The Final Phase of USD Strength

February | 2017

CAMBRIDGE ASSOCIATES

The Final Phase of USD Strength

February | 2017

Aaron Costello
Han Xu

CAMBRIDGE ASSOCIATES

Table of Contents

Introduction 3
USD Bull Markets 4
USD Performance in Recessions 5
USD Performance in Equity Bear Markets 6

Summary of Currency Views 7

USD: The final phase? 8
Nominal Exchange Rates and Bloomberg Consensus Forecasts 8
Rolling Six-Month Percent Change 9
Valuation: Percent Deviation of Real Exchange Rate From Historical Median 10
Fundamentals 11

GBP: Not out of the woods yet 12
Nominal Exchange Rates and Bloomberg Consensus Forecasts 12
Rolling Six-Month Percent Change 13
Valuation: Percent Deviation of Real Exchange Rate From Historical Median 14
Fundamentals 15

EUR: To parity and beyond? 16
Nominal Exchange Rates and Bloomberg Consensus Forecasts 16
Rolling Six-Month Percent Change 17
Valuation: Percent Deviation of Real Exchange Rate From Historical Median 18
Fundamentals 19

CHF: Still caught in the middle 20
Nominal Exchange Rates and Bloomberg Consensus Forecasts 20
Rolling Six-Month Percent Change 21
Valuation: Percent Deviation of Real Exchange Rate From Historical Median 22
Fundamentals 23

JPY: Kuroda's last stand 24
Nominal Exchange Rates and Bloomberg Consensus Forecasts 24
Rolling Six-Month Percent Change 25
Valuation: Percent Deviation of Real Exchange Rate From Historical Median 26
Fundamentals 27

Appendix
Economic Forecasts 29
Bank for International Settlements Trade Weights in NEER Basket 30
Notes on the Data 31

- 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). In the months following the chart book's publication, currency volatility and dispersion surged given the injection of political surprises in the United Kingdom and the United States.

- The dollar rally since 2011 paused for much of 2016, but quickly resumed following the US election. The backdrop of the past two years has been heightened volatility in currency markets as investors grapple with a strong USD amid diverging monetary policies across the developed world. Compared to the two previous cycles shown on the following pages, history implies the USD has more to rise before the current strong dollar cycle is over. However, the currency is entering the final phase of the cycle—how much longer the cycle lasts and how high the dollar ultimately goes will be highly dependent on the fiscal and trade policies enacted by politicians and the responses from global central banks. And the ultimate peak may not occur until the US economy slips into recession.

- This chart book updates our analysis from early 2016 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*.

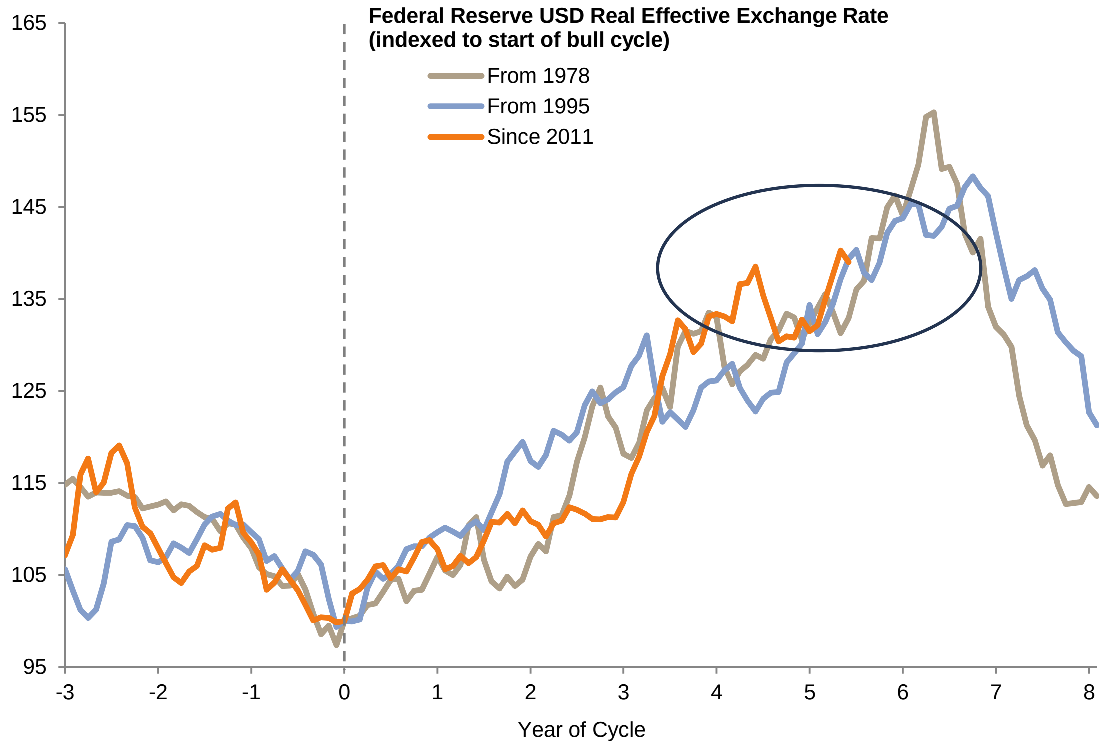
C|A

Has the USD peaked? History suggests not

A recovering US economy and rising rates have the potential to drive the USD higher, with a peak in 2018 possible based on historical cycles

US Dollar Bull Markets

As of January 31, 2017 • Index Level



Strong USD Cycles

Start Date	End Date	Duration (Years)	Magnitude (%)
Nov 1978	Mar 1985	6.3	55.3
May 1995	Feb 2002	6.8	48.4
Aug 2011	**Jan 2017 ***	**5.4**	**39.0**

* End date for current cycle represents most recent month end and does not imply the cycle is over.

Weak USD Cycles

Start Date	End Date	Duration (Years)	Magnitude (%)
Mar 1985	May 1995	10.2	-40.2
Feb 2002	Aug 2011	9.5	-33.3

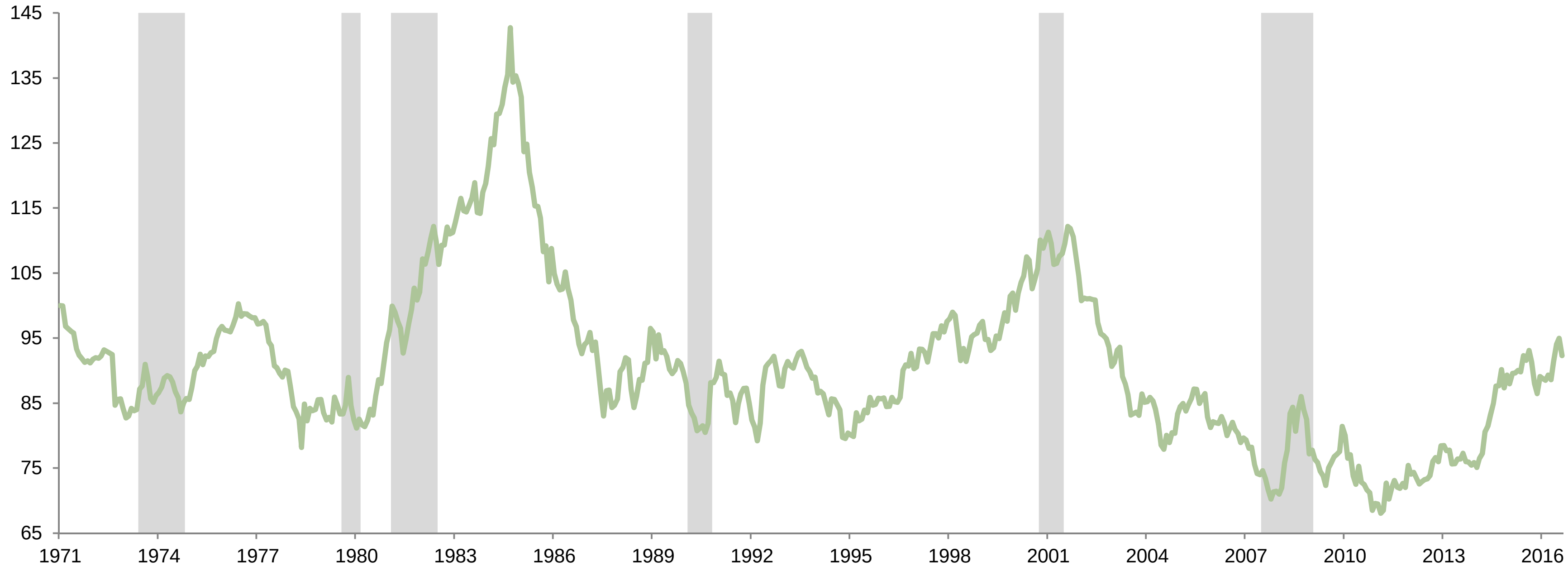
Sources: Federal Reserve and Thomson Reuters Datastream.

The USD tends to rise amid recessions

The USD typically weakens heading into a recession and then strengthens amid the "risk off" environment; large USD declines are not associated with recessions

USD Performance in Recessions

June 30, 1971 – January 31, 2017 • Index Level



USD Performance in Recessionary Periods

Start Date	Nov 1973	Jan 1980	Jul 1981	Jul 1990	Mar 2001	Dec 2007
End Date	Mar 1975	Jul 1980	Nov 1982	Mar 1991	Nov 2001	Jun 2009
Duration (Years)	1.3	0.5	1.3	0.7	0.7	1.5
Performance (%)	-2.4	-1.0	10.0	4.1	-1.9	4.2

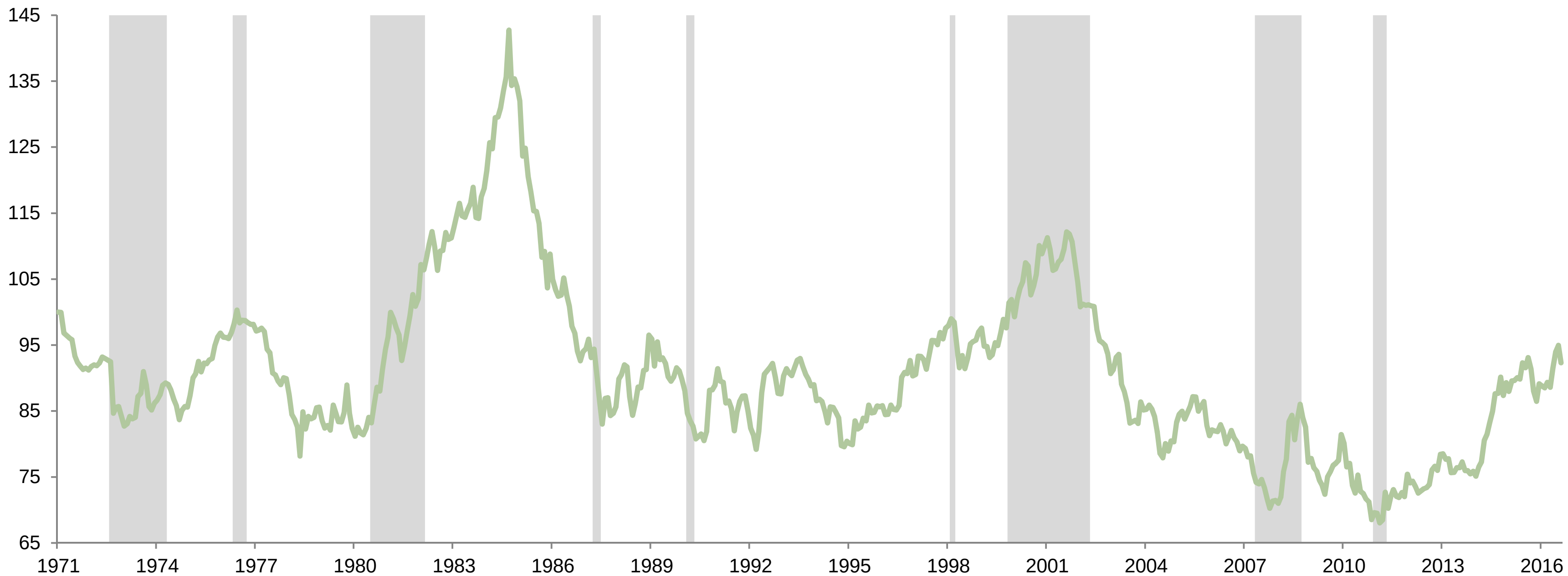
Sources: Bureau of Economic Analysis, National Bureau of Economic Research (NBER), and Thomson Reuters Datastream.

