What's Next for the US Dollar?

October | 2015

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Aaron Costello | Jason Widjaja

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Introduction

This chart book provides an update of our views and analysis originally published in March 2015. At that time, we viewed the US dollar as vulnerable in the near term, despite being only halfway through a typical appreciation cycle. The dollar indeed has become more volatile, weakening over the second quarter and again early in the fourth quarter as the US Federal Reserve kept policy rates the same.

Even given the recent decline in the dollar, we still view the currency as vulnerable in the near term, but it ultimately has more to run before the next depreciation cycle begins. Thus, we still recommend USD-based investors consider hedging a portion of their non-USD exposures, given the potential for an overshoot in the dollar and the fact that hedging reduces volatility and may provide positive carry going forward.

This chart book provides context on previous USD rallies and where the dollar is in the current cycle.

- The USD is just over halfway through a typical up-cycle
  - The previous two cycles were ~7 years in duration and saw the USD rise between 40% and 80%
    - In the current cycle, the dollar is up more than 30% over 4 years
- The USD *still* looks vulnerable in the near term
  - Following a choppy second and third quarter, momentum and sentiment/positioning indicators are more neutral. However, the USD does not yet look oversold and uncertainty over the outlook for the US economy and Fed rate hikes will keep the USD under pressure
  - A pause in the cycle is typical before a final overshoot
    - Similar to past cycles, valuations have reached a point where a correction is due. In previous cycles, the final up leg of the cycle was driven by rising rates and recession fears
- USD-based investors should still consider hedging a portion of their foreign currency exposure
  - Hedging reduces volatility, may produce positive carry going forward, and protects against the risk of a dollar overshoot
  - An overshoot could be triggered by macro risk
    - The final surge in the USD over 1999–2002 was triggered by the bursting of the tech bubble and a global recession
  - Non-USD investors should not underweight the dollar in portfolios

Defining the US Dollar Basket

The cycles are very much the same, regardless of how you weight your dollar basket. We will focus on a fixed-weight basket, composed of 10% in the AUD, CAD, and CHF; 20% in the GBP and JPY; and 30% in the EUR. These weights approximate current weights in the MSCI World ex US Index. A static basket allows for a consistent comparison across time periods, as opposed to trade or market-cap weights, which have shifted substantially over time. (See appendix for more on this topic.)

USD Cycles

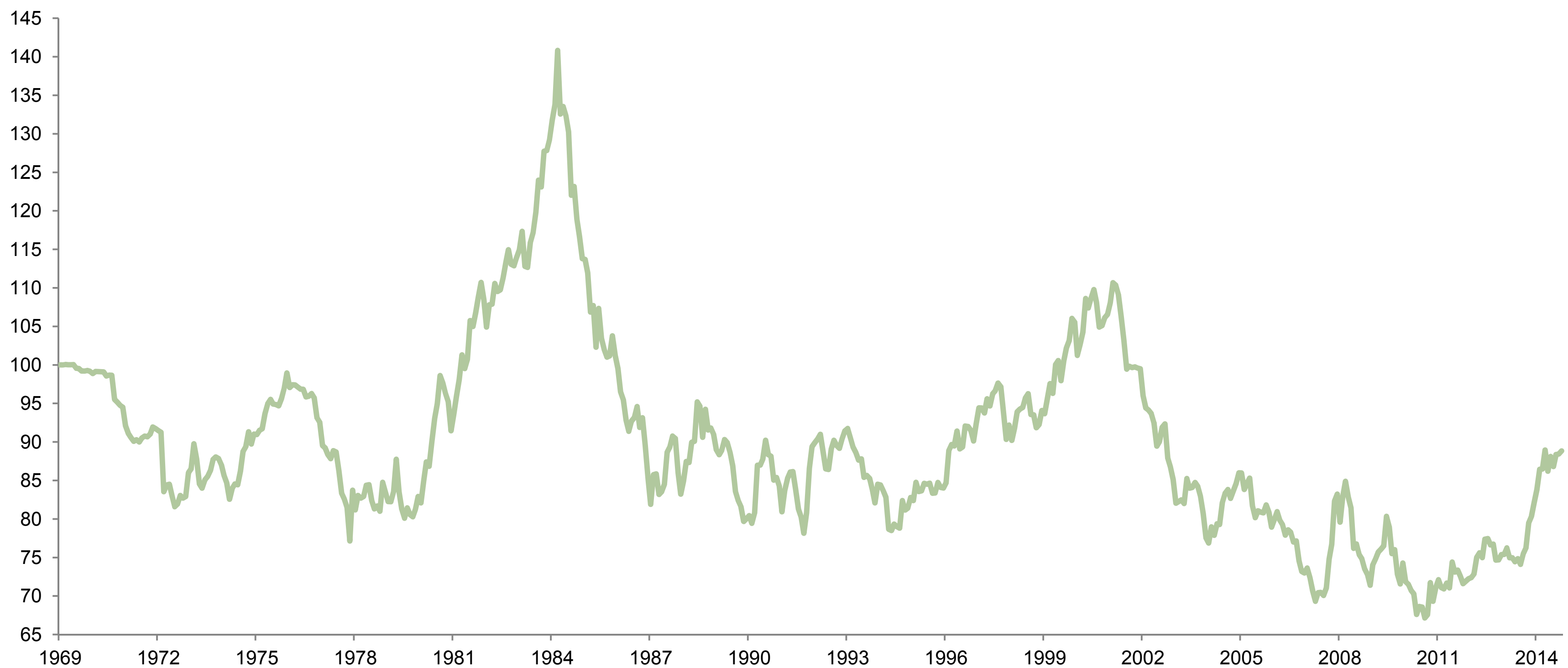
						Current
USD Trade-Weighted Basket						
Peak/Trough Dates (mm/yy)	11/76 – 10/78	10/78 – 2/85	2/85 – 4/95	4/95 – 1/02	1/02 – 4/11	4/11 – 9/15
Performance (%)	-17.8	62.1	-44.8	40.7	-39.6	35.3
Duration (Years)	1.9	6.3	10.2	6.8	9.2	4.4
USD Equity-Weighted Basket						
Peak/Trough Dates (mm/yy)	12/69 – 10/78	10/78 – 2/85	2/85 – 4/95	4/95 – 1/02	1/02 – 7/11	7/11 – 9/15
Performance (%)	-35.4	68.9	-53.3	47.6	-38.5	29.5
Duration (Years)	8.8	6.3	10.2	6.8	9.5	4.2
USD Fixed-Weight Basket						
Peak/Trough Dates (mm/yy)	2/70 – 10/78	10/78 – 2/85	2/85 – 4/95	4/95 – 1/02	1/02 – 7/11	**7/11 – 9/15**
Performance (%)	-22.9	82.6	-44.2	41.0	-39.3	**32.3**
Duration (Years)	8.7	6.3	10.2	6.8	9.5	**4.2**

Source: Thomson Reuters Datastream.
Notes: The USD Trade-Weighted Basket represents the US Federal Reserve's Major Currencies Index. The USD Equity-Weighted Basket is based on the MSCI World ex US Index. 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%).

Since mid-2011 the USD has rallied more than 30% vs a fixed-weight basket of developed markets currencies. The previous "strong dollar" cycles both lasted between six and seven years, with the dollar rising between 40% and 80% in nominal terms. Thus, if this history is any guide, the dollar is about halfway through the typical cycle in terms of duration and between 40% and 70% complete in magnitude.

USD Fixed-Weight Basket

December 31, 1969 – September 30, 2015 • December 31, 1969 = 100



Source: Thomson Reuters Datastream.

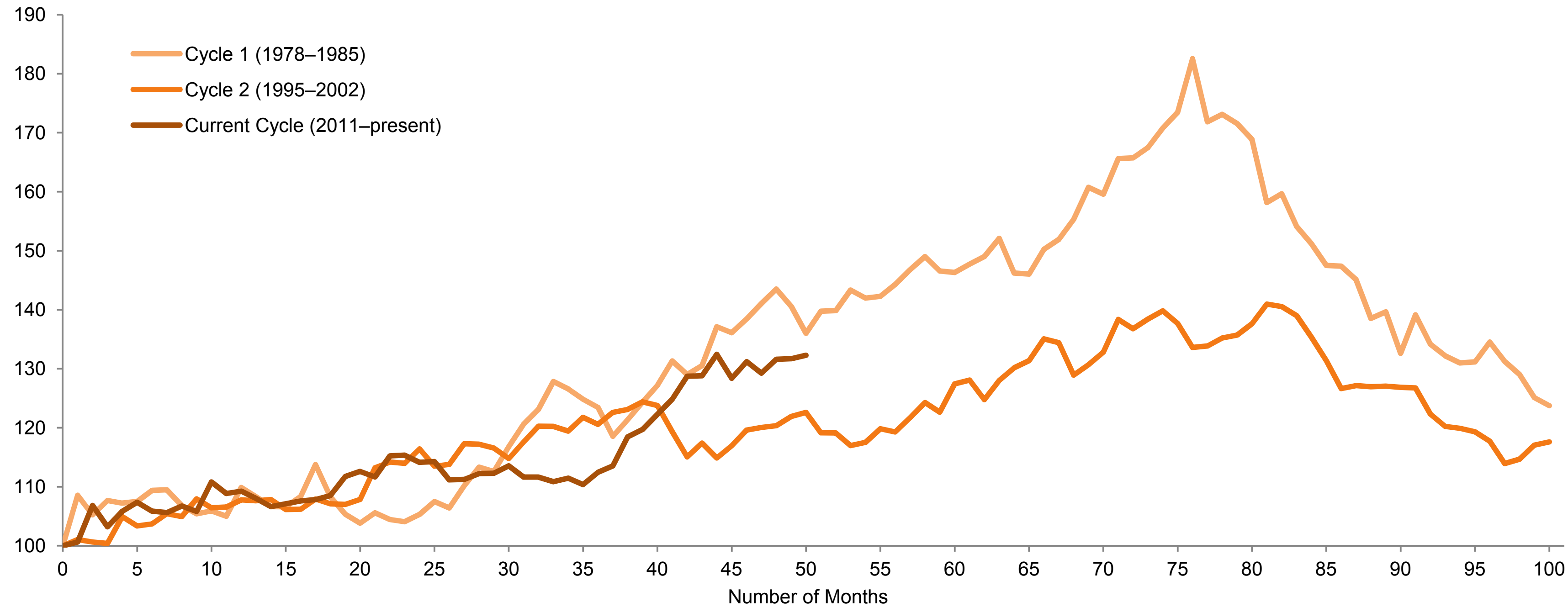
Note: The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

Where Is the US Dollar in the Cycle?

