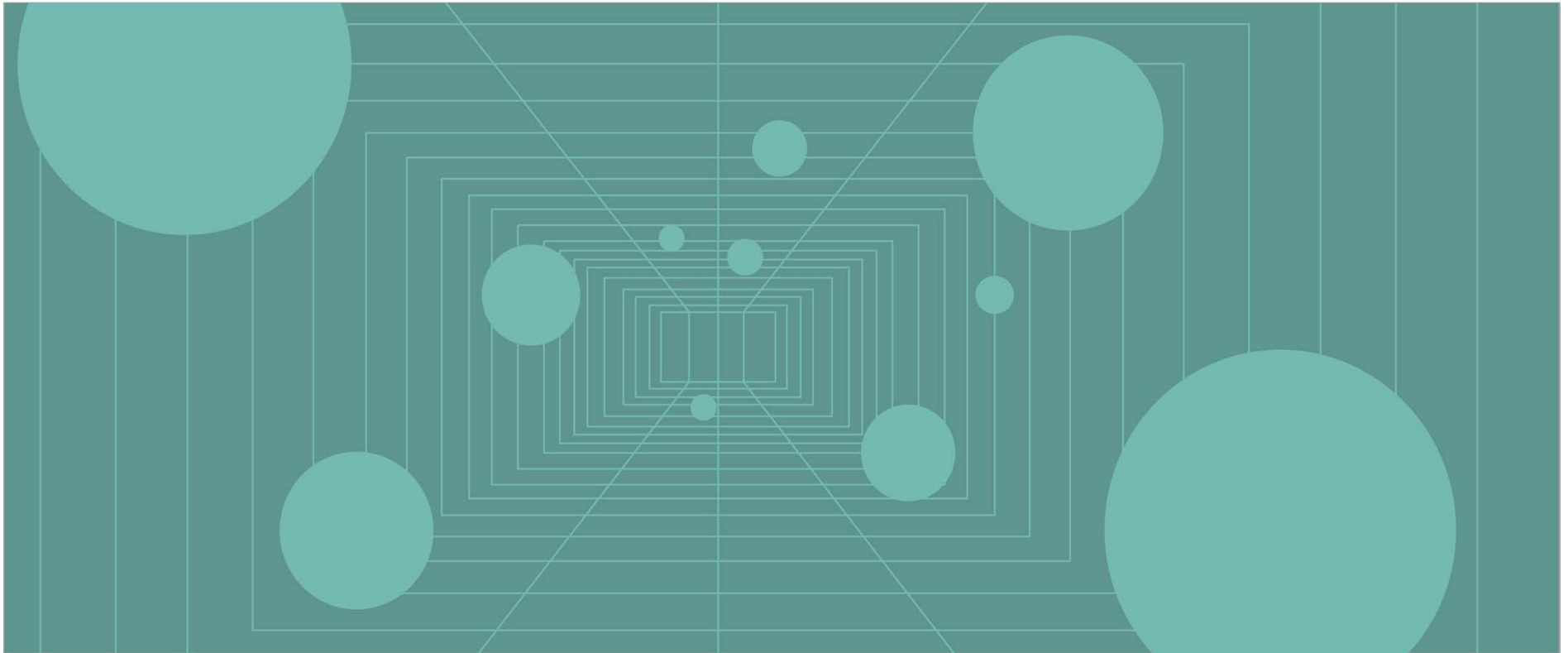


# CURRENCY VIEWS AND VALUATIONS



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## Introduction

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In April 2016, we published *From Dollar Dominance to Divergence*, a resource to help investors understand the behavior of currencies by presenting analysis of historical currency momentum, valuation, and fundamentals in five key base currencies: US dollar (USD), British pound (GBP), euro (EUR), Swiss franc (CHF), and Japanese yen (JPY).

This chart book provides updated analysis and commentary as we continue to believe investors need to understand how their base currency behaves against other major currencies through periodic review of charts like the ones we present here. For more on developing a currency hedging policy, please see our 2016 report, *Strategic Currency Hedging Policy: A New Framework*.

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## Summary of Currency Views

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**USD**  
Every Dog  
Has its Day

With the market net short the USD and momentum measures looking stretched, a rebound in the USD this year cannot be ruled out. However, overvaluation implies continued USD weakness over the longer term.

**GBP**  
The Brexit  
Bounce

The GBP has rallied strongly as the prospect of a “hard Brexit” has faded. However, the currency is no longer undervalued and is starting to look stretched.

**EUR**  
Life After  
QE

The rally in the EUR is starting to look stretched, especially if the European Central Bank (ECB) turns out to be more dovish than expected as the economy begins to slow.

**CHF**  
No Time  
to Tighten

The Swiss National Bank (SNB) will not follow the ECB in tightening monetary policy in an attempt to further weaken the CHF, which remains slightly overvalued.

**JPY**  
Risk On or  
Risk Off?

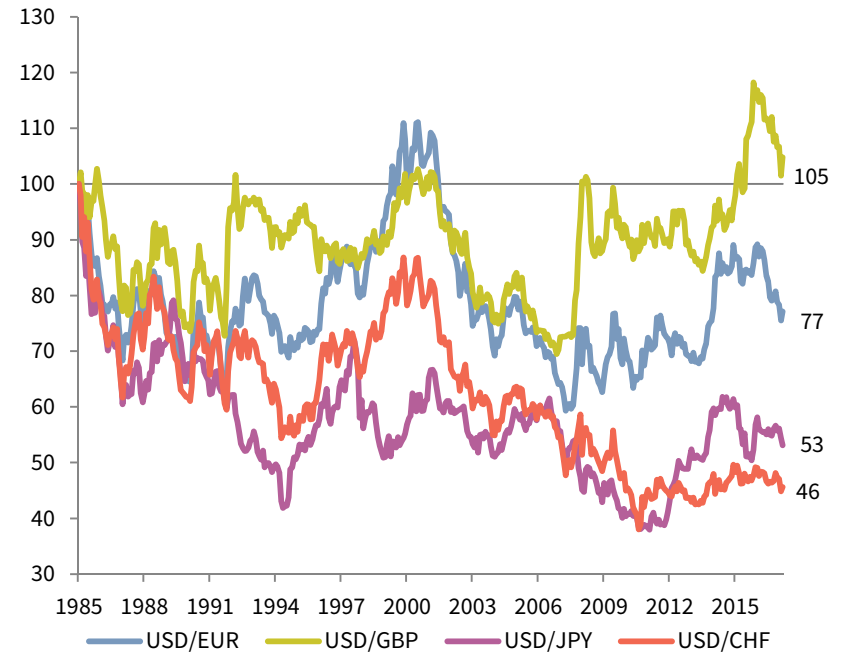
The odds of continued JPY strength are increasing given rising market volatility and net short investor positioning.

## USD: Every dog has its day

- After surging in early 2017 following the US presidential election, the USD has spent the last year or so on the back foot, with neither additional Fed rate hikes nor the passage of US tax cuts providing much support.
- Consensus forecasts expect the USD to remain weak in 2018, except versus the JPY.
- Despite last year's sell-off, the USD still appears slightly expensive, especially vs the JPY and EUR. Unlike last year, however, the market is now net short the green-back and USD weakness is a consensus trade. With the USD starting to look oversold on a momentum basis, a rebound in the USD this year cannot be ruled out.
- Given the overvaluation of the USD, investors need to balance the potential for a near-term rebound with longer-term weakness. The USD has historically rallied amid periods of market stress, which is why hedging typically reduces the volatility of foreign equities.

### USD NOMINAL EXCHANGE RATES

December 31, 1985 – February 28, 2018 • December 31, 1985 = 100



Sources: MSCI Inc., Thomson Reuters, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

### USD CONSENSUS FORECASTS

As of March 12, 2018

	USD/EUR	USD/GBP	USD/JPY	USD/CHF
Current	0.81	0.72	107	0.95
Year-End 2018 Median Forecast	0.79	0.70	110	0.94
Percent Change	-2.5%	-2.8%	2.8%	-1.1%

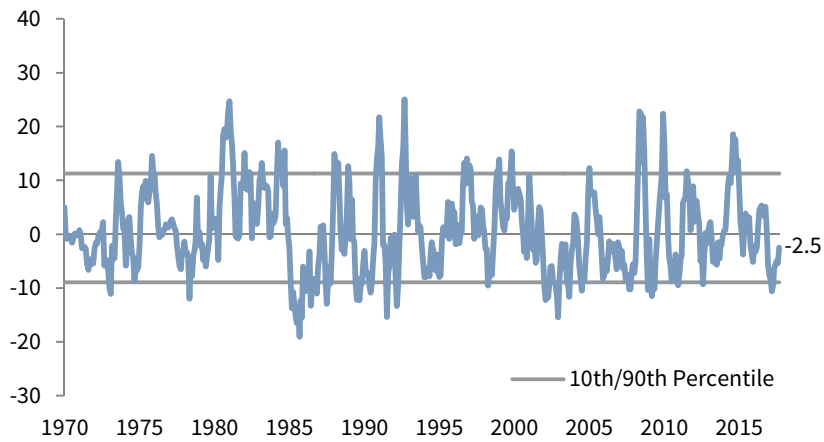
Source: Bloomberg L.P.

# The USD looks oversold vs the GBP

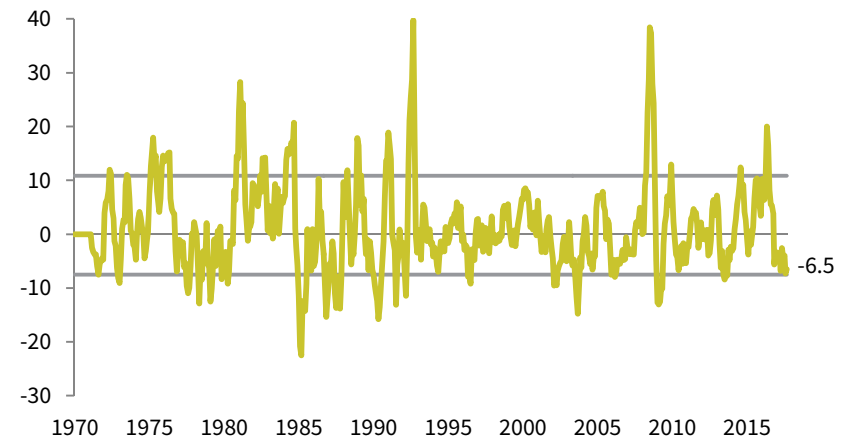
## USD ROLLING 6-MONTH PERCENT CHANGE

June 30, 1970 – February 28, 2018 • Percent (%)