Notes: The USD Fixed-Weight Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%). Recessions shown with shading and are defined by NBER.

Similarly, the USD tends to rise during equity bear markets

USD Performance in Equity Bear Markets

June 30, 1971 – January 31, 2017 • Index Level



USD Performance in Equity Bear Markets

Start Date	Jan 1973	Oct 1976	Dec 1980	Sep 1987	Jul 1990	Jul 1998	Apr 2000	Oct 2007	May 2011
End Date	Sep 1974	Feb 1977	Jul 1982	Nov 1987	Sep 1990	Aug 1998	Sep 2002	Feb 2009	Sep 2011
Duration (Years)	1.7	0.3	1.6	0.2	0.2	0.1	2.4	1.3	0.3
Performance (%)	-3.5	0.5	27.9	-8.4	-2.3	-0.5	-0.3	16.0	4.5

Sources: Bureau of Economic Analysis and Thomson Reuters Datastream.

Notes: The USD Fixed-Weight Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%). Equity bear markets shown in shading and are defined by a peak to trough change in the S&P 500 Price Index of at least 19%, shown to the closest month-end values.

Summary of Currency Views

- **USD: The final phase?** History suggests the USD could peak in 2018. However, much will depend on US fiscal, monetary, and trade policy, with the USD still reliant on a hawkish Federal Reserve.

- **GBP: Not out of the woods yet.** The GBP still faces downside risks from "Brexit," as the recent decline is not extreme relative to history, and exit negotiations have yet to start in earnest.

- **EUR: To parity and beyond?** The combination of rising political uncertainty and a dovish European Central Bank (ECB) may drive the EUR to parity with the USD. Rising inflation and a shift to a hawkish ECB are needed to drive the EUR higher.

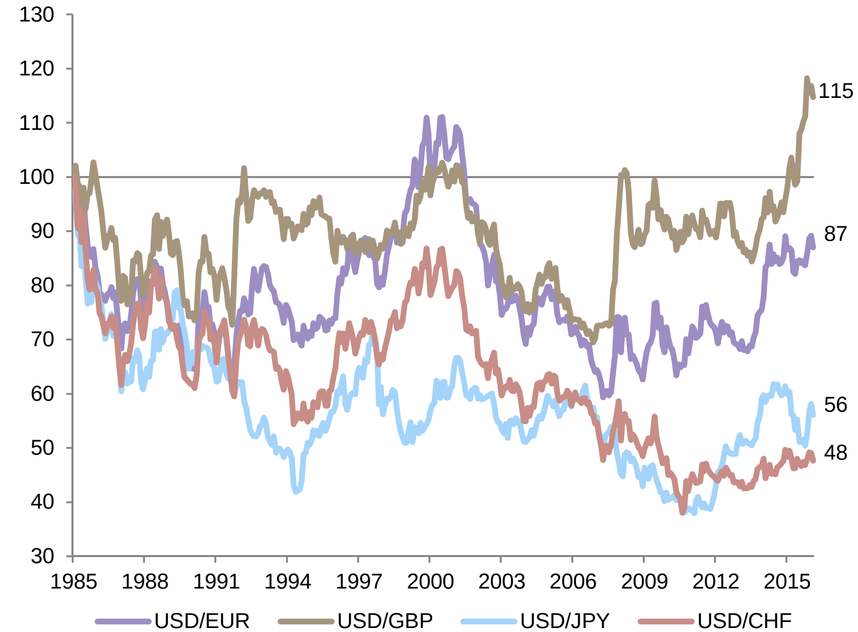
- **CHF: Still caught in the middle.** The CHF will remain weak vs the USD, but steady vs the euro. The Swiss National Bank (SNB) wants to weaken the CHF vs the EUR, but will not be able to do so meaningfully until the ECB begins to tighten monetary policy.

- **JPY: Kuroda's last stand.** The JPY should weaken as the Bank of Japan (BOJ) keeps bond yields near zero while the Fed tightens policy. But how the JPY responds to escalating trade and geopolitical tensions in Asia remains to be seen.

- After weakening for much of 2016, the USD came roaring back to life after the US presidential election on the expectation that increased fiscal stimulus from the Trump administration will boost growth and inflation and allow the Fed to continue hiking rates.
- Consensus forecasts expect only modest gains for the USD in 2017 given the strength of the recent rally and general uncertainty over US economic policy.
- History implies the USD has more to rise, with a potential peak in 2018. The imposition of a "border tax" could send the USD sharply higher, with potential negative impacts on the US economy and Fed policy, setting the stage for renewed USD weakness.
- Given the overvaluation of the USD, investors need to balance the potential for near-term strength with longer-term weakness. This suggests reducing hedges on non-USD exposures.

USD Nominal Exchange Rates

December 31, 1985 – January 31, 2017 • Rebased to 100 at December 31, 1985



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

USD Bloomberg Consensus Forecasts

As of January 31, 2017

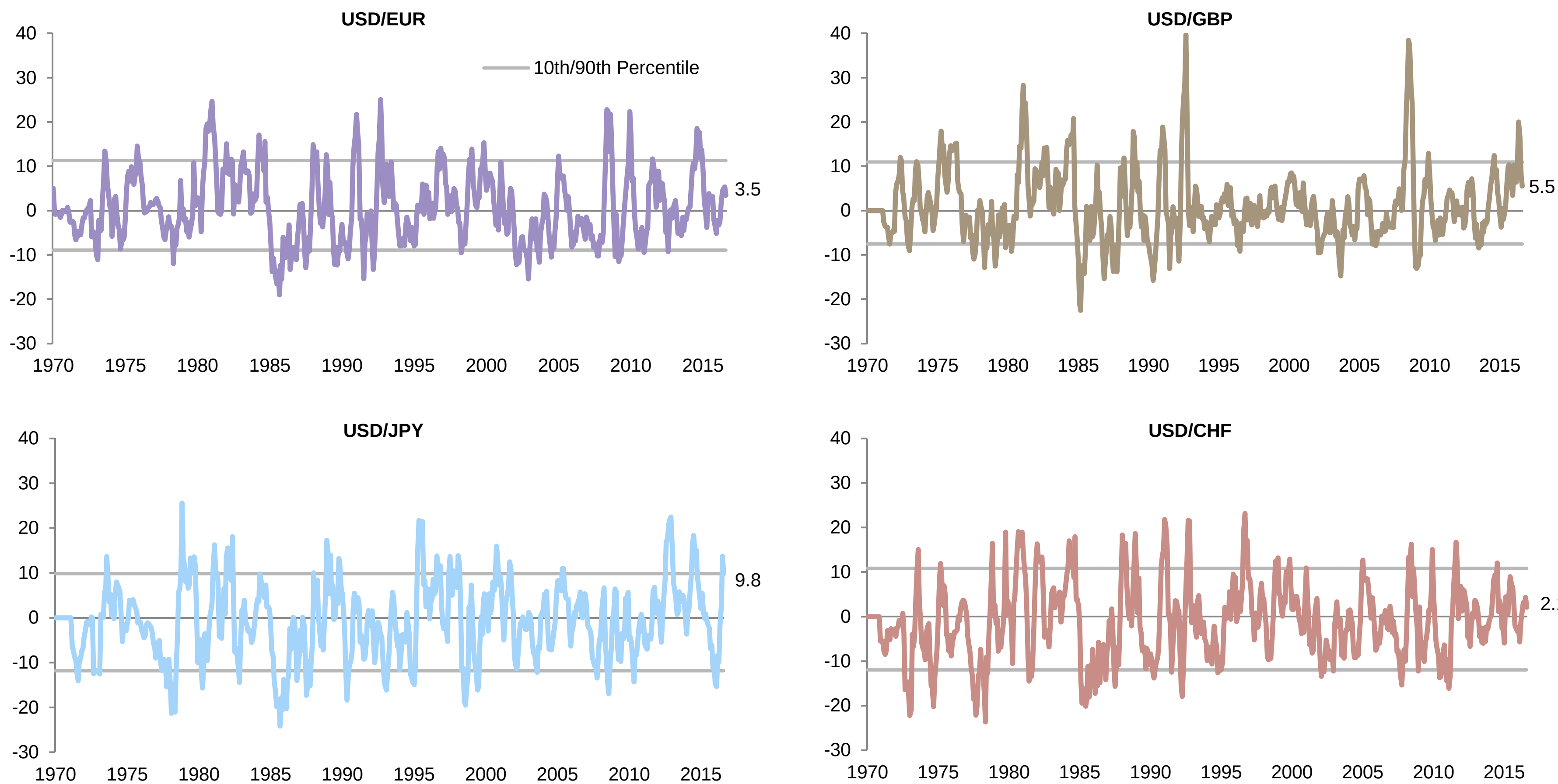
	USD/EUR	USD/GBP	USD/JPY	USD/CHF
Current	0.93	0.79	113	0.99
Year-End 2017 Median Forecast	0.95	0.81	117	1.03
Percent Change	2.2%	2.5%	3.5%	4.0%

Source: Bloomberg L.P.

USD/JPY and USD/GBP rallies were extreme and have started reversing

USD Rolling Six-Month Percent Change

June 30, 1970 – January 31, 2017 • Percent (%)

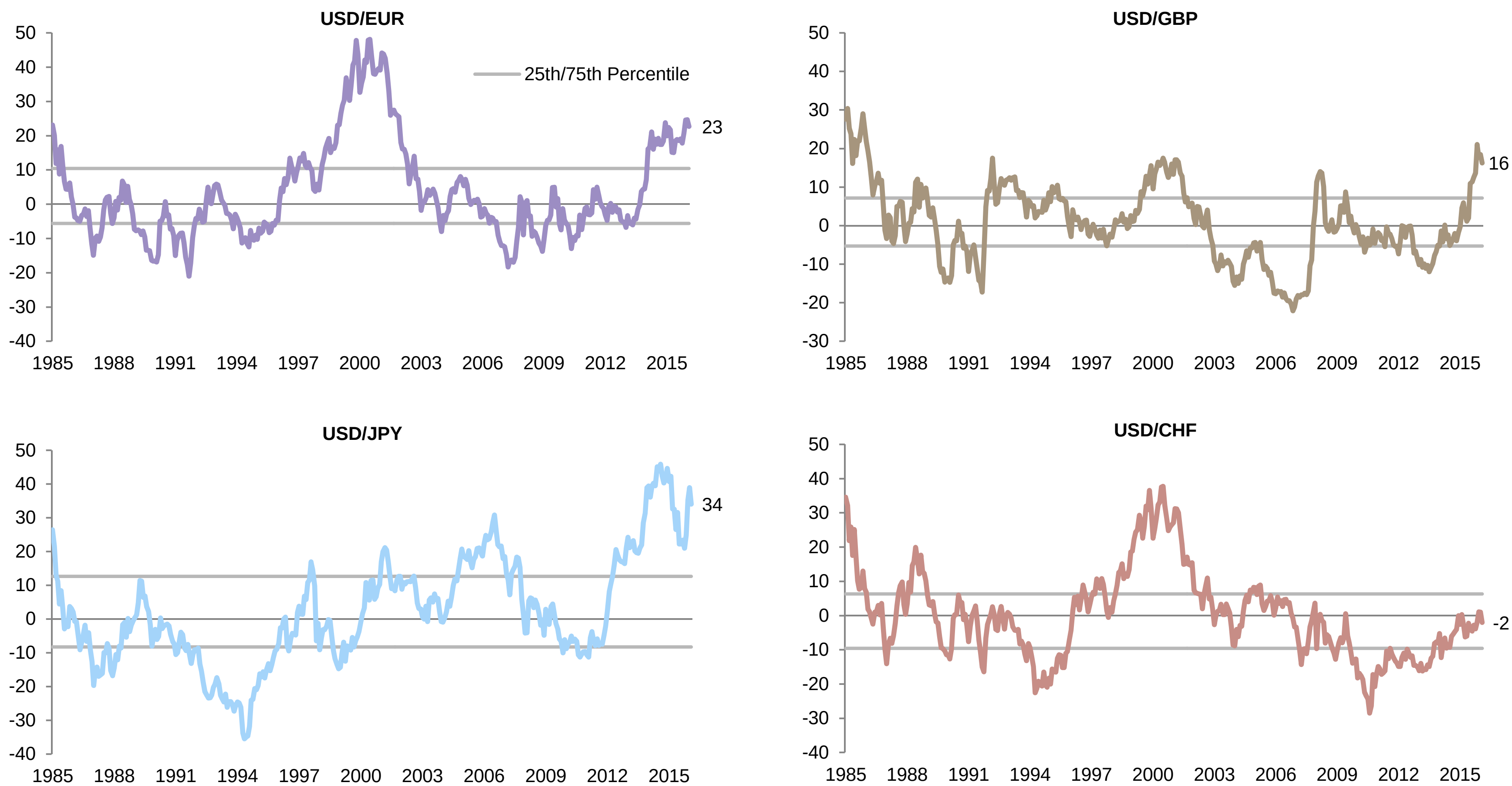


Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

The USD is expensive versus every currency except CHF

USD Valuation: Percent Deviation of Real Exchange Rate From Historical Median

December 31, 1985 – January 31, 2017 • Percent (%)



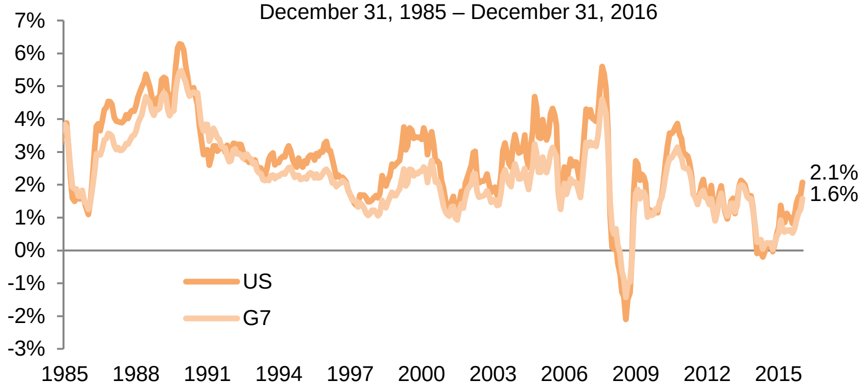
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more information on our valuation metric.

