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Meera Chandan
(44-20) 7134-2924
meera.chandan@jpmorgan.com

Diverging fortunes: FX value to trump carry in 2017

- **Both carry and value strategies delivered positive returns year-to-date. For value, this was a continuation of the trend but for carry, this was a turn of fortunes since it came after three consecutive years in the red. This note discusses the drivers of recent outperformance and presents observations that inform the outlook for next year.**
- **Returns from carry have overshot their fundamental drivers and were likely a result of stability in EM growth and a decline in G3 yields to record lows. The outlook is for negative returns in 2017 given a lower level of yields on the basket, prospects of higher market vol and long positioning.**
- **Within carry, near record low yields and poor external balances continue to support being short G10 high-yielders vs. EM high-yielders.**
- **For value, the outlook is relatively more benign with carry less onerous than average, although an offset is that the "value" basket isn't really cheap.**
- **Within G10, NZD and CHF feature in the "rich" basket but our macro narrative is bearish only for NZD. GBP features in the "cheap" basket however, our forecasts are still bearish on the currency.**

Summary

Both carry and value strategies have delivered positive returns year-to-date. For value, being in the green is not unusual—total returns from the strategy were positive for the second consecutive year and spot returns were positive for the seventh consecutive year. But for carry, this was a turn of fortunes since after three consecutive years in the red, not only has FX carry managed to deliver positive returns this year, it has also delivered its best performance since 2010. This note discusses the drivers of recent outperformance and presents observations on valuations and other metrics that help inform the outlook for next year.

The bottom line for carry is that returns have overshot their fundamental drivers and were likely a result of stability in EM growth, cheap valuations and a decline in G3 yields to record lows. **Our models suggest negative returns from carry in 2017** given a lower level of yields on the basket and prospects of higher market vol, which is offset only modestly by small improvement in EM IP

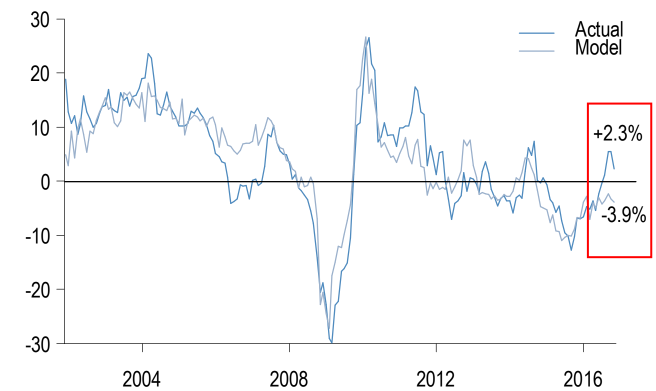
Chart 1: FX carry strategies: positive returns after three consecutive years in the red

Annual returns of FX carry strategies; %

Source: J.P. Morgan

Chart 2: Unlike last year, carry returns in 2016 have overshot underlying drivers

Actual vs. model* returns on global FX carry strategies; %oya



* Model: Annual returns on global carry basket = -13.1 + 0.1.517*(average yield on basket over the past year in %) + 1.12 *(EM industrial production growth year-on-year in %) – 1.37 * 1y change in VXY global (%pt). R-sq = 0.77. Model estimated on monthly data over the past 15 years. Source: J.P. Morgan

growth. The risk to the negative baseline is that EM growth remains stable or improves or if there is a reversal in the recent increase in DM bond yields. Within carry, near record low yields and poor external balances continue to **support being short G10 high-yielders vs. EM high-yielders**, with the caveat that yield spread between the two baskets should be monitored in 2017 as the expectation is for several EM high-yielder central banks to cut rates sizably.

