Global Central Bank QE Programs: How to Navigate Short Term Markets in a Time of Changing Monetary Policies

Chris Ginieczki,
Visa

Jerome Schneider,
PIMCO
United States: Fed extends low rates, QE

- Federal Reserve SOMA purchases nearing $3.5 trillion
  - Since 2008, massive reduction in Treasury bill and commercial paper issuance as well

- Continued quantitative easing measures drive asset prices
  - Prices less reflective of fundamentals

As of 17 October 2013

As of 30 September 2013

Source: Federal Reserve, Bloomberg

System Open Market Account (SOMA)
United States: Economy still well shy of targets

- U.S. unemployment and inflation are still well away from Forward Guidance targets (6.5% and 2%, respectively)
  - Unemployment remains high and inflation expectations are underwhelming
  - Fed unlikely to raise target rate for a long time – PIMCO expects that it will hover near zero until 2016

As of 31 August 2013
SOURCE: Haver Analytics, BEA
Inflation data is current as of 31 August 2013 and reflect recently released comprehensive revisions to the national income and product accounts published by the BEA every five years to more accurately portray the evolving U.S. economy given improved methodologies and newly available data. Assumption of 150,000 for breakeven level of jobs added
* Year-over-year percentage change in the core CPI, forward projections based on BEI
United States: Default averted by short-term compromise

- Congress reaches a temporary resolution
  - Government funded through January 15th at 2013 sequester levels ($986 billion annualized)
  - Committee tasked with delivering a reconciled budget, but no penalty if it fails to deliver

- Growth impact of decline in federal spending
  - Shutdown may result in an annualized drag of 0.1-0.2% of GDP
  - Knock-on effects may harm consumer and business confidence

- Markets shrug off shutdown uncertainty
  - S&P 500 reached a new high in October following Congress’ last-minute deal
  - Fed may extend current pace of purchases into 2014 on continued uncertainty and data delays

Key policy dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>13 Dec</td>
<td>Congressional budget committee delivers budget report for 2014 fiscal year</td>
</tr>
<tr>
<td>15 Jan</td>
<td>Continuing resolution expires</td>
</tr>
<tr>
<td>7 Feb</td>
<td>Debt ceiling suspended until this date, but likely through March with use of extraordinary measures</td>
</tr>
</tbody>
</table>

Government contribution to GDP

As of 18 October 2013
SOURCE: BEA, Haver Analytics, PIMCO

AFP® Annual Conference
United States: Longer-term forecasts create uncertainty

- Fed struggles to gauge economy, leads to conservative decisions (e.g. non-taper)
  - Fed has consistently overestimated GDP growth over prior several years

- Short-term yields may act differently than longer-maturity yields
  - Intermediate and long term yields rose, then fell on September taper announcement
  - Short-term yields remained relatively stable

As of 30 September 2013
SOURCE: FOMC Summary of Economic Projections, PIMCO, Bloomberg
FOMC projections represent the mean of the Central Tendency for FOMC Real GDP predictions 1 and 2 years ahead, respectively.
Active BoE and ECB employ own strategies but rates still closely linked to Fed policy
- Both banks have initiated Forward Guidance measures
- ECB promised “whatever it takes” in 2012, clipped left tail of a European bank run
ECB serves as stabilizing force

- Target2 data suggests improving Eurozone periphery
  - Target2: represents interbank payment system across Eurozone, proxy for surplus versus deficit countries
  - Trend of positive German balance reversed in 2012 and continues to decline

- Europe still struggling for sustainable growth, reflected in bank loans
  - Short-term investors must continue to distinguish across Eurozone countries
  - Implementation of Eurozone banking union ongoing – key to European financial stability

As of 31 Aug 2013
SOURCE: Institute of Empirical Economic Research – Osnabruck University, Bloomberg
Japan: Three Arrows of Abenomics – waiting for Arrow #3

#1 Monetary
- Double monetary base w/ large-scale asset purchases
- Encourage bank lending; raise inflation expectations

#2 Fiscal
- $50b for public works, $100b in additional spending
- RISK: Consumption tax planned to help halve deficit

#3 Reforms
- List of potential measures (below), but lack details
- Ruling LDP controls both houses with ample clout to pass reforms

Pillars of Reform
- Improve productivity of private industry
- Increase labor efficiency & inclusion
- Develop new markets – home & export
Japan: Employing aggressive fiscal and monetary policy

- BoJ articulated a goal of massive monetary base expansion
  - Committed to doubling the monetary base to 55% of GDP by 2015 – seeks to reach 2% inflation level

