Figure 1.3. Inflation, Monetary Policy, and Policy Rate Normalization

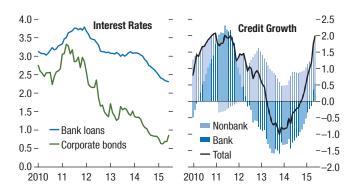
Headline inflation is projected to gradually rise in advanced economies...

1. Inflation Forecasts (Percent) 2.5-Actual **Forecast** 2.0-1.5 1.0-0.5 - 0.0_{-} United States Euro area -0.5 -— Japan China -1.014:04 15:02 15:03 15:04 16:02 16:03 16:04 15:01 16:01 4:01 201

Sources: Bloomberg, L.P.; and IMF staff calculations. Note: Headline inflation (Japan adjusted for value-added tax).

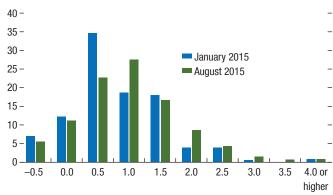
Euro area credit conditions are easing...

3. Euro Area: Credit to Companies and Households (Percent, year over year)



Sources: European Central Bank; Haver Analytics; and IMF staff calculations. But deflation risks remain in the euro area...

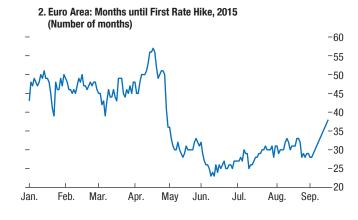
5. Euro Area: Five-Year Option-Implied Inflation Probabilities (Percent)



Source: IMF staff calculations.

Note: The probabilities are constructed by creating a "butterfly" portfolio that pays out if inflation takes a specific value or range. The options involved are inflation caps and floors that protect the buyer against high and low inflation, respectively. Each x-axis label refers to midpoint probability.

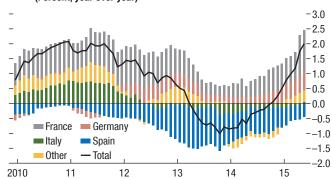
...and markets have shifted from pessimism to cautious optimism.



Source: Citigroup.

...as quantitative easing and bank reform begin to revive credit.

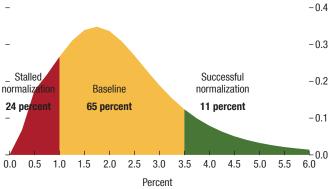
4. Euro Area: Contributions to Credit Growth to Companies and Households (Percent, year over year)



Sources: European Central Bank; Haver Analytics; and IMF staff calculations.

 \ldots and full monetary policy normalization is not guaranteed, even in the United States.

6. United States: Federal Funds Rate-Implied Probabilities (Probability)



Source: IMF staff calculations.

Note: For this calculation, the market pricing of options expiring in August 2017 on three-month swaps was used to determine the probability that market participants are placing on a stalled normalization. The calculation assumes that the difference between the three-month swap rate and the effective federal funds rate would remain relatively stable, at 15 basis points.