Yet USD currency fundamentals are solid

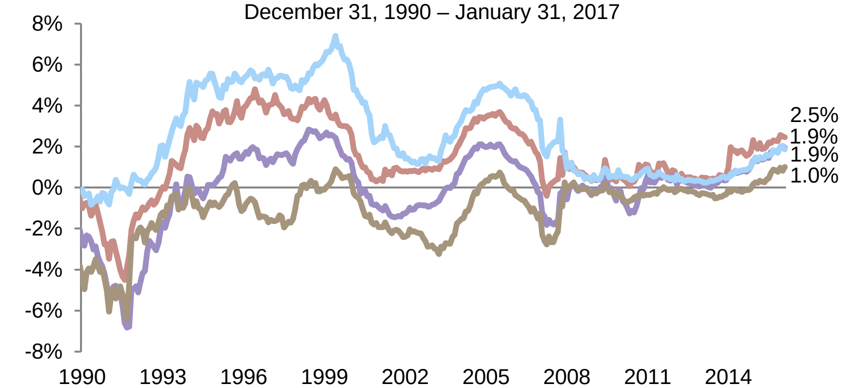
Rising positive carry and abating deflation pressures should help drive USD higher in the intermediate term; negative correlation to equity market implies volatility benefit to hedging most DM currencies, save the JPY

USD Fundamentals

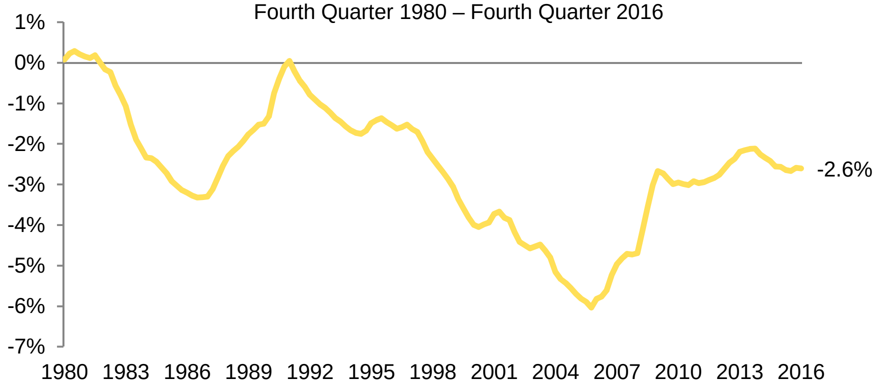
Inflation (Year-Over-Year %)
December 31, 1985 – December 31, 2016



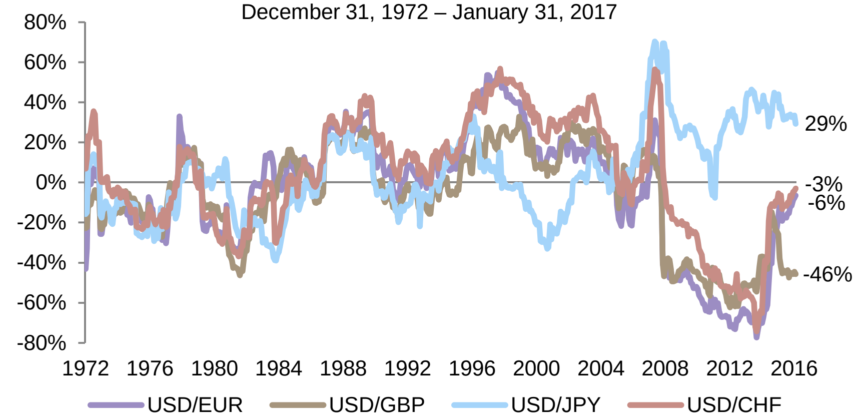
Implied Carry
December 31, 1990 – January 31, 2017



Current Account % GDP
Fourth Quarter 1980 – Fourth Quarter 2016



Rolling 36-Month Correlation With MSCI World
December 31, 1972 – January 31, 2017



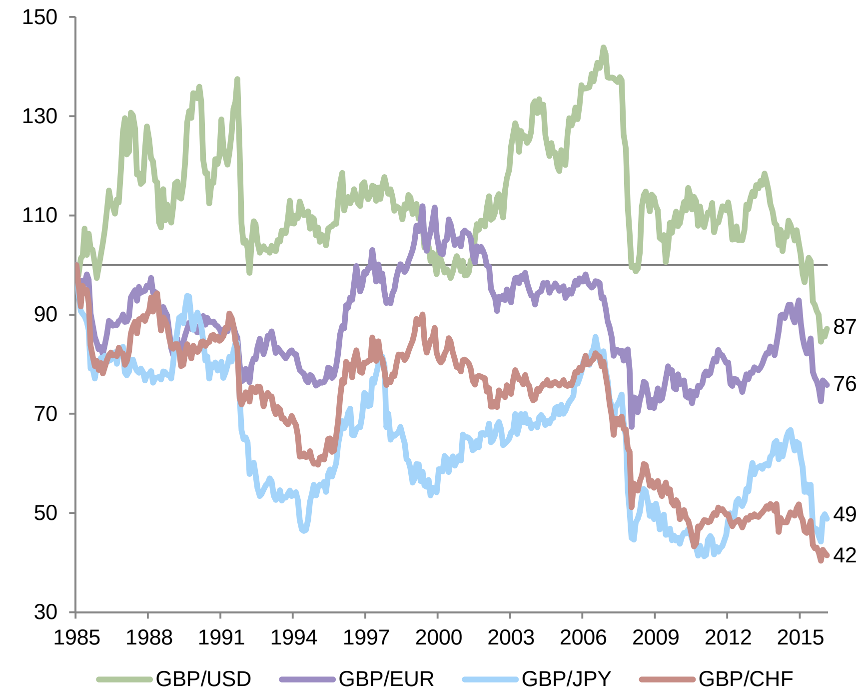
Sources: MSCI Inc., Oxford Economics, Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more on how each of these factors relates to the currency hedging decision.

GBP: Not out of the woods yet

- The GBP plummeted following the Brexit referendum and has reached multi-decade lows vs many currencies.
- Consensus forecasts for 2017 expect the GBP will weaken modestly vs the USD, remain flat vs the EUR and appreciate modestly vs the JPY and CHF. However, markets may still be understating the potential negative impacts from Brexit on the UK economy, especially as the negotiations have yet to begin and Europe will likely push for a "hard" Brexit given the risks a "soft" Brexit poses to the EU, especially in an election year.
- Despite the GBP looking cheap vs the USD, history implies a fall below GBP/USD 1.20 is likely. At the same time, the GBP does not look cheap vs the EUR or JPY.
- GBP-based investors should remain partially unhedged given the prospect for further declines.

GBP Nominal Exchange Rates

December 31, 1985 – January 31, 2017 • Rebased to 100 at December 31, 1985



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

GBP Bloomberg Consensus Forecasts

As of January 31, 2017

	GBP/USD	GBP/EUR	GBP/JPY	GBP/CHF
Current	1.26	1.16	142	1.24
Year-End 2017 Median Forecast	1.23	1.16	144	1.27
Percent Change	-2.4%	0.0%	1.4%	2.4%

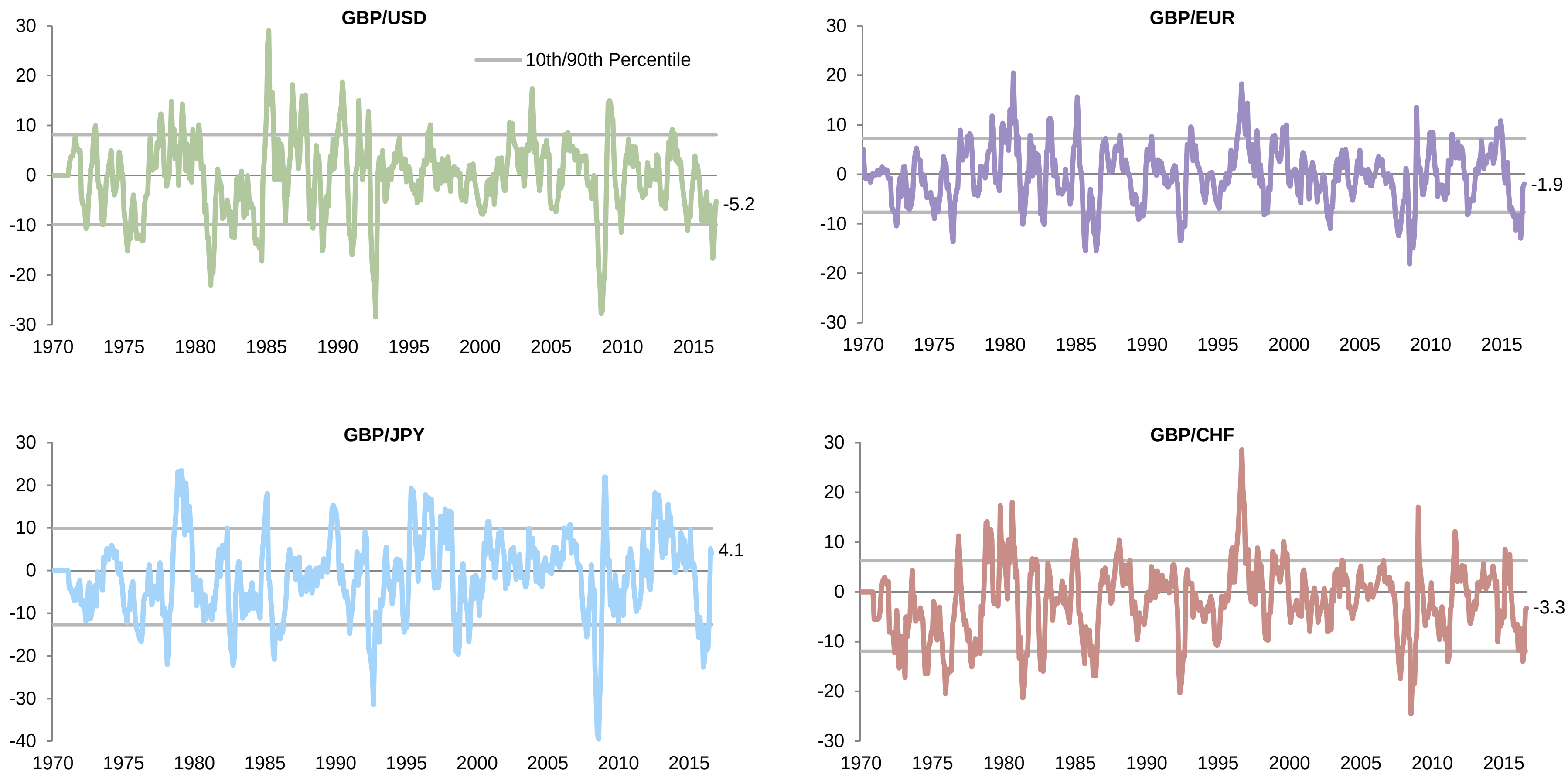
Source: Bloomberg L.P.