- Central bank activity has effectively translated to market expectations
  - Headline CPI and inflation expectations adjusted upward
  - Key will be long-term continued increase and sustainability

As of 30 June 2013
SOURCE: MIAC, Cabinet Office, Bloomberg, PIMCO
Japan: Continued growth requires tricky “handoff”

- BoJ is testing the limits of fiscal and monetary policy, needs to facilitate “handoff”
  - Must translate improving inflation expectations and sentiment to business/private industry
  - Investors need to watch for higher company productivity and profitability, and a more robust workforce
  - Downside risk remains, including: uneasy stock market, vague and slowly-implemented “Third Arrow” policies, impending increase in consumption tax

As of 30 June 2013
SOURCE: Cabinet Office, Bloomberg
China: Expanding financial system, seeking to stabilize growth

- Chinese economy underwent rapid expansion, reflected in industrial activity and GDP growth
  - Rebounded from 2009 downturn, but growth seems to have moderate

- China experienced massive growth in money and credit creation
  - Aggressive central bank policies have spurred economic activity
  - Shadow banking system also witnessed expansion

As of 30 June 2013
SOURCE: CEIC, NBS, PBOC, PIMCO
China: Must undergo transition to consumption-driven economy

- Despite strong growth, China still must effectuate transition to a consumption-driven economy
  - China’s outsized impact on growth prospects worldwide acts as drag on expectations
  - PIMCO believes China will experience below-forecast growth over the next year

As of 30 June 2013
SOURCE: NBS
Developing economy central banks

- Other active, high quality emerging economy central banks may provide stability
  - Brazil adjusted target rate in response to inflation

- Mexico responded to declining productivity by lowering rates
  - Appears to have had positive impact
  - However, central bank activity still has potential to cause or exacerbate instability and encumber growth, e.g. India
Short-Term strategy examples
Targeting opportunities outside of money market securities

As of 30 September 2013

SOURCE: Bloomberg, Municipal Market Advisors, and ICAP; BofA Merrill Lynch

Agencies: Agency discount note (composite of discount offered levels received from brokers and dealers for U.S. Agency discount notes); Treasuries (U.S. on-the-run government bill/note/bond indices); Commercial paper, certificate of deposit and corporate are composite curves provided by Bloomberg; General repo (consolidated data provided by ICAP); Agency repo: Consolidated data provided by ICAP; Municipals represented by the Municipal Market Advisors AAA General Obligation 1-5 Yr Indices; AA, A, and BBB corporate curves represented by their respective generic Bloomberg USD US Corporate curves. MBS, CMBS and ABS data are represented by their respective BofA Merrill Lynch indices and use weighted average life in place of final maturity.
Elevated rates create opportunity

As of 30 September 2013
Source: FOMC Summary of Economic Projections, Bloomberg
Credit diversification, potential for higher yield with similar risk

- Flexibility within the investment-grade space may allow for additional yield within a disciplined risk-reward framework

- Historical default rates for BBB-rated securities averaged only 0.18% since 1975

- The BBB universe broadens the investment grade universe
  - Can add diversification benefits in sectors that are normally defensive, such as industrials and utilities

- Structural seniority and savvy credit research can add potential alpha without stretching for yield

As of 30 June 2013
SOURCE: Moody's, Barclays

Historical default rates

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>Baa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average default rates (1975 to present)</td>
<td>0.04%</td>
<td>0.18%</td>
</tr>
<tr>
<td>Maximum default rate (1975 to present)</td>
<td>0.47%</td>
<td>1.12%</td>
</tr>
<tr>
<td>Maximum default rate year</td>
<td>2008</td>
<td>2002</td>
</tr>
<tr>
<td>2008 default rates</td>
<td>0.47%</td>
<td>0.49%</td>
</tr>
<tr>
<td>2009 default rates</td>
<td>0.19%</td>
<td>0.87%</td>
</tr>
<tr>
<td>2010 default rates</td>
<td>0.23%</td>
<td>0.00%</td>
</tr>
<tr>
<td>St. dev. of default rates (1975 to present)</td>
<td>0.10%</td>
<td>0.30%</td>
</tr>
</tbody>
</table>

Based on Moody’s Annual Issuer-Weighted Corporate Default Rates by Letter Rating
Covered bonds

- Covered bonds are typically high-quality instruments backed by collateral as well as the guarantee of the issuing bank, and sometimes the guarantee of the sovereign government where the security is issued.

- USD covered bond issuance has increased over the last three years, primarily in Canada, France, U.K., and Norway.

- Total amount outstanding of USD covered bonds is around $114 billion.

