Barclays Research

Our analysts strive to deliver differentiated market insights, actionable ideas and collaborative research across asset classes, through publications, global conferences, one-to-one analyst interactions and Premier Events.

Thematic Research
Stay up to date with the most relevant themes across markets and asset classes.

#brexit #europeanelections
#uspolicy
#retailtippingpoint
#corporatepurchases #creditsupply
#energyrevolution #futureofmedia
#disruptivemobility

FICC Premier Events and Industry-Leading Equity Events
Barclays Research hosts nearly 200 Premier Events and 1,000s of Equity Events each year

Providing exclusive access to Analysts
Policymakers
Industry Experts
Cross-Asset Expertise
Corporate Management Teams

...through
Flagship Conferences
Investor Field Trips
Corporate Events
Investor Meetings
Flagship Publications

**Equity Gilt Study**
Now in its 62nd year, the Equity Gilt Study provides multi-disciplinary commentary on longer-term market trends, analyzing asset returns across different markets and geographies.

**Global Outlook**
Published quarterly, the Global Outlook provides an assessment of macro themes across all major economies and outlines their likely implications for global financial markets.

**Top Picks**
Barclays Equity Research’s “Top Picks” represent the single best alpha-generating investment idea within each industry, taken from among the Overweight-rated stocks within that industry.

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**Barclays Live**
The client facing web portal of Barclays Research franchise consistently voted #1 in Web-Based Analytical Tools by Institutional Investor All-America since 2008.

### Barclays Live App
Work seamlessly on your phone, tablet and desktop

### Watchlist
Customized research and charts in your tiles

### You Might Like
Suggested research and personalized reading lists

### Analytics
Relative value analysis, yield curves, historical market data, and quantitative models

### Markets
Monitor market data across asset classes

### Multimedia
Infographics, reports and videos
Macro Research

An integrated offering across economics, rates, FX, commodities, and public policy combining short-term daily commentary with long-term thematic ideas across developed and emerging economies.

Flagship Publications

REGULARS
- Global Economics Weekly
- Emerging Markets Weekly
- FX and EM Macro Strategy Quarterly
- Global Rates Weekly
- The Blue Drum
- Thoughts for the Week Ahead

DEEP DIVES
- Global Outlook
- Thinking Macro
- Three Questions

DIGESTS
- Global Macro Daily
- The House View

Thematic Research

#brexit #europeanelections #missingflation #uspolicy
#chinadebt #brazilrisks #liquiditysqueeze #blockchain

Analysts

60+ economists, rates, FX and commodities strategists form the backbone of the Barclays global macro franchise.

Premier Events

July 1, 2016 – June 30, 2017

62

Macro Events

MOST POPULAR EVENTS
- UK Referendum Timeline and Process
- Roundtable: Oil & Geopolitics in the Middle East
- The Future of US Trade Policy
- China Investor Trip
- Mexico Macro Field Trip
- Sterling Markets Outlook Roundtable — Referendum Time
**Macro Analytic Tools**

Full suite of macro analytic tools including charting tools, calculators, market monitors, volatility and trends analysis.

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**OASIS**

Identify opportunities and themes in FX volatility and perform complex analysis across multiple asset classes.

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**VolT**

Analyze foreign exchange trade volume and positioning trends.

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**TRENDS**

View a snapshot of the technical condition of the FX and commodities markets.

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**Barclays Macro Events**

Monthly Barclays Live Web events that highlight new features and analysis around Macro market themes.

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**Inflation-Linked Toolkit**

Monitor inflation-linked analytics through our suite of calculators and curve/charting tools.

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The dedicated Barclays Live Sales team provides tutorials and updates for clients on how to use Barclays Live.
Credit Research

Offering strategy and fundamental research with thematic views, trade ideas and Premier Events across a wide range of credit products and geographies.

Flagship Publications
Our suite of daily, weekly, bi-weekly, and quarterly publications provides thematic research and trade ideas.

- European Credit Alpha
- U.S. Credit Alpha
- CDS Index Option Dashboard
- AAA Investor
- Global Credit Outlook
- Barclays Tuesday Credit Call
- CDS Index Positioning
- Daily Research Summary
- Emerging Markets Weekly
- EM Corporate Credit Top Picks

Thematic Research

- #retailtippingpoint
- #creditsupply
- #fallenangels
- #corporatepurchases
- #chinadebt
- #energyrevolution

Analyst Coverage (as of 19 June 2017)
~70 credit analysts and strategists cover...

- US 450+ (~47%)
- Europe 270+ (~29%)
- LatAm+ Asia 70 (~7%)
- EEMEA 110+ (~12%)
- Sovereigns 40+ (~4%)

950+ Issuers globally

330+ issuers across EMEA

Credit Strategy
Across investment grade and high yield, including coverage of hybrid capital, loans, CLO, EM corporate, cross-currency relative value, derivatives and select securitized products.

Premier Events
July 1, 2016 – June 30, 2017

155 Credit Events

MOST POPULAR EVENTS
- New Look Investor Meeting
- Repsol Investor Roundtable
- China Economic Update & Implications for Autos & Metals Corporates
- Chemicals Credit Review with S&P
- European Telecoms Regulatory Outlook
- European Banks Roundtable Dinner
Credit Analytic Tools

Full suite of macro analytic tools including **charting tools, calculators, market monitors and screeners**

### Chart

Access hundreds of multi-currency relative value curves and historical time series across financial markets for pre-trade analysis.