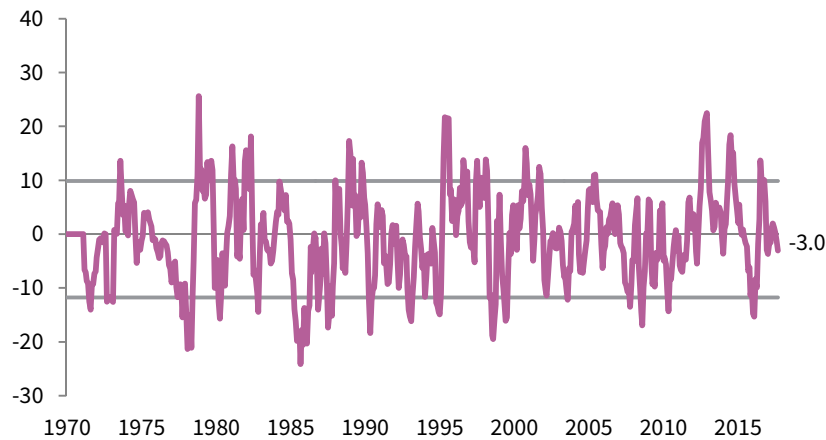
### USD/EUR



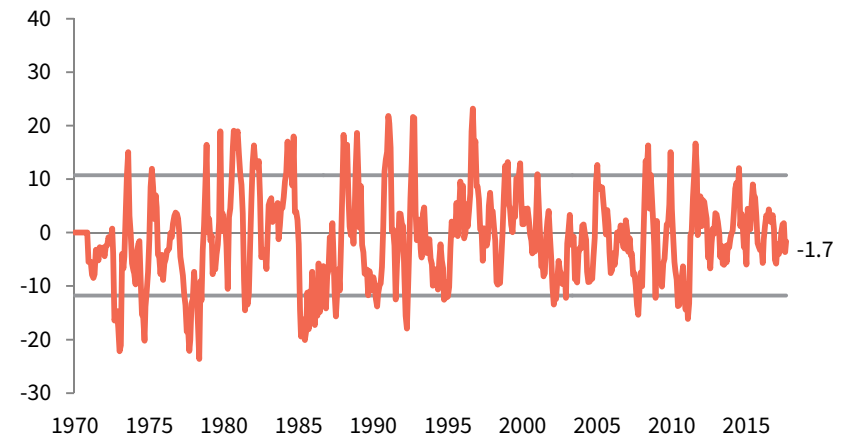
### USD/GBP



### USD/JPY



### USD/CHF

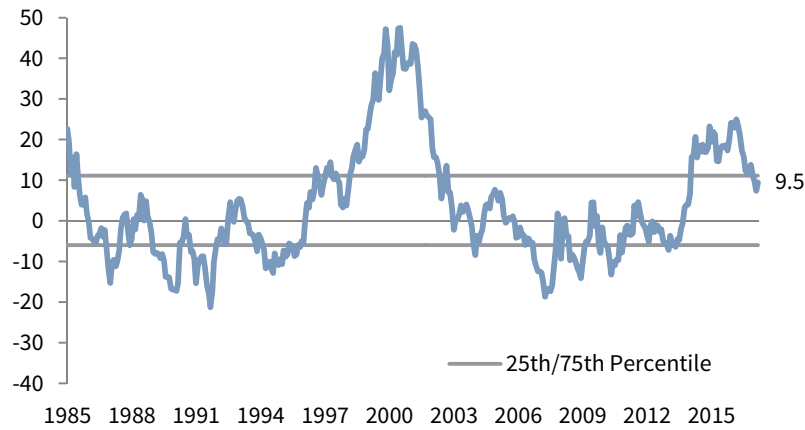


# The USD is expensive vs the JPY and EUR; fairly valued vs the GBP and CHF

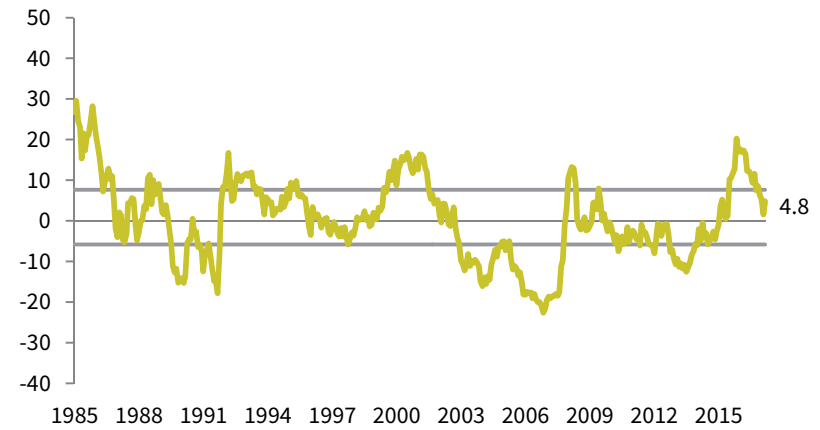
## USD VALUATION: PERCENT DEVIATION OF REAL EXCHANGE RATE FROM HISTORICAL MEDIAN

December 31, 1985 – February 28, 2018 • Percent (%)

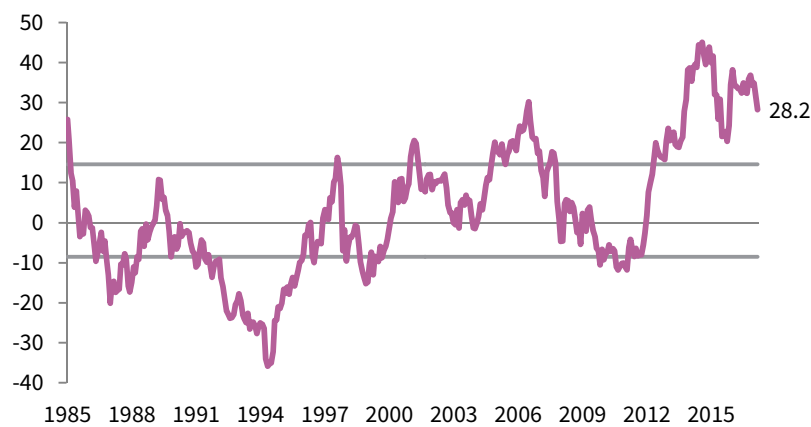
### USD/EUR



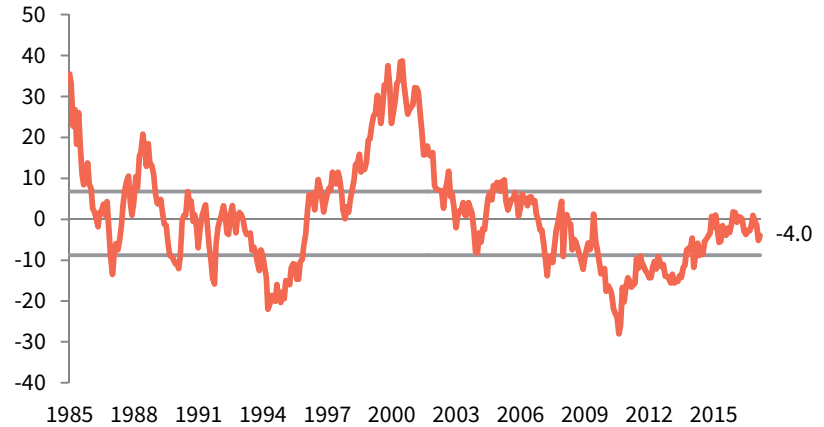
### USD/GBP



### USD/JPY



### USD/CHF



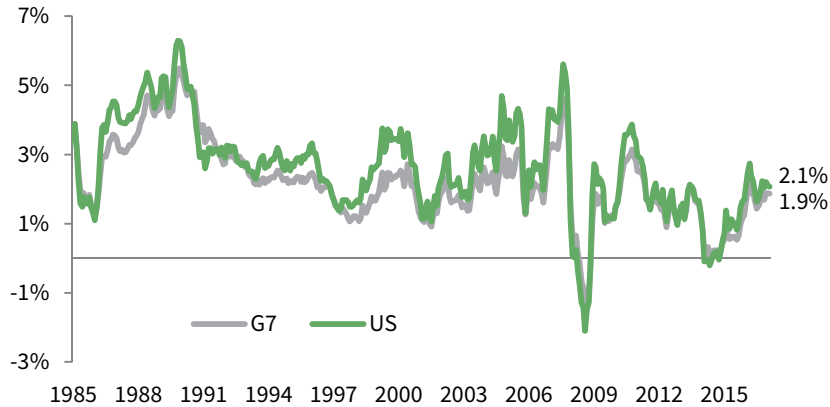
# Rising positive carry has not helped the USD in 2017 and 2018

Negative correlation to equity market implies volatility benefit to hedging most DM currencies, save the JPY

## USD FUNDAMENTALS

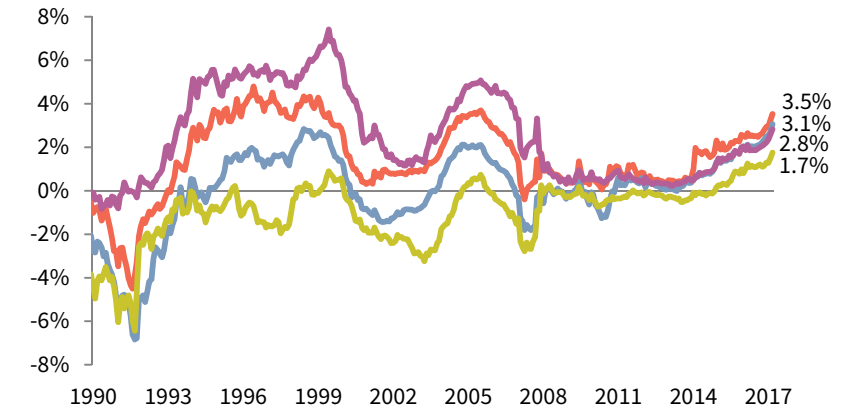
### Inflation (Year-Over-Year %)

December 31, 1985 – January 31, 2018



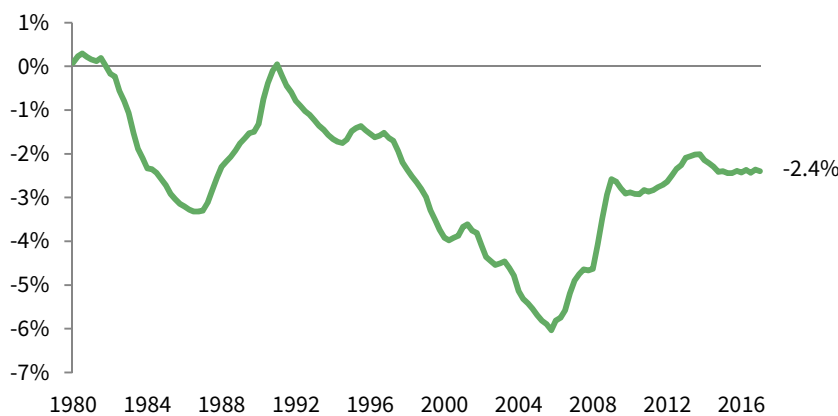
### Implied Carry

December 31, 1990 – February 28, 2018



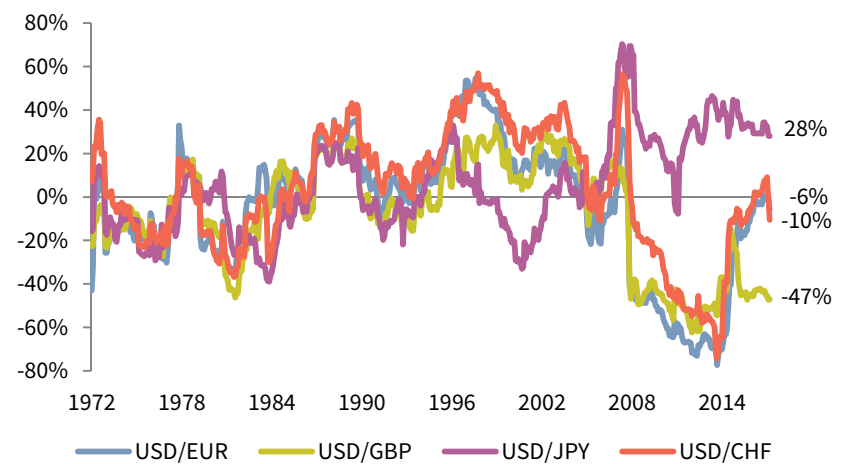
### Current Account % GDP

Fourth Quarter 1980 – Fourth Quarter 2017



### Rolling 36-Month Correlation With MSCI World

December 31, 1972 – February 28, 2018



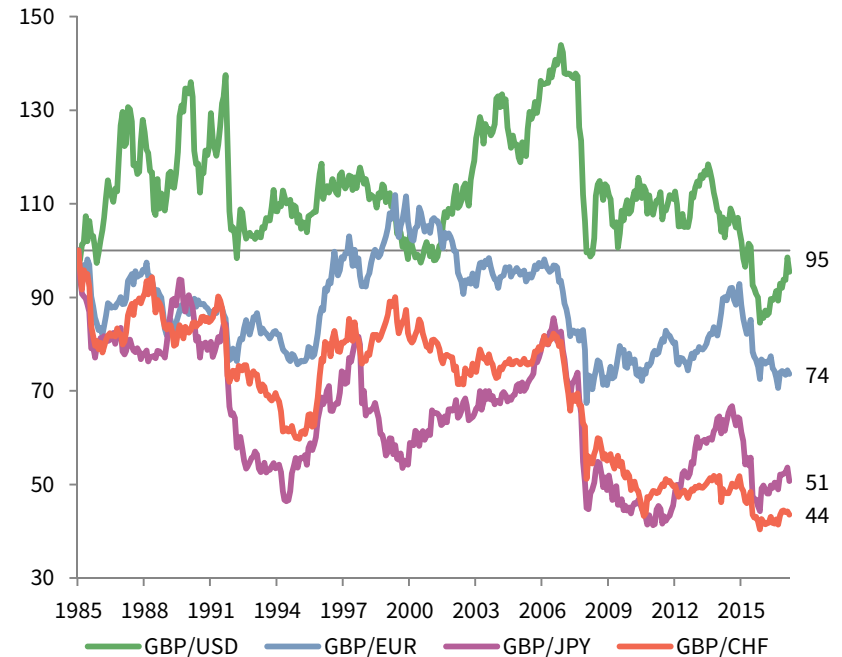


## GBP: The Brexit Bounce

- The GBP rallied strongly over 2017 and early 2018 following a rout in 2016 as the UK economy has remained resilient and it has become clear that “hard Brexit” can be avoided.
- Consensus forecasts expect the GBP will continue to rally in 2018. Rising inflation has increased expectations that the BOE will resume hiking rates in the coming months, which may also provide some support to the GBP.
- However, following last year’s rally, the GBP no longer looks undervalued and momentum measures are beginning to look stretched. This implies a period of consolidation is likely.
- While a case can be made for continued appreciation, GBP-based investors should remain partially unhedged as the currency has become very pro-cyclical with high positive correlation to global equities; this implies unhedged exposure lowers equity volatility.