GBP sell-off was large, but not extreme

The sell-off is not yet as extreme as 2008 or 1994, implying possible further downside for the currency

GBP Rolling Six-Month Percent Change

June 30, 1970 – January 31, 2017 • Percent (%)

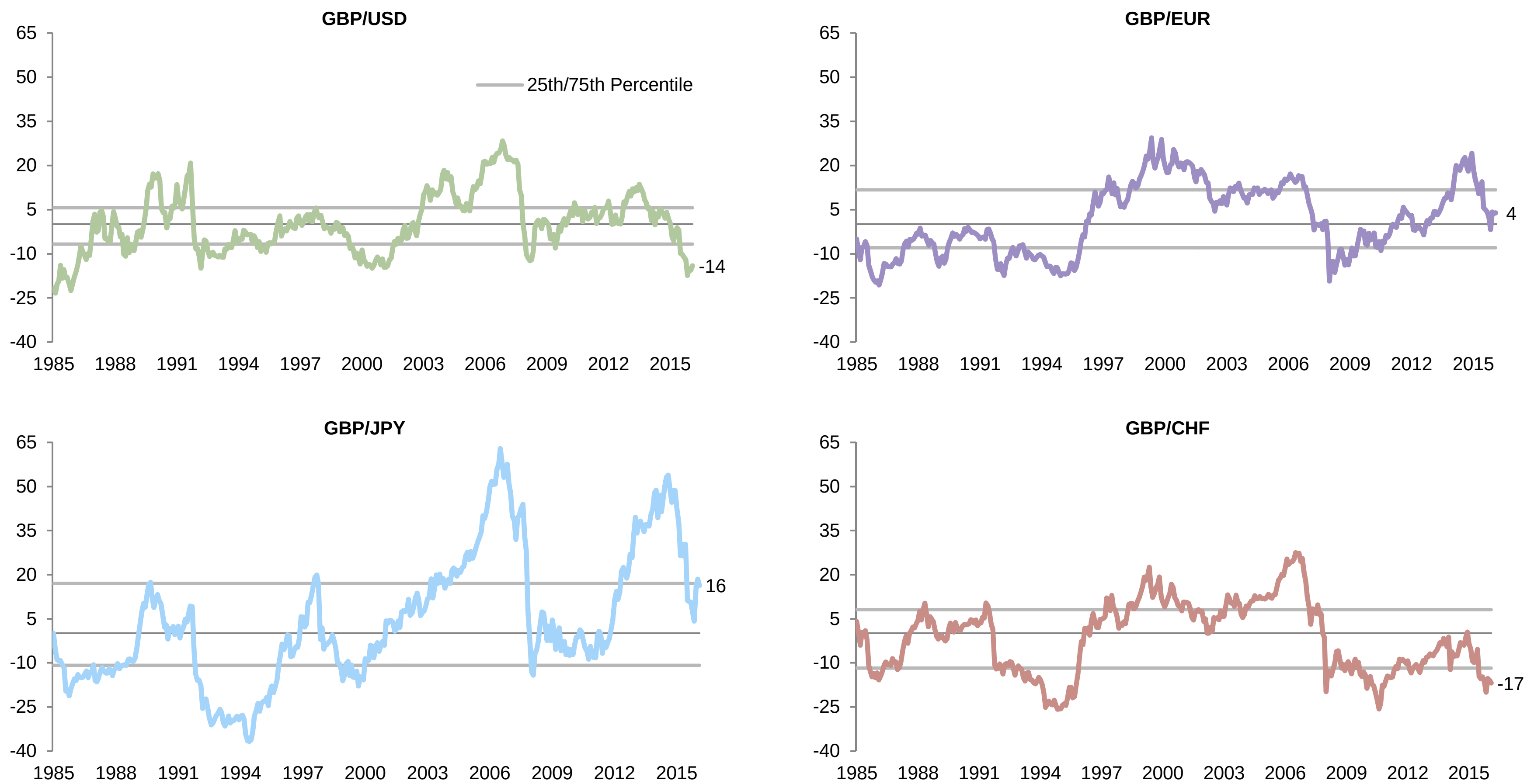


Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

GBP appears cheap vs the USD and CHF, fairly valued vs EUR, and expensive vs the JPY

GBP Valuation: Percent Deviation of Real Exchange Rate From Historical Median

December 31, 1985 – January 31, 2017 • Percent (%)



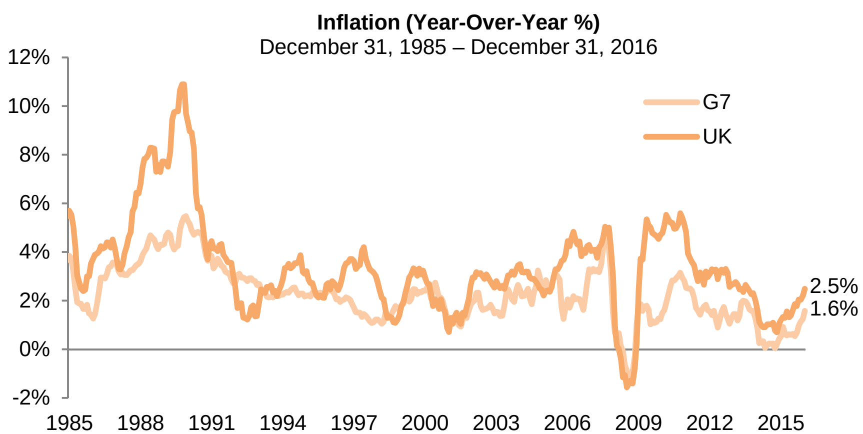
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

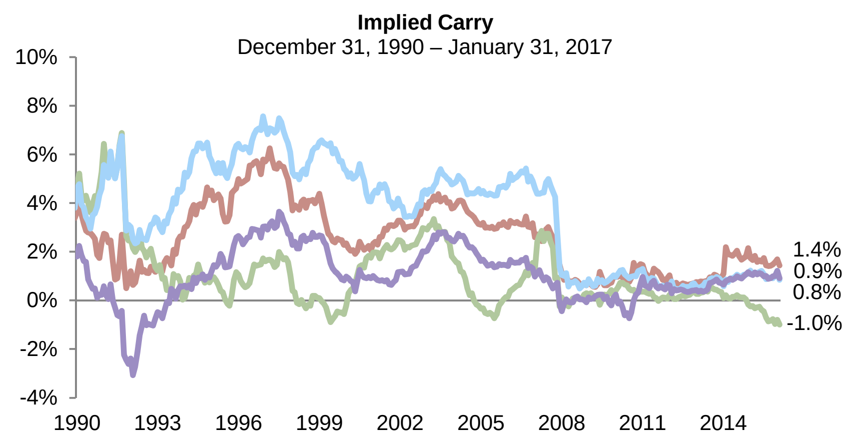
Note: Please see Notes on the Data for more information on our valuation metric.

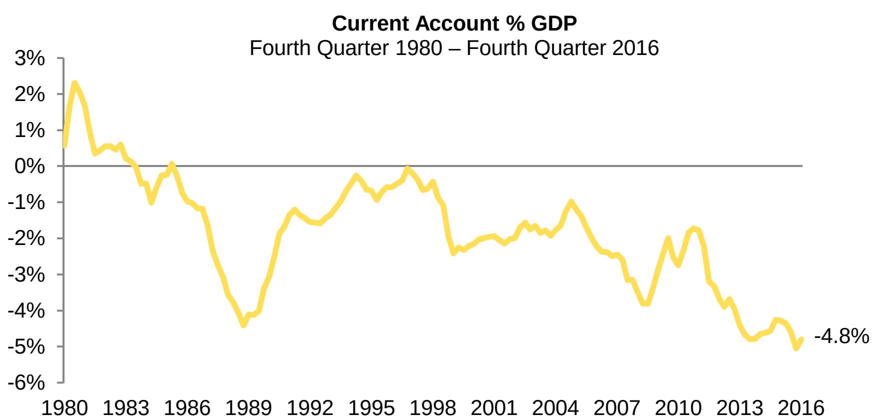
GBP is vulnerable given large current account deficit

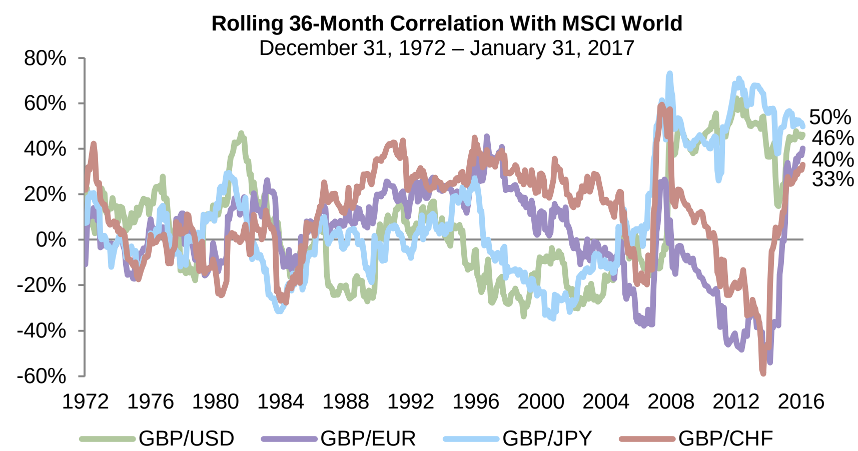
The GBP has become a very pro-cyclical currency with high positive correlation to global equities; this and mixed valuations imply GBP-based investors should remain partially unhedged

GBP Fundamentals









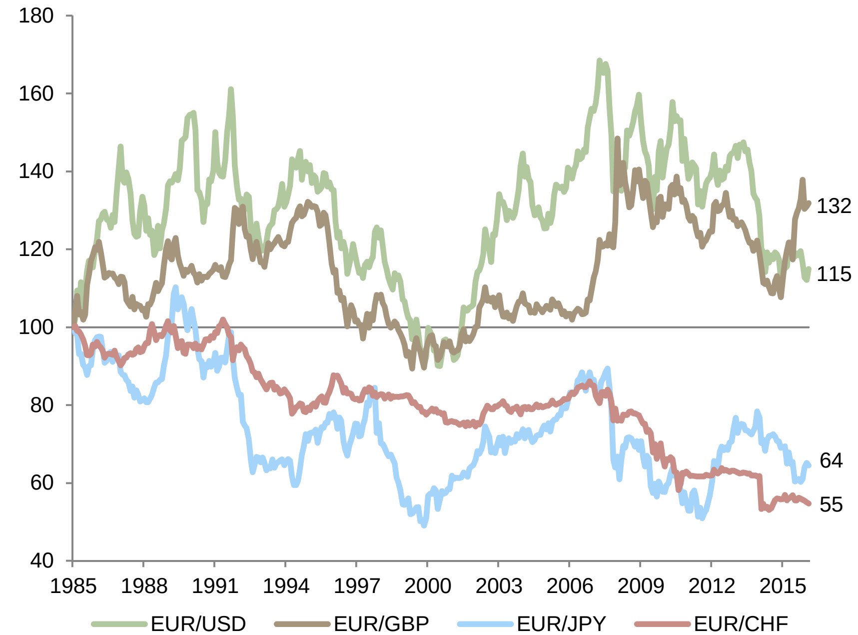
Sources: MSCI Inc., Oxford Economics, Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more on how each of these factors relates to the currency hedging decision.

EUR: To parity and beyond?

- The EUR sold off sharply in late 2016 before rebounding modestly in early 2017. Consensus forecasts see the EUR weakening modestly vs the USD to 1.05, staying flat vs the GBP, and rising modestly vs the JPY and CHF.
- A move in the EUR to parity or lower vs the USD cannot be ruled out, especially should the future of the EU be called into question given the start of Brexit negotiations and a series of national elections across Europe that could see anti-EU parties gain seats.
- While the EUR appears cheap vs the USD, it is hard to expect broad EUR strength so long as the ECB is easing monetary policy. A recovery in growth and a shift to a hawkish ECB are needed to drive the EUR higher over a multi-year horizon.
- These factors suggests EUR-based investors should remain partially unhedged to benefit from any continued EUR weakness.