### Credit Center

Access all relevant analytics and research across a single issuer and its sector peers in one application.

### Bond Screening Tool

Multi-input bond screener for easy identification of the bonds fitting your customized criteria.

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**Barclays Credit Workshops**

The Workshop series focuses on relevant credit themes with guest speakers throughout the year. These WebEx calls feature relative value themes, current trade ideas and our fundamental views.

Alongside our workshops, the dedicated Barclays Live Sales team provides **tutorials and updates** for clients on how to use Barclays Live and the content available for your analysis and monitoring of the Credit markets.
Our Product Mix

**Single Stock**
- Full Signal
  - Our brand for in-depth fundamental single stock research

**Thematic**
- #futureofmedia
  - Tracking the most relevant market themes

**UK**
- UK Mid & Small Cap
  - Market-leading directory spanning 245 UK stocks

**Transatlantic**
- Transatlantic Collaboration
  - A fresh perspective on today’s global sectors

Analyst Coverage (as of 19 June 2017)

<table>
<thead>
<tr>
<th>Region</th>
<th>Analysts</th>
<th>Stocks</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>1,003</td>
<td>~600</td>
</tr>
<tr>
<td>Continental Europe</td>
<td>347</td>
<td>352</td>
</tr>
<tr>
<td>UK</td>
<td>245</td>
<td>245</td>
</tr>
<tr>
<td>Canada</td>
<td>94</td>
<td>94</td>
</tr>
<tr>
<td>LatAm</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

1,752 Stocks

Events

**BARCLAYS SELECT SERIES**
- Building & Building Products
- European Payments & Fintech Forum
- European Retail Forum

**INDUSTRY LEADING CONFERENCES**
- CEO Energy-Power
- Global Consumer Staples
- Global Financial Services
- Global Automotive
- Global Technology, Media and Telecommunications (TMT)
- Industrial Select
- Global Healthcare
Company Pages

Access company research, upside/downside scenario ranges and company financials, including three-year forecasts across income statement, balance sheet and cashflow.

Equity Industries Under Coverage
(as of 28 June 2017)

Size of the bubble denotes total market capitalization of our coverage stocks in each industry.

Top Picks

Barclays Equity Research’s “Top Picks” represent the single best alpha-generating investment idea within each industry, taken from among the Overweight-rated stocks within that industry.
Quantitative Portfolio Strategy

Providing our clients with innovative insights into all aspects of the investment process, across asset classes.

Extensive Research
Spanning major steps of the investment process

- Asset Allocation
- Benchmark Customisation
- Choice of Investment Style
- Risk Budgeting

Unique Content
For over two decades, the Barclays Quantitative Portfolio Strategy team has used its extensive research and portfolio management experience to provide our clients with research that is:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Practical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis based on rigorous and innovative empirical studies and models. No subjective views: “let the data speak”</td>
<td>Realistic and implementable research findings in response to questions from practitioners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Academically Recognized</th>
<th>Broad in Nature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Published in key industry journals</td>
<td>Covering all major asset classes including cross-asset research and aimed at a variety of institutional clients</td>
</tr>
</tbody>
</table>


QPS Annual Councils
Hosted annually by Barclays

The Americas Advisory Council in New York and the European Advisory Council in London provide a great opportunity for two-way dialogue with large institutional investors.

Agenda highlights new QPS research for the past year. QPS analysts moderate discussions with e-voting in an effort to get client feedback.
### QPS Research Categories

#### Choice of Investment Style
- Smart beta in fixed income markets
- Properties of systematic investment styles
- Value of security selection vs asset allocation

#### Portfolio Construction Methodologies
- Duration Times Spread (DTS) — a new risk measure introduced by QPS that became industry standard
- Portfolio/index hedging and replication
- Topical studies on ESG investing, Risk Parity, FX hedging, Diversification, Factor Modelling, Style Premia

#### Analytics and Sector/Issuer/Issue Level Periodic Scorecards
- Modeling liquidity in bond markets: Liquidity Cost Scores (LCS), Trade Efficiency Scores and Price Impact Measure
- Excess Spread to Peers (ESP) — relative value in credit markets
- Equity Momentum in Credit (EMC) — identifying value in corporate bonds of an issuer based on momentum of its equity
- Issuance Momentum in Credit (EMC) — identifying value in corporate bonds of an issuer based on momentum of its equity
- Global Rates Carry — selecting sovereign markets with higher promised yield
- Spread per unit of Debt To Earning Ratio (SPiDER) — relative value in equity and credit markets
- Bond in Equity Asset Momentum (BEAM) — ranking equities based on momentum of corporate bonds of the same issuer

#### Analysis of Manager’s Performance
- Measure of Manager Skill for identifying hedge funds performance persistence
- Algorithmic Evaluation of Returns for comparing performance and risk of a given hedge fund to its peers
- Studies of active manager performance and of the value of skill in different environments

#### Bespoke Portfolio Optimization Tools
- Optimal Risk Budgeting with Skill (ORBS)
- Maximum Likelihood Scenario Definition
- Try and Hold model for long-horizon credit portfolios

### Published Books
Our QPS team has published three books over the last 10 years reflecting our client-driven research.

*Quantitative Management of Bond Portfolios* by Larry Siegel, Arturjus Silver, and Julian Smith
*Quantitative Credit Portfolio Management* by Andrew Edey, Esty Menkin, and Bruce Phillips
*Barclays A Decade of Duration Times Spread (DTS)*

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