The current rally is moving in line with previous dollar cycles. A repeat of the 1978–85 cycle is not our base case, given different economic drivers in place today. The 1995–2002 cycle is perhaps a better road map; however, both cycles saw a period of consolidation at this point in the rally.

Current vs Past USD Cycles

Rebased to 100 at the start of each cycle • Fixed-Basket Weights



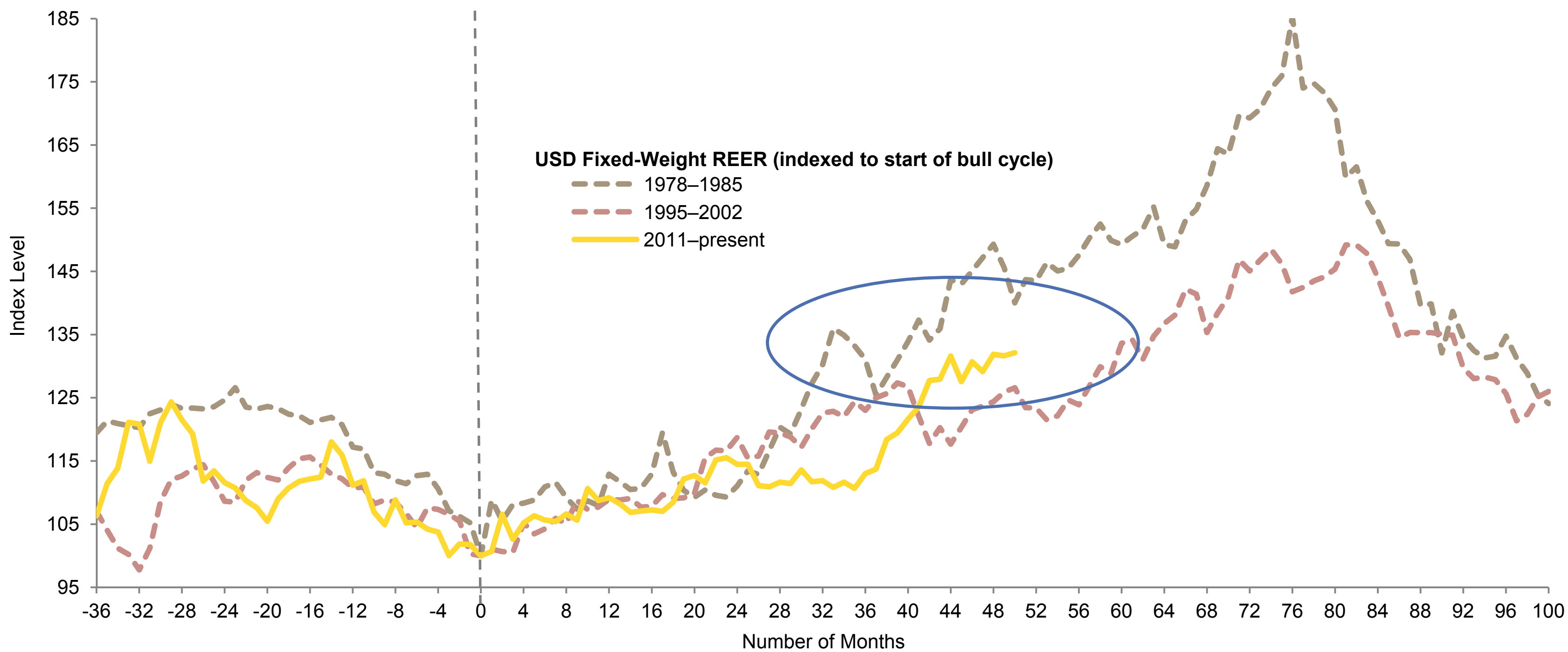
Source: Thomson Reuters Datastream.

Notes: Data for current cycle are through September 30, 2015. The USD 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%).

Where Is the US Dollar in the Cycle?

The picture is largely the same when looking at real (inflation-adjusted) exchange rates. The USD is at the point in the cycle where previous strength has started to have an impact on the underlying economy, which sees a period of modest weakness before the start of the final upward phase.

US Dollar Bull Markets
As of September 30, 2015

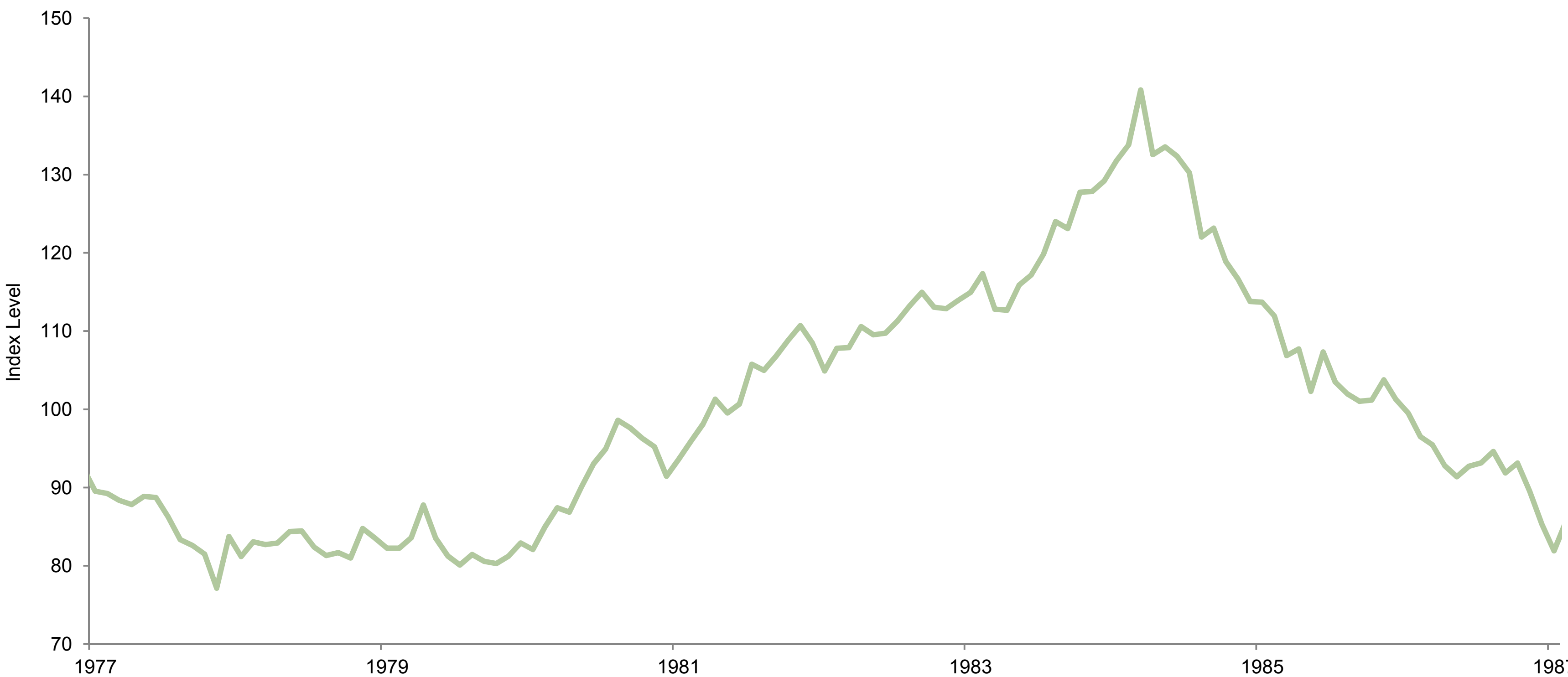


Sources: Credit Suisse and Thomson Reuters Datastream.
Note: USD Fixed-Weight Real Effective Exchange Rate (REER) is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

The 80%+ rise over 1978–85 cycle was arguably an overshoot caused by Fed Chair Paul Volcker's quest to crush inflation with double-digit interest rates, which gave the dollar a sizable yield advantage and drove it higher. The extreme rally culminated in the Plaza Accords, a coordinated devaluation of the USD vs the German *mark* (DEM) and especially the JPY. This resulted in the equally dramatic decline in the USD over 1985–87 (with the JPY moving from USD/JPY 250 to USD/JPY 120).