For value, the outlook is relatively more benign. Admittedly, opportunities in the strategy are fewer as measured by the dispersion in the rich and cheap baskets, but this has been the case for the last three years and hasn't prevented positive returns. **Carry is an important dimension for the strategy and this is less onerous** than average on a net basis and high for the "value" basket. Valuations are less compelling since unlike at the beginning of the year, the mispricing on the "value" basket is average rather than cheap. **Within G10, NZD and CHF feature in the "rich" basket but our macro narrative is bearish only for NZD. GBP features in the "cheap" basket however, our forecasts are still bearish on the currency.**

FX Carry: returns overshot in 2016

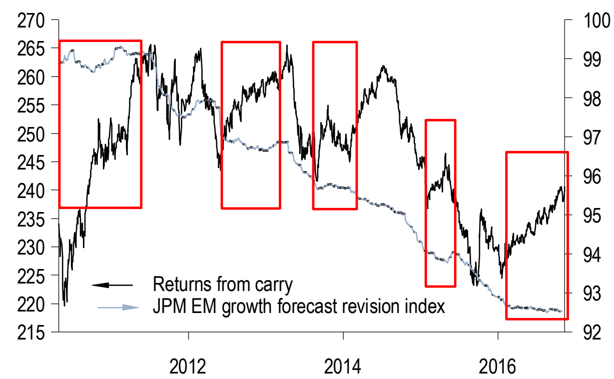
After three consecutive years in the red, not only has FX carry managed to deliver positive returns this year, it has also delivered its best performance since 2010. The year-to-date returns (4.9% on the global carry basket) tones down the intra-year performance which saw larger returns (of 6%) prior to the US elections. On a granular basis, EM was the standout performer with the carry basket delivering intra-year returns of as much as 11%, the highest in six years (YTD returns of 7.2%). The G10 carry basket also delivered positive returns, but these were relatively more modest with an intra-year high of 3.4%, the highest in three years (chart 1).

How do these returns stack up against their typical drivers? In our prior publications, we have routinely explained returns from FX carry as a function of the yield earned on the basket, EM growth using IP as a proxy and the level of volatility in FX markets (JPM VXY Global), with the view that a higher yield on the basket, better EM growth and lower volatility are usually supportive of carry performance (*FX carry outlook: No respite in 2016, but G10 high-yielders should underperform EM*). Chart 2 shows that **returns from the FX carry basket in the past year have been larger than that implied by its usual drivers.** The model implied that carry returns in the 1-year ending October 2016 should have been -3.9%, based on the level of yields, EM IP and changes in volatility. By contrast returns were higher at + 2.3%. This is similarly true for the G10 and EM carry baskets as well. Implied returns using a similar framework for the past year were -6% and +0.3% for G10 and EM respectively, vs. realized returns of +2.3% and +6.7%.

What explains the overshoot? One reason could be an extended period of **stability in EM growth forecasts for the first time in three years**. The typical pattern has been for carry baskets to deliver positive returns during such periods (chart 3). That **G3 nominal yields made a record low** during this period of EM stability helped as well (chart 4), as did **cheap valuations** (REERs were well below long-run averages at the beginning of 2016 (chart 6).

Chart 3: The outperformance of FX carry this year has been driven by stability in EM growth forecasts…

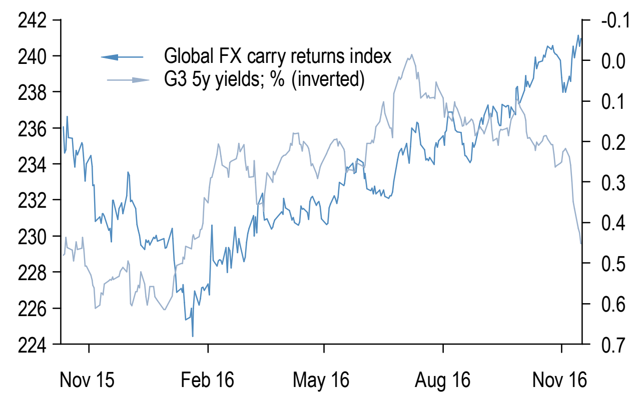
Index of returns from a global FX carry basket vs. J.P. Morgan EM growth forecast revision index



Source: J.P. Morgan

Chart 4: …at the same time that G3 yields made record lows

Index of returns from a global FX carry basket vs. average 5-year government bond yields (%)



Source: J.P. Morgan

Table 1: Returns from the global carry basket are projected to be negative (-5.3%) in 2017 if carry remains low and FX vol is higher; Improvement in EM IP would be an offset

