Deutsche Bank
Markets Research

Global

Foreign Exchange
FX Spot

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Alan Ruskin
Strategist
(+1) 212 250-8646
alan.ruskin@db.com

George Saravelos
Strategist
(+44) 20 754-79118
george.saravelos@db.com

FX Forecasts and Valuations

Long-term overshoot

Welcome to DB's new publication of FX forecasts and valuations, a bi-monthly update of our medium and long-term currency views. The piece will include forecasts going out as long as five years for G10 currencies and one year for EM FX, with bullets providing the rationale behind our projections. There is also a section on long-term exchange rate valuation metrics, including charts on purchasing power parity (PPP); fundamental equilibrium exchange rate (FEER); and, our behavioral exchange rate (BEER) models.

The forecasts below, notably for the end of 2015, are closely aligned with the previous forecasts in the now retired Exchange Rate Perspectives (ERP). The 2015 year-end forecasts for the majors are: EUR/USD 1.15, USD/JPY 120, GBP/USD 1.57, USD/CHF at 1.09 and USD/CAD at 1.20.

The thrust of our USD positive forecasts are centered around the theme of multi-year policy divergence in favor of the dollar. This has not changed materially in the past year. Readers will find more surprises in the out years, notably in our new 2016 and 2017 forecasts when we expect the USD to overshoot 'fair value'. This follows a familiar post-Bretton Woods pattern of USD overshooting (up and down) in every cycle when USD policy rates strongly transition from a very low ranking against G10 peers, to a ranking at or near the top end. Only in the 2018 – 2019 period do we project some reversion back to long-term 'fair value' in line with expected monetary policy trends. Even here, there is an active debate within the team about the possibility that EUR and JPY may not see rate increases before the next downturn, which would extend the USD overshoot for longer than our forecasts imply!

Table 1: G10 FX Forecasts

USD-crosses	Spot	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	2016	2017	2018	2019
EUR/USD	1.27	1.25	1.22	1.20	1.18	1.15	1.05	0.95	1.10	1.15
USD/JPY	108	112	114	116	118	120	120	110	100	105
GBP/USD	1.62	1.62	1.61	1.60	1.59	1.57	1.50	1.38	1.38	1.42
USD/CHF	0.95	0.96	1.01	1.03	1.06	1.09	1.24	1.42	1.23	1.14
AUD/USD	0.88	0.90	0.87	0.85	0.83	0.80	0.72	0.65	0.70	0.75
NZD/USD	0.79	0.80	0.76	0.72	0.68	0.65	0.58	0.53	0.57	0.65
USD/CAD	1.11	1.14	1.15	1.17	1.19	1.20	1.25	1.30	1.22	1.15
USD/SEK	7.17	7.16	7.27	7.38	7.49	7.61	8.10	8.95	7.73	7.39
USD/NOK	6.44	6.40	6.49	6.58	6.68	6.78	7.24	8.00	6.91	6.61
EUR-crosses	Spot	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	2016	2017	2018	2019
EUR/JPY	138	140	139	139	139	138	126	105	110	121
EUR/GBP	0.79	0.77	0.76	0.75	0.74	0.73	0.70	0.69	0.76	0.83
EUR/CHF	1.21	1.22	1.23	1.24	1.25	1.25	1.30	1.35	1.35	1.35
EUR/SEK	9.13	8.95	8.90	8.85	8.80	8.75	8.50	8.50	8.50	8.50
EUR/NOK	8.20	8.00	7.95	7.90	7.85	7.80	7.60	7.60	7.60	7.60

Source: Deutsche Bank

EM Currency & Policy forecasts

Table 2: Asia FX and policy rate forecasts

	FX forecasts						Policy rate forecasts			
	Ccy	Spot	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Current	Q4 2014	Q1 2015	Q3 2015
China	USD/CNY	6.14	6.11	6.08	6.05	6.02	3.00	3.00	3.00	3.00
Hong Kong	USD/HKD	7.76	7.75	7.78	7.79	7.80	0.50	0.50	0.75	1.00
India	USD/INR	61.0	61.0	62.0	62.5	63.0	8.00	8.00	8.00	7.75
Indonesia	USD/IDR	12165	11700	11850	11925	12000	7.50	7.50	7.50	7.50
Malaysia	USD/MYR	3.25	3.25	3.27	3.26	3.25	3.50	3.50	3.50	3.75
Philippines	USD/PHP	44.6	43.4	43.2	43.6	44.0	5.75	6.00	6.00	6.25
Singapore	USD/SGD	1.27	1.27	1.30	1.30	1.30	0.40	0.50	0.55	0.80
South Korea	USD/KRW	1069	1040	1060	1065	1070	2.25	2.00	2.00	2.25
Taiwan	USD/TWD	30.4	30.0	30.1	30.2	30.2	1.88	1.88	1.88	2.00
Thailand	USD/THB	32.5	32.0	32.3	32.4	32.5	2.00	2.00	2.00	2.25

Source: Deutsche Bank

Table 3: EMEA FX and policy rate forecasts

	FX forecasts						Policy rate forecasts			
	Ccy	Spot	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Current	Q4 2014	Q1 2015	Q3 2015
Czech Rep.	EUR/CZK	27.5	27.0	27.0	27.0	27.0	0.05	0.05	0.05	0.05
	USD/CZK	21.6	20.8	21.4	22.1	22.8				
Hungary	EUR/HUF	307	325	325	324	324	2.10	2.10	2.10	2.60
	USD/HUF	241	250	260	266	273				
Poland	EUR/PLN	4.18	4.10	4.08	4.06	4.03	2.50	2.00	2.00	2.25
	USD/PLN	3.28	3.15	3.26	3.33	3.40				
Russia	USD/RUB	40.0	35.6	35.2	35.5	35.8	8.00	8.50	8.50	8.50
Turkey	USD/TRY	2.26	2.15	2.25	2.26	2.27	8.25	8.00	8.00	8.00
South Africa	USD/ZAR	11.0	10.8	10.7	10.5	10.2	5.75	6.00	6.00	6.25

Source: Deutsche Bank

Table 4: Latin America FX and policy rate forecasts

	FX forecasts						Policy rate forecasts			
	Ccy	Spot	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Current	Q4 2014	Q1 2015	Q3 2015
Argentina	USD/ARS	8.46	8.66	9.37	10.24	11.10	27.00	29.00	31.00	33.00
Brazil	USD/BRL	2.38	2.35	2.35	2.40	2.45	11.00	11.00	11.00	11.00
Chile	USD/CLP	593	590	590	590	590	3.50	3.25	2.75	2.75
Colombia	USD/COP	2048	1960	1970	1980	1990	4.50	4.75	4.75	4.75
Mexico	USD/MXN	13.3	13.1	13.1	13.1	13.0	3.00	3.00	3.00	3.00

Source: Deutsche Bank

** Emerging Market FX and policy rate forecasts are provided by Deutsche Bank's Regional Economics teams.

FX Views

G10 Views

Euro

The forces towards euro weakness are finally aligning. On the European side, we expect ECB sovereign QE over the next six months, but even the latest October announcements are not fully priced into markets. EONIA should be trading closer to -15bps rather than -5bps currently and balance sheet expansion worth 1trio is historically associated with at least a 10% decline in the TWI vs. a 5% current depreciation. ECB dovishness should maintain downward pressure on real yields. In the meantime, the flow story is finally starting to turn, with the large equity inflows seen last year turning into outflows over the summer, and European purchases of offshore assets starting to pick up as little yield is left in Europe. On the US side, Fed exit remains on track, with the USD historically rallying into the first Fed rate hike and an incipient sign of a pick-up in portfolio flows.