The 1978–85 Cycle: USD Fixed-Weight Basket

December 31, 1977 – December 31, 1987



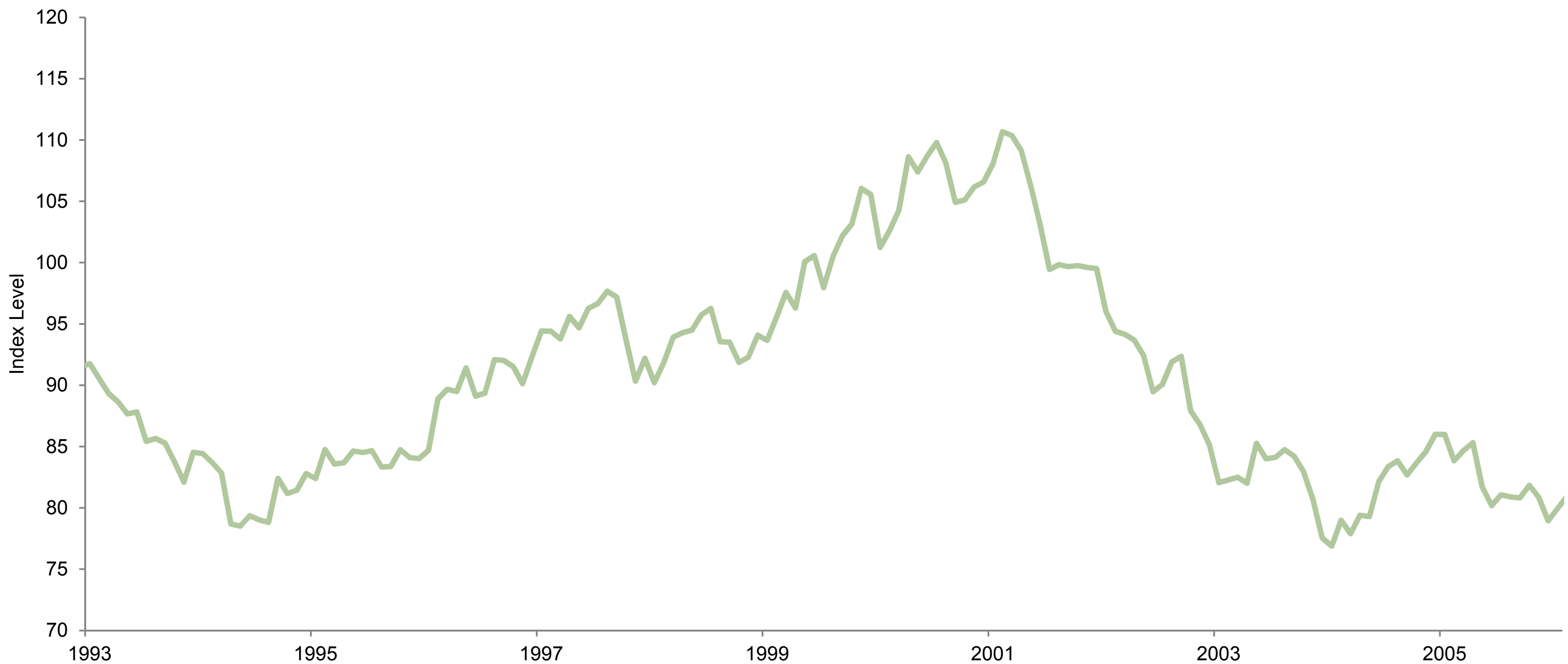
Source: Thomson Reuters Datastream.

Note: The USD 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%).

The 1995–2002 rally can be viewed as three distinct periods. The first was a 25% rise amid a strengthening US economy over 1995–98, followed by a soft period coinciding with Fed rate cuts in 1998 and the resumption of rate hikes in 1999. The final phase was a 20% rise over late 1999–2002 amid a "flight to safety" during the global recession following the bursting of the tech bubble and 9/11.

The 1995–2002 Cycle: USD Fixed-Weight Basket

December 31, 1993 – December 31, 2006

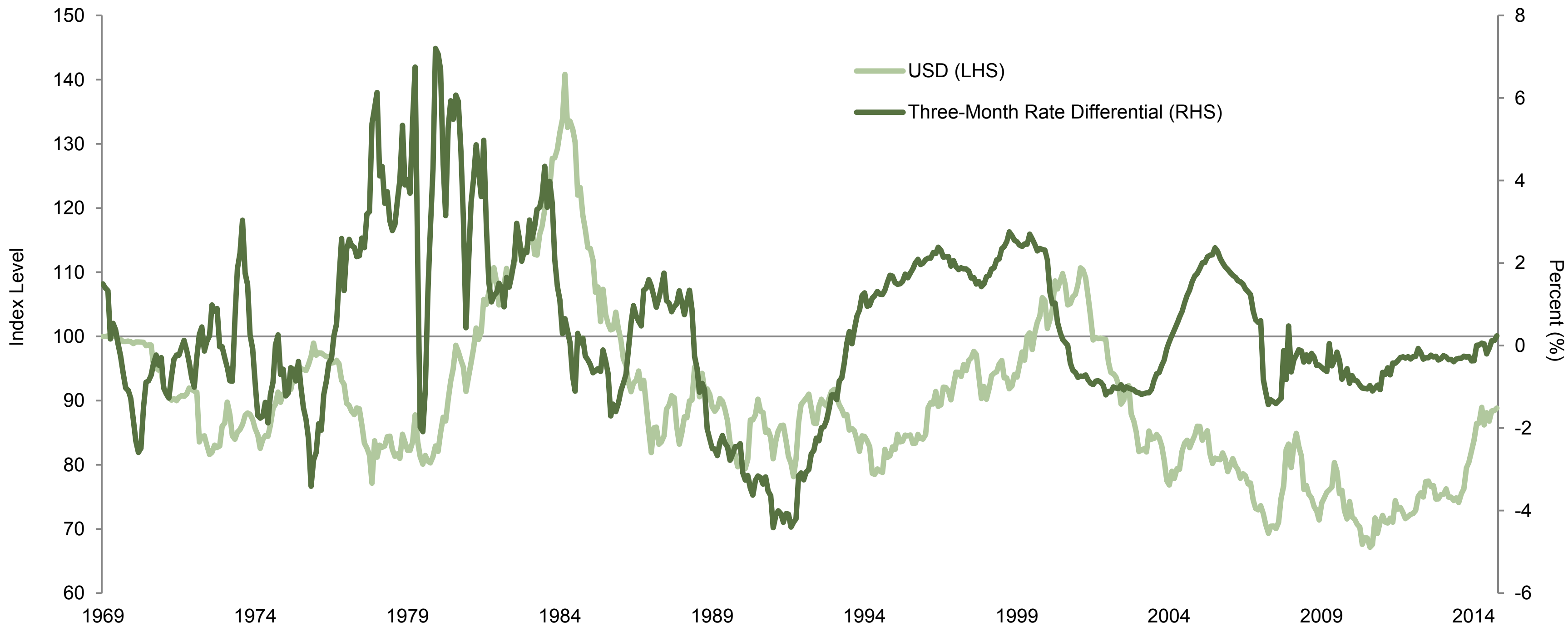


Source: Thomson Reuters Datastream.

Note: The USD 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%).

High relative interest rates helped stabilize the USD during the late 1970s and drove it higher over the early 1980s. In contrast, the USD remained weak for much of the late 1980s and early 1990s due to negative interest rate differentials. However, the dollar can still rally amid declining rate differentials, such as 1984–85 and 2001–02.

USD Fixed-Weight Basket vs Interest Rate Differentials
December 31, 1969 – September 30, 2015

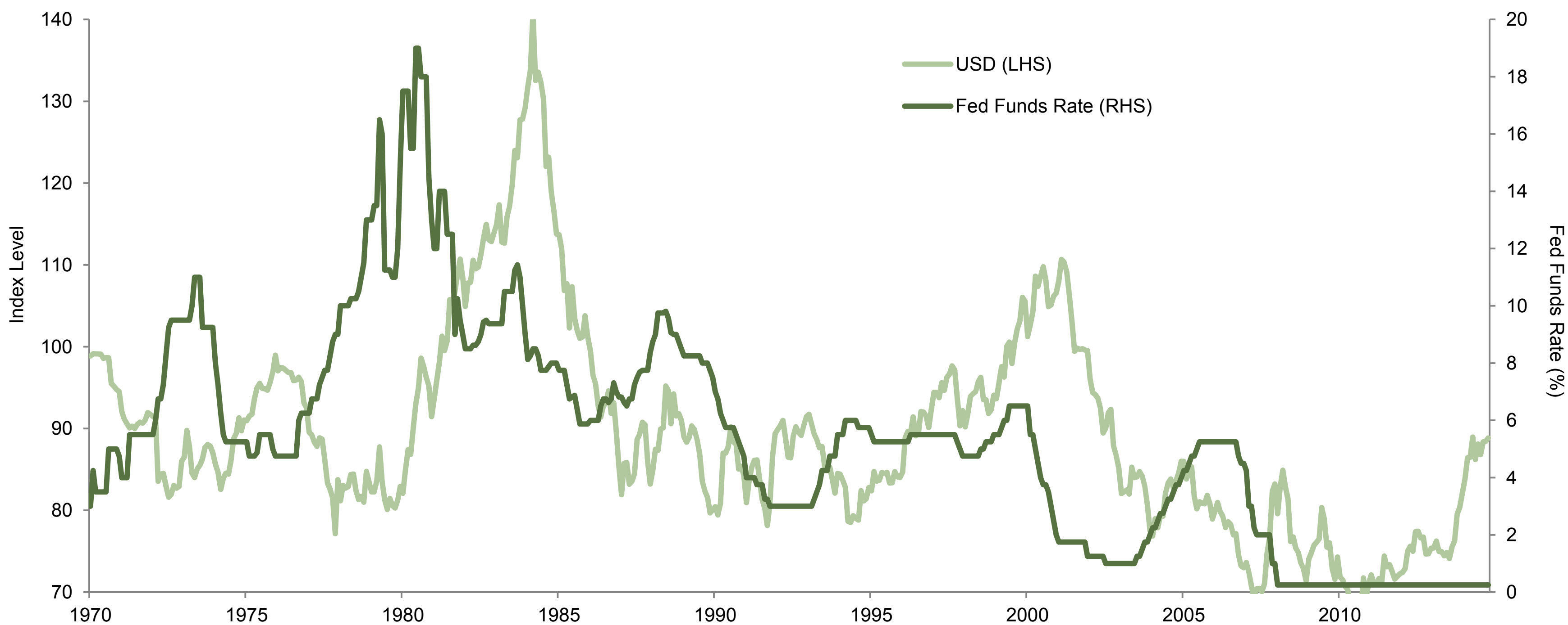


Source: Thomson Reuters Datastream.
Notes: The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%). The rate differential is based on the same weighted average interbank rate of these six currencies.

How Does the US Dollar React to Changes in the Fed Funds Rate?

Changes in the Fed Funds rate and the USD do not show a consistent relationship. The dollar weakened over 1994 at the start of a Fed rate cycle that coincided with concern rising rates would send the US economy back into recession. The dollar strengthened over 2001–02 amid rate cuts.