Actual vs. model* returns on global FX carry strategies; %oya

Variable	Coeff	T-statistics	Current (1y ending Oct'16)	Forecast (2017)	Impact on returns from projected change
Intercept	-13.1	-12.3	1	1	0.0
Carry on the global basket (%)	1.5	11.3	3.66	2.89	-1.2
EM IP (% oya)+	1.1	12.1	3.11	4.3	1.3
VXY Global (1y change; %pt)	-1.4	-10.3	-0.1	1.0	-1.6
Projected returns on global carry basket; %			-3.9	-5.3	-1.4
Actual returns (through Oct'16); %			2.3		

Data fitted on monthly data for last 15 years. Source: J.P. Morgan

Low yields, higher vol and modest EM recovery imply negative returns in 2017

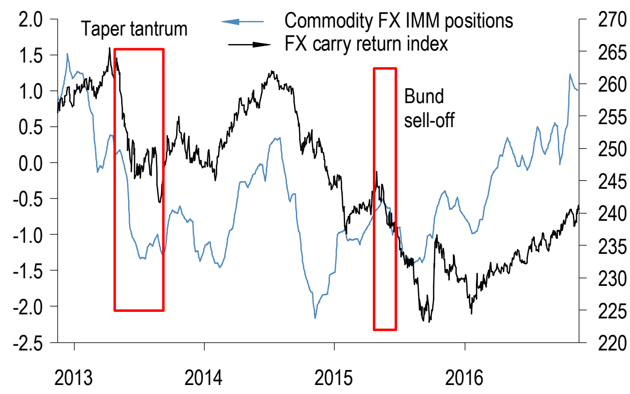
Looking ahead, **the model suggests that the outlook for FX carry is fragile and that the strategy will deliver negative returns in 2017**. Two out of the three usual drivers of carry returns are implying a worse outlook: the yield earned on the carry basket has declined which would shave 1.2% off the estimated returns relative to last year if it persisted at current levels, and our derivatives strategists expect FX vol to average a point higher given greater uncertainty following recent political development. An increase of that magnitude has typically shaved off 1.6% from carry returns (table 1). An offset would by EM IP growth which our economists anticipate will improve by 1.3%pts next year and would boost returns by a similar magnitude relative to the model estimate from last year. All told, the model forecasts negative returns of -5.3% from the global basket for 2017 (table 1), which represents a 1.4% decline relative to the 2016 model estimate.

Risks to the negative outlook for carry are ongoing EM growth stability/ possible improvement and a reversal in the recent increase in DM bond yields if expectations of fiscal stimulus are overdone. Both would reinitiate a search for carry. However, our sector analysts are highlighting that (a) the near-term downside risks to EM growth have increased following the US election since it could impact business confidence (*EM braces for uncertain times*, Luis Oganes) and (b) that DM yields are likely to increase further led by the Euro area (10-year bund yield is forecast to reach 0.85% by year-end). The combination of rich bond yield valuations and still-long positioning indicates that the DM bond market sell-off has the potential to become disorderly, with potential to result in a broader deleveraging as it did during the **Treasury taper tantrum** in 2013 and **the Bund market sell-off** in 2015. **In both instances, net longs in high beta currencies were unwound and FX carry delivered negative returns** (chart 5; note that the underperformance of FX carry was substantially larger in 2013 as it also coincided with a substantial sequential cuts to the EM growth outlook; our EM growth forecast revision index was taken down by 3.2%pts between April and August 2013).

Investors are long high beta FX and G10 carry baskets are rich

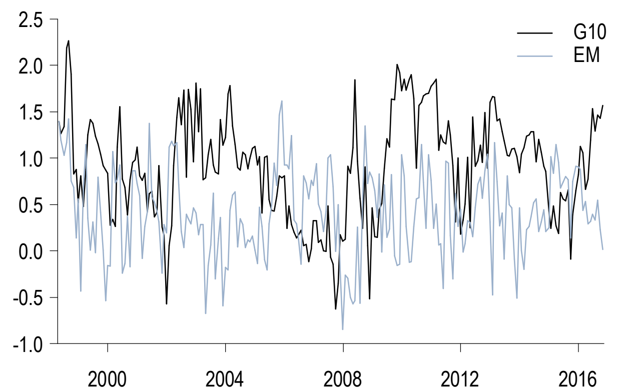
It is also worth nothing that positioning and valuations could make carry vulnerable to a broader deleveraging, should it occur. Investors are net long high beta currencies with positions 1 sigma above average. This a 4-year high so indicates that **longs in high beta currencies are currently larger than pre-taper tantrum and the Bund market sell-off levels** (chart 5). On valuations, metrics such as