EUR Nominal Exchange Rates

December 31, 1985 – January 31, 2017 • Rebased to 100 at December 31, 1985



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

EUR Bloomberg Consensus Forecasts

As of January 31, 2017

	EUR/USD	EUR/GBP	EUR/JPY	EUR/CHF
Current	1.08	0.86	122	1.07
Year-End 2017 Median Forecast	1.05	0.86	123	1.10
Percent Change	-2.8%	0.0%	0.8%	2.8%

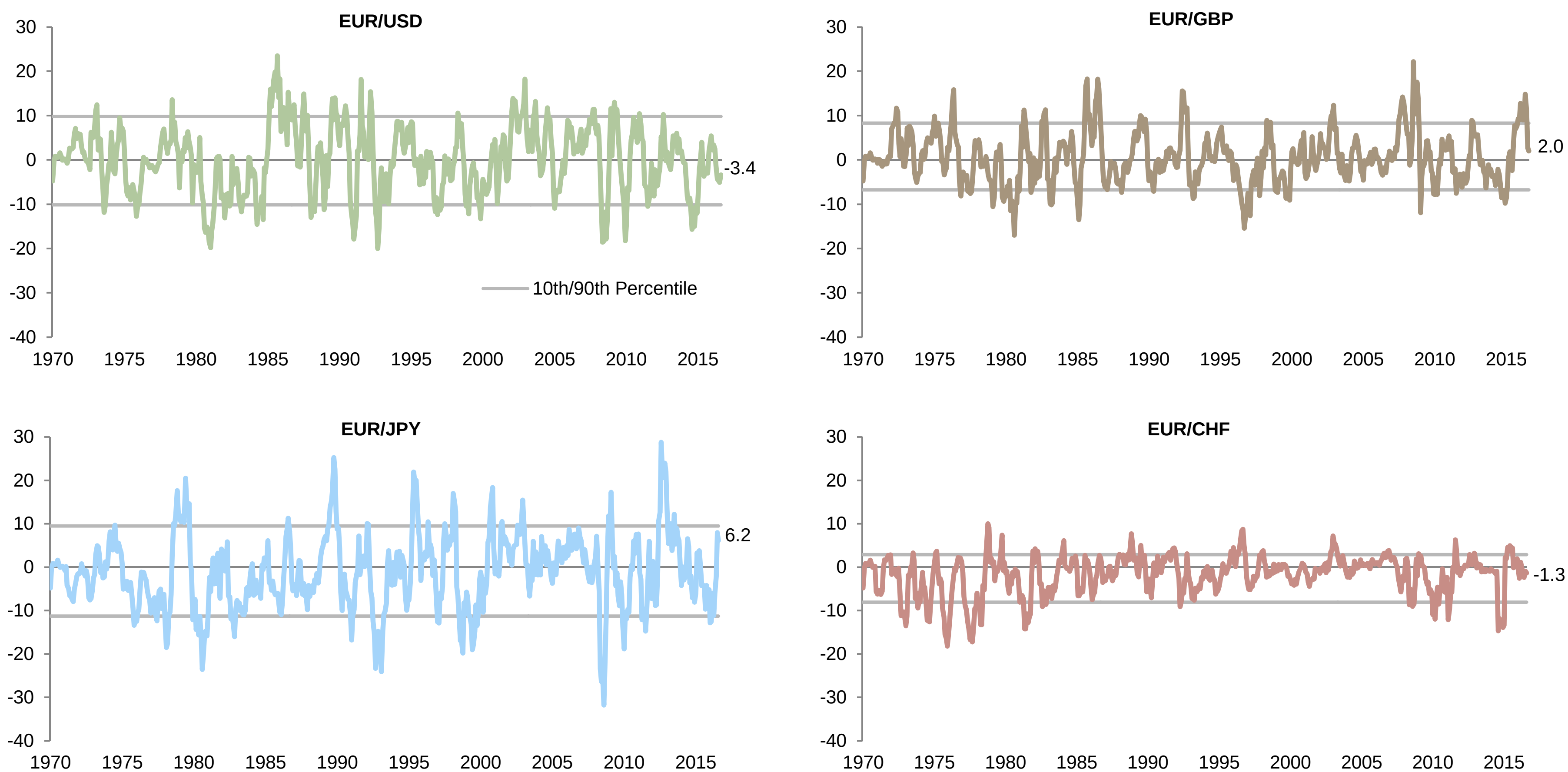
Source: Bloomberg L.P.

Rally in the EUR is losing steam

Recent moves in EUR/GBP were stretched while moves vs USD and CHF have been more modest

EUR Rolling Six-Month Percent Change

June 30, 1970 – January 31, 2017 • Percent (%)



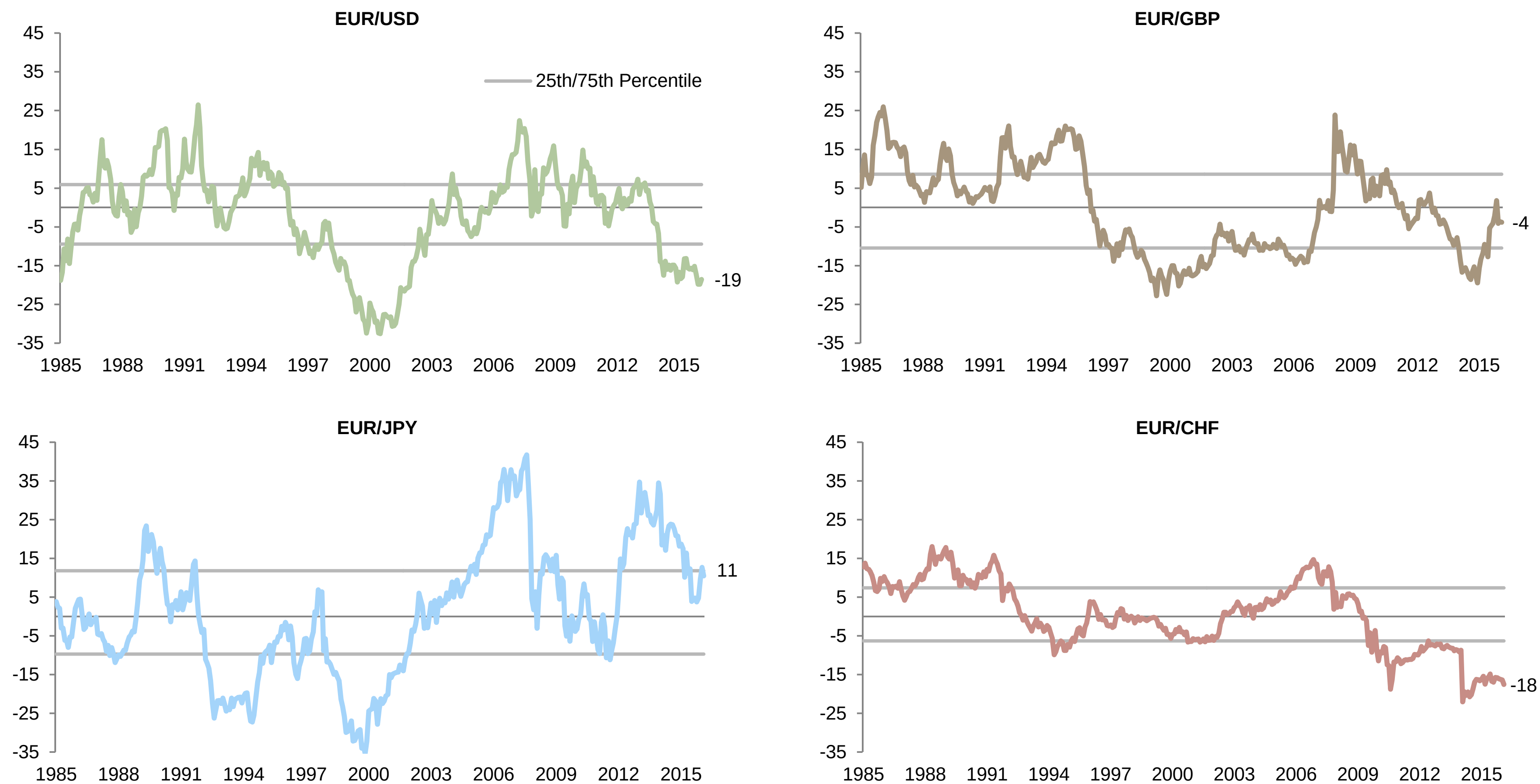
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

EUR valuations are mixed

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 – January 31, 2017 • Percent (%)



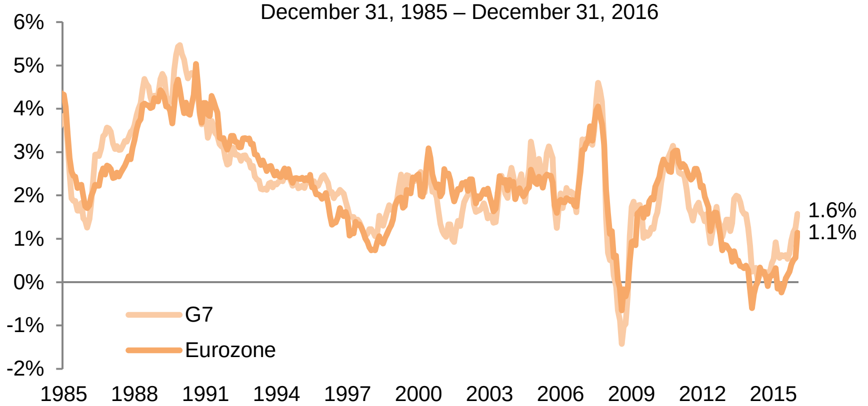
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more information on our valuation metric.

Rising current account surplus should help support EUR over the long run

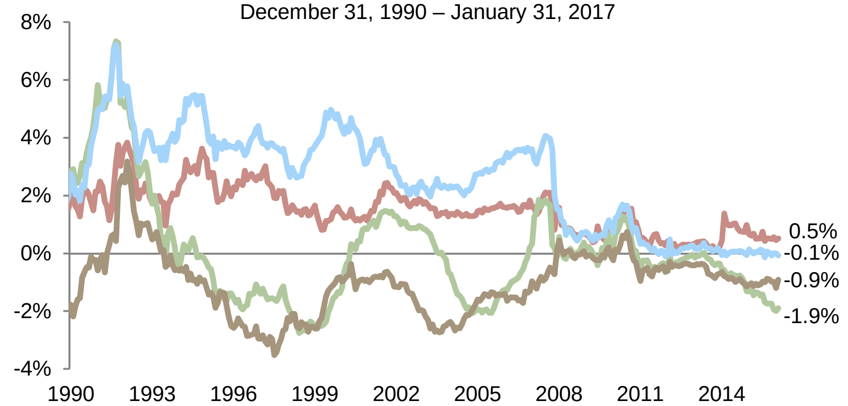
Correlations to equities have become unstable; EUR/JPY positive correlation and overvaluation imply EUR-based investors should remain unhedged vs JPY

EUR Fundamentals

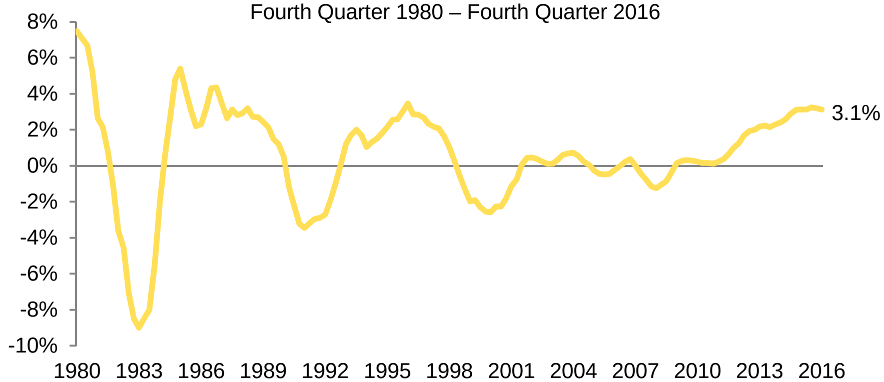
Inflation (Year-Over-Year %)
December 31, 1985 – December 31, 2016