USD Fixed-Weight Basket vs Fed Funds Rate
December 31, 1970 – September 30, 2015



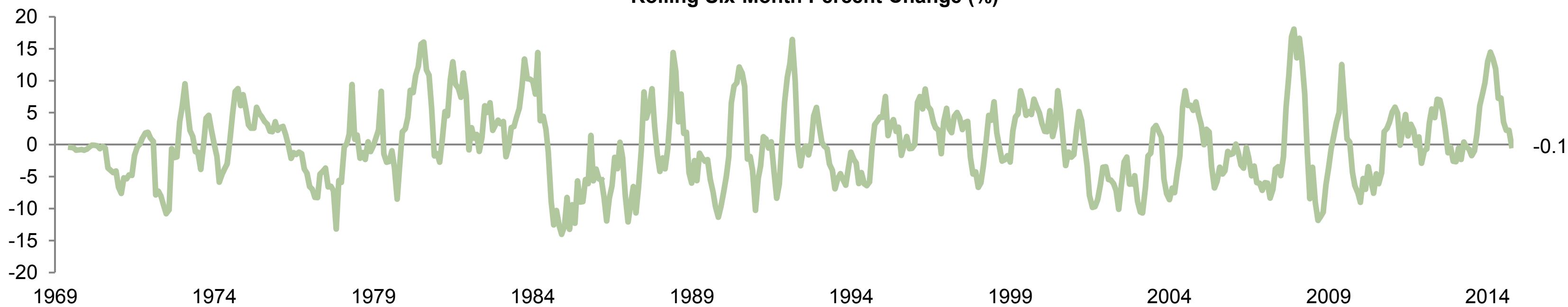
Source: Thomson Reuters Datastream.
Note: The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

The USD became overbought from a momentum standpoint in early 2015. While momentum measures have cooled, the USD is not yet oversold.

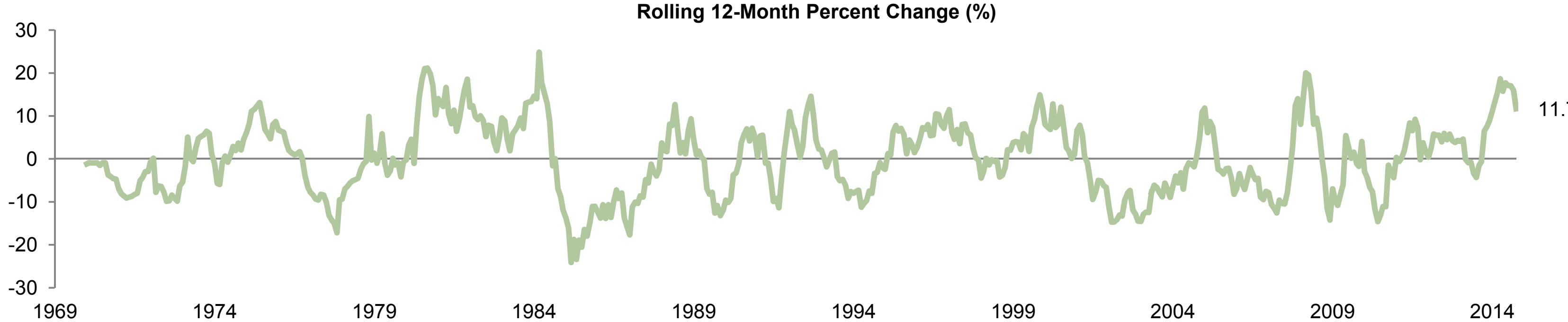
Momentum of USD Fixed-Weight Basket

December 31, 1969 – September 30, 2015

Rolling Six-Month Percent Change (%)



Rolling 12-Month Percent Change (%)



Source: Thomson Reuters Datastream.

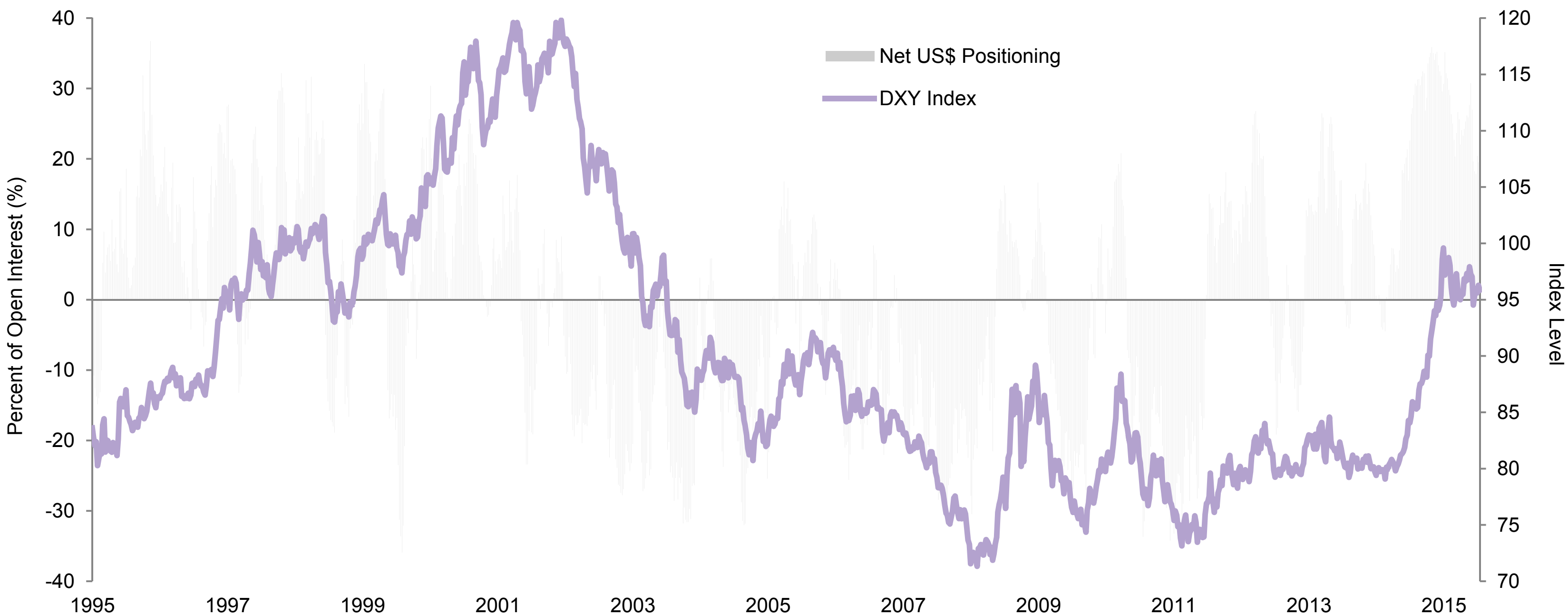
Note: The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

The US Dollar Is Vulnerable in the Near Term

While traders have reduced record long-dollar positions as a percent of open interest, the market remains net long.

Net Aggregate Non-Commercial Positioning of the US Dollar

March 21, 1995 – September 29, 2015



Sources: Thomson Reuters Datastream and US Commodity Futures Trading Commission.

Notes: Data are weekly. US dollar positioning tracks the net aggregate futures positions of non-commercial speculators against the Australian dollar, Canadian dollar, euro, Japanese yen, Mexican peso, New Zealand dollar, Swiss franc, and UK pound traded on the Chicago Mercantile Exchange as a percent of the total open interest. A negative number indicates a net short position on the dollar while a positive number indicates a net long position. The DXY Index is a contract traded on the Intercontinental Exchange (ICE) based on the trade-weighted value of the dollar.

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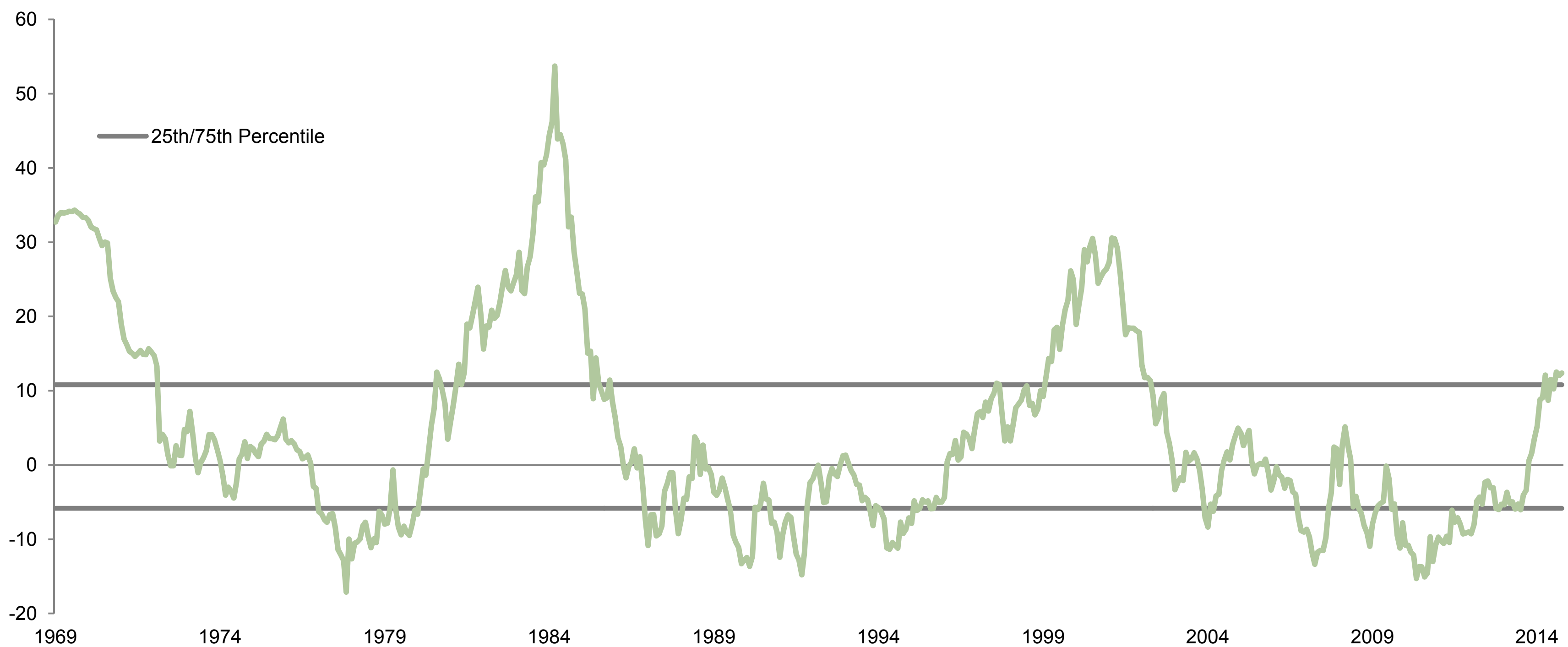
Our valuation rating for the USD moved from undervalued to fairly valued in October 2014 and to overvalued in March 2015. The currency remains nearly 15% expensive on a real exchange rate basis, which is above the 75th percentile and similar to the levels seen in 1998 and 1981. We continue to view the USD as overvalued. However, the currency remains well below previous peaks; the USD was 35% overvalued in 2002 and 45% overvalued in 1985.