Japan

The recent speed of the yen slippage may perturb some importers, but in macro terms yen weakness is still seen as a favorable outcrop of policy and the yen is expected to fully participate in the strong USD story over the next two years. Japan's narrow basic balance is running at 2.5% of GDP, and this will not be easily balanced by portfolio flows, especially while the authorities are encouraging of risk reallocation that favors additional holdings of foreign assets. The GPIF has assets of Y130trn and mutual funds have another Y50trn that invest in line with GPIF allocations such that a 1% change in allocation amounts to over 16 billion USD. What might slowdown yen weakness? Clearer signs that Japan's export volumes are responding favorably to yen weakness, and a related substantial reduction in the narrow basic balance deficit. Our Y120 forecast for USD/JPY includes some overshooting, but at that point undervaluation will already be near extremes relative to PPP, and the yen is not expected to weaken much further.

United Kingdom

With political risk having diminished, there are a number of reasons to believe the pound should be the best performing G10 currency after the dollar into the end of the year. First, positioning has lightened substantially with leveraged funds longs cut in half according to the CFTC and pound positioning the lightest in G10 according to our proprietary dbSelect report. Second, the Bank of England is on track to be the first major central bank to hike rates after the crisis and with a turndown in Europe and China, monetary policy divergence should become increasingly stark. Third, the flow picture is looking increasingly positive, with the UK enjoying the strongest 3m M&A inflows in G10 and low European yields likely to encourage foreign buying of gilts. The main risk stems from growth, particularly a slowing housing market. However, the Bank of England already anticipate a Q4 slowdown, meaning any fall would have to be substantial to change the monetary policy calculus.

Switzerland

The outlook is bearish for the Swiss franc. Investors have been frustrated by the failure of long-awaited safe-haven outflows to materialize but we think the more interesting developments are on the domestic side. A deteriorating inflation backdrop combined with QE from the ECB should impel the SNB to further ease monetary policy most likely by cutting interest rates to negative. This should generate significant capital leakage with excess liquidity larger on an absolute basis than the Eurozone.

Canada

Canada's strong ties to the US economy are finally bearing fruit to the extent that Canadian exports have recovered sharply and the external accounts have steadied out. This together with some surprising strength in the housing sector, suggests the Bank of Canada tightening will not be far behind the Fed. The problem is that household balance sheets are more extended and more vulnerable to a turn up in interest rates, and we do not expect the BOC to keep pace with Fed tightening in 2016 in particular. CAD will be a relatively low beta short in a strong USD cycle, without housing showing a clear downturn.

Australia and New Zealand

We see the RBA on hold through 2015, so external influences are likely to continue to set the trend in the AUD. We think the medium-term picture is negative for AUD/USD, with the rate spread narrowing as US yields rise and the trend decline in the terms of trade continuing over coming years. Over the long term, we assume AUD falls to around its post-float average.

The NZD has been supported by historically high commodity prices and high relative interest rates. In recent months, lower commodity prices and a less hawkish outlook for official interest rates have seen the exchange rate fall. We note that the RBNZ considers that the NZD remains at levels that are ‘unjustified and unsustainable’. A narrowing interest rate spread as US yields rise should see NZD/USD fall further over the medium term. Our long-run forecast assumes the NZD falls to around its 20-year average.

Norway

Given the sensitivity to the front-end of the rates market, and with the rates market still not fully priced for an initial Norges Bank hike until early 2017, we take the view that the policy outlook can only be NOK supportive going into the turn of the year. Adding to the case for a more constructive trend in the krone is Norges Bank’s data showing that until very recently foreigners had been consistent net sellers of NOK, suggesting that positioning is cleaner than it has been for sometime

Sweden

The Krona is in a good position to strengthen, in particular against the EUR. An ongoing recovery and signs that disinflation has bottomed suggest that the Riksbank easing cycle likely has come to an end. In addition, the SEK remains among the cheaper currencies on all our valuation metrics, certainly the most undervalued cyclical currency in developed markets. Finally, flow dynamics remain supportive, with steady inflow into Swedish debt and equity securities, as well as a large and stable trade surplus.

Asia

China

We remain positive on CNH. Following the recent shaking up of speculative flows early in the year which resulted in RMB weakness, the focus now has turned more towards supporting growth. Given the tightness of liquidity/credit onshore, the authorities are likely to be using the currency as a tool to loosen liquidity conditions by encouraging inflows, or at least arresting outflow pressure. In addition, sentiment towards the currency has shifted significantly over the last few weeks, driven in particular by; (1) a rebound in China’s trade surplus, which our economist expects will continue, given the gradual recovery in the G3 economies; and (2) expectation that the Chinese government will introduce more stimuli to support domestic demand. With the policy bias appearing in favor of measured appreciation, we prefer staying long for now.

India

We are fundamentally long INR, but would fund outside the USD. India's current account turnaround has been impressive, with the deficit more than halving from the peak. Deficit compression should be more enduring with gold restrictions being kept in place. India is also a big winner from lower oil prices, and RBI’s hawkish stance should be positive for long-term FX value. Higher US rates are a risk, but ECB QE and a better domestic story should make flows stickier and cushion the impact. Debt flows could slow if FII quotas are not expanded, but FDI and foreign participation in disinvestments should improve. RBI will continue to absorb USD inflows, but with reserves regaining their pre-crisis peak, there is scope for intervention intensity to decline on the margin. Speculative positioning is also significantly lighter.

Indonesia

The rupiah is back on shaky ground. Politics has soured. The new Parliament - dominated by opposition parties could be obstructionist, as the recent maneuver on direct local elections suggests. Jokowi has failed to add to his minority coalition, and leadership positions in the House have gone to his opponents. External fundamentals remain challenging. The current account deficit has been sticky and foreign debt ownership is at record highs, with $15bn of bond flows received in the past year. Despite the overhang of negatives, there are reasons to be cautious in adding to bearish positions. The currency looks undervalued on many metrics. And an aggressive move to hike fuel prices, for instance with a Rp. 3000 hike, could be a meaningful positive. Along with the drop in global oil prices, the oil trade deficit could improve by $1-1.5bn/mth, or roughly 1.5% of GDP improvement in the CA deficit. Watch and wait.

Korea

Despite a large current account surplus, we have been biased recently towards weakness in the won. Weak domestic data both on growth and inflation have added to the dovish stance by authorities. In addition, the renewed depreciation of the JPY and weakness in the EUR are likely to increase resistance to any KRW gains given growing competitiveness concerns and Korea's exposure to a slowing China KRW's high betas characteristic to the dollar in the region (and indeed to US Treasury yields), in keeping with the high levels of foreign ownership in its capital market also make the currency prone to further weakness against the USD. With the Fed expected to further shift its monetary policy stance, the reversal of recent portfolio inflows will likely persist. In addition, we also see more evidence of domestic investors diversifying into overseas assets to add to the low levels of return in Korea.

Malaysia

We are looking for a gradual move higher in USD/MYR in the coming months. Malaysia's basic balance position has weakened significantly, with domestic outflows and a re-rating lower in the CA, raising the hurdle for foreign debt flow financing. USD/MYR has technically broken out of the recent down-trend channel, pointing to a return to 3.35. The fiscal trajectory has admittedly been positive, with the recent surprise hike in fuel prices. However, BNM is likely to wait till after the GST implementation next year before tightening again. MYR will remain a high beta to the USD.

