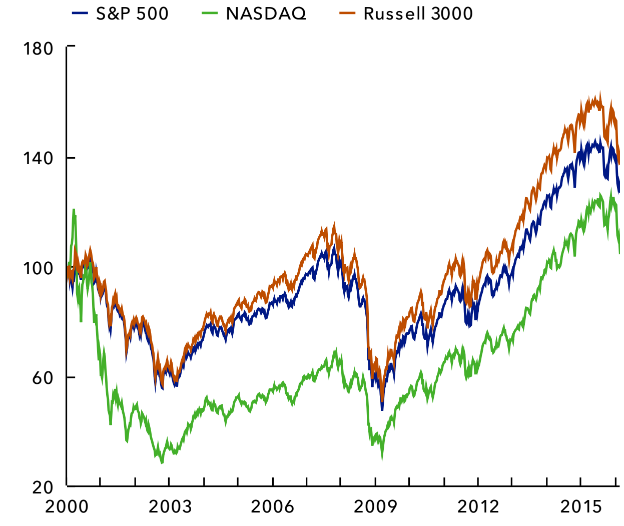
Source: Haver Analytics

Global equity indices



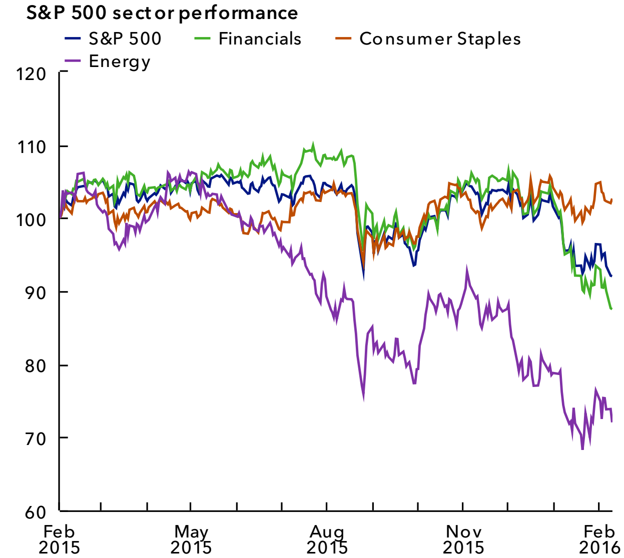
Notes: Index = February 01, 2015
Source: Bloomberg L.P.

U.S. equity indexes



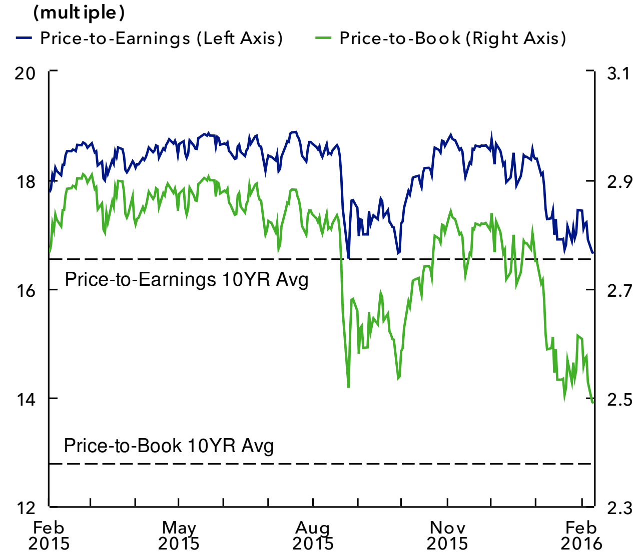
Notes: Index 100 = Jan 1, 2000
Source: Bloomberg L.P.

S&P 500 sector performance



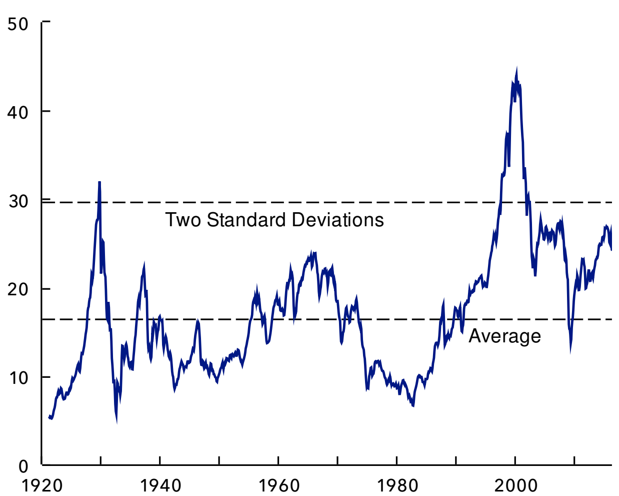
Notes: Index 100 = February 01, 2015
Source: Bloomberg L. P.