### GBP NOMINAL EXCHANGE RATES

December 31, 1985 – February 28, 2018 • December 31, 1985 = 100



Sources: MSCI Inc., Thomson Reuters, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

### GBP CONSENSUS FORECASTS

As of March 12, 2018

	GBP/USD	GBP/EUR	GBP/JPY	GBP/CHF
Current	1.39	1.12	148	1.32
Year-End 2018 Median Forecast	1.42	1.13	156	1.33
Percent Change	2.2%	0.9%	5.5%	0.8%

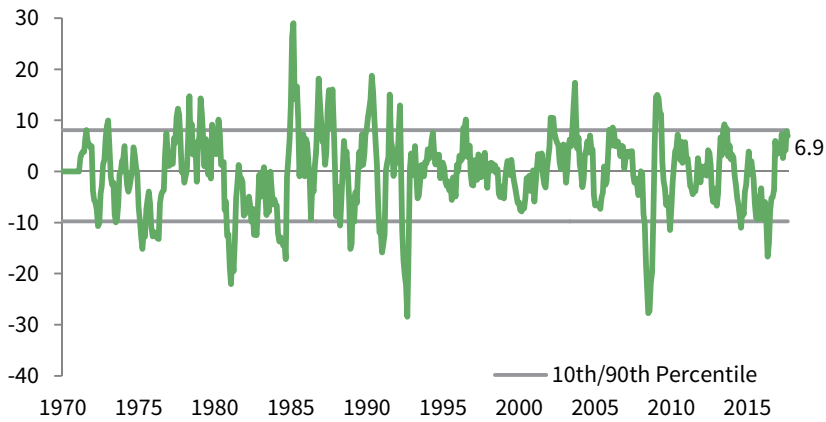
Source: Bloomberg L.P.

# The GBP rally is starting to look stretched

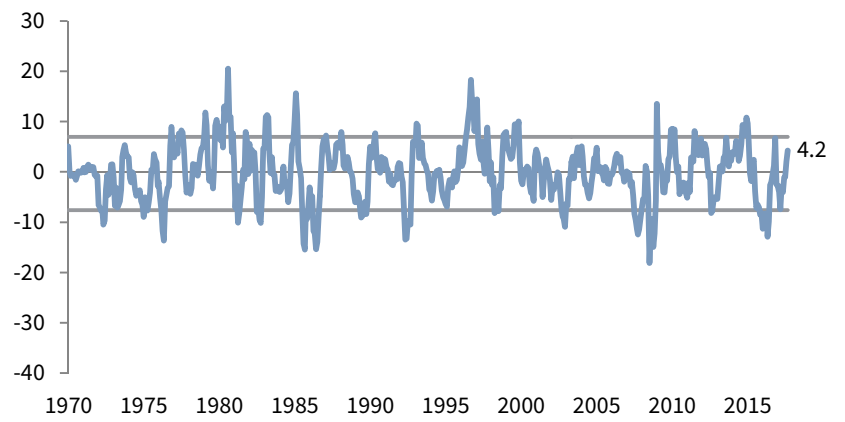
## GBP ROLLING 6-MONTH PERCENT CHANGE

June 30, 1970 – February 28, 2018 • Percent (%)

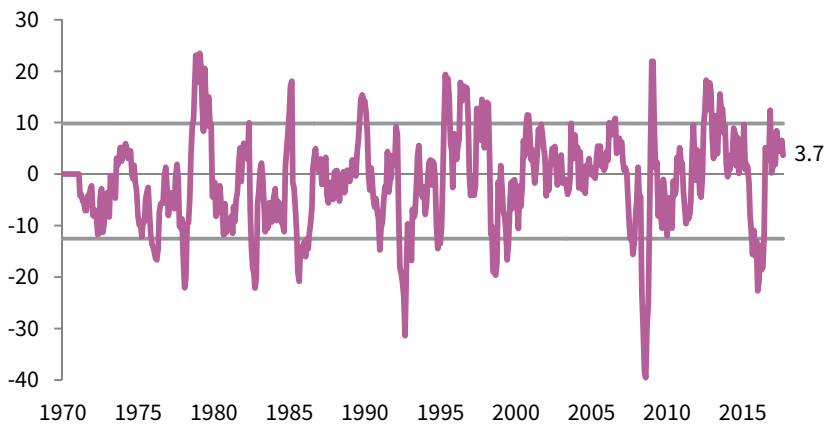
### GBP/USD



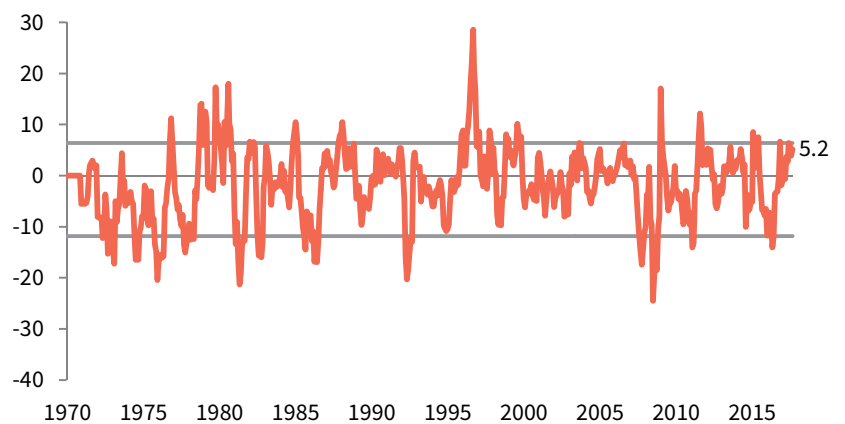
### GBP/EUR



### GBP/JPY



### GBP/CHF

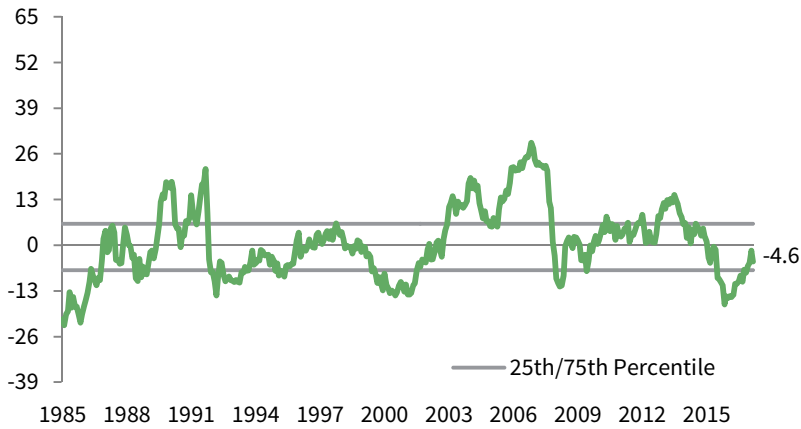


# GBP is expensive vs the JPY, fair vs the EUR and USD, and cheap vs the CHF

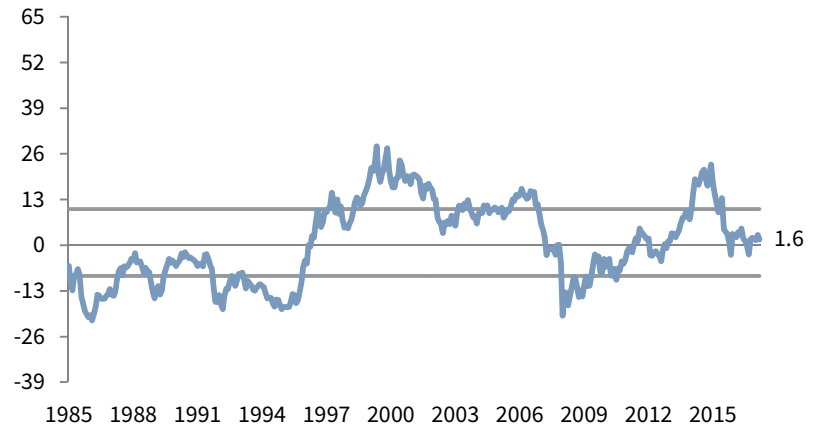
## GBP VALUATION: PERCENT DEVIATION OF REAL EXCHANGE RATE FROM HISTORICAL MEDIAN

December 31, 1985 – February 28, 2018 • Percent (%)

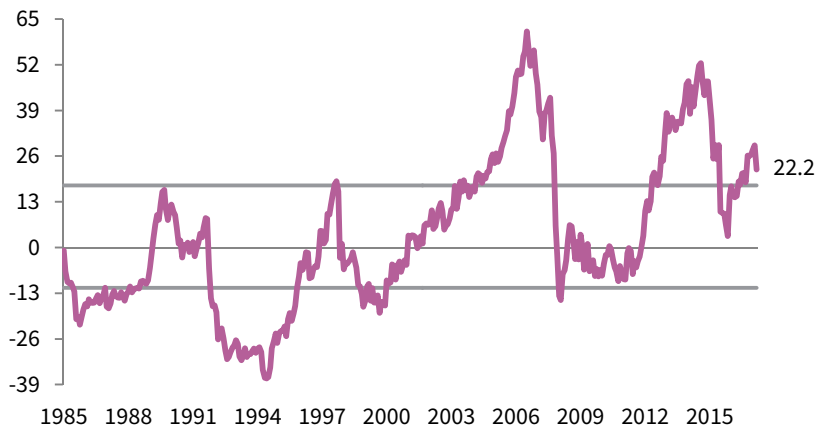
GBP/USD



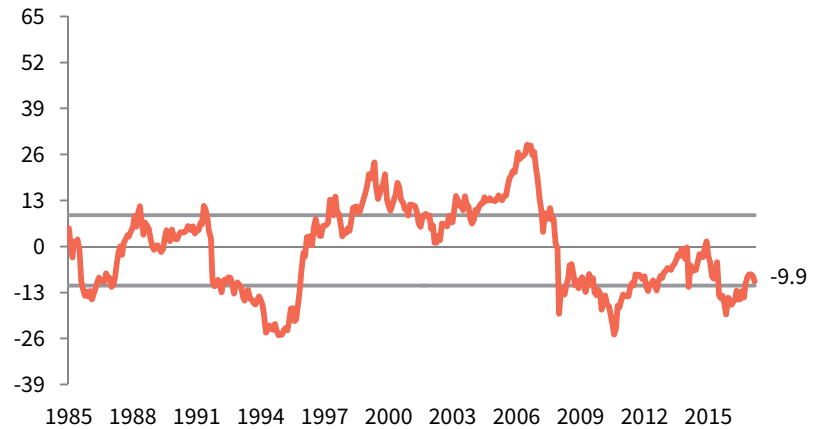
GBP/EUR



GBP/JPY



GBP/CHF



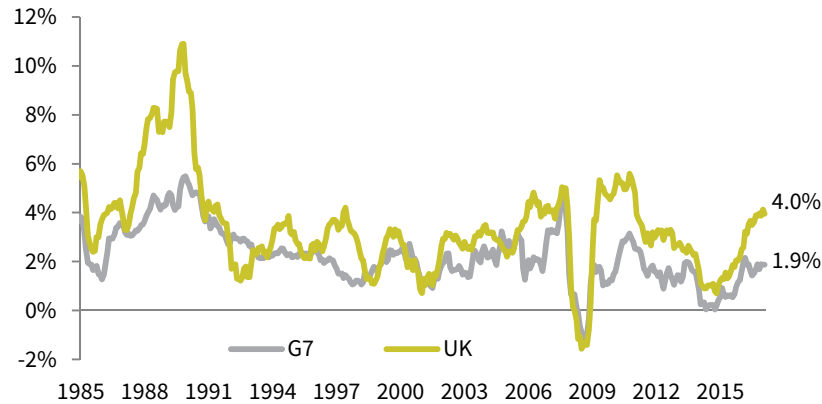
# GBP is vulnerable given a large current account deficit