Philippines

Philippines is one of the few EM economies which remains in tightening mode. BSP has raised RRR, SDA rates and policy rates this year and the road to complete policy normalization still lies ahead. However, the currency has been underperforming suggesting the market may have called time on this theme, with BSP now seen as behind the inflation curve. Real rates are deeply negative and the weakest in the region. The PHP remains one of the most overvalued on our metrics, has little carry to offer, and the reform impulse has taken a turn for the worse recently.

Singapore

We expect MAS to remain on hold at their next policy meeting, with core inflation expected to remain elevated at 2-3%. However, we do not believe the appreciation bias is a reason to be constructive on the SGD for four main reasons. The property market is softening, the currency is one of the most overvalued in the world at stretched levels, exports are underperforming driven by competitiveness losses in electronics and manufacturing, and the SGD has the highest sensitivity in Asia to USD strength. We are structurally long USD/SGD

Taiwan

Despite expectation of further improvement in growth, we remain bearish on TWD. With the Fed starting to signal a change in monetary policy stance, the divergence in monetary policy between the CBC and Fed and ongoing equity outflows have titled the risk for USD/TWD on the upside. More importantly, CBC is unlikely to slow the weakness given (1) ongoing weakness in Won and lackluster RMB performance, (2) benign inflation outlook and (3) fragile export recovery. We would expect TWD to continue to underperform its regional peers.

Thailand

Political risk premium has compressed since the coup in May. The consolidation of the military's power has promoted near-term stability and stopped the free-fall in confidence indicators. However, foreigners have not been keen to return to Thai assets, exports have been very disappointing, and domestic real activity indicators are scarcely improved. Despite the bleak picture, the currency should be more insulated from external stress relative to last year and relative to some of her ASEAN peers. The trade balance has moved into surplus because of the slowdown in growth, and outflow potential is limited with little foreign money left equities and bond investors already underweight. THB should outperform much of ASEAN, but largely for the wrong reasons.

EMEA

Israel

The run of poor activity data and very subdued CPI has continued, resulting in the BoI surprising the markets on Aug 25th, cutting rates by another 25bp to 0.25%. With inflation currently running at a mere 0.3% YoY (July), and with inflation expectations also having declined, the Bank will be very sensitive to monthly CPI reports as a further deceleration would take prices dangerously close to deflationary territory. Market pricing reflects this by not pricing further rate cuts but on the other hand pricing a very benign hiking cycle over the next 15 months (+30bps by end-15). Hence with policy rate close to zero, FX intervention is now the more likely route should the BoI want to ease further, especially given its concerns about the impact of the strong shekel on export performance. Stay short ILS vs USD until ILS is trading at around 4.23/4.24 vs an equally weighted EUR & USD basket. Next target 3.75, with a trailing 1% stop.

Poland

In Poland the latest NBP minutes showed that while most policy makers agreed monetary easing is "probably justified" in the future, motions for both 25bp and 50bp were voted down due to ongoing uncertainties in Ukraine and others arguing that rate cuts will not be effective since demand for corporate loans is low and zloty depreciation on rate cuts could hurt households with FX loans, thereby cutting not underpinning demand. On balance we favour another rate cut (-25bps to 2.25%) on Oct 8th, but with the rates market priced for another 85-90bps of further easing over the next 6-12 months the impact on PLN will be limited. We remain long PLN/HUF from the EMM on July 17th. It is a carry positive inter-regional trade, largely insulated to swings in EUR/USD. PLN is one of few EM currencies consistently undervalued on all our longer term valuation metrics (BEER, FEER and PPP). Polish EU fund conversion will provide PLN support going into Q4. Target remains 78.50, with a revised stop @ 73.15 (73.65).

Russia

The weak economic trend has been reinforced by further sanctions on the Russian economy, with DB Economics now anticipating a mere +0.8% GDP growth this year, and +1.0% in 2015. Inflation re-accelerated slightly in August to 7.6% YoY, from 7.5% in July, primarily reflecting the pass-through from RUB depreciation, as well as the restriction on imports (boosting food prices). Elsewhere the CBR continued to widen the parameters of the exchange rate policy with the targeted rate band of the dual currency basket being shifted from RUB/BASK7.0 to RUB/BASK9.0. The CBR stated that the changes were carried out as part of the transition to an inflation targeting regime, which the monetary authorities expect to launch at the beginning of 2015.

South Africa

The run of poor economic data continues, with mining strikes continuing to weigh on exports of precious metals, whilst electricity shortages are underpinning oil imports. As a result the C/A balance has weakened again, now sitting at -6.2% of GDP. DB Economics are still looking for a hike (+25bps) in November, but have revised the policy rate profile for next year lower to 6.5% (from 7.50% previously). Overall, no improvement in the external balances and very sluggish domestic growth limiting the scope for rate hikes is not a backdrop conducive to currency strength. Other high yielders offer more attractive carry (BRL, TRY, INR), a more supportive growth backdrop (INR and TRY), and/or at least the prospect/hope of economic reform (BRL and INR). We remain short ZAR vs TRY, next targeting 5.0150, with a revised stop @ 4.9250 (4.89).

Turkey

With inflation running close to 10%, and with USD/TRY at around 2.28 at the time of writing, the CBT will be cautious in adding to depreciation pressures, suggesting rates will be left unchanged at the next meeting on Oct 23rd. Speculative TRY positioning, meanwhile, is flat judging by the latest dbSelect report, with the TRY position in its 53rd percentile for the past 12 months. Only very gradual improvement in Turkey's external balances continues to hamper a more constructive development in the Lira. Largely neutral near-term vs the majors, whilst we maintain a long TRY vs short ZAR position, in order to capture C/A divergence.

Hungary

Government officials have stated that they aim to convert the entire remaining FX loan stock to forint by year-end. While this is too optimistic in our opinion, the process could only impact HUF negatively, through two channels. First indirectly through higher risk premia if banks have to absorb large losses, as that would impact the stability of the banking system and long-term growth prospects. But probably more important is the direct impact on the HUF. Eliminating the EUR11.6bn existing FX loan stock would mean that banks would need to access FX liquidity of that magnitude. Part of that would likely be provided by the NBH's reserves, but it has stated that it will not provide the EUR11.6bn in entirety. The early repayment scheme in 2011 saw EUR4.4bn repaid by borrowers. Banks bought EUR2.6bn from the NBH, and EUR1.8bn on the market. A similar 40% share of the EUR11.6bn is EUR4.6bn, ie more than twice as much. In 2011 HUF depreciated by 6-7% vs PLN and CZK over this period.

Latin America

Brazil

The BRL exhibited a massive sell-off in September, losing more than 10% vs. the dollar. The main driver behind this was the re-ascent of incumbent president Dilma Rousseff in the polls, with the Dollar strength of the past few months acting as an additional source of pressure. The BCB, which had been successful in keeping the currency range-bound in April-September through its FX swaps program (accumulating a USD 95bn position in the process), eventually increased its daily swap rollover pace to about 100% in an attempt to keep the currency at bay, but at no success. Some relief came after the surprisingly narrow first round victory by Rousseff, who will face market-friendly Aecio Neves in the second round on October 26. In the time leading up to the run-off, the BRL should experience heightened volatility, as the result-dependent potential outcomes are quite far apart. We believe an Aecio victory could see the BRL rallying back to levels last seen in 2013, while a Dilma re-election, which we still view as more likely, would likely see a further sharp sell-off.