S&P 500 price-to-earnings and price-to-book ratios (multiple)



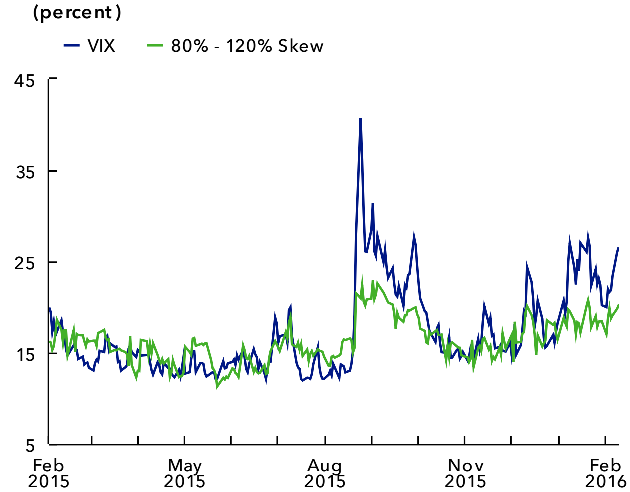
Source: Bloomberg L.P.

S&P 500 cyclically adjusted price-to-earnings (CAPE) ratio



Notes: CAPE is the ratio of the monthly S&P 500 price level to trailing 10-year average earnings (inflation adjusted)
Source: Haver Analytics, OFR analysis

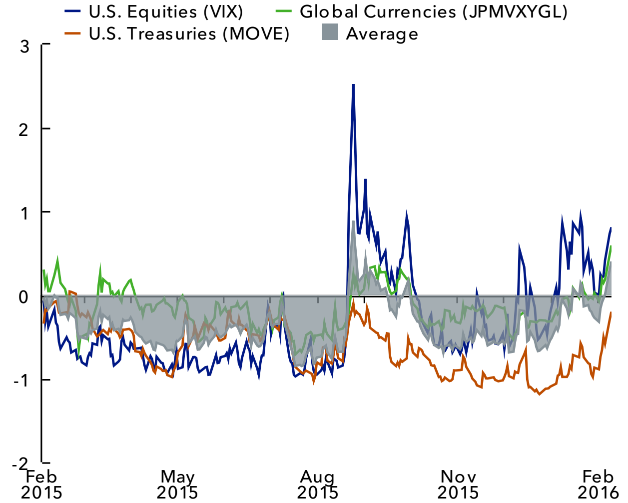
S&P 500 implied volatility and option skew (percent)



Notes: Option skew is the difference between 3-month implied volatility of out of the money puts and calls with strikes equal distance from the spot price (+/- 20%). Higher values reflect greater demand for downside risk protection.
Source: Bloomberg L.P.

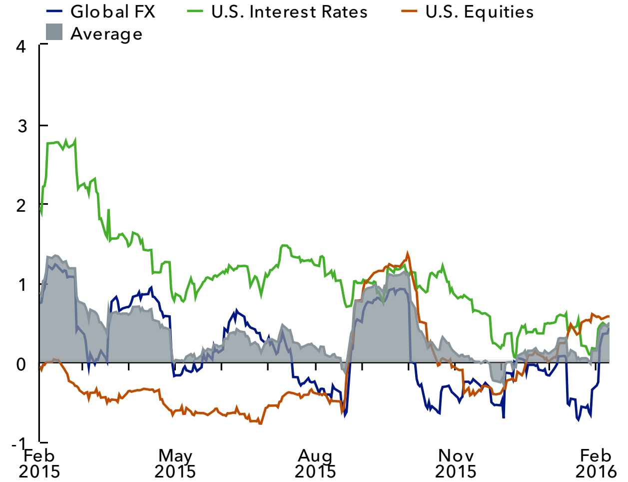
Volatility

Implied volatility by asset class (z-score)



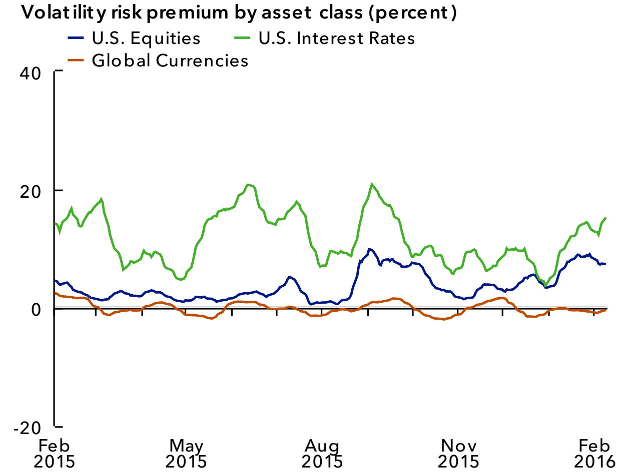
Notes: Note: Z-score represents the distance from the average, expressed in standard deviations. Standardization uses data going back to Jan 1, 1993.
Source: Bloomberg L.P.