The GBP has become a very pro-cyclical currency with high positive correlation to global equities; this implies unhedged exposure lowers equity volatility

## GBP FUNDAMENTALS

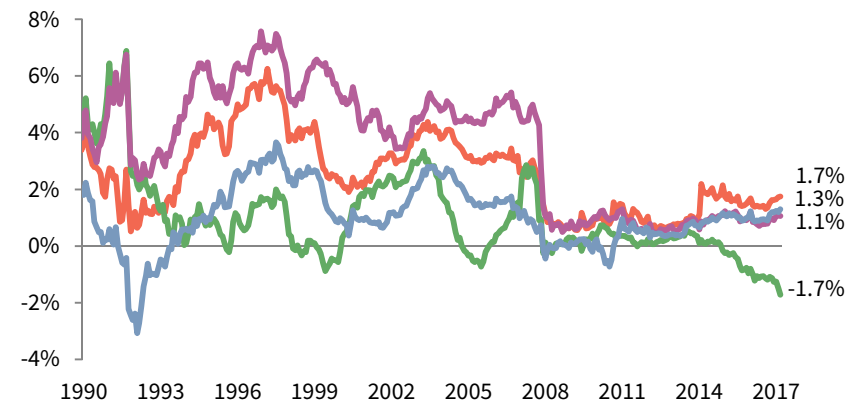
### Inflation (Year-Over-Year %)

December 31, 1985 – January 31, 2018



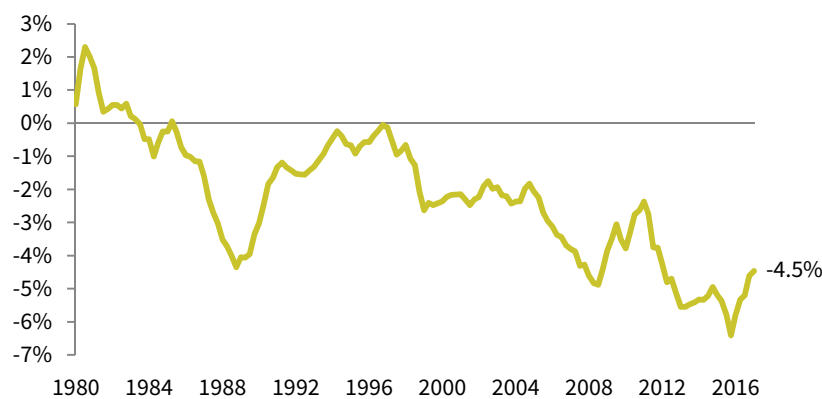
### Implied Carry

December 31, 1990 – February 28, 2018



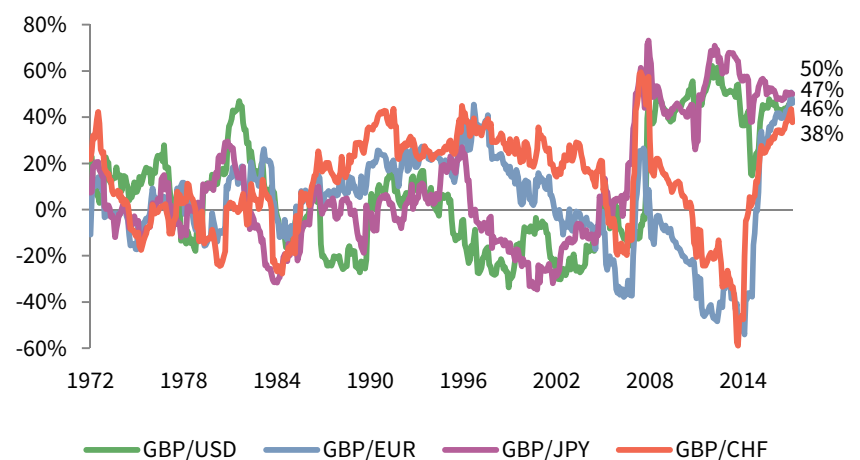
### Current Account % GDP

Fourth Quarter 1980 – Fourth Quarter 2017



### Rolling 36-Month Correlation With MSCI World

December 31, 1972 – February 28, 2018

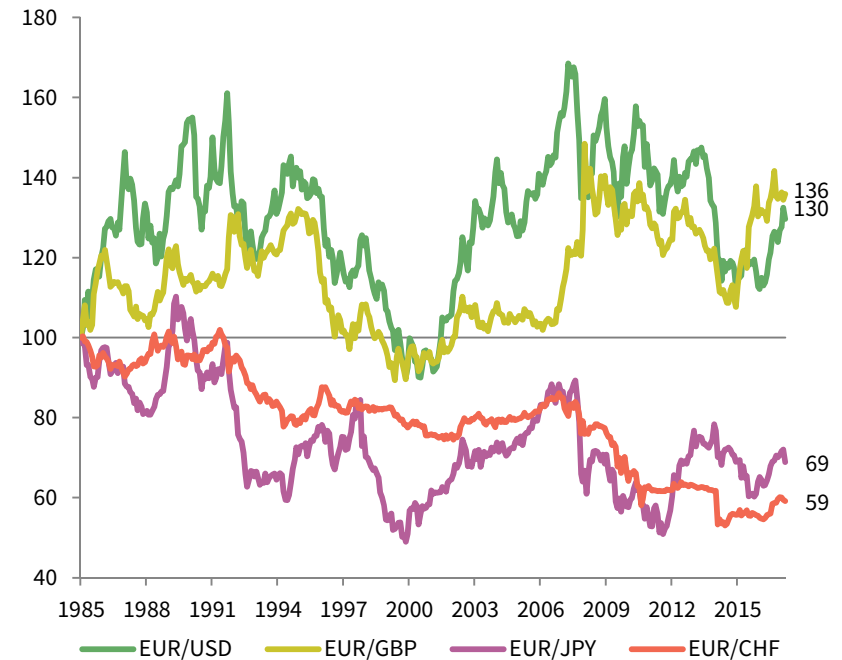


## EUR: Life after QE

- The EUR rallied strongly in 2017 and so far in 2018 as political risks in Europe faded over the course of the year and investors began to focus on improving economic growth and expectations for ECB monetary tightening.
- Consensus forecasts see additional EUR strength in 2018 versus the USD and JPY, but a flat EUR versus the GBP and CHF.
- However, record long positions in the EUR imply the market may be set up for disappointment if Eurozone growth weakens, forcing the ECB to remain dovish.
- The EUR remains undervalued vs the USD and CHF, but fairly valued vs the GBP and expensive vs the JPY.
- The above suggests that EUR-based investors should remain partly hedged vs most currencies, but unhedged versus the JPY.

### EUR NOMINAL EXCHANGE RATES

December 31, 1985 – February 28, 2018 • December 31, 1985 = 100



Sources: MSCI Inc., Thomson Reuters, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

### EUR CONSENSUS FORECASTS

As of March 12, 2018

	EUR/USD	EUR/GBP	EUR/JPY	EUR/CHF
Current	1.23	0.89	132	1.17
Year-End 2018 Median Forecast	1.26	0.89	136	1.18
Percent Change	2.4%	0.0%	3.0%	0.9%

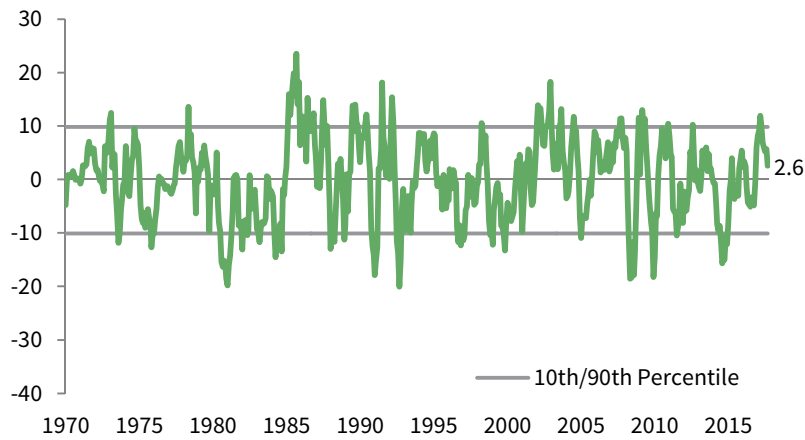
Source: Bloomberg L.P.

# Rally in the EUR is losing steam

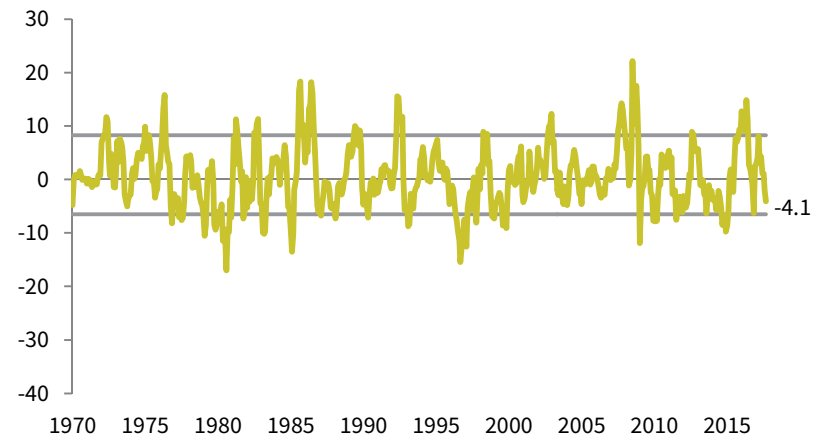
## EUR ROLLING 6-MONTH PERCENT CHANGE

June 30, 1970 – February 28, 2018 • Percent (%)