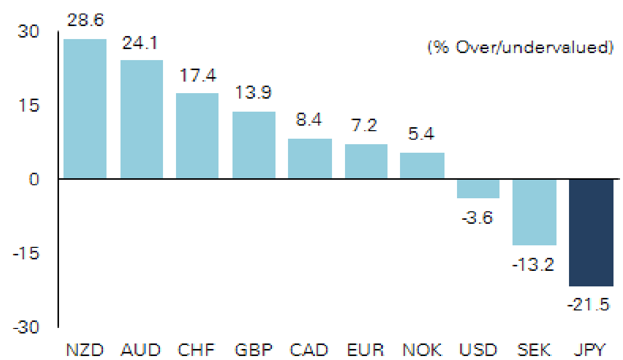
Mexico

The economy in Mexico has been showing some signs of pick-up after the disappointing beginning to the year, and we expect significant recovery in 2H14. In particular, manufacturing and construction seem to be gaining traction. Domestic demand is still weak, but we expect a pickup in US demand to benefit the local economy. Importantly, the legislative process for the two most important reforms, telecommunications and energy, was completed in late July. While actual implementation and direct impact on growth and FDI flows will take some time, the reforms will continue to positively impact expectations and benefit the currency. Another positive is speculative positioning, which is heavier than it was at the beginning of the year, but still very light compared to pre-taper tantrum figures.

George Saravelos	London,	+44 (20) 754-79118
Alan Ruskin	New York,	+1 (212) 250-8646
Taisake Tanaka	Tokyo,	+81-(3)-51566714
Mallika Sachdeva	Singapore,	+65 6423-5347
Henrik Gullberg	London,	+44 (20) 754-59847
Oliver Harvey	London,	+44 (20) 754-59847
Tim Jordan	Sydney,	+61 (2) 8258-2130
Assaf Schtauber	New York,	+1 (212) 250-8609
Sameer Goel	Singapore,	+65 6423-6973
Perry Kojodjojo	Hong Kong	+852-2203-6153
Daniel Brehon	New York	+1 (212) 250-7639

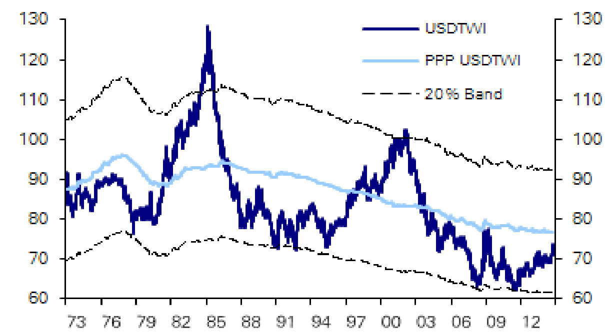
G10 FX Valuation Monitor: Lines in the Sand*

Figure 1: The euro is expensive and the dollar cheap



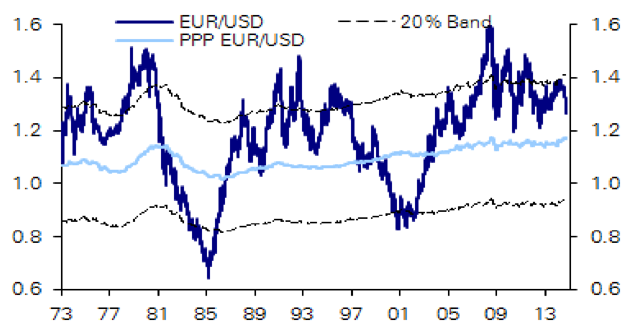
Source: DB FX Research

Figure 2: The dollar is 4% cheap to fair value



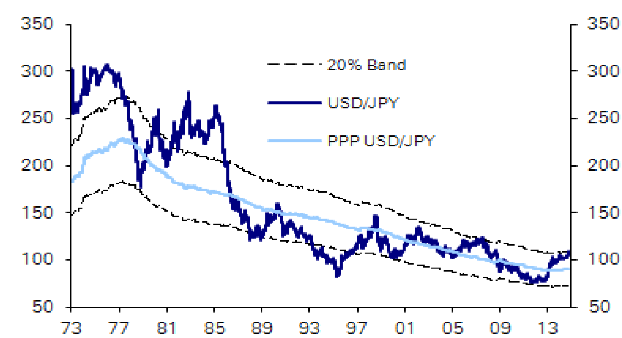
Source: DB FX Research

Figure 3: EUR/USD: The euro is expensive though remains within the 20% threshold …