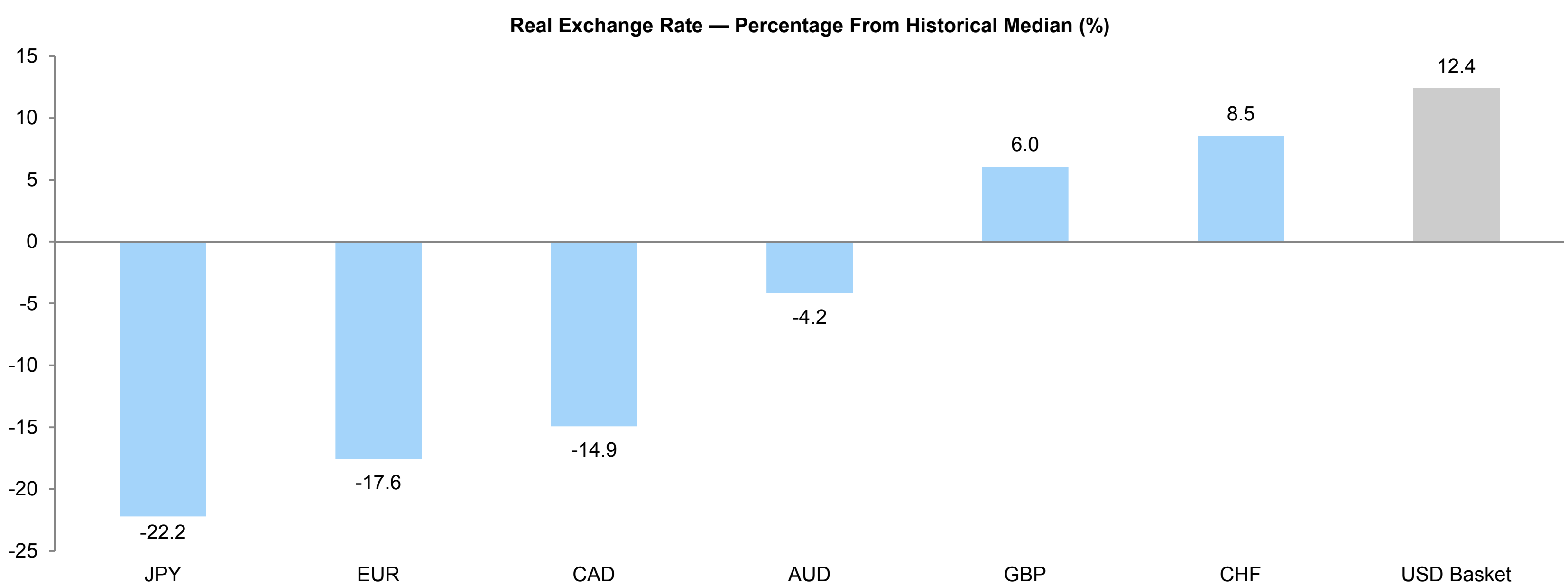
USD Fixed-Weight Basket Real Exchange Rate: Percent From Median
December 31, 1969 – September 30, 2015



Source: Thomson Reuters Datastream.
Notes: Median is calculated on the post-1971 data. The USD 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%).

While the USD appears expensive on a basket basis, dispersion remains among individual currencies. The JPY, EUR, and CAD appear undervalued on both a real exchange rate and econometric fair value estimate basis, while the AUD and GBP appear fairly valued. The CHF remains expensive. For commentary and charts on each of the six major developed currencies, please see pages 19–24.

Valuation Versus the US Dollar: Developed Markets Currencies
As of September 30, 2015



Sources: Goldman, Sachs & Co., J.P. Morgan Securities, Inc, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

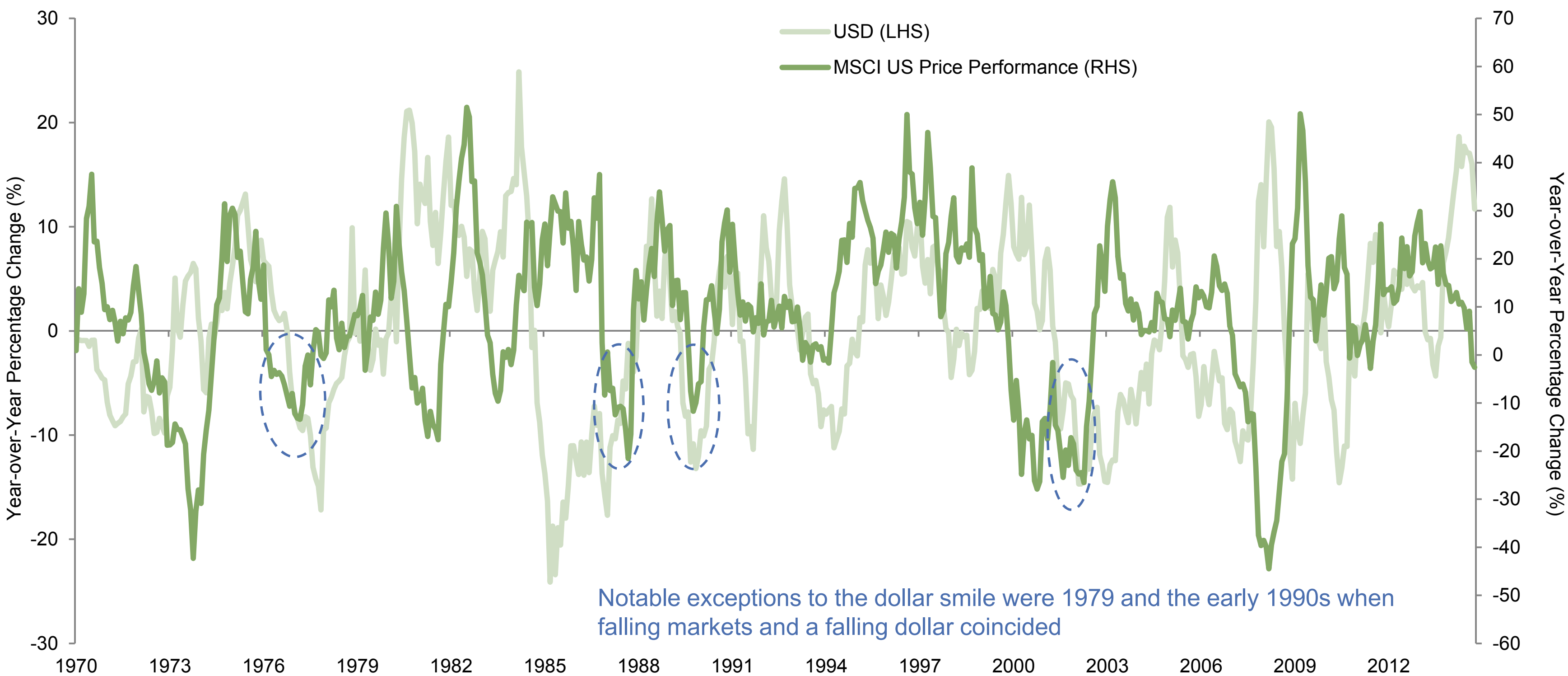
Notes: Real exchange rate takes into account each country's nominal exchange rate versus the US dollar and its inflation relative to the United States. Historical median is calculated from July 1971 onward. The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

How Much Higher Can the US Dollar Go?

Historical cycles and valuations suggest the dollar has potentially 10%–20% more upside over the next three years. Sustained economic growth and rising relative rates, or a bout of global market turmoil, typically drive the dollar higher. This is known as the "dollar smile" in that the USD rallies when US growth (and therefore rates) are well above other markets, or when global risk aversion rises sharply.