Realized volatility by asset class (z-score)



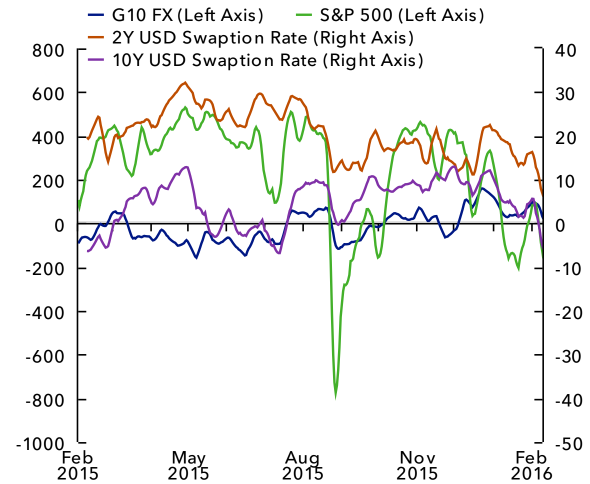
Notes: 30 Day realized volatility. Equities based on S&P 500 index, interest rates based on weighted average of Treasury yield curve, FX based on weights from JPMVXY index. Standardization uses data going back to Jan 1, 1993.
Source: Bloomberg L.P., OFR Analysis

Volatility risk premium by asset class (percent)



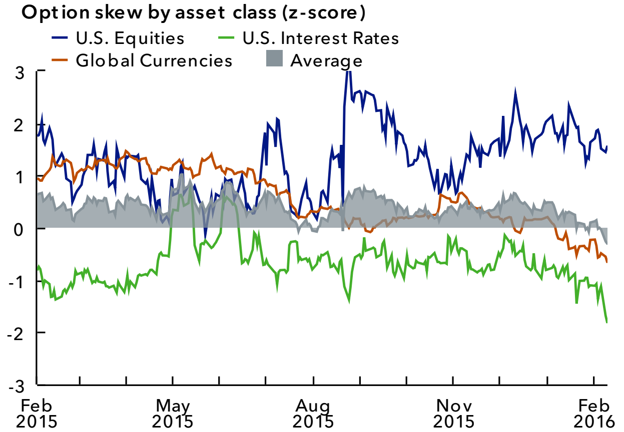
Notes: 1-month option-implied volatility minus 1-month model-predicted volatility. The latter is computed based on realized volatility, using a hetero-autoregressive model with 1, 5, and 22 day lags. U.S. Interest Rates represents the average volatility risk premium of 2- and 10-year swap rates. Equities based on S&P 500 index. Currencies based on weights from JPMVXYGL Index.
Source: Bloomberg L.P., OFR Analysis

Slopes of implied volatility curves (basis points)



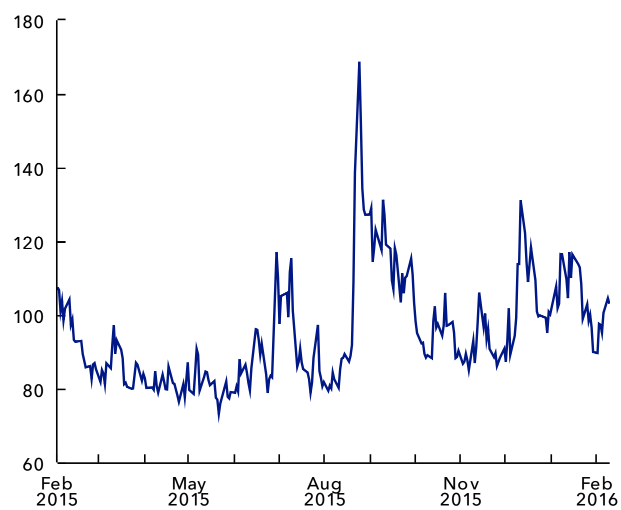
Notes: 7-day moving average. Slope represents difference between 1year and 1month maturities. G10 FX based on weights from Deutsche Bank's CVIX index.
Source: Bloomberg L.P., OFR Analysis

Option skew by asset class (z-score)