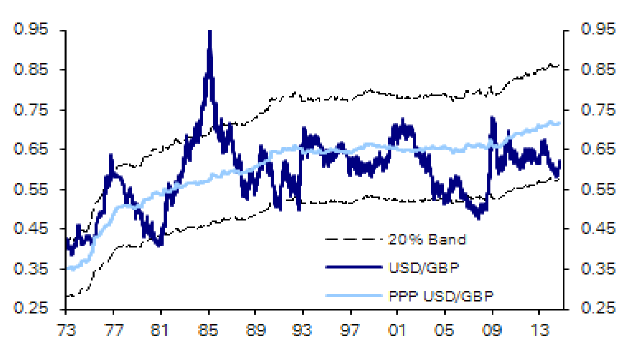
Source: DB FX Research

Figure 4: USD/JPY: …The yen is very cheap to fair value



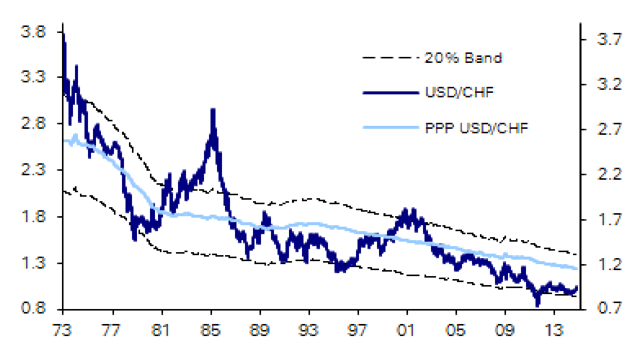
Source: DB FX Research

Figure 5: USD/GBP: GBP is expensive …



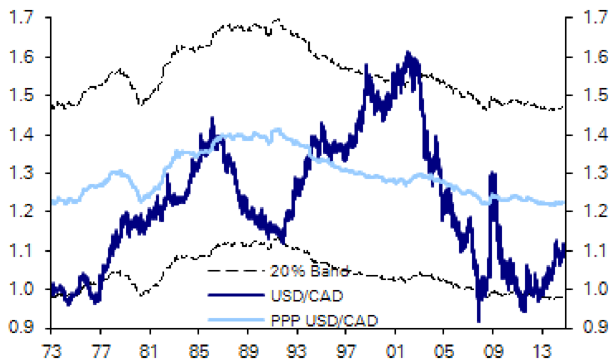
Source: DB FX Research

Figure 6: USD/CHF: as well as CHF



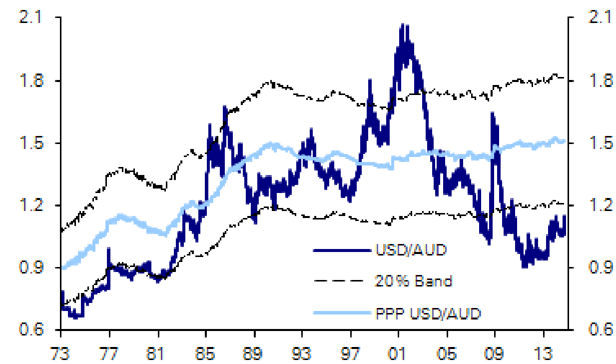
Source: DB FX Research

Figure 7: USD/CAD: CAD overvaluation is being unwound



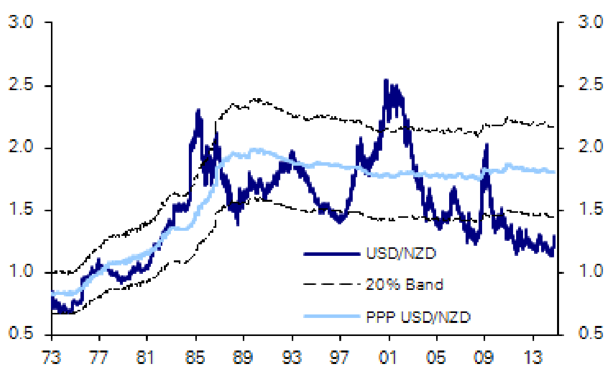
Source: DB FX Research

Figure 8: USD/AUD: AUD is very expensive, beyond 20% threshold



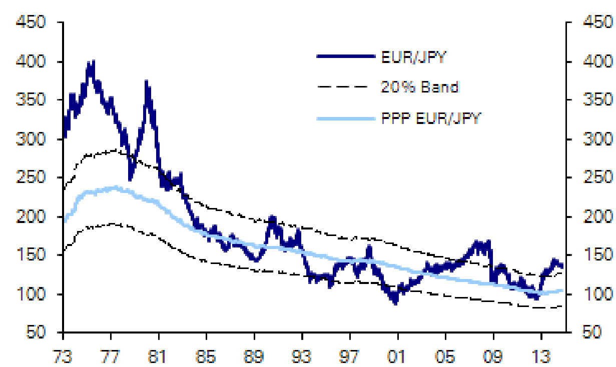
Source: DB FX Research

Figure 9: USD/NZD: .and so is NZD



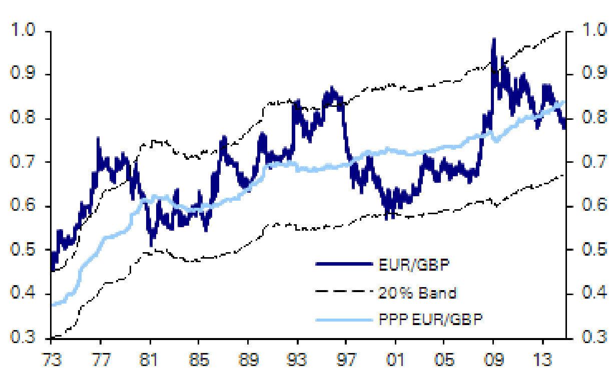
Source: DB FX Research

Figure 10: EUR/JPY: The euro is very expensive against the yen



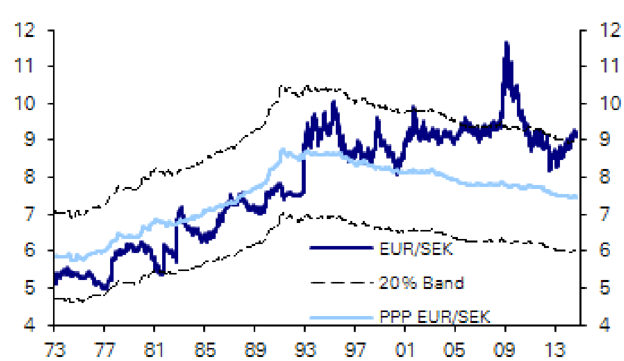
Source: DB FX Research

Figure 11: EUR/GBP: Sterling is close to its fair value against the euro



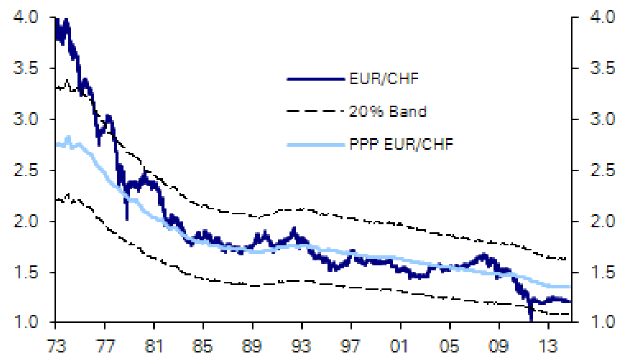
Source: DB FX Research

Figure 12: EUR/SEK: SEK is very cheap versus the euro



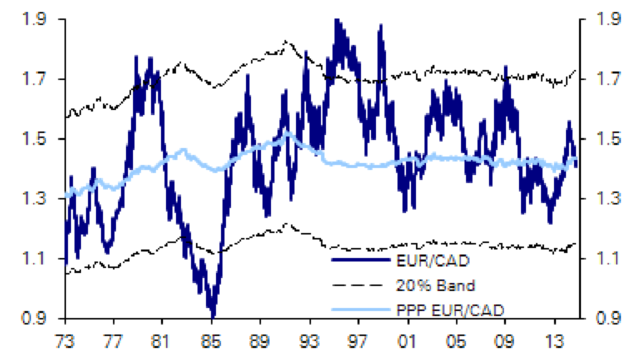
Source: DB FX Research

Figure 13: EUR/CHF: CHF is expensive against the euro



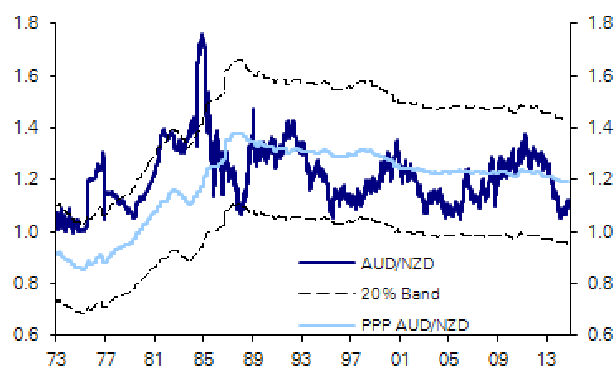
Source: DB FX Research

Figure 14: EUR/CAD: CAD is close its fair value against EUR



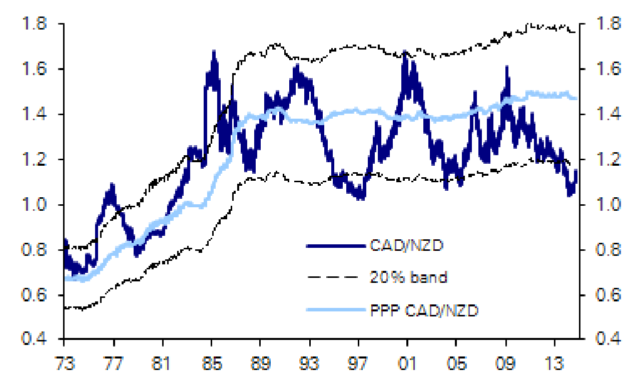
Source: DB FX Research

Figure 15: AUD/NZD: NZD is expensive against AUD….