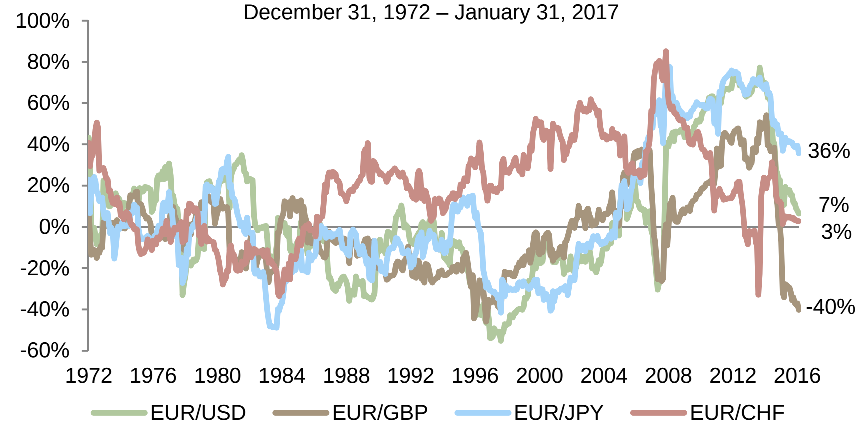
Implied Carry
December 31, 1990 – January 31, 2017



Current Account % GDP
Fourth Quarter 1980 – Fourth Quarter 2016



Rolling 36-Month Correlation With MSCI World
December 31, 1972 – January 31, 2017



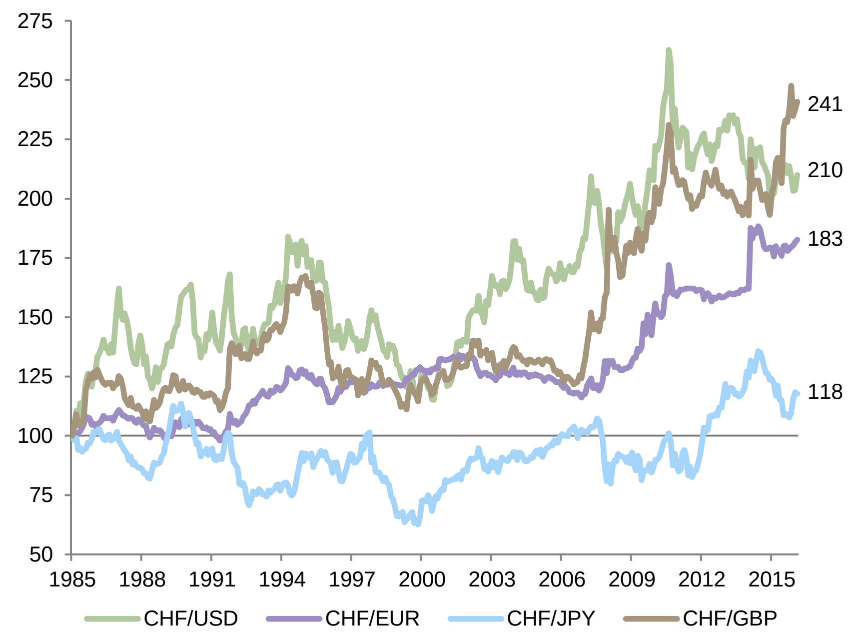
Sources: MSCI Inc., Oxford Economics, Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more on how each of these factors relates to the currency hedging decision.

CHF: Still caught in the middle

- For much of 2016, the CHF was weak vs the USD but relatively stable vs the EUR. Consensus forecasts see the CHF weakening against most DM currencies in 2017.
- From a valuation perspective, the CHF is fairly valued vs the USD but expensive vs the EUR, GBP, and JPY.
- The CHF will remain caught in the middle between USD strength and EUR weakness until the ECB begins tightening monetary policy, thereby creating a larger interest rate differential vs the SNB.
- Overvaluation suggests that CHF-based investors should be partially unhedged vs the major developed currencies. If the CHF becomes cheap vs the USD, hedging vs USD and being unhedged vs other major currencies may be necessary.

CHF Nominal Exchange Rates

December 31, 1985 – January 31, 2017 • Rebased to 100 at December 31, 1985



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

CHF Bloomberg Consensus Forecasts

As of January 31, 2017

	CHF/USD	CHF/EUR	CHF/JPY	CHF/GBP
Current	1.01	0.94	114	0.81
Year-End 2017 Median Forecast	0.97	0.91	113	0.79
Percent Change	-4.0%	-3.2%	-0.6%	-2.5%

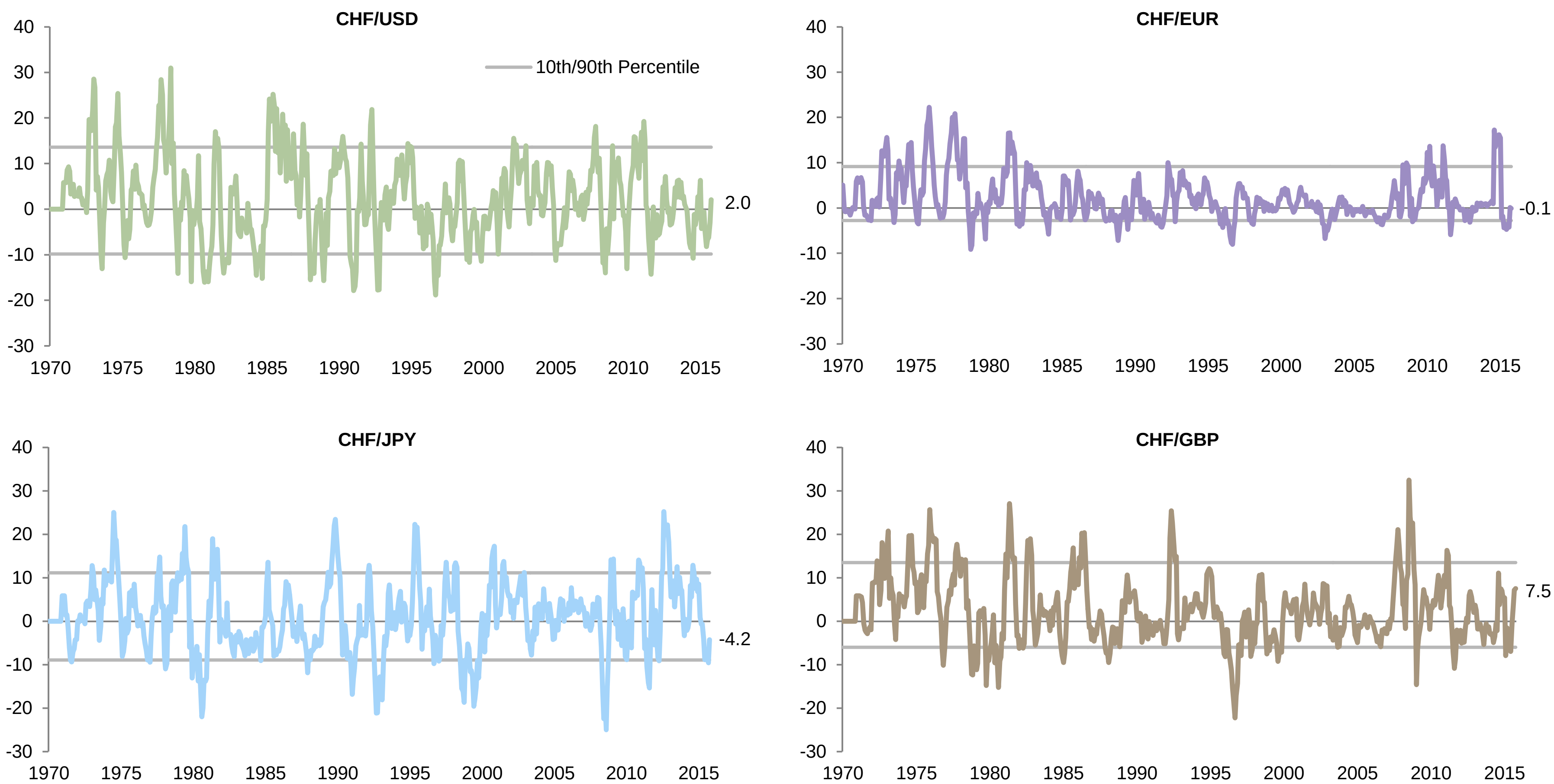
Source: Bloomberg L.P.

CHF momentum does not appear stretched

Moves in the CHF have been within historical norms following the volatility of early 2015

CHF Rolling Six-Month Percent Change

June 30, 1970 – January 31, 2017 • Percent (%)

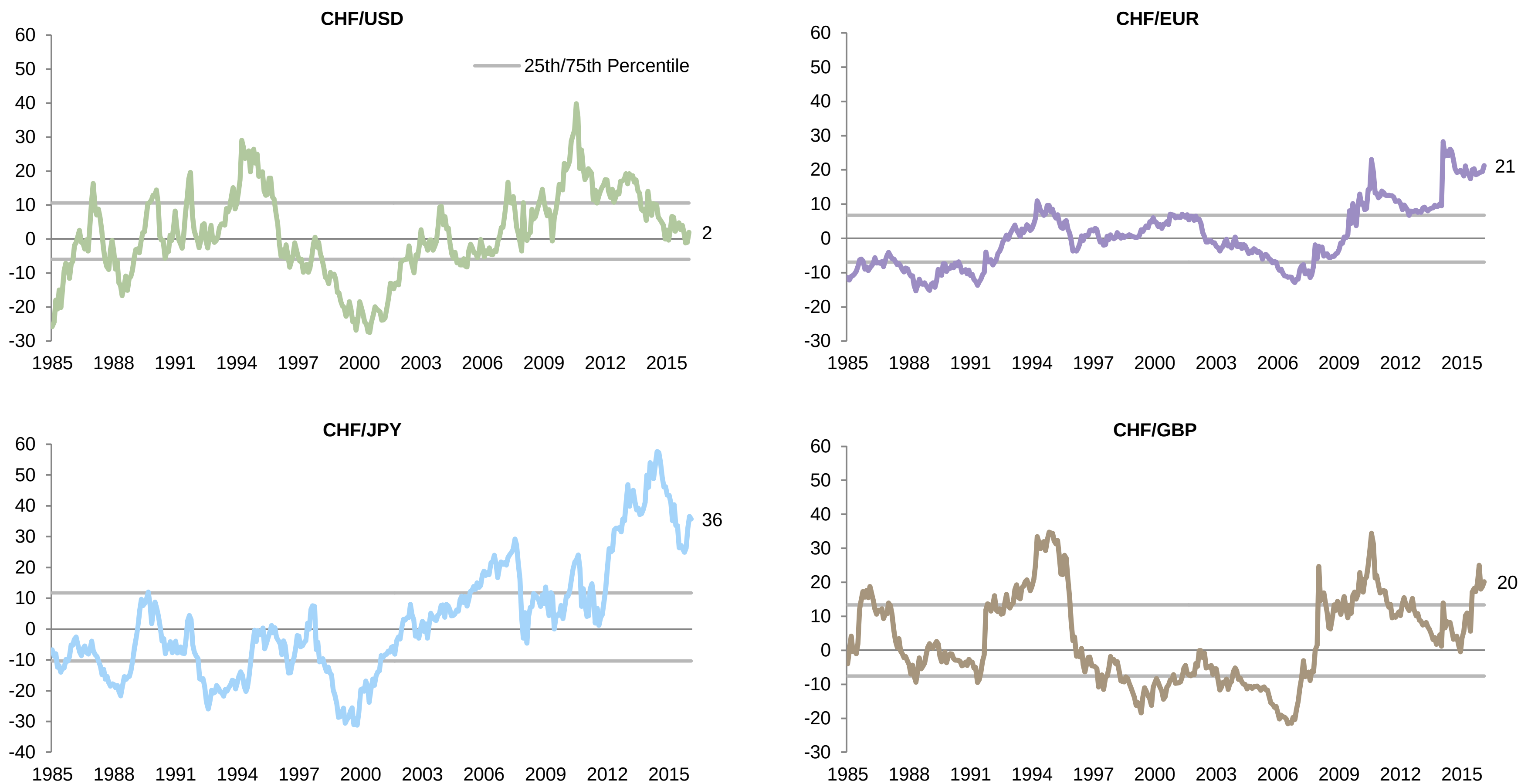


Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

While the CHF appears fairly valued vs the USD, the franc is expensive against other major currencies

CHF Valuation: Percent Deviation of Real Exchange Rate From Historical Median

December 31, 1985 – January 31, 2017 • Percent (%)