As of 30 September 2013
SOURCE: Barclays

* Covered bonds are generally affected by changing interest rates and credit spread; there is no guarantee that covered bonds will be free from counterparty default. Represented by the Barclays Global Covered Bonds Index – the sub index is the USD-denominated covered bonds.
Appendix

**Past performance is not a guarantee or a reliable indicator of future results.**

**CHART**
Performance results for certain charts and graphs may be limited by date ranges specified on those charts and graphs; different time periods may produce different results.

**CREDIT QUALITY**
The credit quality of a particular security or group of securities does not ensure the stability or safety of an overall portfolio. The Quality ratings of individual issues/issuers are provided to indicate the credit worthiness of such issues/issuer and generally range from AAA, Aaa, or AAA (highest) to D, C, or D (lowest) for S&P, Moody's, and Fitch respectively.

**RISK**
Investing in the bond market is subject to certain risks, including market, interest rate, issuer, credit and inflation risk; investments may be worth more or less than the original cost when redeemed. Investing in foreign-denominated and/or -domiciled securities may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in emerging markets. Mortgage- and asset-backed securities may be sensitive to changes in interest rates, subject to early repayment risk, and their value may fluctuate in response to the market's perception of issuer creditworthiness; while generally supported by some form of government or private guarantee, there is no assurance that private guarantors will meet their obligations. Derivatives may involve certain costs and risks, such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested.

The value of most bond strategies and fixed income securities are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and more volatile than securities with shorter durations; bond prices generally fall as interest rates rise.

This material contains the current opinions of the manager and such opinions are subject to change without notice. This material has been distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission. PIMCO and YOUR GLOBAL INVESTMENT AUTHORITY are trademarks or registered trademarks of Allianz Asset Management of America L.P. and Pacific Investment Management Company LLC, respectively, in the United States and throughout the world. ©2013, PIMCO.

**PIMCO Investments LLC**, distributor, 1633 Broadway, New York, NY, 10019, is a company of PIMCO.
Global Central Bank QE Programs: How to Navigate Short Term Markets in a Time of Changing Monetary Policies

Chris Ginieczki,
Visa
Are you prepared?

Quantitative Easing?
Political Divide?
Benchmark Rates?
New Leadership?
Forward Guidance?
Tapering?
Numerical Thresholds?
Rates reacted quickly to Fed speak about tapering

“the Committee currently anticipates that it would be appropriate to moderate the monthly pace of purchases later this year” - June FOMC
### Taper = Tightening?

...but Fed participants aren’t forecasting a quick rise in rates

<table>
<thead>
<tr>
<th>Target federal funds rate at year-end (%)</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Longer run</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.25</td>
<td>17</td>
<td>14</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75</td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.25</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.50</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.75</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>2.00</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.50</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.75</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3.00</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.25</td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.50</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3.75</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4.00</td>
<td>2</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.25</td>
<td></td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: Federal Reserve
Expectations that the Fed would taper its bond purchases also elevated market volatility.

Note: Historical volatility depicted as two standard deviation using 6 months of historical data annualized.

SOURCE: Federal Reserve
Performance during Taper Tantrum

The dramatic shift up in rates negatively impacted total return

<table>
<thead>
<tr>
<th>Period</th>
<th>Yield</th>
<th>Mark to Market</th>
<th>Total Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 month</td>
<td>.04%</td>
<td>-.58%</td>
<td>-.54%</td>
</tr>
<tr>
<td>2 months</td>
<td>.09%</td>
<td>-.87%</td>
<td>-.78%</td>
</tr>
<tr>
<td>3 months</td>
<td>.13%</td>
<td>-.53%</td>
<td>-.40%</td>
</tr>
<tr>
<td>4 months</td>
<td>.18%</td>
<td>-.39%</td>
<td>-.21%</td>
</tr>
<tr>
<td>5 months</td>
<td>.22%</td>
<td>-.45%</td>
<td>-.23%</td>
</tr>
</tbody>
</table>

SOURCE: Bloomberg raw data

 AFP® Annual Conference
Primary dealers are not providing liquidity as they have done historically
Taper = Rate Shock Redux?