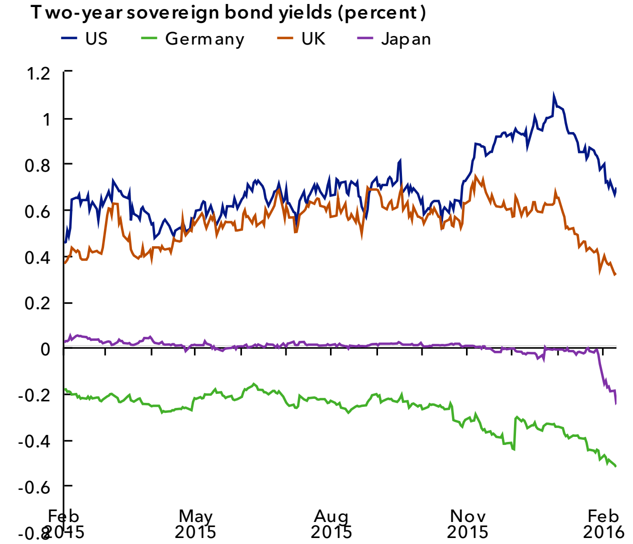
Notes: Option skew is the difference between 3-month implied volatility of out of the money puts and calls with strikes equal distance from the spot price (+/- 10%). Higher values reflect greater demand for downside risk protection. Equities represents S&P500 index. Interest rates represent weighted average skew of Treasury futures curve. Currencies represent dollar skew against major currencies based on JPMVXY index weights. Z-score standardization uses data going back to Jan 1, 2006.
Source: Bloomberg L.P., OFR Analysis

Volatility of equity volatility

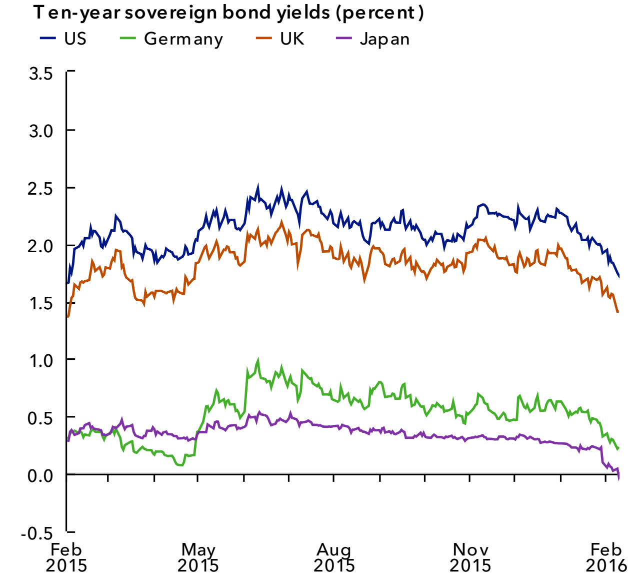


Notes: VVIX Index measures the expected volatility of the 30-day forward price of the CBOE VIX Index.
Source: Bloomberg L.P.

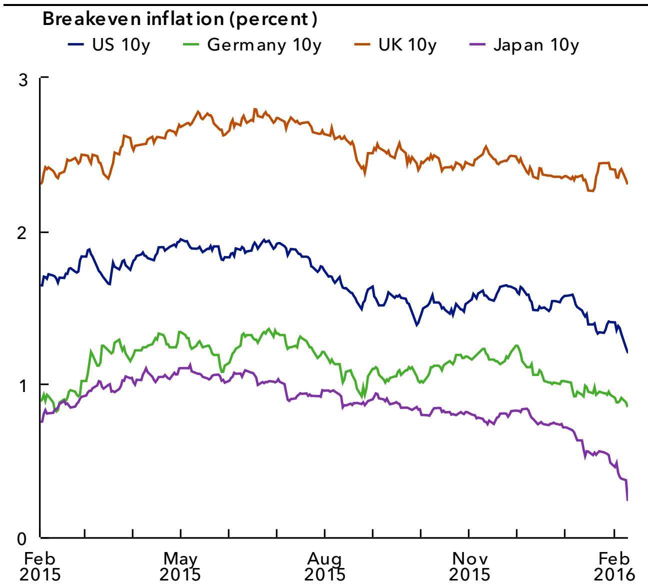
Advanced Economies



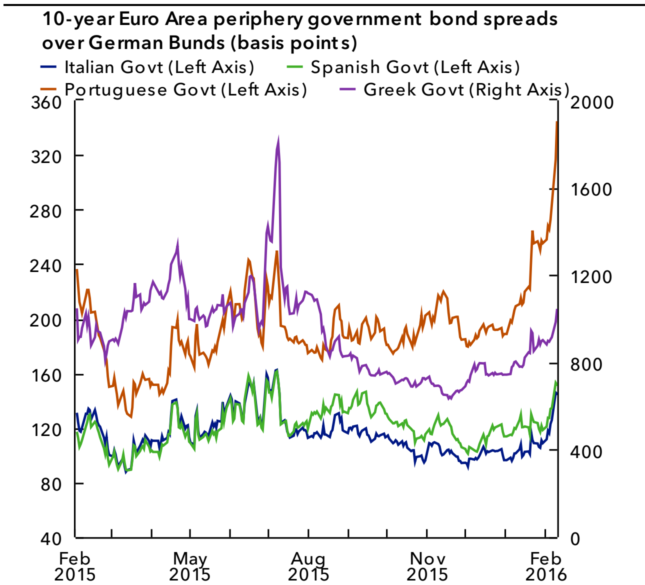
Source: Bloomberg L.P.