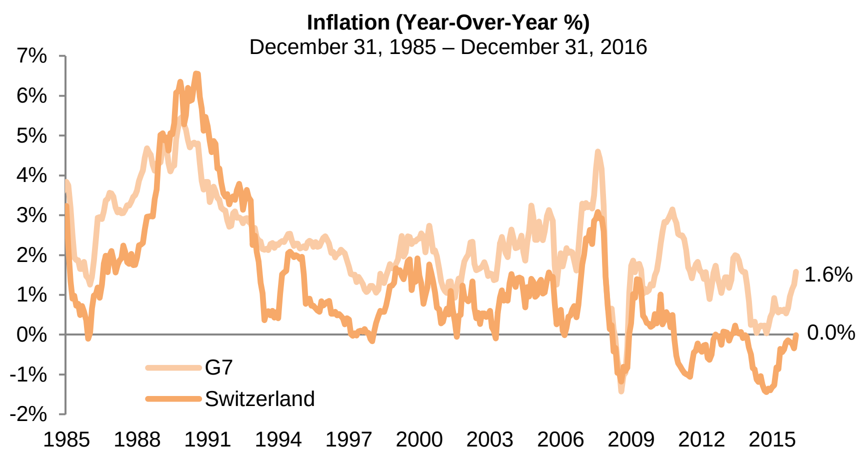
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

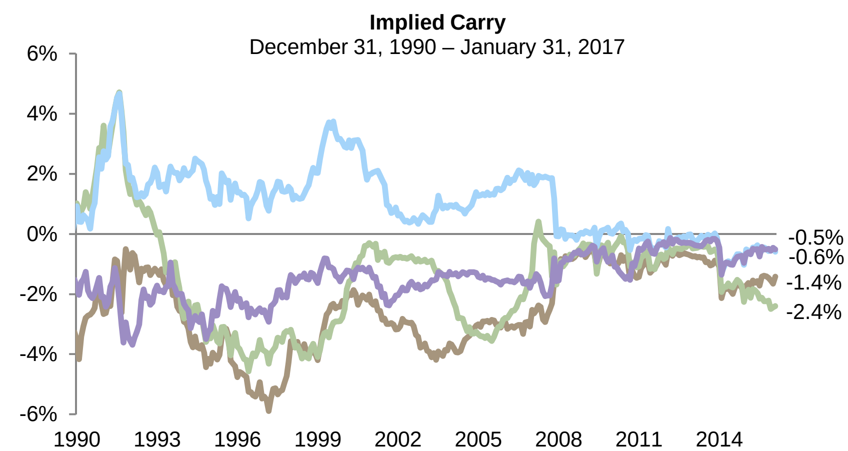
Note: Please see Notes on the Data for more information on our valuation metric.

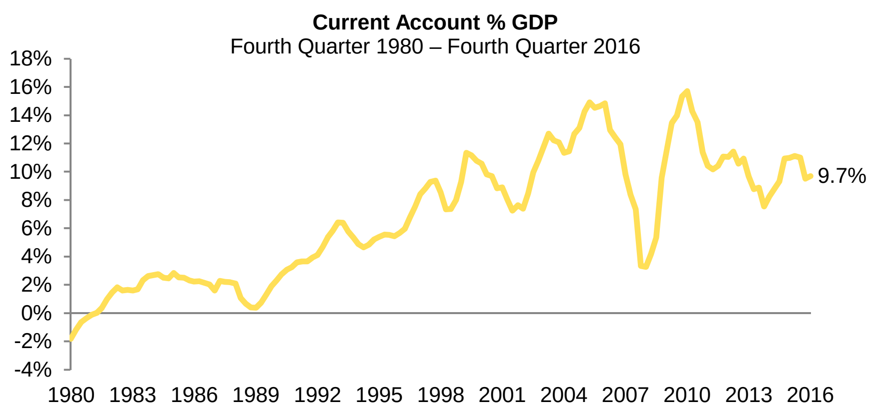
Deflation and current account surplus placing upward pressure on CHF

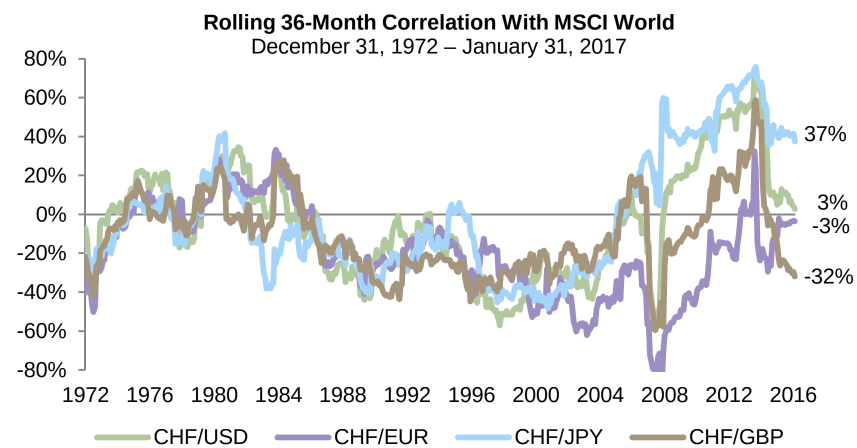
Negative carry is low compared to history

CHF Fundamentals









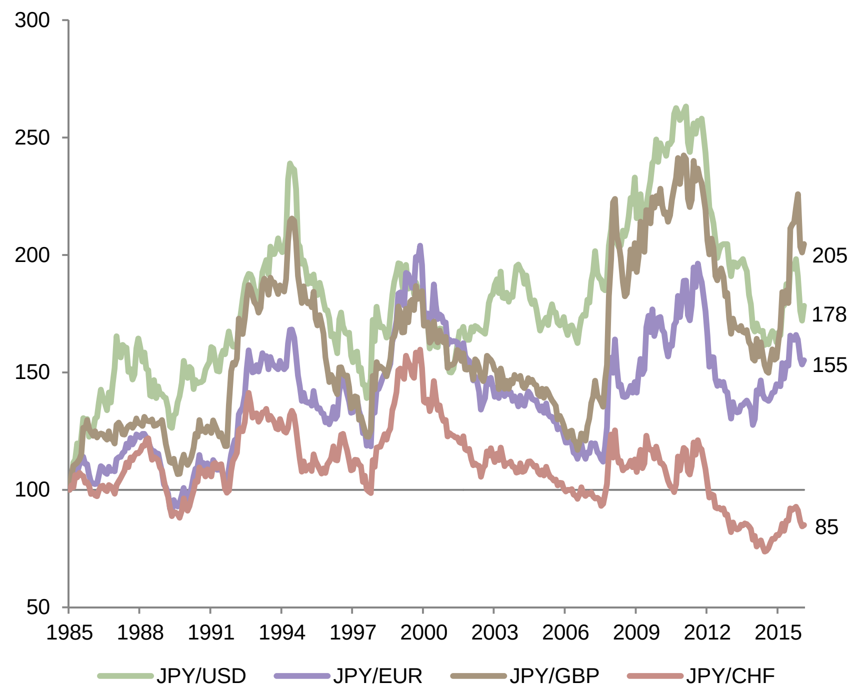
Sources: MSCI Inc., Oxford Economics, Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more on how each of these factors relates to the currency hedging decision.

JPY: Kuroda's last stand

- The JPY surged in early 2016 as the BOJ's foray into negative interest rates backfired. The JPY resumed weakening after the BOJ pledged to keep the ten-year Japanese government bond yield at 0% until its 2.0% inflation target is achieved. The new yield-curve targeting policy should allow the Japanese government to increase fiscal spending without driving up yields. With only one year left in his term, BOJ Governor Haruhiko Kuroda will seek to keep monetary policy loose and the JPY weak.
- Consensus forecasts expect the JPY to weaken modestly over 2017 vs most currencies. Yet larger declines could occur amid rising global interest rates, given the BOJ's dovish stance.
- The undervaluation of the JPY implies non-JPY-based investors should be unhedged to benefit from eventual JPY strength. This also helps reduce the volatility of Japanese equity exposure, as the JPY tends to rally amid "risk off" periods. However, partial hedging can boost returns amid JPY weakness and earn positive carry, while also removing some degree of FX uncertainty.

JPY Nominal Exchange Rates

December 31, 1985 – January 31, 2017 • Rebased to 100 at December 31, 1985



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

JPY Bloomberg Consensus Forecasts

As of January 31, 2017

	USD/JPY	EUR/JPY	GBP/JPY	CHF/JPY
Current	113	122	142	114
Year-End 2017 Median Forecast	117	123	144	113
Percent Change	-3.4%	-0.8%	-1.4%	0.6%

Source: Bloomberg L.P.

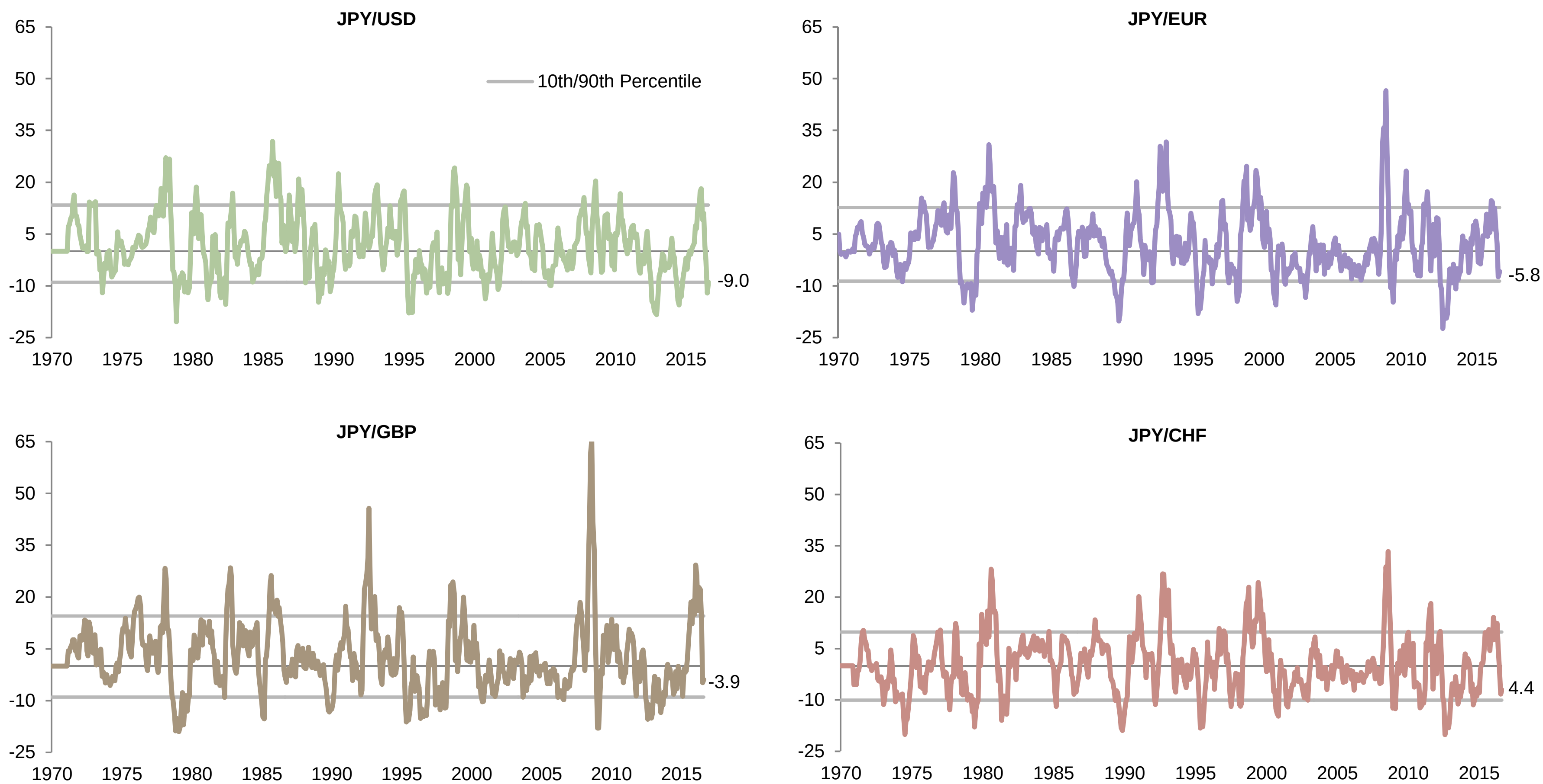
Note: Currency pairings against the Japanese yen are shown from the perspective of the foreign currency.

