Daily Trends in Yields, Equity Returns, FX

10-Yr US Government Yield (%) vs Equity Return (%)

Cumulative MSCI Equity Return in USD (%)

10-Yr Government Yield: Cumulative Change (bps)

Strength of USD

*See Appendix for data sources
Monthly Trends in Yields, Equity Returns, FX

10-Yr US Government Yield (%)
- Nominal Yield
- MSCI USA

Equity Return (%)

Cumulative MSCI Equity Return in USD (%)
- USA
- World ex USA
- Emerging Markets

10-Yr Government Yield: Cumulative Change (bps)
- US
- Germany
- UK
- Japan

Strength of USD
- vs EUR
- vs GBP
- vs JPY
- vs CNY

*As of July 28
**See Appendix for data sources
Government Nominal Yield Curves

*See Appendix for data sources
Daily & Monthly US Corporate Spreads vs Equities

**10-Yr BBB OAS (bps)**

- Option Adjusted Spread
- MSCI USA

**10-Yr Corporate OAS: Cumulative Change (bps)**

- BBB
- A
- AA

---

*As of July 28

**See Appendix for data sources**
Euro Corporate and Sovereign Spreads vs Equities

10-Yr BBB OAS (bps)*  | Equity Return (%)*
---|---
| Option Adjusted Spread | MSCI Europe |
*Option Adjusted Spread in basis points to German government curve. Equity return expressed in USD.

10-Yr Corporate OAS: Cumulative Change (bps)

<table>
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<tr>
<th>Dec 2020</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul**</th>
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<td>122</td>
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</table>

10-Yr Sovereign OAS (bps)*  | Equity Return (%)*
---|---
| Italy | France | Spain | MSCI Europe |
*Option Adjusted Spread in basis points to German government curve. Equity return expressed in USD.

10-Yr Sovereign OAS: Cumulative Change (bps)

<table>
<thead>
<tr>
<th>Dec 2020</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul**</th>
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**As of July 28
***See Appendix for data sources
Trends in Government Yields and Actual Inflation

10-Yr Government Nominal Yields (%)

Realized Inflation (12-Month, in %)

10-Yr Government Breakeven Inflation Yields (%)

10-Yr Government Real Yields (%)

*UK breakeven inflation and real yields are adjusted to reflect historical differences between the Retail Price Index (RPI) and the Consumer Price Index (CPI)

**See Appendix for data sources
Spreads on Corporates & Euro / EM Sovereigns

10-Yr US Corporate OAS (bps)

10-Yr Euro Sovereign OAS (bps)*

*Spread to German government curve

10-Yr Euro OAS (bps)*

10-Yr Emerging Markets Sovereign OAS (bps)*

*Spread to US Treasury curve

**See Appendix for data sources
Inflation: US Market Implied (BEI) and Actual CPI / PCE

US Government Breakeven Inflation Yield Curve (%)

-3.00 -2.00 -1.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00

Maturity (years)

1 3 5 7 10 15 20 30

28-Jul 2021 31-Jan 2021 31-Jul 2020

US CPI vs Breakeven Inflation Yields (%)

-3.00 -2.00 -1.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00

Aug '17 Jul '18 Jun '19 Jun '20 Jun '21 Jun '22

CPI ex food/energy 2-yr 5-yr 10-yr

US CPI (%)

-3.00 -2.00 -1.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00

Aug '17 Jul '18 Jun '19 Jun '20 Jun '21 Jun '22

CPI all items CPI ex food/energy

US Inflation: CPI vs PCE (%)

-3.00 -2.00 -1.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00

Aug '17 Jul '18 Jun '19 Jun '20 Jun '21 Jun '22

PCE ex food/energy CPI ex food/energy

*CPI all items inflation (yoy) 5.4% as of Jun 2021
**See Appendix for data sources