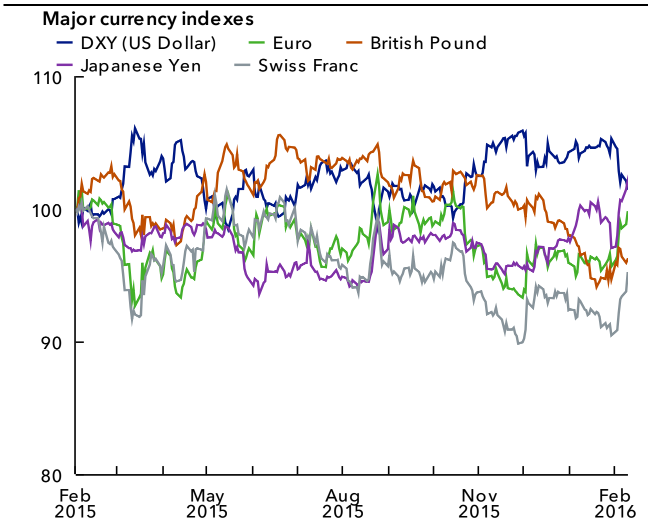
Source: Bloomberg L.P.



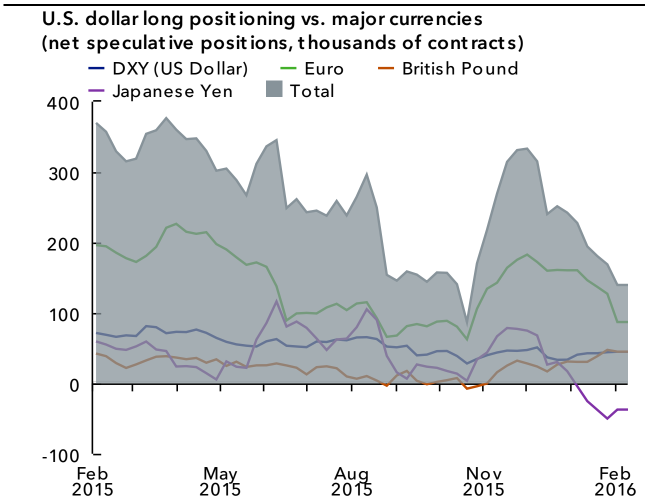
Source: Bloomberg L. P.



Source: Bloomberg L.P.



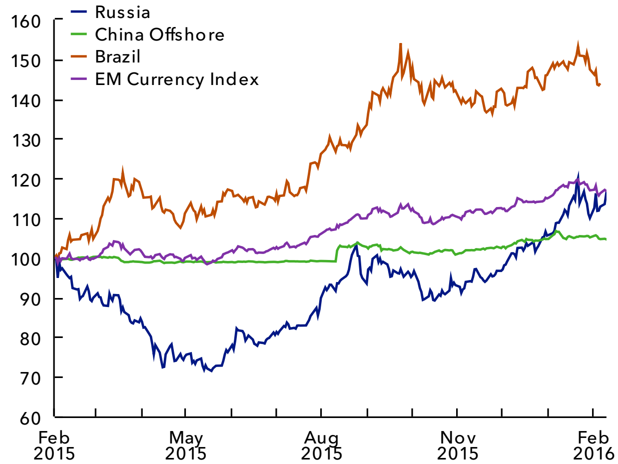
Notes: Foreign currencies increases represent greater strength versus the US Dollar. DXY increases represent greater strength of the US Dollar versus a basket of major world currencies. Index 100 = Oct 1, 2014.
Source: Bloomberg L.P.



Notes: Positive values represent net U.S. dollar long positions. The Dollar Index (DXY) is a futures contract based on the U.S. dollar's value against a basket of major world currencies. To express a U.S. dollar long position in a non-U.S. dollar contract, the contract must be shorted.
Source: Bloomberg L.P.