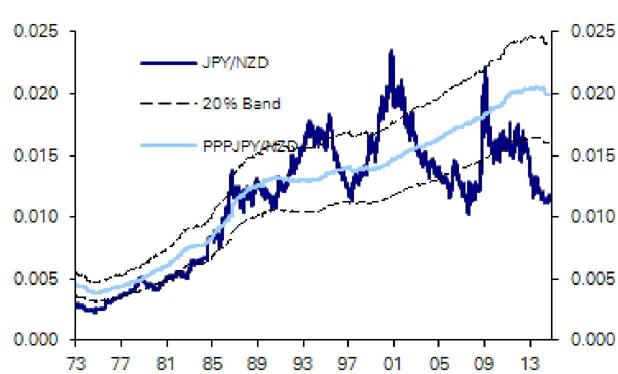
Source: DB FX Research

Figure 16: CAD/NZD: ….as well as CAD



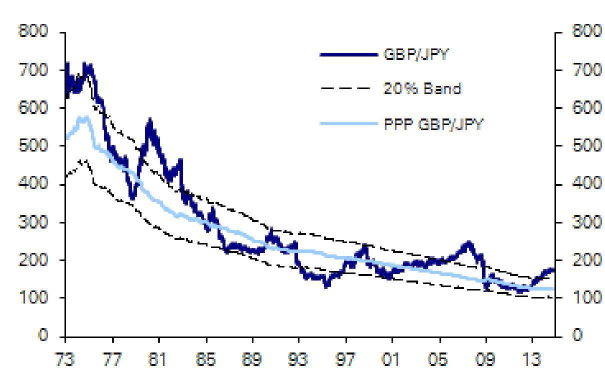
Source: DB FX Research

Figure 17: JPY/NZD: NZD is expensive against the yen



Source: DB FX Research

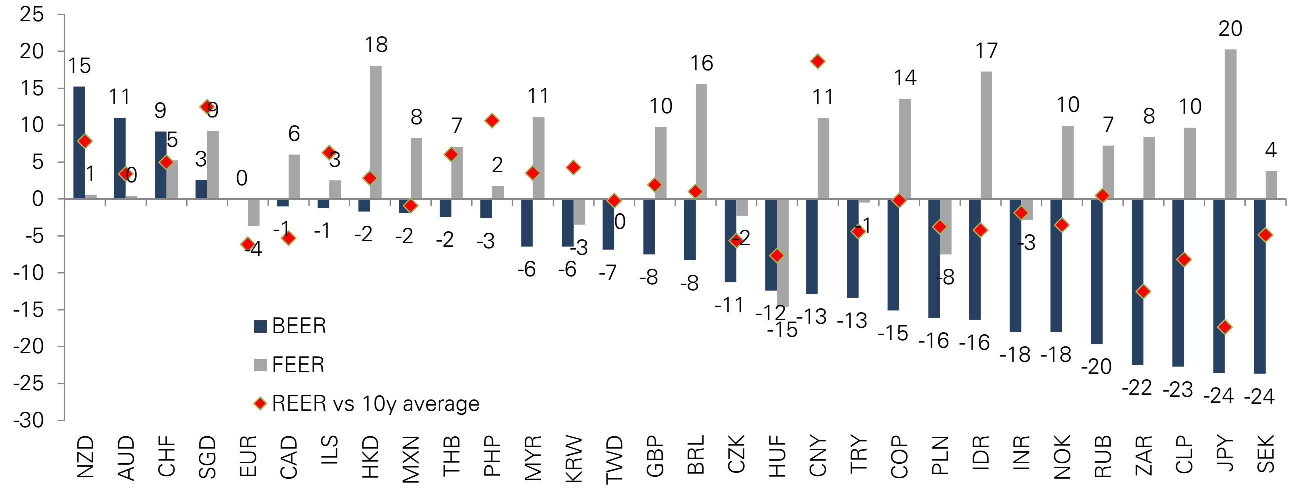
Figure 18: GBP/JPY: JPY is very cheap against GBP



Source: DB FX Research

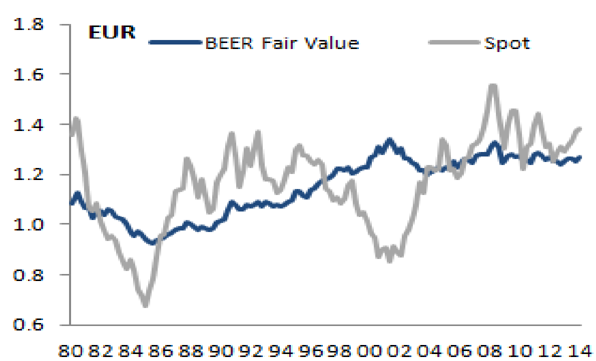
FX Behavioral and Fundamental Equilibrium Exchange Rates (BEER and FEER)*