USD Basket vs MSCI US Price Performance

December 31, 1970 – September 30, 2015

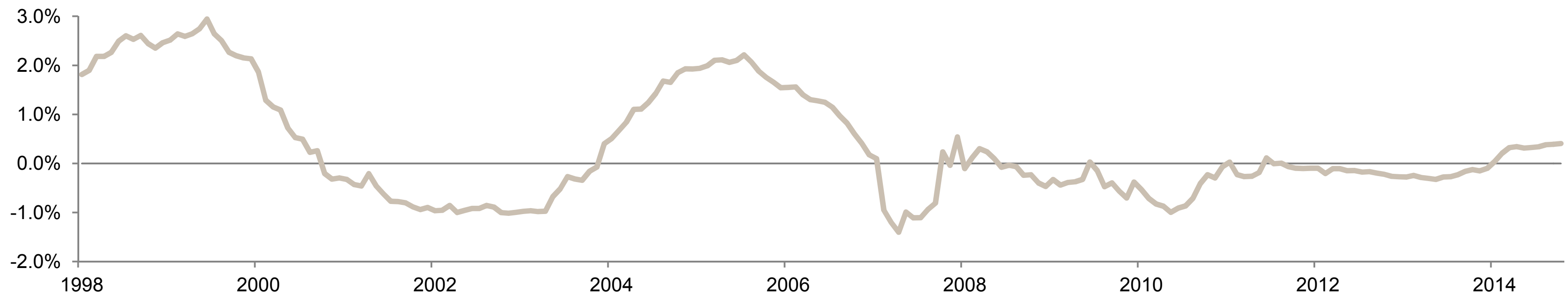


Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

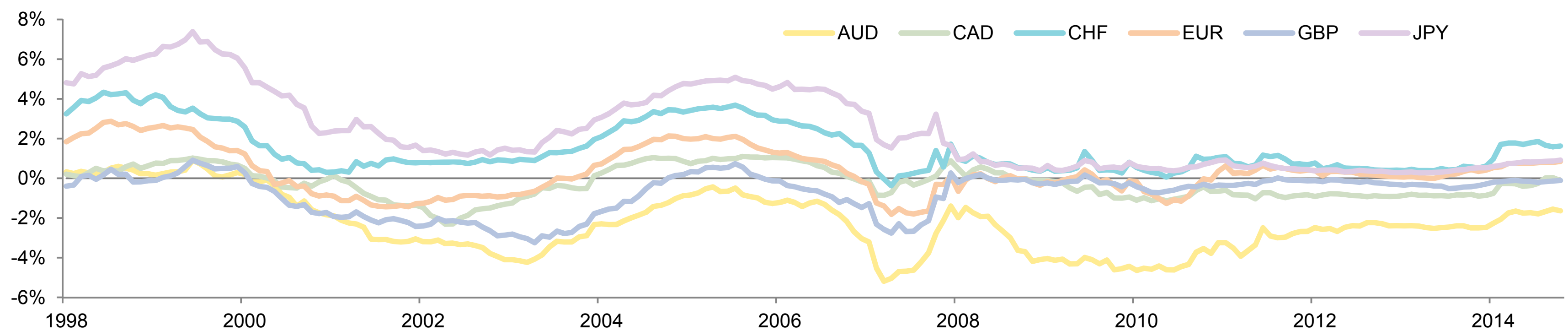
Note: The USD Basket is a weighted average of six currencies: the Australian dollar (10%), British pound (20%), Canadian dollar (10%), euro (30%), Japanese yen (20%), and Swiss franc (10%).

Despite the dollar's vulnerability to a near-term pull back, USD-based investors should consider hedging a portion of their non-USD exposures. Such hedging will reduce the impact a potential USD overshoot may have on the portfolio should aggressive monetary easing by global central banks continue to send the dollar sharply higher. Hedging allows investors to potentially overweight undervalued non-US assets without being substantially underweight the USD versus their benchmark. Hedging does add cost and complexity, but investors should ask whether they are comfortable with their current currency exposures.

Average Implied Carry From One-Year Forwards: USD Fixed-Weight Basket
December 31, 1998 – September 30, 2015



Implied Carry From One-Year Forwards: Developed Markets Currencies
December 31, 1998 – September 30, 2015



Source: Thomson Reuters Datastream.
Note: The USD 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%).

Outlook for Individual Currencies versus the US Dollar

The following pages provide commentary on the outlook for six major developed markets currencies. As the table below highlights, most currencies remain well above their 2002 lows, although some have made much larger adjustments than others.

Developed Markets Currencies Versus the US Dollar: Today's Level Relative to Recent Peaks and Troughs
As of September 30, 2015

	Current	2011 Peak	2008 Low	2002 Low	% From 2011 Peak	% From 2008 Low	% From 2002 Low	Decline to 2002 Low
AUD/USD	0.70	1.10	0.65	0.51	-36%	8%	39%	-28%
CAD/USD	0.75	1.05	0.81	0.62	-29%	-7%	20%	-16%
CHF/USD	1.02	1.27	0.82	0.58	-19%	24%	75%	-43%
EUR/USD	1.12	1.48	1.27	0.86	-25%	-12%	30%	-23%
GBP/USD	1.51	1.67	1.44	1.41	-9%	5%	7%	-7%
USD/JPY	120	76	109	134	-36%	-9%	12%	-11%

Source: Thomson Reuters Datastream.

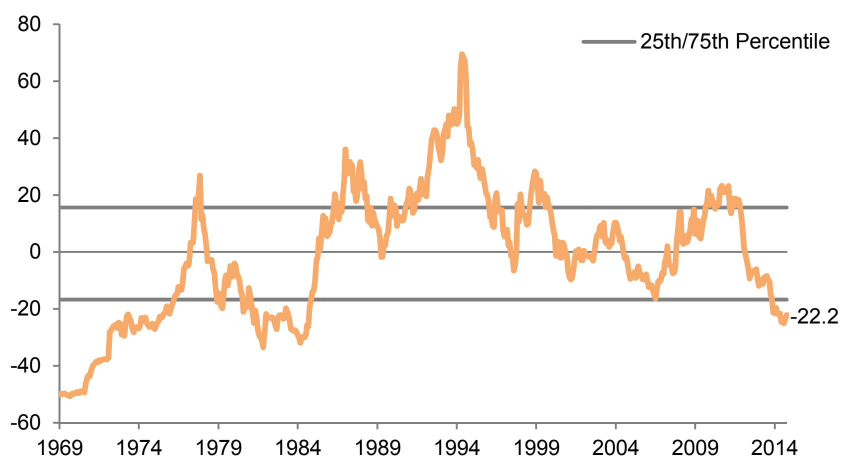
Japanese Yen: Can the BOJ Achieve Inflation?

The JPY has fallen 36% from its 2011 peak. At USD/JPY 120, the currency is already below its 2008 low. Consensus forecasts see the JPY hitting 126 by the end of 2016, with a forecast range of 115–140. A move back to its 2002 low of 134 implies 10% downside from current levels.

From a valuation perspective, the JPY is 22% undervalued, a 30-year low. The outlook for the JPY depends heavily on whether the economy can actually achieve sustained inflation. The JPY has exhibited persistent strength since the early 1990s as the economy slipped into deflation (as per economic theory). Thus, while today the JPY appears cheap on an inflation-adjusted basis, rising inflation would alter the valuation picture, implying more downside for the JPY. The risks of a JPY overshoot to the 130 level or beyond would require continued aggressive easing by the BOJ.

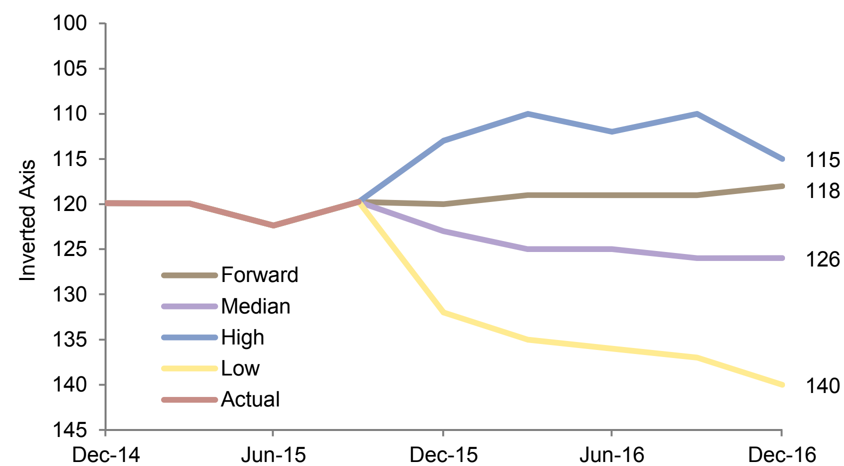
USD/JPY Real Exchange Rate

December 31, 1969 – September 30, 2015 • Percent from Median (%)



USD/JPY: Consensus Forecast

As of September 30, 2015



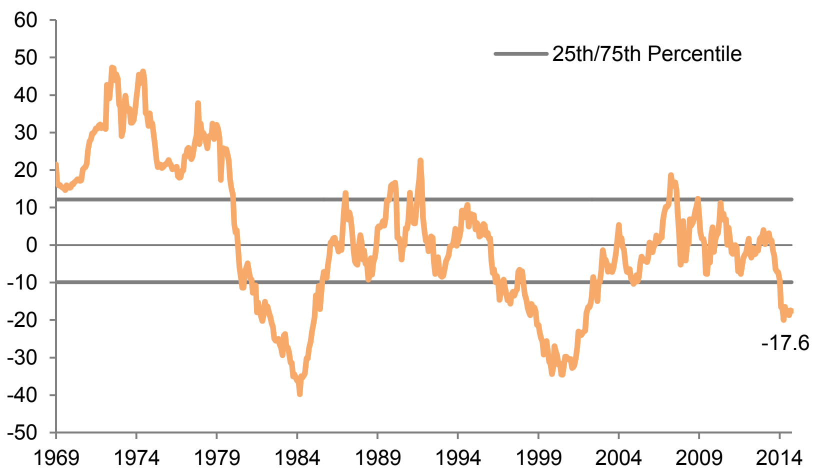
Sources: Bloomberg L.P. and Thomson Reuters Datastream.

Euro: Heading Back to Parity?

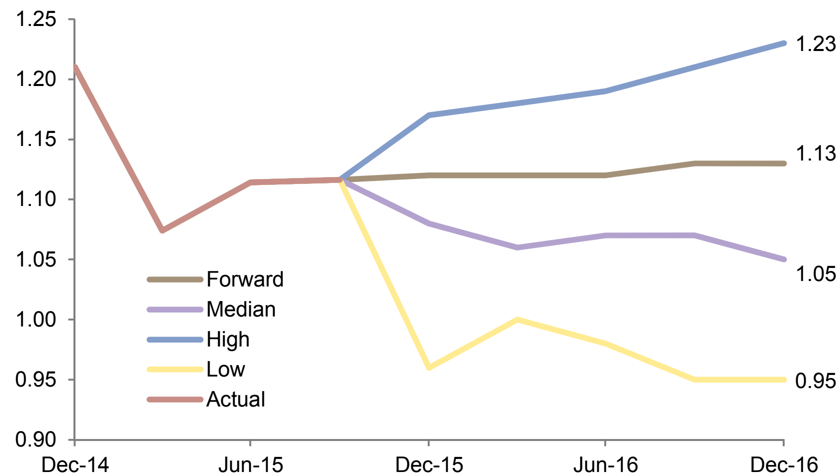
The EUR has fallen 25% from its 2011 high and, at EUR/USD 1.12, is at its lowest level since 2002, but off its recent low of 1.05. The consensus expects the EUR to head back to such levels by the end of 2016, although with a forecast range of 0.95–1.23. A move back to the EUR's 2002 low of 0.86 implies another 23% decline.