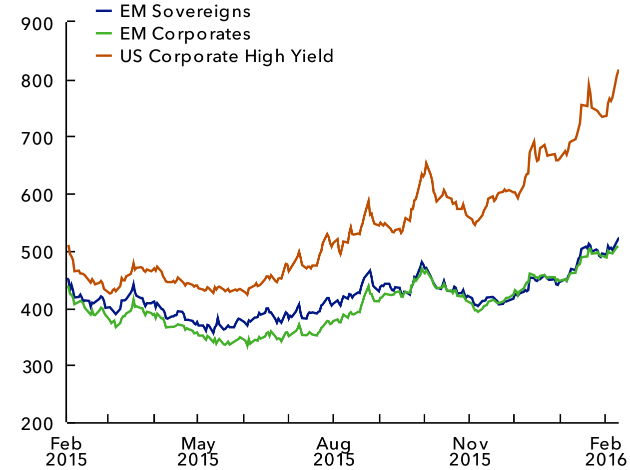
Emerging Markets

Emerging market currencies (foreign currency units per $US)



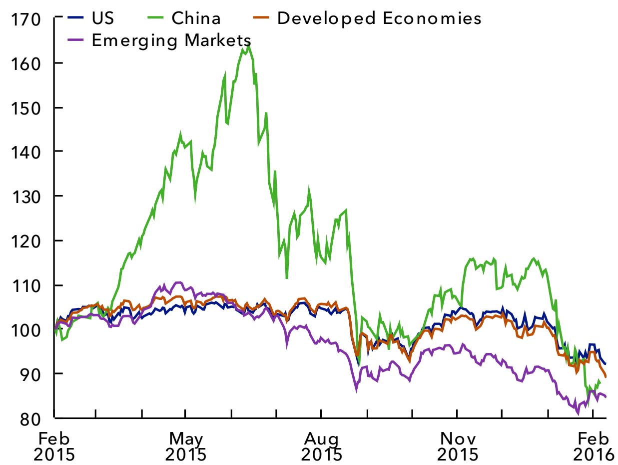
Notes: Increasing values indicate weakening versus the U.S. Dollar. The J.P. Morgan EM Currency Index is inverted to provide the same interpretation as other currency indexes. Index 100=February 01, 2015.
Source: Bloomberg L.P.

Spreads to Treasuries (basis points)



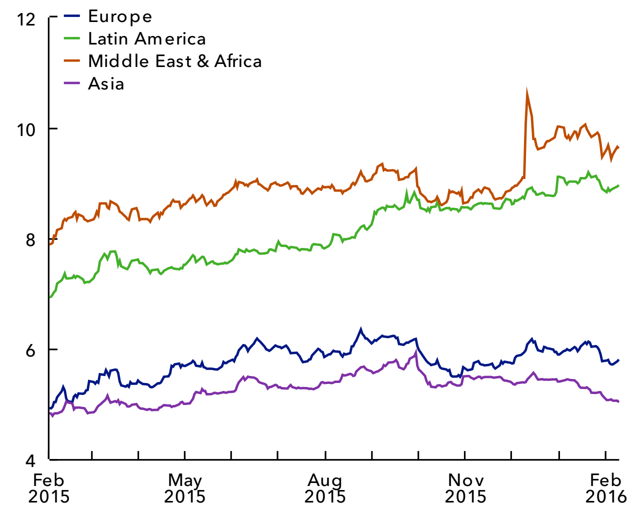
Notes: EM sovereign and corporate spreads to worst come from the dollar denominated J.P. Morgan Emerging Bonds Index Global and Corporate Emerging Market Bond Index. U.S. High-Yield Option-adjusted spreads come from the Bank of America Merrill Lynch index.
Source: Bloomberg L.P.

Equity price indexes



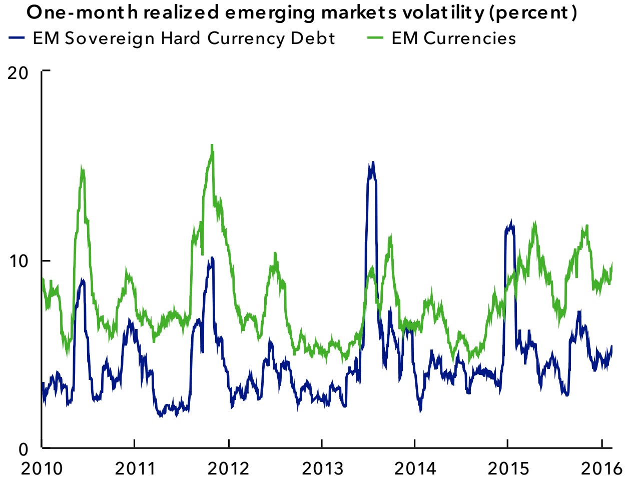
Notes: Note: Index 100 = February 01, 2015. The US equity index is the S&P 500 Index. The Chinese equity index is the Shanghai Composite Index. The Developed Economies index is the MSCI World Index and the Emerging Markets index is the MSCI EM Index (both are in local terms).
Source: Bloomberg L.P.