*CPI ex food/energy inflation (yoy) 4.5% as of Jun 2021
*PCE ex food/energy inflation (yoy) 3.4% as of May 2021
US Govt Yield Drilldown: Nominal, Real and BEI

*See Appendix for data sources
China Government Bond Drilldown

**China Sovereign (CNY) Yield Curve (%)**

- Maturity (years): 2.00, 2.25, 2.50, 2.75, 3.00, 3.25, 3.50, 3.75, 4.00

**10-Yr China Sovereign Yield (%)**

- As of July 28. Equity return in USD

**Realized Inflation (%)**

- **China inflation (yoy) 1.1% as of Jun 2021**
- Inflation measured by All Items CPI includes food and energy prices

**Equity Return (%)**

- Equity return in USD

---

***See Appendix for data sources**
Long-Run Trends in Yields and Inflation

10-Yr Government Nominal Yields (%)

Realized Inflation (12-Month, in %)

10-Yr Government Breakeven Inflation Yields (%)

10-Yr Government Real Yields (%)

*UK breakeven inflation and real yields are adjusted to reflect historical differences between the Retail Price Index (RPI) and the Consumer Price Index (CPI)

**See Appendix for data sources

*US: PCE ex food/energy; Eurozone: HICP ex food/energy/alcohol/tobacco
UK: CPIH ex food/energy/alcohol/tobacco; Japan: CPI ex food/energy
Long-Run Trends in Spreads

10-Yr US Corporate OAS (bps)

10-Yr Euro Sovereign OAS (bps)*

10-Yr Euro OAS (bps)*

10-Yr Emerging Markets Sovereign OAS (bps)*

*Spread to German government curve
**See Appendix for data sources

*Spread to US Treasury curve
Trends in Yield and Return Volatilities

10-Yr Government Nominal Yield Volatility (bps)*

10-Yr US Yield Volatility (bps)*

US Nominal Yield Volatility Curve (bps)*

Equity and 10-Yr US Government Return Volatility (%)*

*Realized volatility using exponential time decay with half life of 18-weeks
**See Appendix for data sources
Trends in Correlations and Yield Curve Slope

Return Correlations: Equities & 10-Yr US Government*

Return Correlations: US Equity & 10-Yr US Real, BEI*

Yield Correlations: 10-Yr US Government*

Yield Curve Slope: 10-Yr less 3-Month (bps)

*Realized correlation using exponential time decay with half life of 2-years

**See Appendix for data sources
FX Trends

Strength of US Dollar

FX Forward Curve: Strength of US Dollar*

<table>
<thead>
<tr>
<th>Maturity (years)</th>
<th>vs EUR</th>
<th>vs GBP</th>
<th>vs JPY</th>
<th>vs CNY</th>
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</table>

*As of July 28

**Realized volatility using exponential time decay with half life of 18-weeks

**See Appendix for data sources
**GDP**

**US GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

**Eurozone GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

**China GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

**Japan GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

**UK GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

**Germany GDP (%)**
- 2019: -10.0
- 2020: -5.0
- Q4 2020: 0.0
- Q1 '21: 5.0
- Q2* '21: 10.0
- Q3 2020: 15.0
- Q4 2020: 20.0
- Q1 '21: 15.0
- Q2* '21: 10.0

*Most recent quarterly GDP: 1.6
*Most recent quarterly GDP: -0.3
*Most recent quarterly GDP: 1.3
*Most recent quarterly GDP: -1.0
*Most recent quarterly GDP: -1.6
*Most recent quarterly GDP: -1.8

**See Appendix for data sources**
Appendix
Data Sources

**Yields and Spreads**
MSCI zero coupon yield and spread curves

**Indexes**
MSCI USA Index, MSCI World ex USA Index, MSCI Europe Index, MSCI China, MSCI Emerging Market Index

**Relative Strength of Currencies**
MSCI

**Inflation and GDP**
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<th>ASIA PACIFIC</th>
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* = toll free

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