Forward curve is predicting a near parallel shift in the yield curve

SOURCE: Bloomberg raw data
Company Specific Factors

- Risk Tolerance
- Cash Flows
- Resources
- Duration Risk
- Credit Risk
- Liquidity Risk

Strategy

Investment Characteristics
Company Specific Factors

Risk Tolerance
- Quantity your risk tolerance
- Consider VaR and market to market metrics

Cash Flow
- Onshore vs. offshore segmentation
- Understand how corporate strategy affects cash flows

Resources
- Manage in house vs. SMA
- Trading systems, compliance, accounting, and performance analytics

AFP® Annual Conference
Investment Characteristics

**Duration Risk**
- Price sensitivity to changes in interest rates
- Can drive total return in low coupon environment

**Credit Risk**
- Idiosyncratic to exposure
- Ratings risk
- Spread duration

**Liquidity**
- Varies within and among asset types
- Not necessarily aligned with credit ratings
- Test your liquidity assumptions
Segmentation and Strategy

Results from a factor analysis may point to the creation of several portfolios, each with their own strategy.

- Liquidity Portfolio
- Risk Portfolio
- Non USD Portfolios
## Where to invest? – Liquidity Portfolio

<table>
<thead>
<tr>
<th>Investment</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bills</td>
<td>• Same day liquidity, tight bid/ask</td>
</tr>
<tr>
<td></td>
<td>• Relatively volatile given supply technicals</td>
</tr>
<tr>
<td>ECR</td>
<td>• Relatively high yield vs. interest bearing deposits, time deposit</td>
</tr>
<tr>
<td></td>
<td>• Counterparty risk</td>
</tr>
<tr>
<td>Money Market Funds</td>
<td>• Diversified portfolios adhering to very conservative credit and liquidity rules</td>
</tr>
<tr>
<td></td>
<td>• Regulatory risk</td>
</tr>
<tr>
<td>Commercial Paper</td>
<td>• Dominated by financials</td>
</tr>
<tr>
<td></td>
<td>• Credit risk, 90 days and in market</td>
</tr>
<tr>
<td>Treasuries/Agencies</td>
<td>• US Gov’t credit, deepest liquidity</td>
</tr>
<tr>
<td></td>
<td>• Supply technicals, duration risk</td>
</tr>
</tbody>
</table>
Navigating Risk

**Duration**
- Laddering fixed rate investments – including time deposits - shortens duration

**Credit**
- Limit and diversify counterparty risk from bank products (ECR, deposits)

**Liquidity**
- Understand market technicals and regulations
Where to invest? – Risk Portfolio

These assets require a deep understanding of portfolio construction as well as knowledge of their associated credit, duration and liquidity risks.

<table>
<thead>
<tr>
<th>Investment</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Grade</td>
<td>• Spread duration</td>
</tr>
<tr>
<td>ABS</td>
<td>• Structures differ by asset type</td>
</tr>
<tr>
<td></td>
<td>• Follow the cash flow waterfall</td>
</tr>
<tr>
<td>MBS</td>
<td>• Prepayment characteristics</td>
</tr>
<tr>
<td></td>
<td>• Regulatory risk</td>
</tr>
<tr>
<td>High Yield</td>
<td>• Default risk</td>
</tr>
<tr>
<td>ETFs/Funds</td>
<td>• Index exposure</td>
</tr>
<tr>
<td></td>
<td>• Fees, withdrawn limitations</td>
</tr>
</tbody>
</table>
Roll Down?

Total return will differ based on realized roll down

SOURCE: Bloomberg raw data
Navigating Risk

**Duration**
- Floating rate notes will limit price volatility
- Laddered portfolios shorten duration

**Credit**
- Re-leveraging via shareholder friendly activities can affect coverage ratios and ratings

**Liquidity**
- Avoid crowded trades – liquidity can be impacted at exit
Where to invest? – Non USD Portfolio

Investing is much more tactical depending upon whether cash is “trapped” and the hedging philosophy

<table>
<thead>
<tr>
<th>Investment</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank products</td>
<td>• Structured deposits include optionality</td>
</tr>
<tr>
<td></td>
<td>• Counterparty risk</td>
</tr>
<tr>
<td>Money Market Funds</td>
<td>• Yields attractive vs. bank products</td>
</tr>
<tr>
<td></td>
<td>• Portfolio constraints different from 2a-7</td>
</tr>
<tr>
<td>Bonds</td>
<td>• Spread duration</td>
</tr>
<tr>
<td></td>
<td>• Local market expertise</td>
</tr>
<tr>
<td>ETFs/Funds</td>
<td>• Index exposure</td>
</tr>
<tr>
<td></td>
<td>• Fees, withdrawn limitations</td>
</tr>
</tbody>
</table>
Navigating Risk

Duration

- Be aware of the local interest rate environment – rates may be decreasing

Credit

- Global businesses diversify exposure to local market

Liquidity

- Understand structured deposit withdrawal limitations
  - Consider converting exposure to USD