Emerging markets local currency bond yields



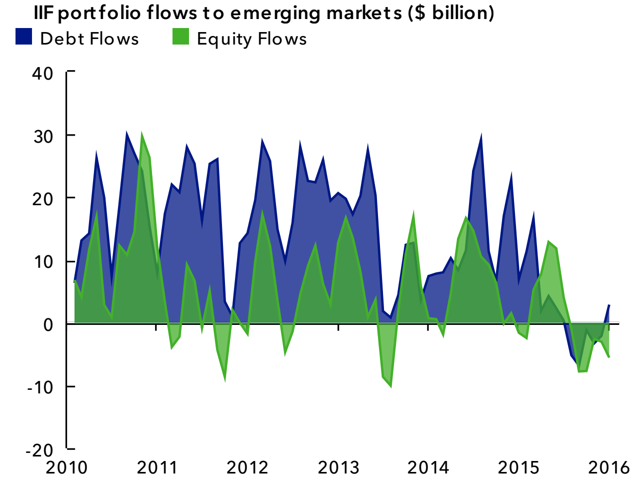
Notes: Yields are derived from J.P. Morgan Government Bond Index - Emerging Markets (GBI-EM) and related single entity indexes.
Source: Bloomberg L.P.

One-month realized emerging markets volatility (percent)



Notes: Realized volatility is the annualized standard deviation. Hard currency sovereign debt based on the J.P. Morgan Emerging Bonds - Global Price Index and currencies based on a weighted average of EM currency returns against the dollar using weights from J.P. Morgan VXY-EM currency volatility index.
Source: Bloomberg L.P., OFR Analysis

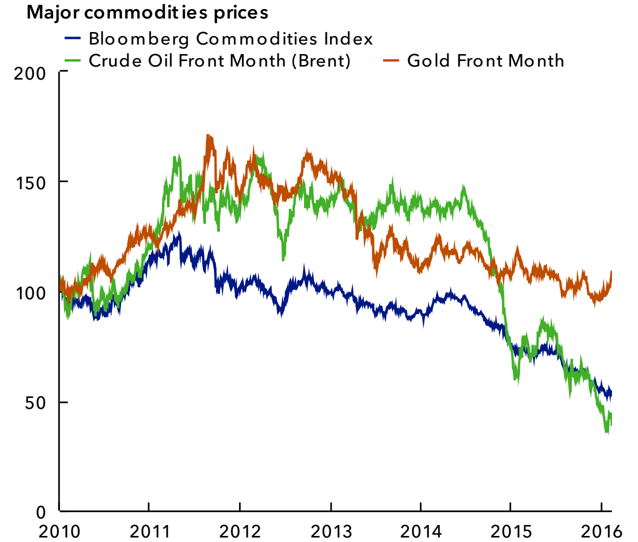
IIF portfolio flows to emerging markets ($ billion)



Notes: Data represents the Institute of International Finance's monthly estimates of non-resident flows into 30 EM countries. Data for latest observations are derived from IIF's empirical estimates using data from a smaller subset of countries, net issuance and other financial market indicators.
Source: Bloomberg