From a valuation perspective the euro is 18% undervalued. Most of the euro's weakness occurred before the ECB launched its QE program in March, with the currency actually stronger than end of March. Continued strength may put pressure on the ECB to increase the QE program, which implies a move to parity or below remains possible.

EUR/USD Real Exchange Rate
January 31, 1969 – September 30, 2015 • Percent From Median (%)



EUR/USD: Consensus Forecast
As of September 30, 2015



Sources: Bloomberg L.P. and Thomson Reuters Datastream.

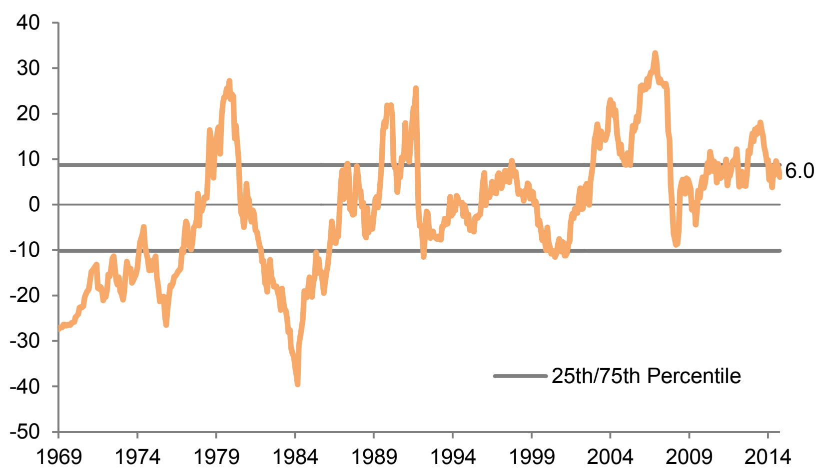
British Pound: Steady versus the Dollar, Strong versus the Euro

The GBP has been the most resilient currency vs the USD, falling only 9% from its 2011 high. At GBP/USD 1.51, the GBP is roughly in line with where consensus forecasts see the currency ending the year, with a forecast range of 1.45–1.76. From a valuation perspective, the GBP is 6.0% expensive on a real basis.

The GBP has one of the clearest long-term resistance levels, never falling below 1.40 over the past 30 years, despite "testing" this level in early 1993 (when George Soros famously broke the BOE), 2001–02, and 2008. The GBP breaking 1.40 would be significant and would require the BOE to resume its own QE program. More likely, the GBP could remain somewhat steady vs the USD while appreciating more versus the EUR. There is roughly 8% downside for GBP vs the USD to 1.40, but around 12% upside vs the EUR back to GBP/EUR 1.70, as occurred over 2001–02.

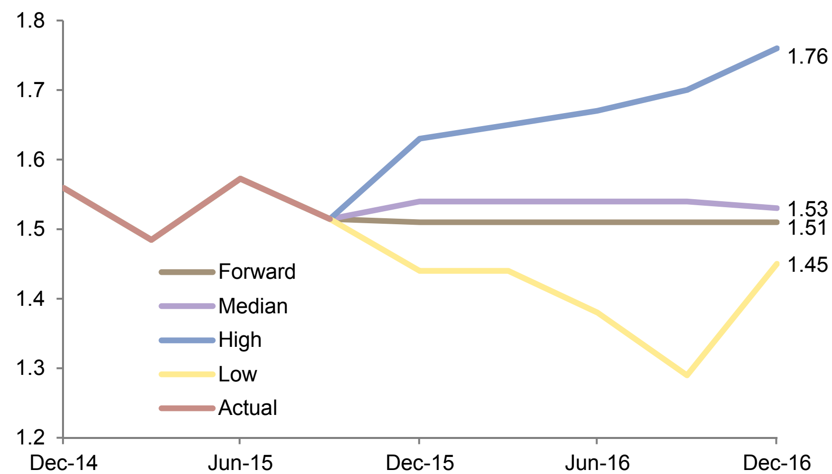
GBP/USD Real Exchange Rate

January 31, 1969 – September 30, 2015 • Percent From Median (%)



GBP/USD: Consensus Forecast

As of September 30, 2015



Sources: Bloomberg L.P. and Thomson Reuters Datastream.

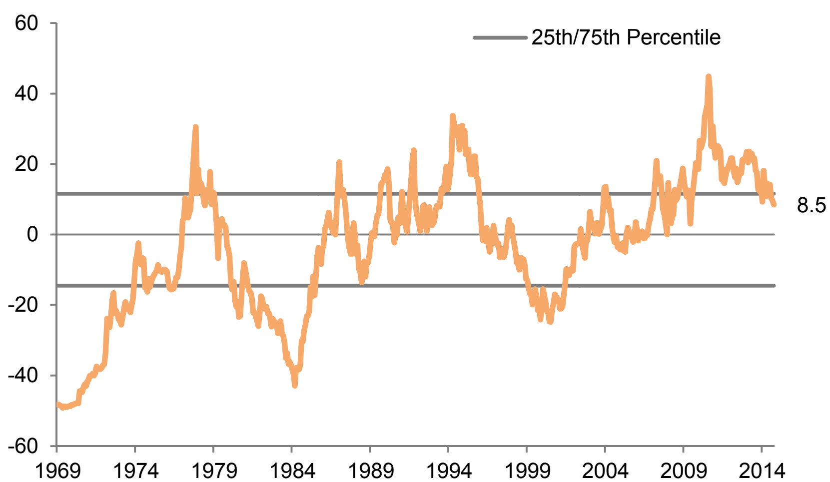
Swiss Franc: More Weakness vs the Dollar Likely Ahead

The CHF has fallen 18% from its 2011 high. From today's CHF/USD level of 1.02, the consensus forecasts see the currency falling to 1.00 by the end of 2016, albeit with a wide range of 0.86–1.20, given the recent volatility in the currency following the SNB's decision to remove the CHF's cap vs the EUR.

The CHF is 8.5% expensive on a real basis and remains 24% above its 2008 low. A return to its 2002 low of 0.58 requires an extreme 43% decline. Such a move seems unlikely and would probably require a rapid rise in inflation in Switzerland, as opposed to current lingering deflation. The most likely path for the CHF is continued weakness vs the USD, but relative stability vs the EUR amid ECB QE.

CHF/USD Real Exchange Rate

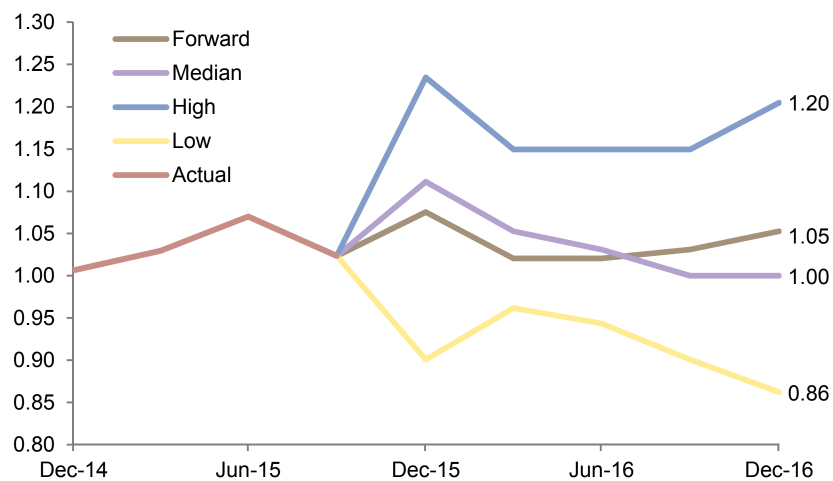
January 31, 1969 – September 30, 2015 • Percent From Median (%)



Sources: Bloomberg L.P. and Thomson Reuters Datastream.

CHF/USD: Consensus Forecast

As of September 30, 2015



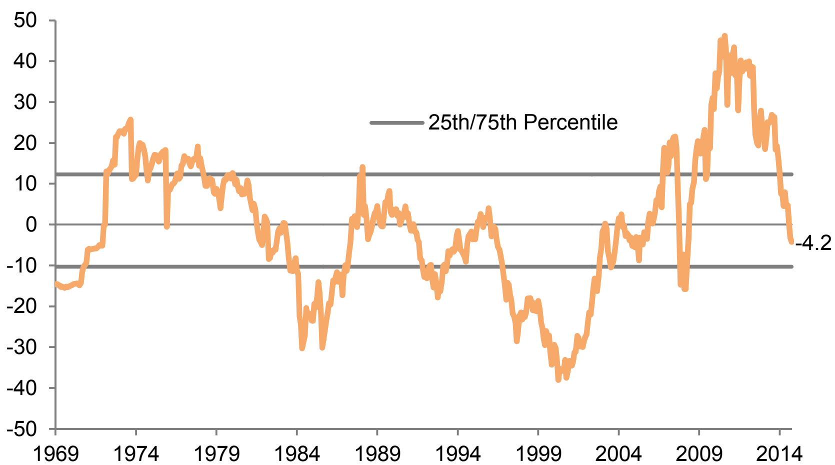
Australian Dollar: Falling Commodity Prices a Headwind

The AUD has fallen 36% vs the USD since 2011. Consensus forecasts have the AUD/USD exchange rate ending 2016 at 0.70, essentially unchanged from current levels.

The AUD is only 4.2% undervalued despite its large fall vs the USD, given the extreme overvaluation seen in 2011. While the AUD bottomed at 0.49 in 2001–02, representing 30% downside from today's level, the currency has typically found support at around 0.65, a level reached in 2008, 1992, and 1987, which implies 7% downside. The AUD will remain under pressure if the RBA is forced to cut interest rates further, and remains sensitive to Chinese demand for commodities. An AUD overshoot is likely amid a China scare.