Figure 1: USD-cross BEER and FEER valuations, TWI PPP valuations



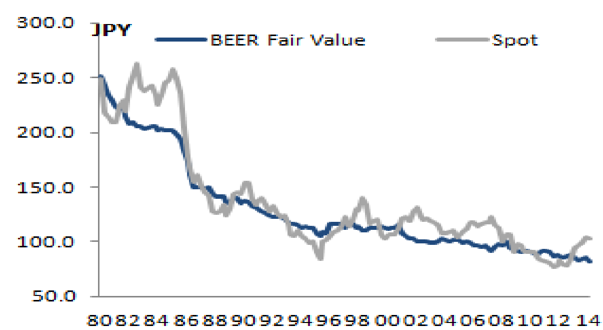
Source: DB FX Research

Figure 2: EUR/USD is expensive vs. BEER FV



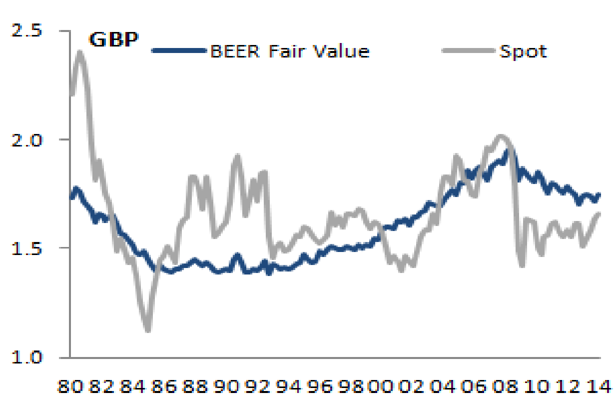
Source: DB FX Research

Figure 3: USD/JPY is now above fair value vs. BEER FV



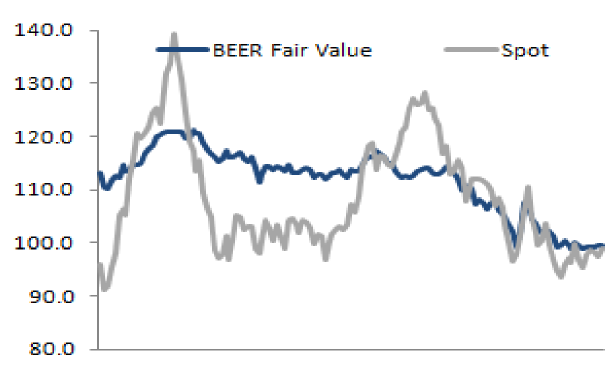
Source: DB FX Research

Figure 4: GBP/USD is coming closer to its fair value



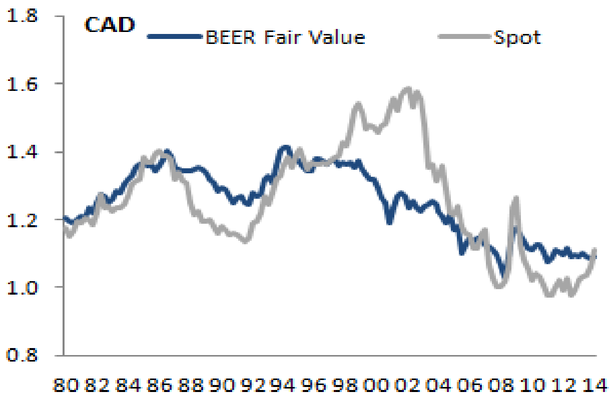
Source: DB FX Research

Figure 5: USD BIS TWI is close to its fair value



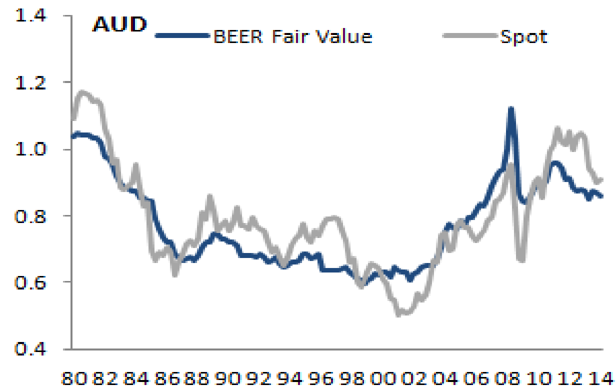
Source: DB FX Research

Figure 6: USD/CAD is now close its fair value vs. BEER FV



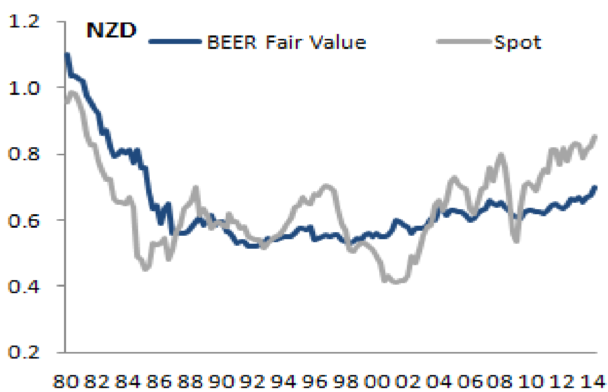
Source: DB FX Research

Figure 7: AUD/USD is expensive vs. BEER FV



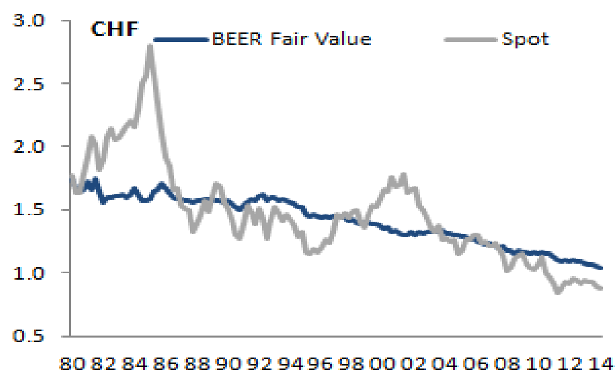
Source: DB FX Research

Figure 8: NZD/USD is very expensive vs. BEER FV



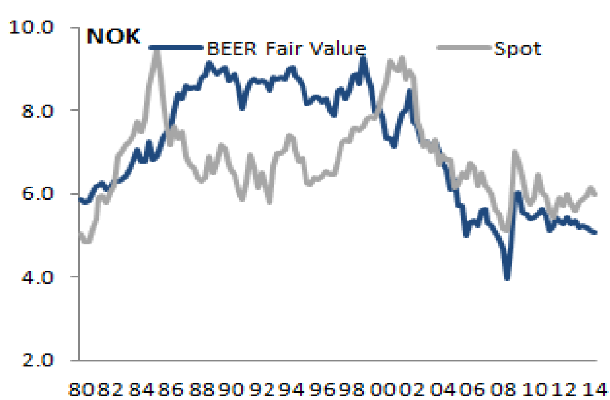
Source: DB FX Research

Figure 9: USD/CHF is quite cheap vs. BEER FV



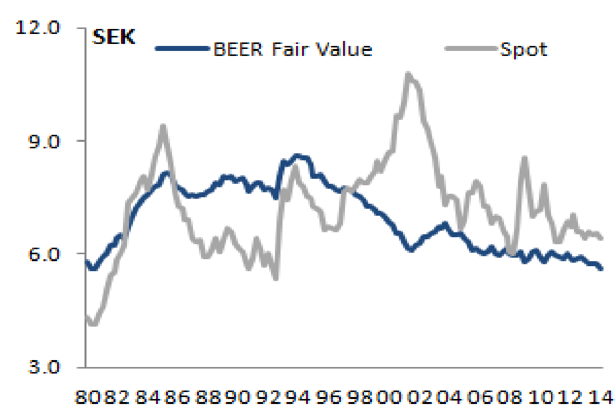
Source: Deutsche Bank

Figure 10: USD/NOK is expensive vs. BEER FV



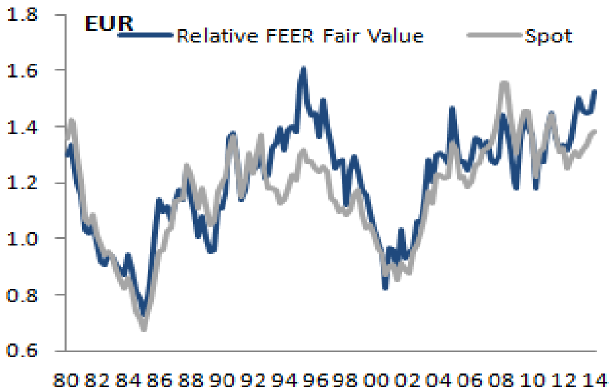
Source: DB FX Research

Figure 11: USD/SEK is expensive vs. BEER FV



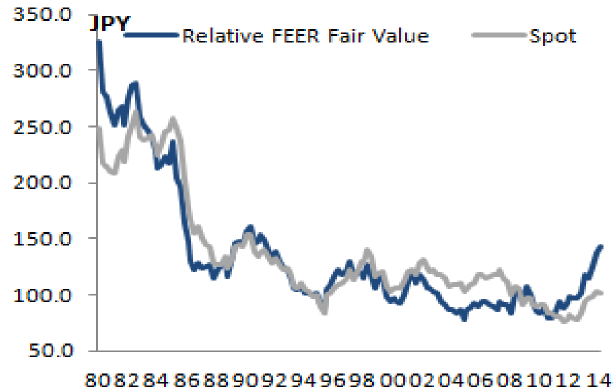
Source: DB FX Research

Figure 12: EUR/USD is cheap vs. FEER FV



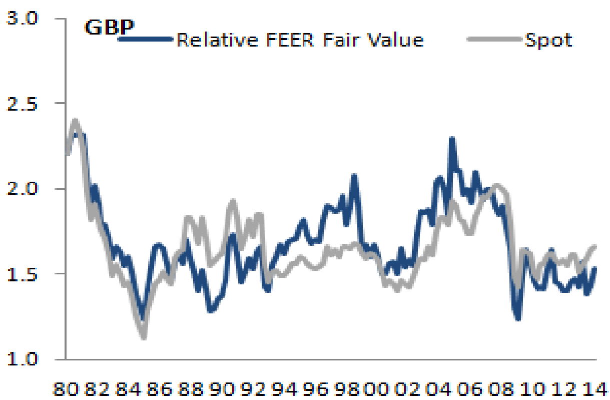
Source: DB FX Research

Figure 13: USD/JPY is cheap vs. FEER FV



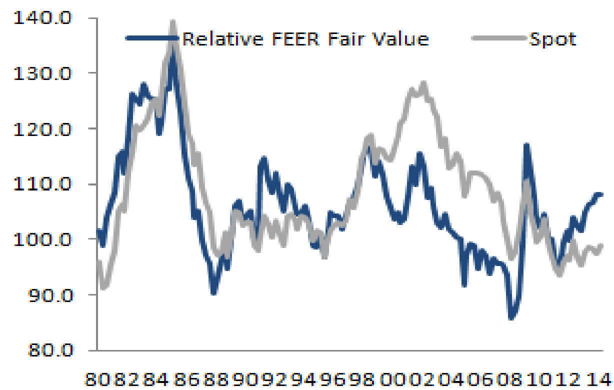
Source: DB FX Research

Figure 14: GBP/USD is expensive vs. FEER FV



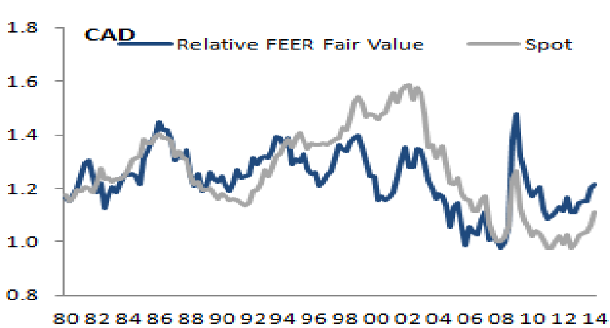
Source: DB FX Research

Figure 15: USD BIS TWI is very cheap vs. FEER FV



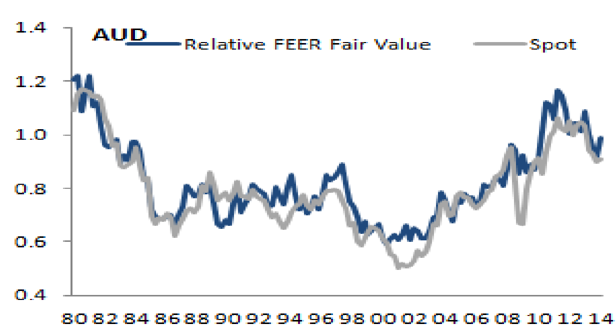
Source: DB FX Research

Figure 16: USD/CAD is cheap than its. FEER FV



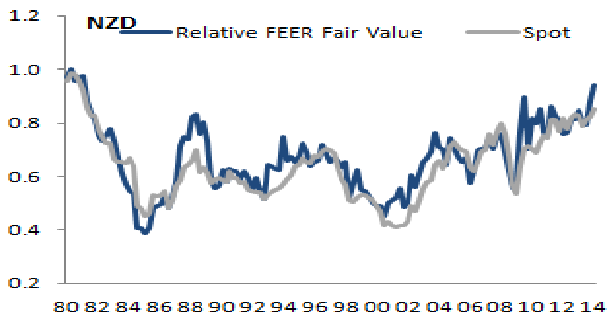