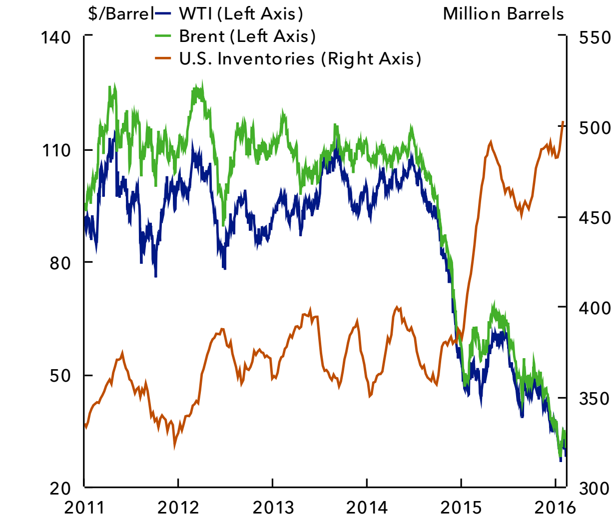
Commodities

Major commodities prices



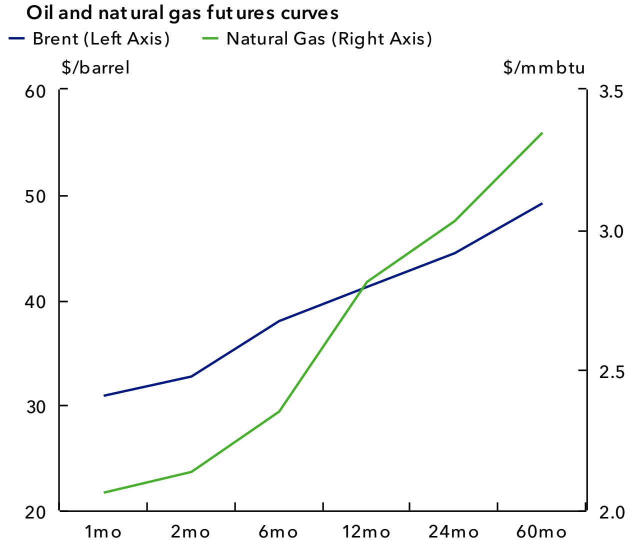
Notes: Index 100 = Jan 01, 2010
Source: Bloomberg L.P.

Crude oil



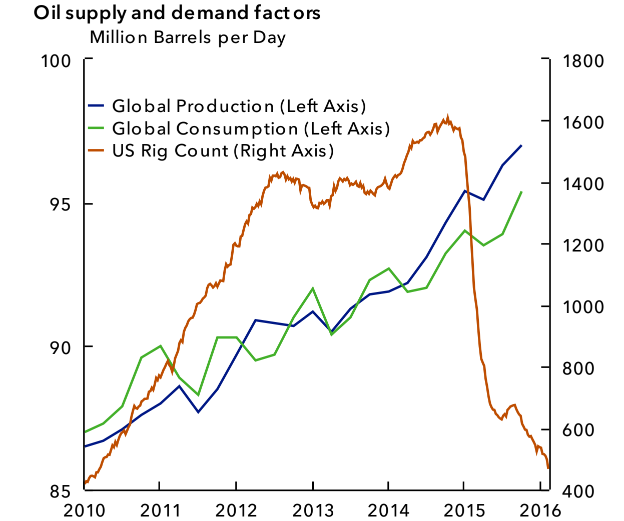
Notes: WTI and Brent are front-month contracts.
Source: Bloomberg L.P.

Oil and natural gas futures curves



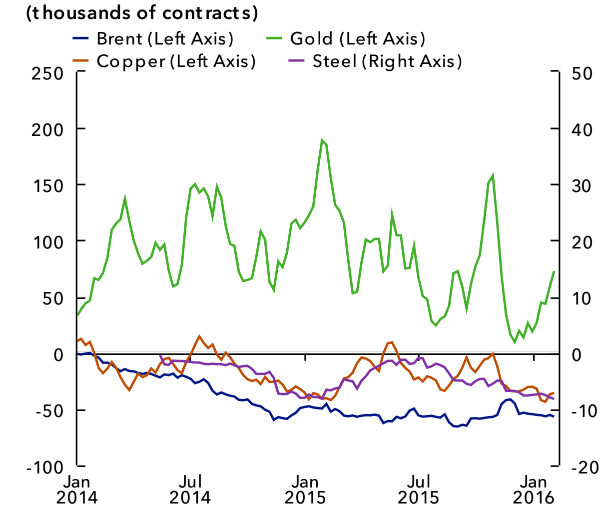
Notes: Data as of Feb 5th, 2016
Source: Bloomberg L.P., OFR Analysis

Oil supply and demand factors



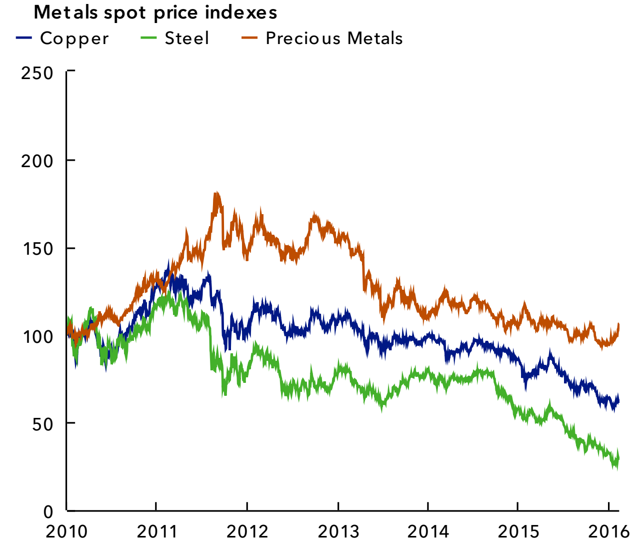
Notes: Global production and consumption are estimates by the International Energy Agency.
Source: Bloomberg L.P.

Speculative futures positioning (thousands of contracts)



Notes: Positive values represent net long positions and negative values represent net short positions.
Source: Bloomberg L.P.

Metals spot price indexes



Notes: Index 100 = Jan 01, 2010
Source: Bloomberg L.P.