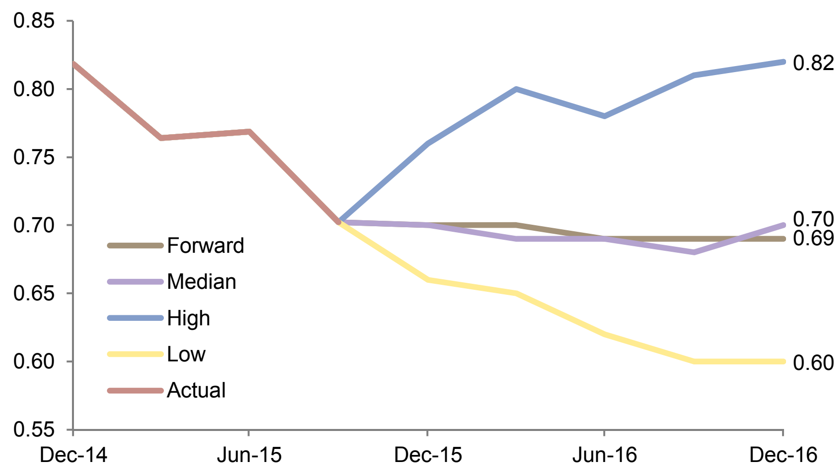
AUD/USD Real Exchange Rate

January 31, 1969 – September 30, 2015 • Percent From Median (%)



AUD/USD: Consensus Forecast

As of September 30, 2015



Sources: Bloomberg L.P. and Thomson Reuters Datastream.

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Canadian Dollar: Keyed to Commodity Prices

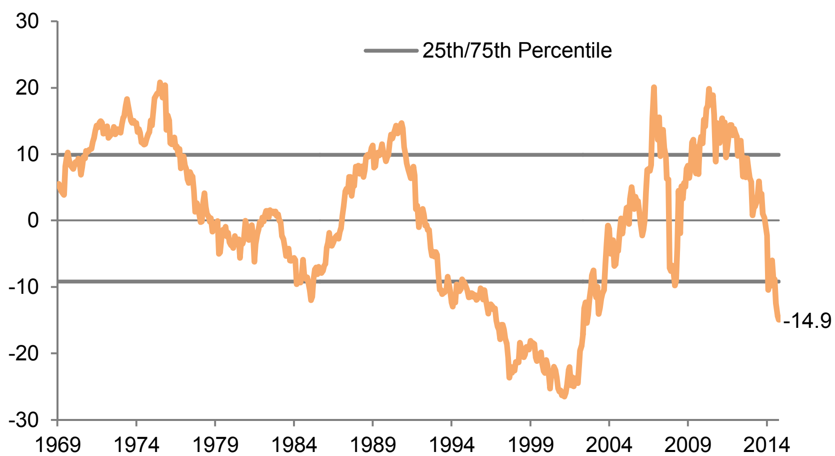
The CAD has fallen 29% from its 2011 high. At CAD/USD 0.75, the CAD is back to its lowest level since 2003, and is roughly in line with where consensus forecasts expect the currency to end 2016.

At 14.9% below the historical median the CAD also appears cheap vs the USD in real terms, although less so than the EUR or JPY. A move back to the 2002 low of 0.62 would represent a 16% decline from today's levels.

Commodity prices, especially oil, will be a key factor in CAD strength, as well as whether the RBC hikes rates in line with the Fed, given the interconnectedness of the two economies.

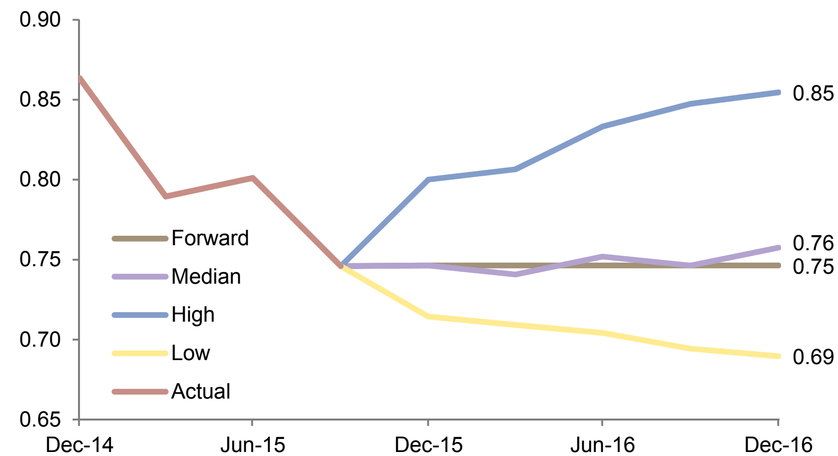
CAD/USD Real Exchange Rate

January 31, 1969 – September 30, 2015 • Percent From Median (%)



CAD/USD: Consensus Forecast

As of September 30, 2015



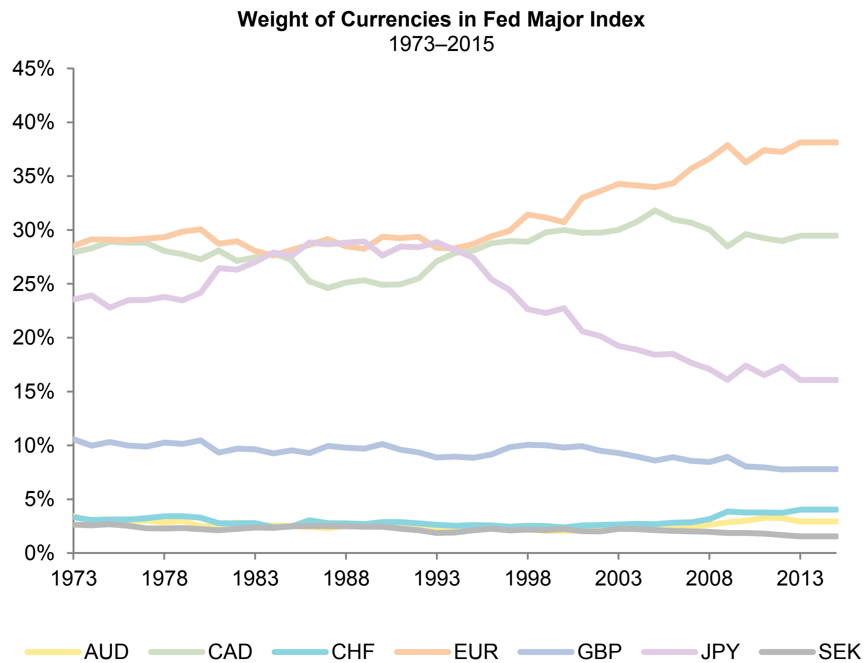
Sources: Bloomberg L.P. and Thomson Reuters Datastream.

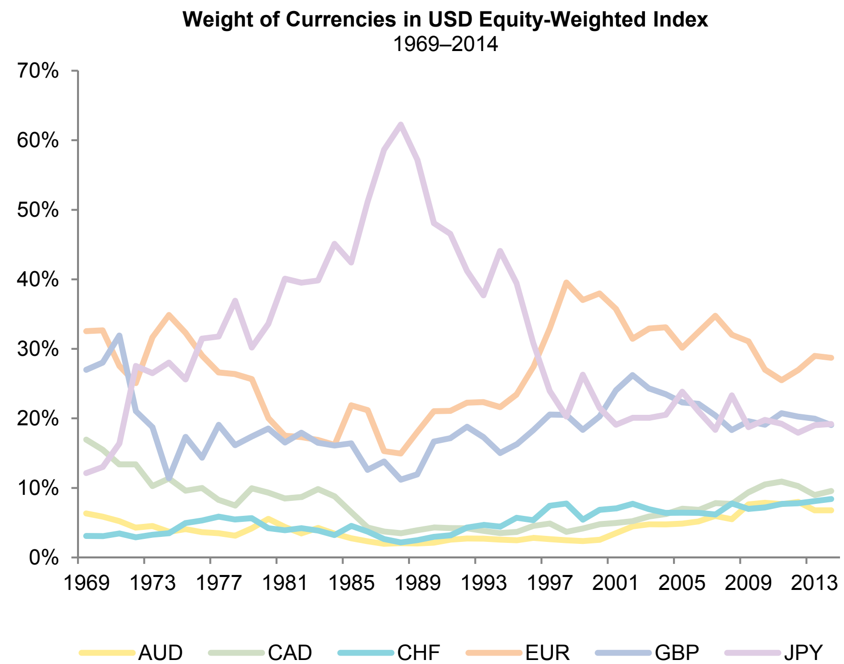
Appendix: Comparing Currency Baskets

Historical Changes in Currency Weights

Dynamic weights make it difficult to compare historical performance and cycles. For the Fed Major Trade-Weighted Index, since 1985 the EUR has increased from 30% to 38%, while the JPY has decreased from 30% to 15%. Currency weights based on equity market capitalization have been even more volatile, with the JPY down from 60% in 1989 to 20% today, while the EUR has ranged between 20% and 40%.

Weight of Major Currencies in USD Indexes





Sources: Federal Reserve, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.
Note: The USD Equity-Weighted Index is based on the MSCI World ex US Index.

Composition of USD Baskets

Currency weights vary widely between baskets. The Fed Major Index has a 29.5% weight to CAD, while an MSCI World ex US equity-weighted basket has only 8.8% in CAD. The DXY index often quoted in the press uses fixed weights, but is overly concentrated in the EUR at 57.6%. For our analysis, we have chosen to use fixed weights approximating today's equity weights, which may be more relevant for investors.

Composition of Various USD Baskets

	DXY Index	Fed Major	Equity Weighted (MSCI World ex US)	Fixed Weight
Weighting System	Fixed	Dynamic (Trade Weighted)	Dynamic (Market Cap Weighted)	Fixed
Number of Currencies	6	7	12	6
Weight of Major Currencies (%)				
AUD	—	2.9	6.8	10.0
CAD	9.1	29.5	9.6	10.0
CHF	3.6	4.0	8.4	10.0
EUR	57.6	38.1	27.8	30.0
GBP	11.9	7.8	19.1	20.0
JPY	13.6	16.1	19.2	20.0
SEK	4.2	1.6	2.9	—
Others	—	—	6.8	—

Sources: Federal Reserve, J.P. Morgan Securities, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.