Source: DB FX Research

Figure 17: AUD/USD is cheaper than vs. FEER FV



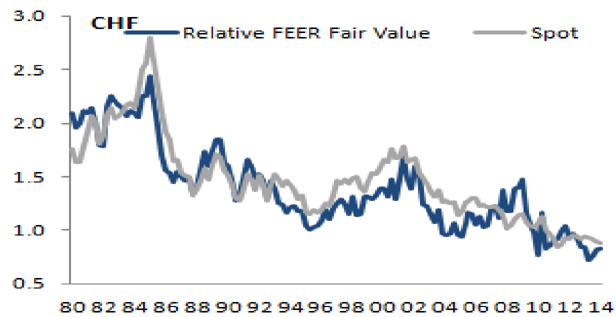
Source: DB FX Research

Figure 18: NZD/USD is cheap vs. FEER FV



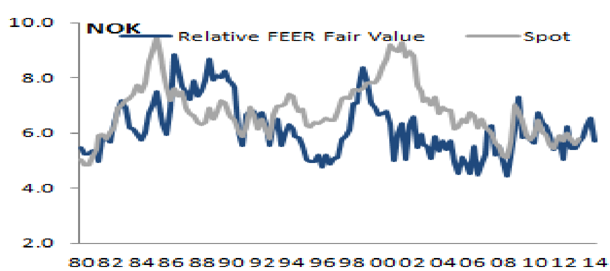
Source: DB FX Research

Figure 19: USD/ CHF is expensive vs. FEER FV



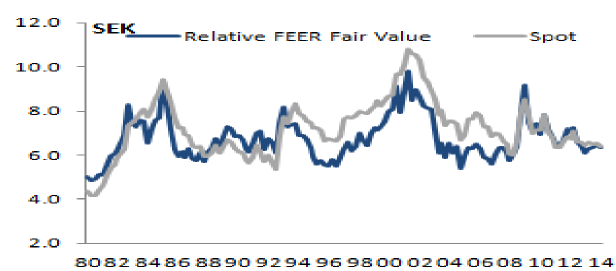
Source: DB FX Research

Figure 20: USD/NOK expensive than FEER FV



Source: DB FX Research

Figure 21: USD/SEK is close to its FEER FV



Source: DB FX Research

Appendix 1

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David Folkerts-Landau
Group Chief Economist
Member of the Group Executive Committee

Guy Ashton Global Chief Operating Officer Research	Marcel Cassard Global Head FICC Research & Global Macro Economics	Richard Smith and Steve Pollard Co-Global Heads Equity Research

Michael Spencer Regional Head Asia Pacific Research	Ralf Hoffmann Regional Head Deutsche Bank Research, Germany	Andreas Neubauer Regional Head Equity Research, Germany	Steve Pollard Regional Head Americas Research

International Locations

Deutsche Bank AG
Deutsche Bank Place
Level 16
Corner of Hunter & Phillip Streets
Sydney, NSW 2000
Australia
Tel: (61) 2 8258 1234

Deutsche Bank AG
Große Gallusstraße 10-14
60272 Frankfurt am Main
Germany
Tel: (49) 69 910 00

Deutsche Bank AG
Filiale Hongkong
International Commerce Centre,
1 Austin Road West,Kowloon,
Hong Kong
Tel: (852) 2203 8888

Deutsche Securities Inc.
2-11-1 Nagatacho
Sanno Park Tower
Chiyoda-ku, Tokyo 100-6171
Japan
Tel: (81) 3 5156 6770

Deutsche Bank AG London
1 Great Winchester Street
London EC2N 2EQ
United Kingdom
Tel: (44) 20 7545 8000

Deutsche Bank Securities Inc.
60 Wall Street
New York, NY 10005
United States of America
Tel: (1) 212 250 2500

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