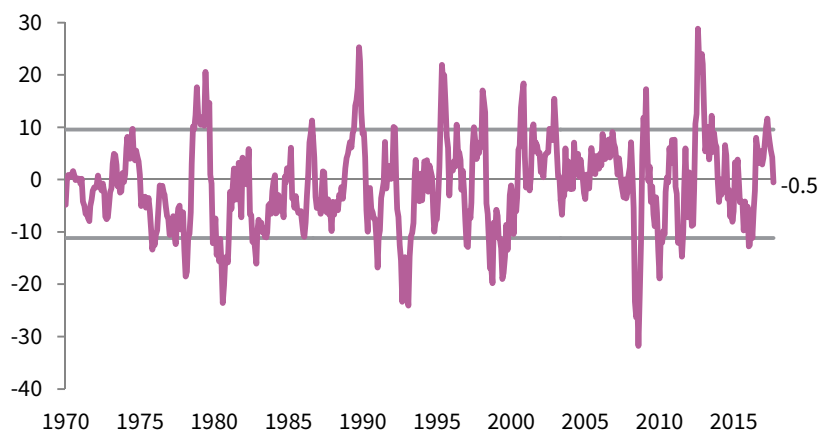
### EUR/USD



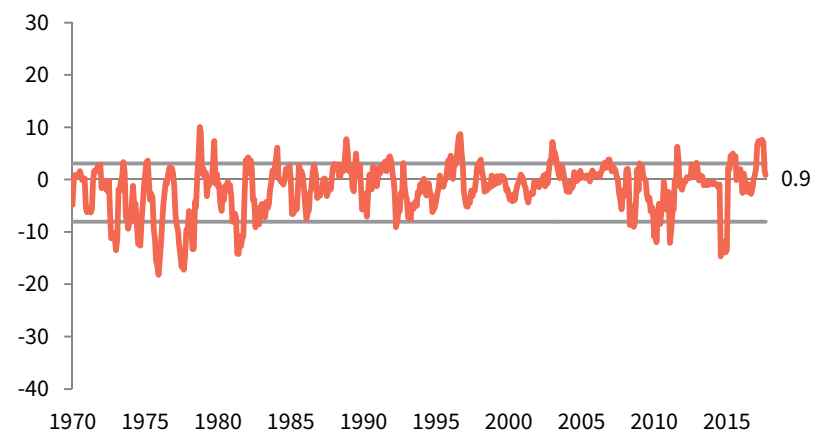
### EUR/GBP



### EUR/JPY



### EUR/CHF

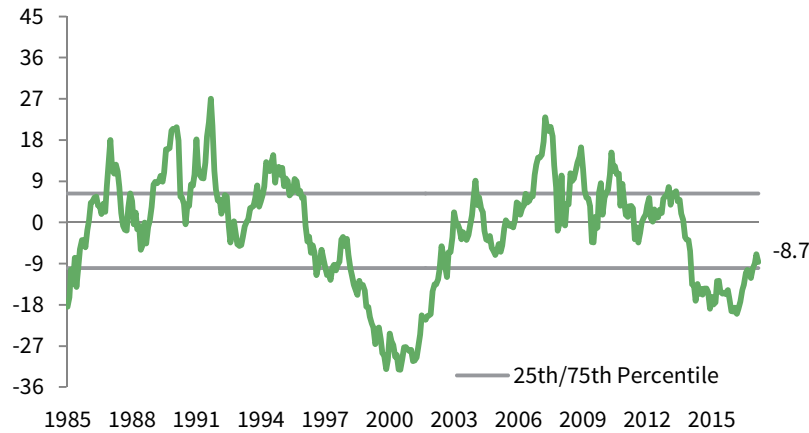


# EUR is cheap vs USD and CHF, but fairly valued vs GBP and expensive vs JPY

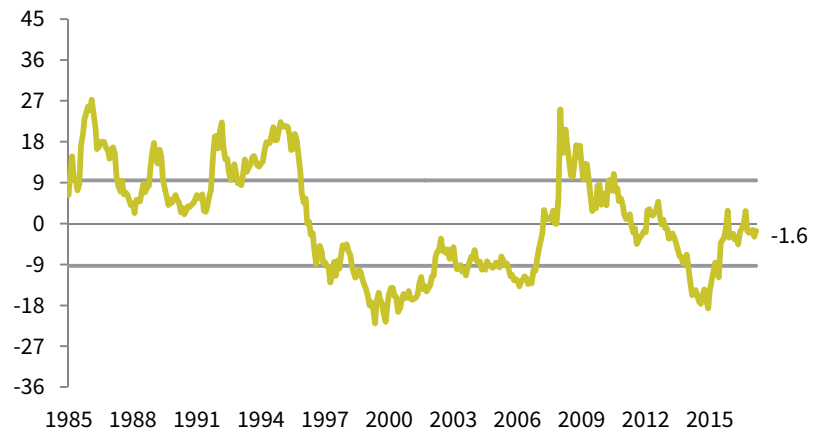
## EUR VALUATION: PERCENT DEVIATION OF REAL EXCHANGE RATE FROM HISTORICAL MEDIAN

December 31, 1985 – February 28, 2018 • Percent (%)

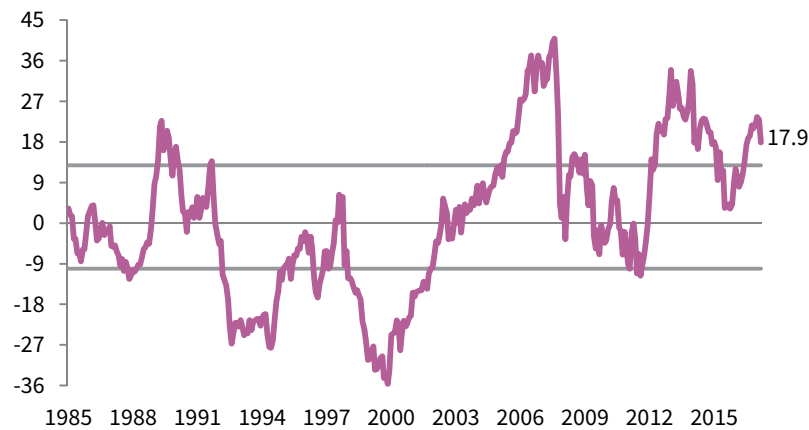
### EUR/USD



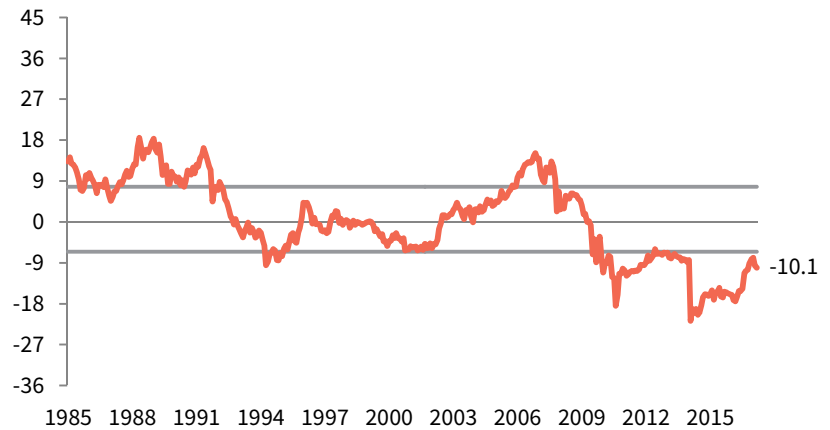
### EUR/GBP



### EUR/JPY



### EUR/CHF



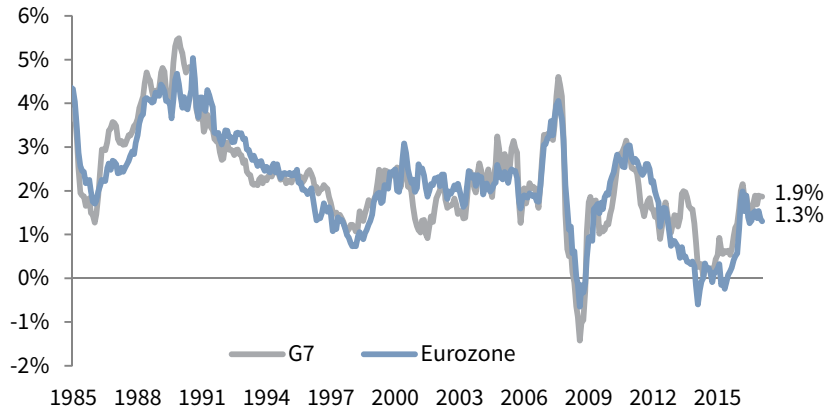
# Rising current account surplus places upward pressure on the EUR

Correlations to equities have become unstable; EUR/JPY positive correlation and overvaluation imply EUR-based investors should remain unhedged vs JPY

## EUR FUNDAMENTALS

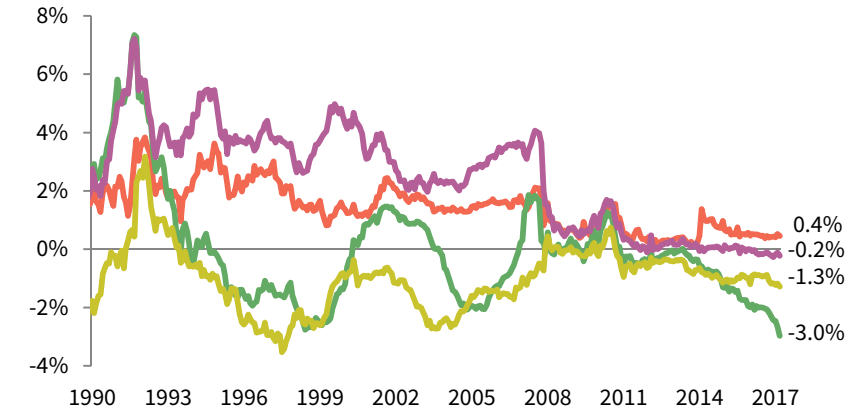
### Inflation (Year-Over-Year %)

December 31, 1985 – January 31, 2018



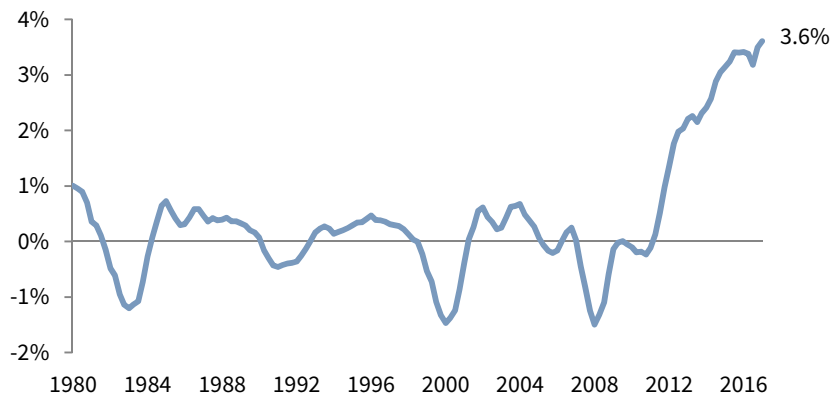
### Implied Carry

December 31, 1990 – February 28, 2018



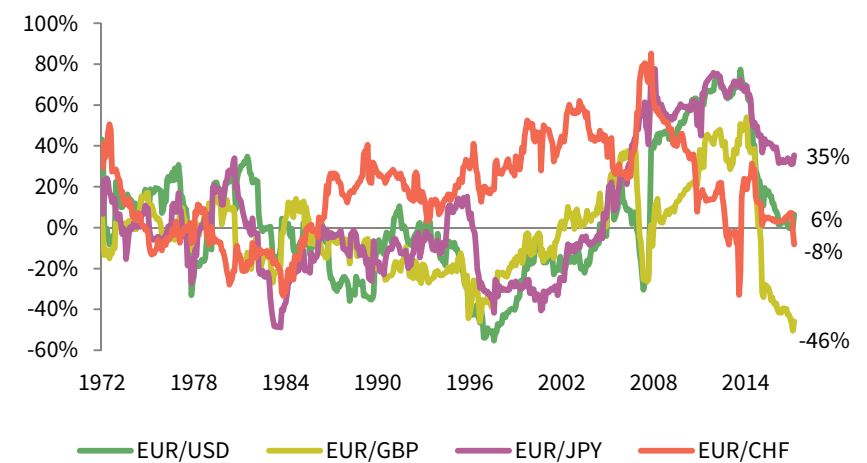
### Current Account % GDP

Fourth Quarter 1980 – Fourth Quarter 2017



### Rolling 36-Month Correlation With MSCI World

December 31, 1972 – February 28, 2018



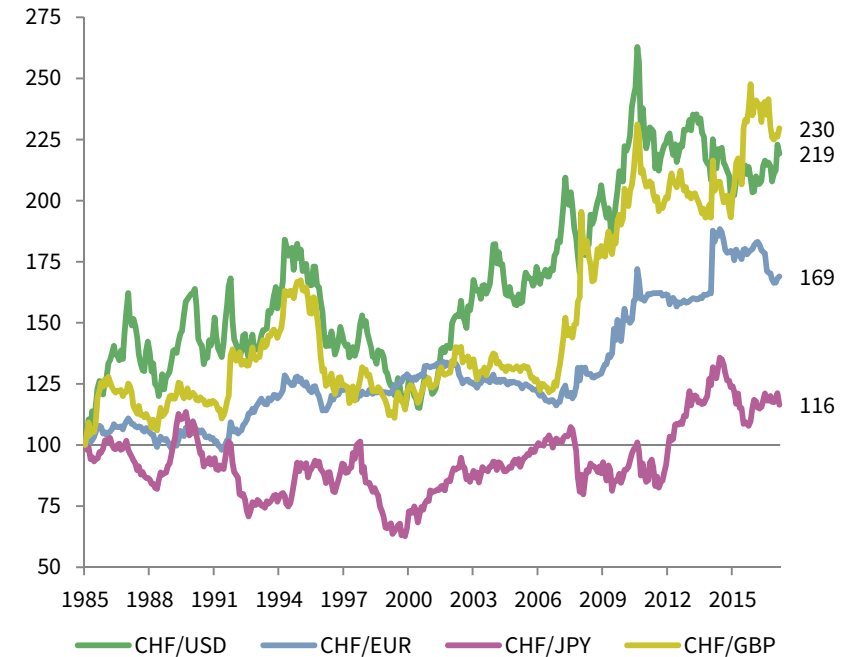


## CHF: No time to tighten

- The CHF weakened versus the EUR but gained versus the USD for much of 2017 and so far in 2018, as investor optimism over the outlook for the Eurozone has seen less safe-haven inflows into Switzerland.
- Consensus forecasts see the CHF mixed for the rest of 2018, gaining versus the USD and JPY, flat versus the EUR and weak versus the GBP.
- From a valuation perspective, the CHF is fairly valued versus the USD but expensive versus the EUR, GBP, and JPY.
- Given lingering overvaluation, the SNB is likely to not follow the ECB in tightening monetary policy to encourage additional CHF weakness.
- Overvaluation suggests that CHF-based investors should be partially unhedged. While the currency may rally amid renewed market volatility, the CHF has behaved less like a safe-haven currency recently.