JPY appears oversold

The post–US election sell-off in the JPY reversed much of the rise over 2016

JPY Rolling Six-Month Percent Change

June 30, 1970 – January 31, 2017 • Percent (%)



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

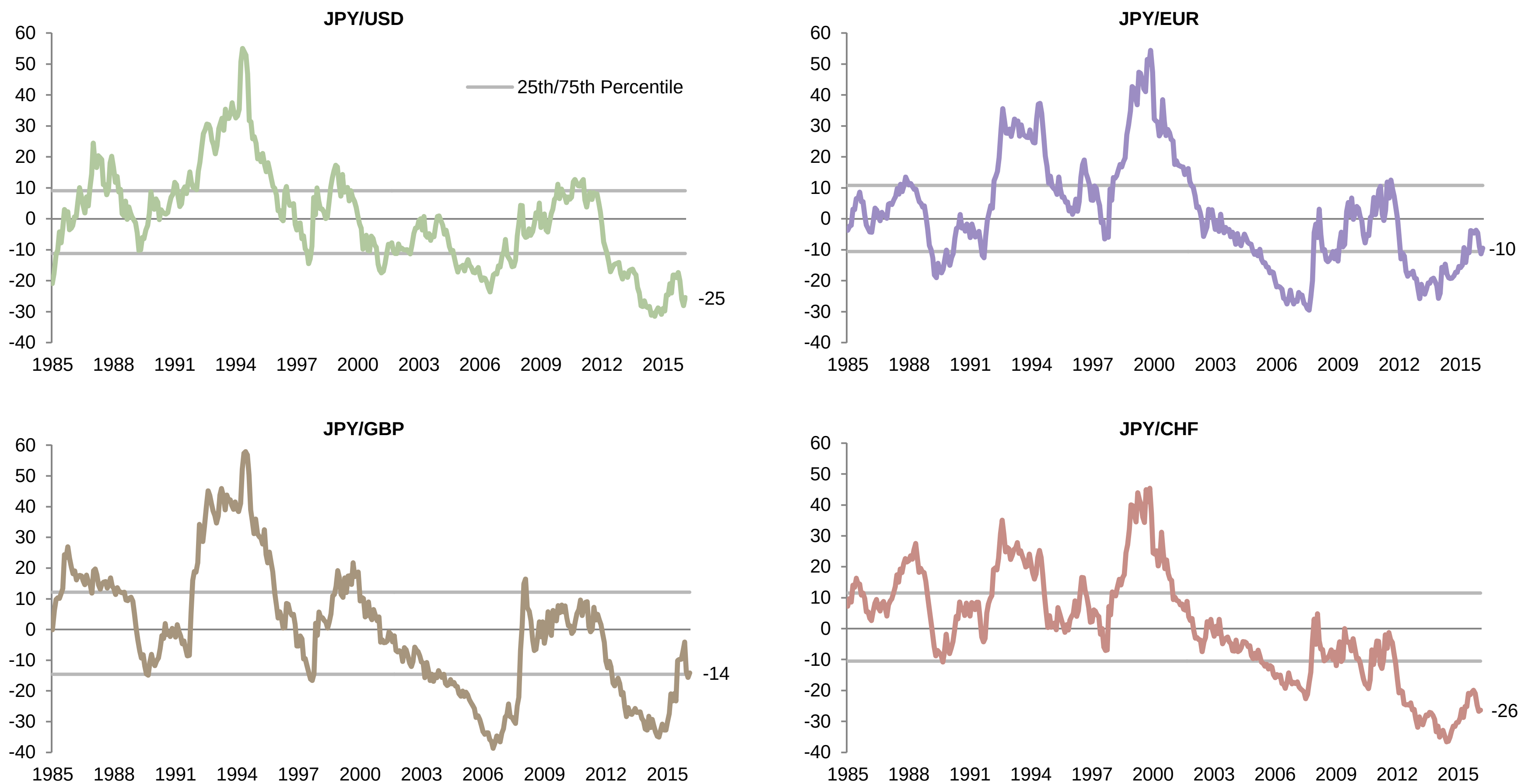
C|A

JPY still cheap against major currencies despite its rally

Yet a return to inflation could see real FX valuations rise while nominal FX rates remain range bound

JPY Valuation: Percent Deviation of Real Exchange Rate From Historical Median

December 31, 1985 – January 31, 2017 • Percent (%)



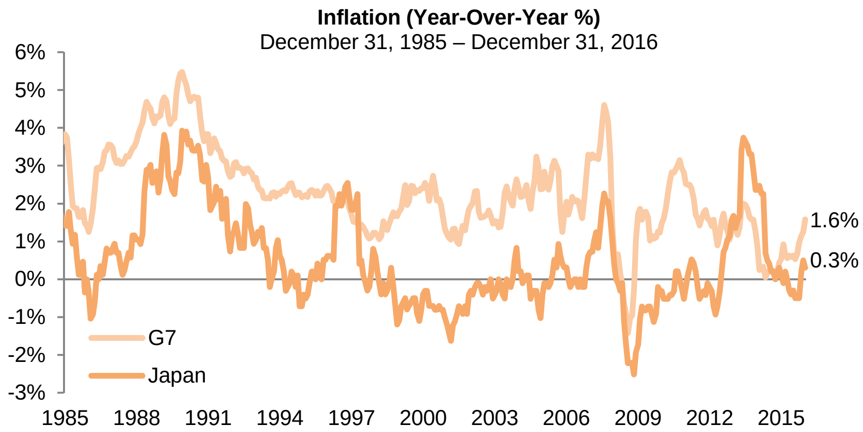
Sources: MSCI Inc., Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.

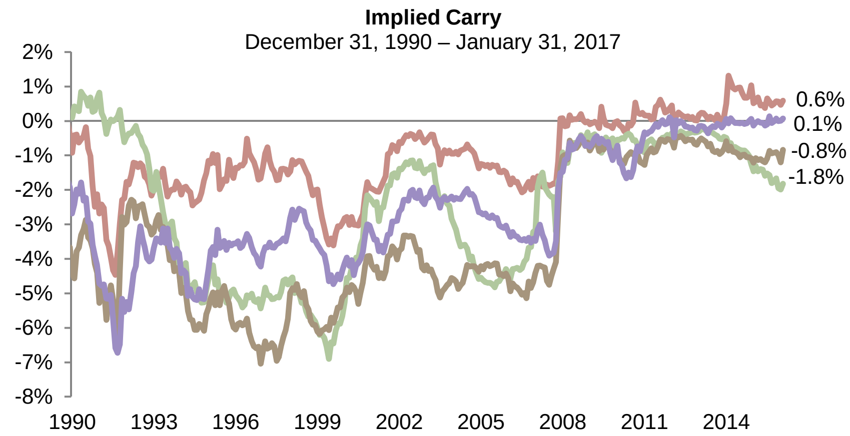
Note: Please see Notes on the Data for more information on our valuation metric.

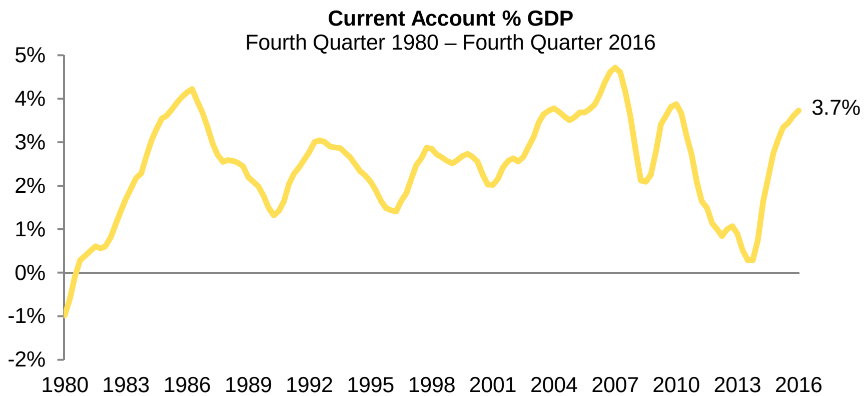
Rising current account surplus reaffirms JPY's "risk-off" nature

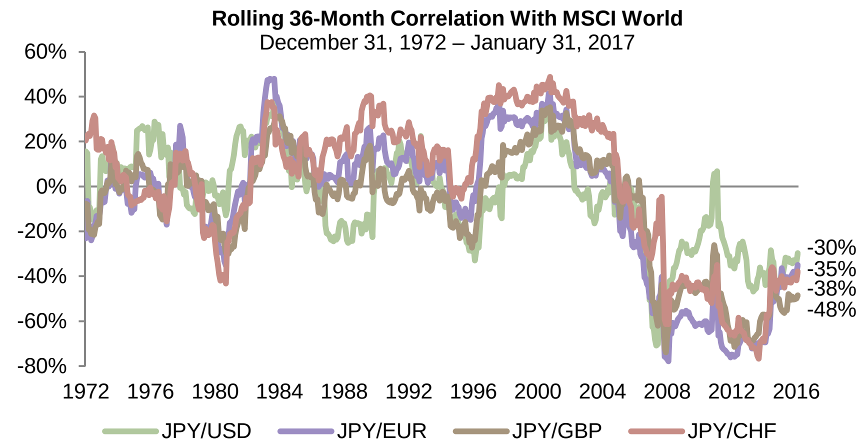
Negative correlations with equities imply volatility benefit from leaving JPY exposure unhedged for non-JPY-based investors

JPY Fundamentals









Sources: MSCI Inc., Oxford Economics, Thomson Reuters Datastream, and WM/Reuters. MSCI data provided "as is" without any express or implied warranties.
Note: Please see Notes on the Data for more on how each of these factors relates to the currency hedging decision.

Appendix

Consensus forecasts imply continued economic divergence

United States is forecasted to maintain growth and yield advantage

Economic Forecasts
As of February 8, 2017

	Real GDP (%)		Inflation (%)		Three-Month Interest Rate (%)		Ten-Year Bond Yield (%)	
	2016	2017 (f)	2016	2017 (f)	2016	2017 (f)	2016	2017 (f)
United States	1.9	2.3	1.8	2.4	1.00	1.57	2.45	2.84
United Kingdom	2.2	0.8	1.2	2.7	0.37	0.35	1.24	1.67
Europe	1.8	1.5	0.7	1.3	-0.32	-0.31	0.20	0.66
Switzerland	1.4	1.5	-0.2	0.4	-0.73	-0.77	-0.22	0.10
Japan	1.7	1.0	0.3	0.6	-0.05	-0.04	0.05	0.05

Source: Bloomberg L.P.
Notes: 2016 Real GDP growth for Switzerland and Japan are forecasts based on Bloomberg consensus data. All 2017 forecasts are based on Bloomberg consensus data.

Trade weights make some currency pairs more relevant than others

The United Kingdom and Switzerland's major trade exposure is EUR; the United States more exposed to EUR and CAD than JPY; China is a major trade partner to all

Bank for International Settlements Trade Weights in NEER Basket

As of January 31, 2017

United States	% Weight
China	21.7
Euro area	16.6
Canada	12.9
Mexico	12.5
Japan	8.0
Korea	3.6
United Kingdom	3.1
Chinese Taipei	2.2
India	1.9
Brazil	1.6

United Kingdom	% Weight
Euro area	43.7
China	12.7
United States	10.7
Japan	3.5
Switzerland	2.6
Poland	2.2
India	2.0
Sweden	1.8
Turkey	1.8
Czech Republic	1.7

Euro Area	% Weight
China	17.9
United States	13.2
United Kingdom	9.9
Switzerland	5.8
Japan	5.2
Poland	5.0
Czech Republic	4.1
Sweden	3.5
Russia	3.4
Turkey	3.0

Japan	% Weight
China	31.0
United States	15.2
Euro area	13.0
Korea	6.6
Chinese Taipei	4.2
Thailand	3.9
Singapore	2.6
Indonesia	2.4
Malaysia	2.3
United Kingdom	2.0

Switzerland	% Weight
Euro area	48.4
United States	9.9
China	9.5
United Kingdom	5.1
Japan	3.8
Czech Republic	1.6
Poland	1.5
Hong Kong SAR	1.4
Korea	1.4
India	1.4

Canada	% Weight
United States	57.6
China	12.8
Euro area	8.5
Mexico	4.7
Japan	3.6
United Kingdom	1.8
Korea	1.7
Chinese Taipei	1.2
Switzerland	0.9
India	0.8

Source: Bank for International Settlements.

Notes: Nominal effective exchange rates (NEER) are calculated as the geometric weighted average of bilateral exchange rates. Weights are based on trade over the 2011–13 period.

Exchange rates

- Historical exchange rates provided by Thomson Reuters Datastream, based on WM/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 and economic data forecasts provided by Bloomberg and are based on the median forecast as of January 31, 2017.

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).

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.