### CHF NOMINAL EXCHANGE RATES

December 31, 1985 – February 28, 2018 • December 31, 1985 = 100



Sources: MSCI Inc., Thomson Reuters, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

### CHF CONSENSUS FORECASTS

As of March 12, 2018

	CHF/USD	CHF/EUR	CHF/JPY	CHF/GBP
Current	1.05	0.85	113	0.76
Year-End 2018 Median Forecast	1.06	0.85	117	0.75
Percent Change	1.0%	0.0%	4.0%	-1.3%

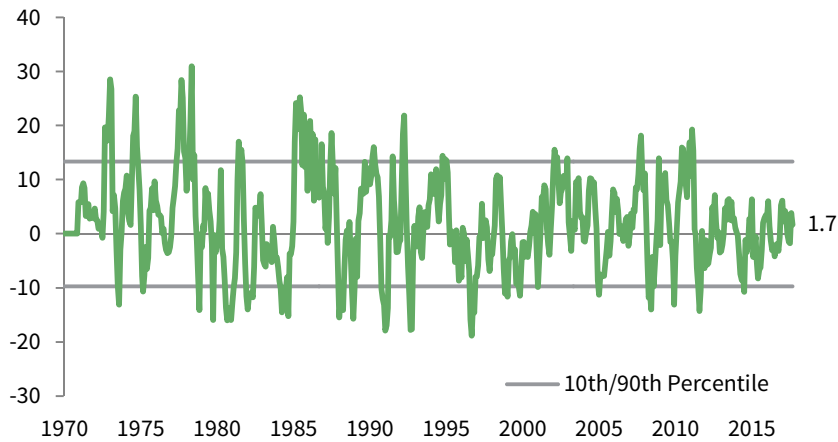
Source: Bloomberg L.P.

## CHF appears oversold vs the GBP but neutral vs other currencies

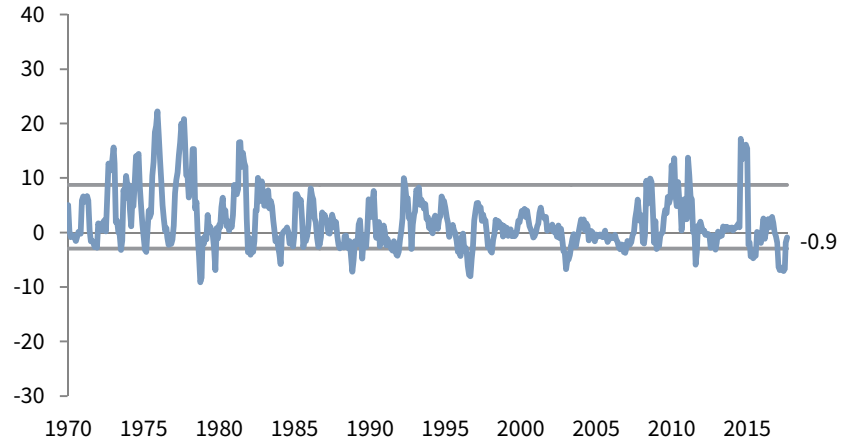
### CHF ROLLING 6-MONTH PERCENT CHANGE

June 30, 1970 – February 28, 2018 • Percent (%)

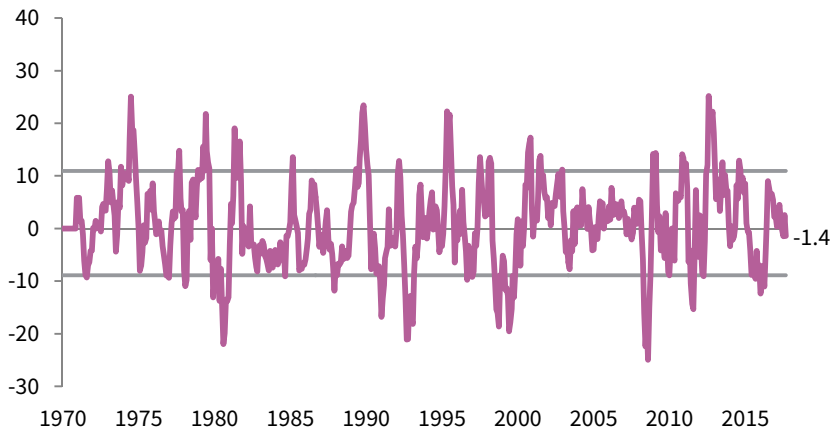
#### CHF/USD



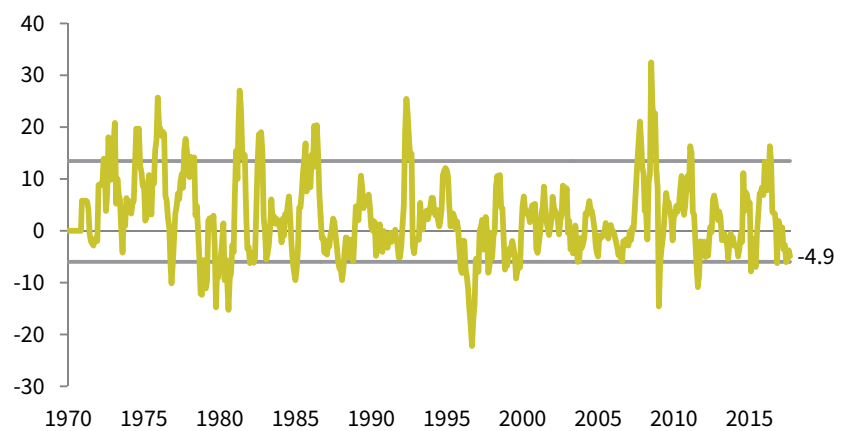
#### CHF/EUR



#### CHF/JPY



#### CHF/GBP

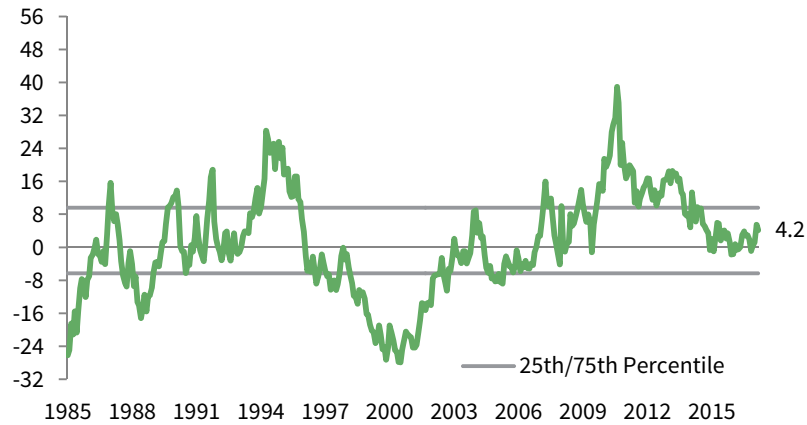


# The CHF is fairly valued vs the USD, but expensive vs other currencies

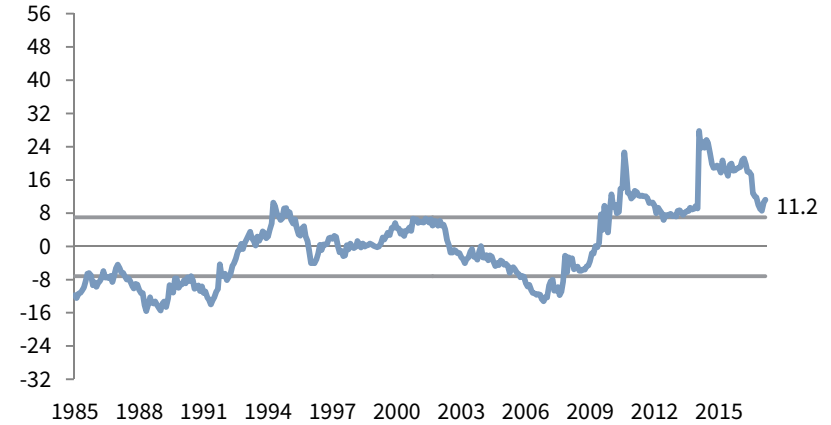
## CHF VALUATION: PERCENT DEVIATION OF REAL EXCHANGE RATE FROM HISTORICAL MEDIAN

December 31, 1985 – February 28, 2018 • Percent (%)

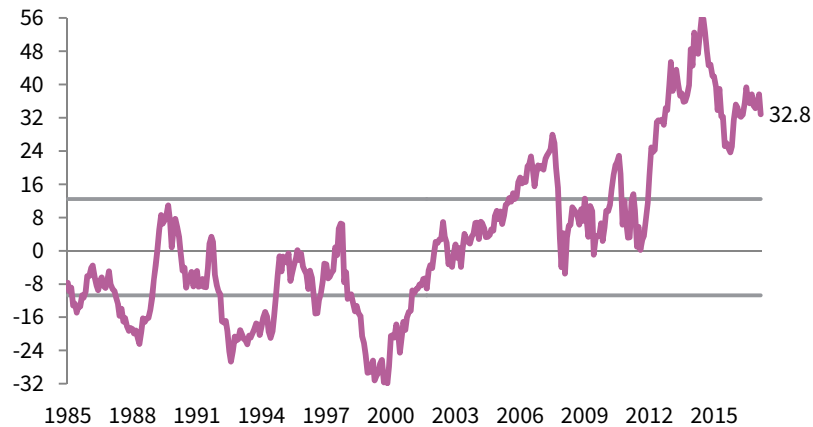
CHF/USD



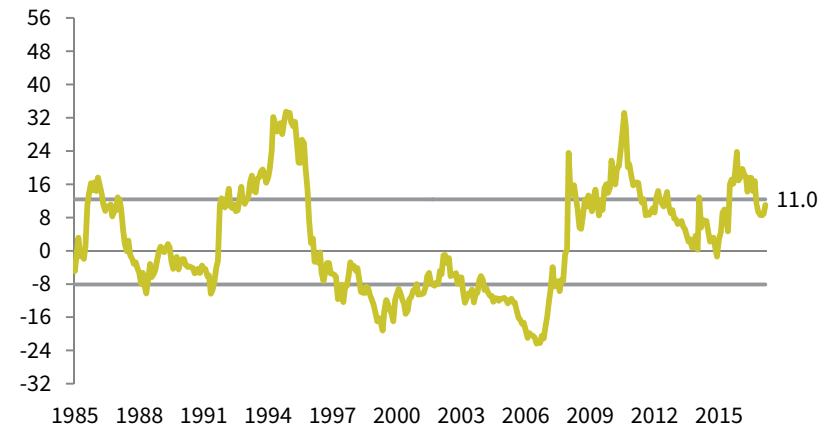
CHF/EUR



CHF/JPY



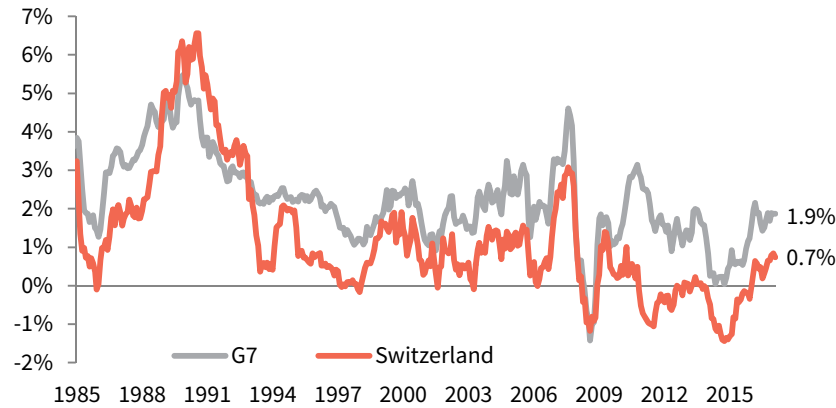
CHF/GBP



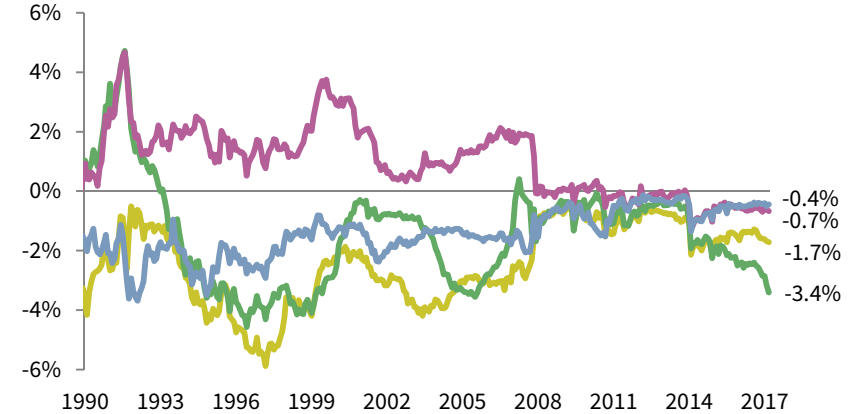
# Mixed correlations implies the CHF is less of a safe-haven currency than in the past

## CHF FUNDAMENTALS

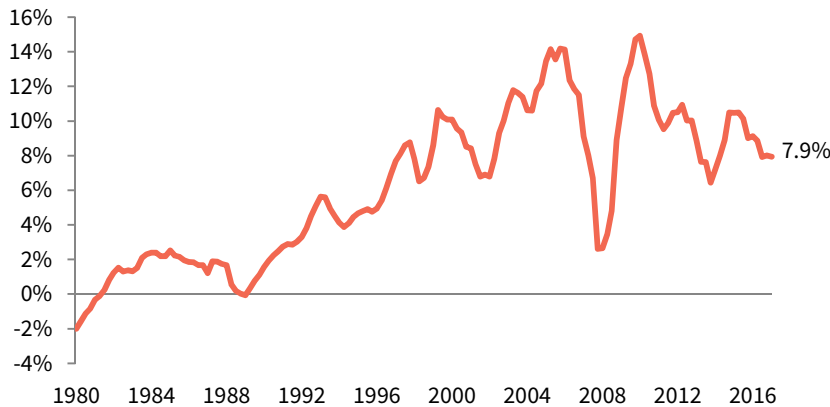
**Inflation (Year-Over-Year %)**  
December 31, 1985 – January 31, 2018



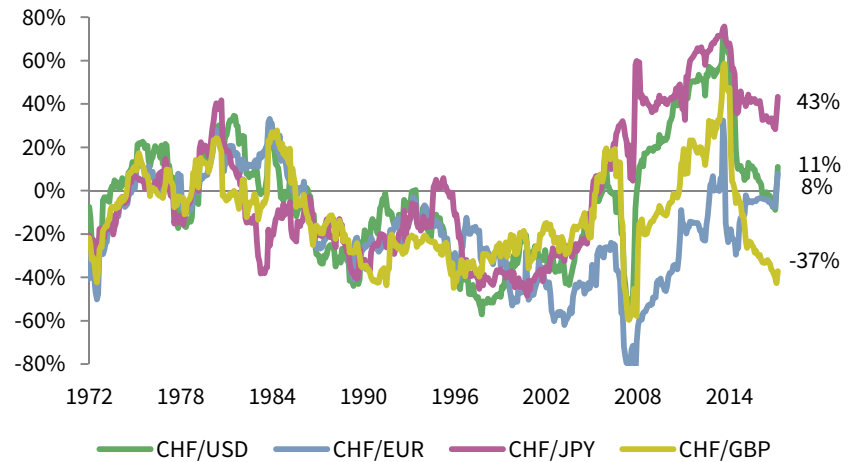
**Implied Carry**  
December 31, 1990 – February 28, 2018



**Current Account % GDP**  
Fourth Quarter 1980 – Fourth Quarter 2017



**Rolling 36-Month Correlation With MSCI World**  
December 31, 1972 – February 28, 2018

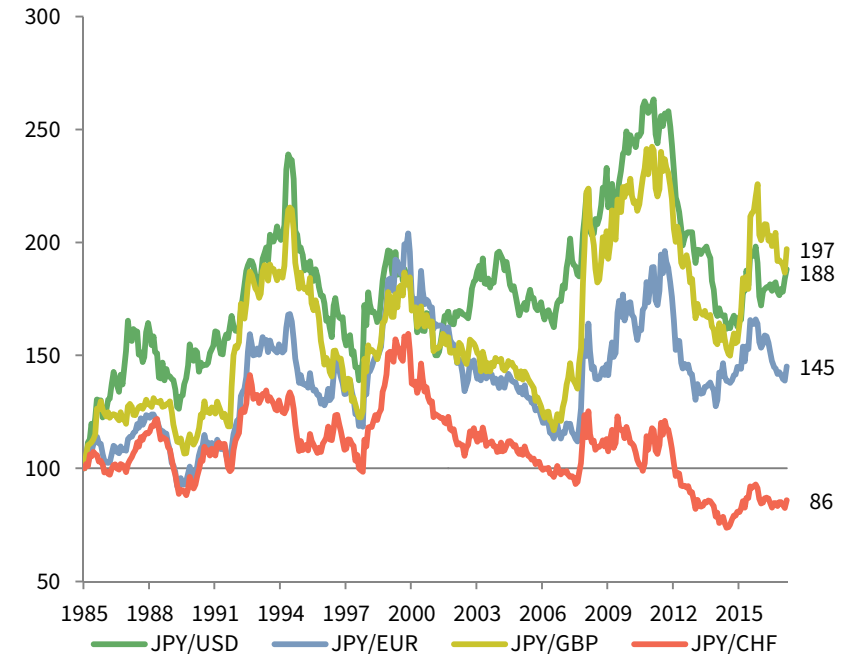


## JPY: Risk-on or risk-off?

- The JPY rallied in 2017 and early 2018 amid broad-based USD weakness and the general rise in global market volatility.
- Consensus forecasts expect the JPY to weaken over the rest of 2018 as the BOJ keeps interest rates at 0%, while other central banks tighten monetary policy.
- However with market positioning heavily net-short the JPY, continued market volatility could continue to drive the JPY higher, especially as the recent rally does not yet look long in the tooth.
- The undervaluation of the JPY implies non-JPY-based investors should be unhedged to benefit from potential JPY strength. This also helps reduce the volatility of Japanese equity exposure, as the JPY tends to rally amid “risk off” periods.

### JPY NOMINAL EXCHANGE RATES

December 31, 1985 – February 28, 2018 • December 31, 1985 = 100



Sources: MSCI Inc., Thomson Reuters, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

### JPY CONSENSUS FORECASTS

As of March 12, 2018

	USD/JPY	EUR/JPY	GBP/JPY	CHF/JPY
Current	107	132	148	113
Year-End 2018 Median Forecast	110	136	156	117
Percent Change	2.8%	3.0%	5.5%	4.0%

Source: Bloomberg L.P.

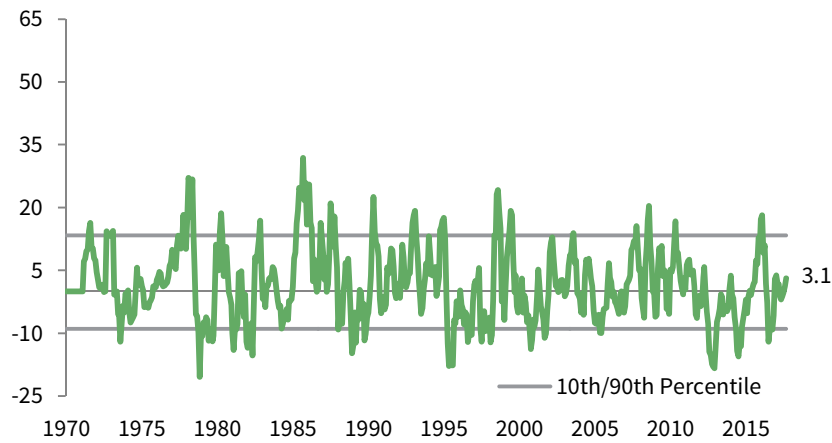
Notes: JPY exchanges rates are shown from the foreign currency perspective, and the percent change reflects the appreciation of the foreign currency.

# JPY rebound does not seem overdone

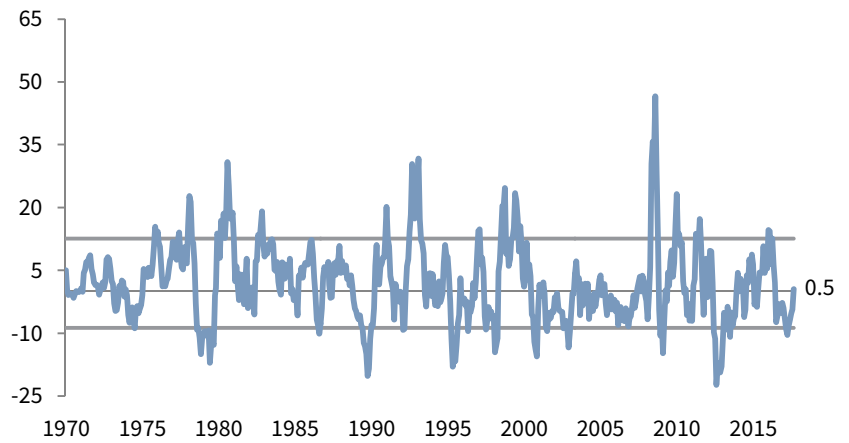
## JPY ROLLING 6-MONTH PERCENT CHANGE

June 30, 1970 – February 28, 2018 • Percent (%)

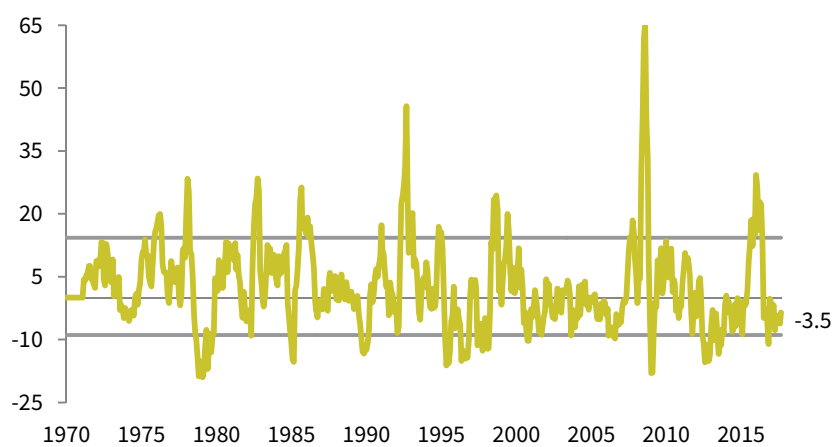
### JPY/USD



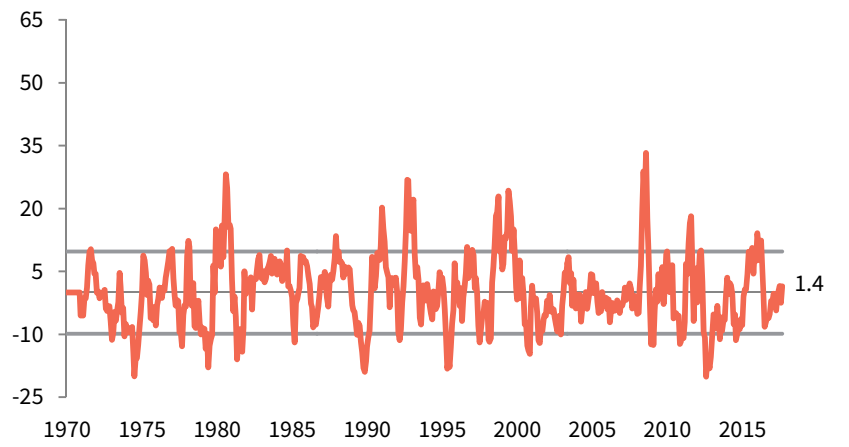
### JPY/EUR



### JPY/GBP



### JPY/CHF

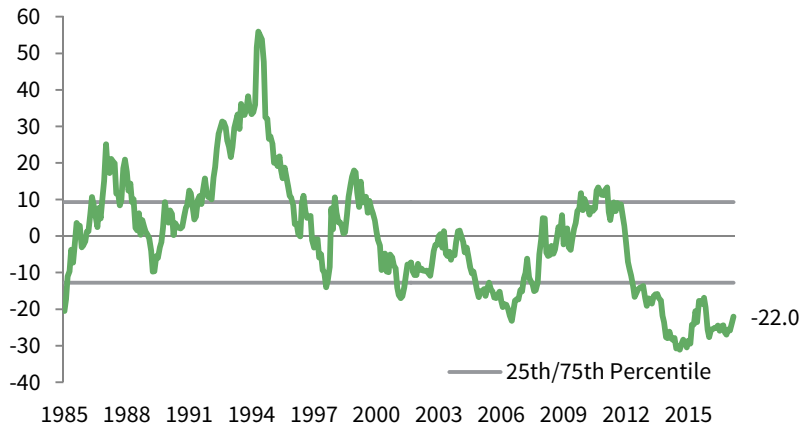


# JPY still cheap against major currencies despite its rally

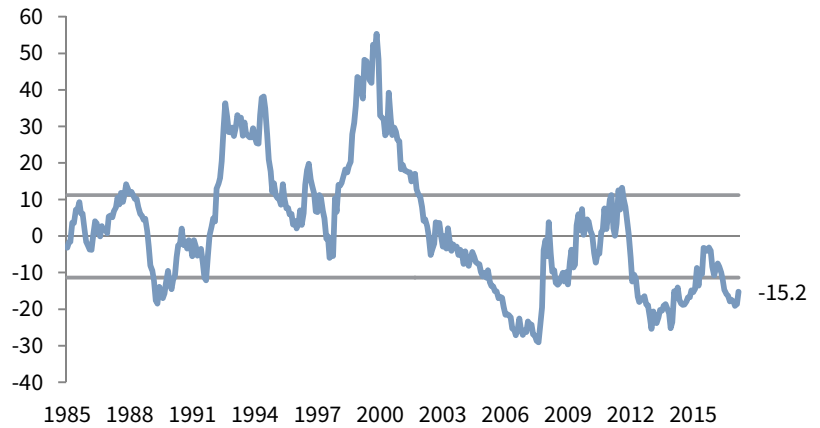
## JPY VALUATION: PERCENT DEVIATION OF REAL EXCHANGE RATE FROM HISTORICAL MEDIAN

December 31, 1985 – February 28, 2018 • Percent (%)

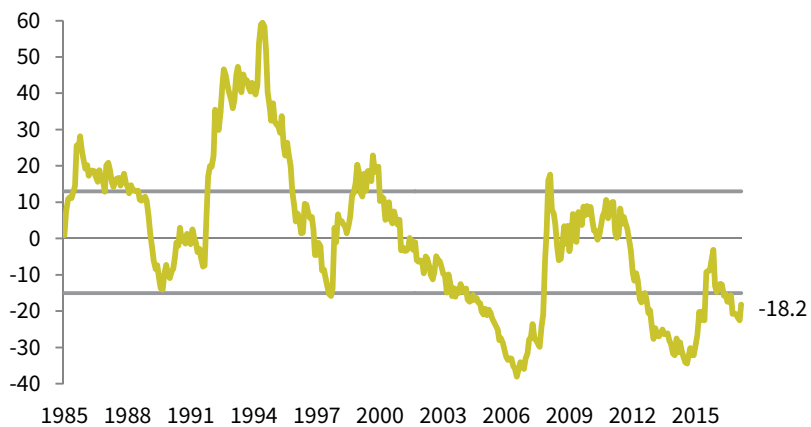
JPY/USD



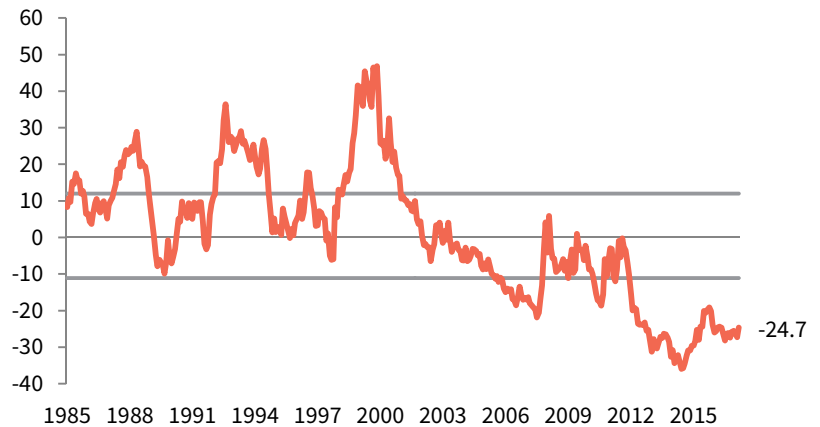
JPY/EUR



JPY/GBP



JPY/CHF



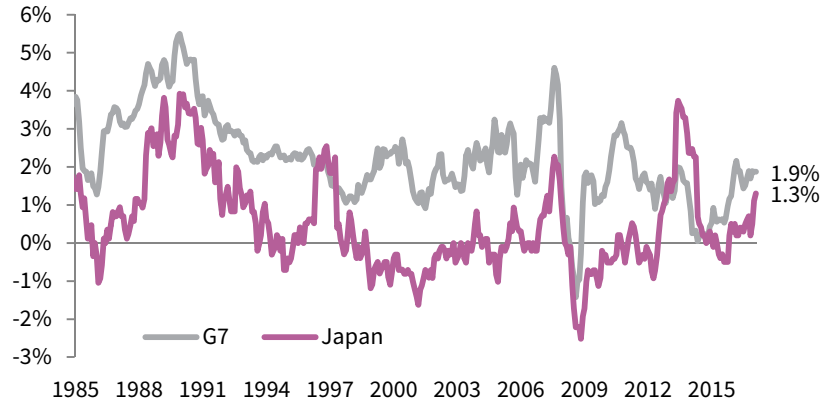
# Rising current account surplus reaffirms JPY's "risk-off" nature

Negative correlations with equities imply volatility benefit from leaving JPY exposure unhedged for non-JPY-based investors

## JPY FUNDAMENTALS

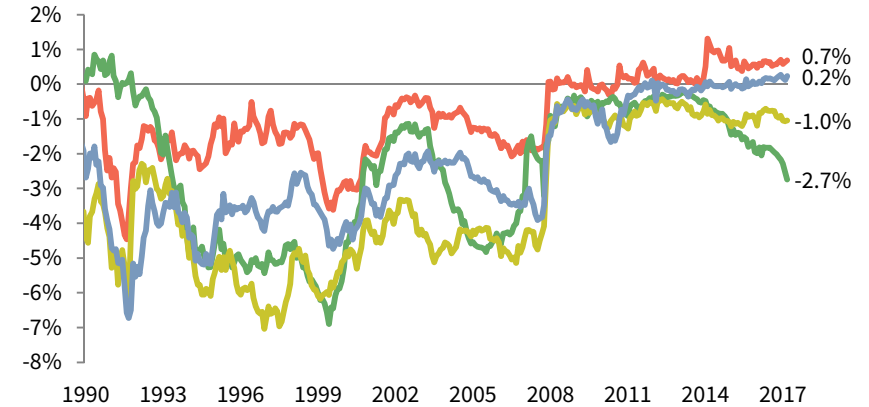
### Inflation (Year-Over-Year %)

December 31, 1985 – January 31, 2018



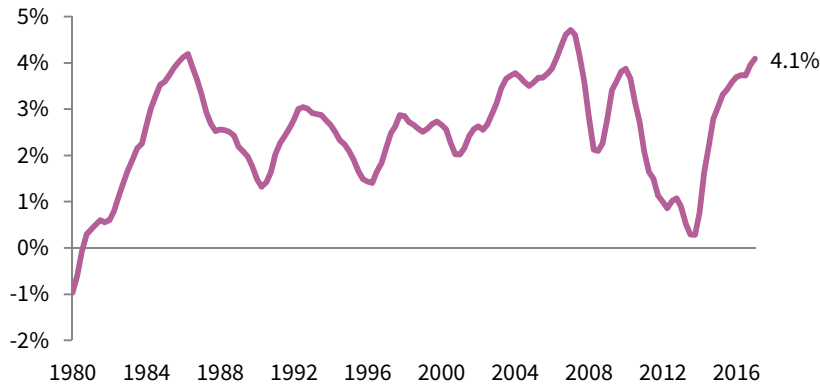
### Implied Carry

December 31, 1990 – February 28, 2018



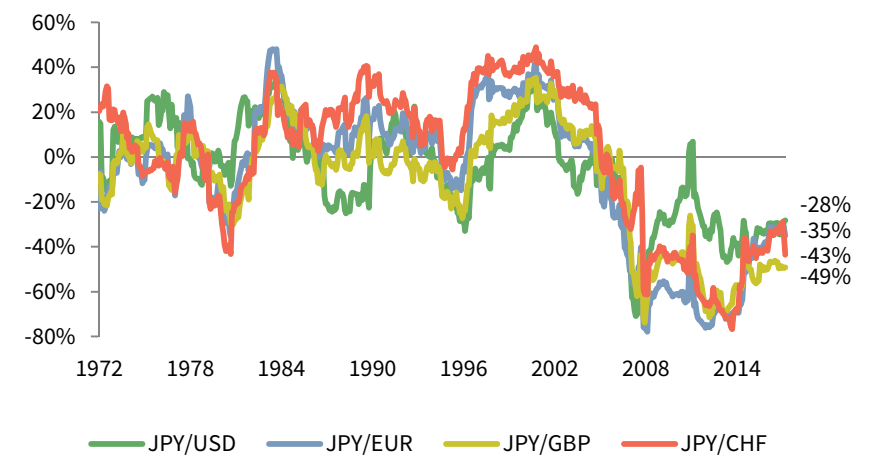
### Current Account % GDP

Fourth Quarter 1980 – Fourth Quarter 2017



### Rolling 36-Month Correlation With MSCI World

December 31, 1972 – February 28, 2018





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## Notes on the Data

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### Exchange Rates

- Historical exchange rates are provided by Thomson Reuters Datastream, based on Thomson Reuters closing spot rates. Data for the EUR before 1998 are based on a weighted basket of EMU legacy currencies calculated by Thomson Reuters.

### Consensus Forecasts

- FX forecasts are provided by Bloomberg and based on the median forecast as of March 12, 2018.

### Momentum: Six-Month Rate of Change

- The six-month rate of change is a simple momentum measure that provides context on whether recent moves in a currency pair are extreme relative to history. Implicit in this analysis is that short-term movements are mean-reverting, and therefore extreme moves are prone to reversals.

### Valuation: Real Exchange Rate Percent Deviation from Historical Median

- Our primary valuation metric for currencies is real exchange rates. For each currency pair, we create a real exchange rate history based on nominal exchange rates divided by relative CPI inflation. This is analogous to the purchasing price parity (PPP) approach, which assumes relative inflation is the driver of currencies over the long run. However, our approach avoids reliance on a particular base year for the relative inflation calculation (which can have a meaningful impact on implied PPP) by comparing the real exchange rate to its own historical median, i.e., the level to which the real exchange rate has gravitated over time. We focus on the post-1985 period given the meaningful shifts in certain currencies following the Plaza Accords, notably the JPY, CHF, and EUR (in light of the large revaluation of the Deutsche mark).

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## Notes on the Data (continued)

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### Fundamentals

- **Inflation.** Over the long run, currencies with lower inflation should appreciate, per PPP theory. Rising relative inflation often signals a currency is becoming overvalued, unless offset by nominal FX depreciation.
- **Implied carry.** The implied interest rate differential priced into one-year FX forwards. Negative carry implies a drag from hedging the currency pair back to the base currency. Economic theory states currencies with high interest rate differentials should depreciate over the long run; this is often not the case in the short run.
- **Current account.** Countries with current account surpluses are less reliant on foreign inflows and are typically net creditors. Historically, currencies with persistent current account surpluses have appreciated over time.
- **Correlation to MSCI World.** The rolling 36-month correlation of the percent change in the currency pair and the MSCI World Index of developed markets equities in local currency terms. A negative correlation implies a “counter-cyclical” currency pair that moves inversely to equity markets, thereby increasing the volatility of unhedged exposure (equities down, base currency up/foreign currency down, unhedged return lower). A positive correlation implies a “pro-cyclical” currency pair that moves in line with equities, thereby reducing the volatility of unhedged exposure (equities down, base currency down/foreign currency up, unhedged return higher). In theory, investors should consider hedging countercyclical currency pairs to reduce volatility. However, currency correlations are unstable, and hedging decisions should be made in conjunction with views on carry, desired overall foreign currency exposure, and underlying asset class exposure.



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