Chart 5: What happens to carry in disorderly bond market sell-offs? Net longs in high beta FX were cut and returns were negative
Index of returns from a global FX carry basket vs. position metric for high beta currencies* (5-year zscore)



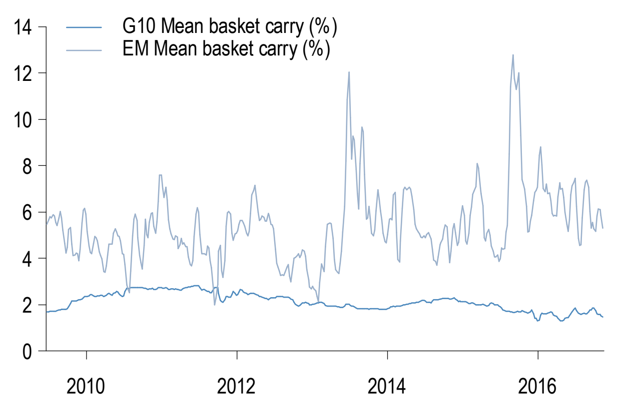
* Based on IMM data for CAD, NZD, AUD, RUB, BRL and MXN. Source: J.P. Morgan

Chart 6: Valuations are richer for G10 carry baskets than for EM
REER deviation from 15-year averages for dynamic G10 and EM carry baskets; %



Source: J.P. Morgan

Chart 7: Yield spread on G10 baskets remains low relative to the EM basket
Average yield on carry baskets; 2-week moving average



Source: J.P. Morgan

Meera Chandan
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meera.chandan@jpmorgan.com

deviation of REERs from longer-run averages indicate that unlike at the beginning of 2016 when valuations were cheap for carry baskets, valuations are less compelling now in aggregate. Valuations are 0.5 sigma richer than average for the global carry basket, although a granular breakdown shows that long-run valuations are rich and thus a concern primarily for G10 high yielders (chart 6).

G10 high-yielders continue to look unattractive relative to EM

While the overall outlook for FX carry continues to look tenuous, **G10 high-yielders still rank poorly relative to EM high-yielders and should continue to underperform**. Earlier in the year we highlighted that the combination of record low yields in G10, wide yield differences between EM and DM carry baskets and worsening DM external balances vs. EM would all result in an outperformance EM high-yielders vs. G10 (*FX carry outlook: No respite in 2016, but G10 high-yielders should underperform EM* and *Petro-hedged FX carry: Long RUB vs. CAD*). All of these factors remain intact. **The EM-G10 yield spread is still high** (chart 7) and at 390bp, remains consistent with projected positive returns in being short the G10 high yielders vs. EM high yielders (our prior backtesting exercises showed that when the EM-G10 yield spread was 350bp or larger, annual returns on EM carry baskets historically exceeded that on G10 carry baskets by 2.5% with hit rates of 62%, when longer holding period horizons of 6- to 12-months are used; based on 15-year history). **Valuations are also richer for G10 carry** (chart 6) and as noted elsewhere, **external balances for G10 continue to weaken further relative to EM** (see *Global Basic Balances* in the year-ahead FX Outlook). Finally, since pairing one high-beta vs. another is less sensitive to overall risk sentiment, the risk-adjusted carry can be higher for some combination of pairings (chart 8).

However, note that **the EM-DM yield spread will need to be tracked closely in 2017** since unlike at the beginning of 2015 when the expectation was for the EM-DM yield spread to widen due to policy rate divergence, **it is possible that the EM-DM yield spread compresses in 2017** as even though the outlook is for additional rate cuts from G10 high-yielders like Australia and New Zealand which will result in even lower DM carry (37.5bp cuts expected from RBA and RBNZ on average), our economists are also looking for larger rate cuts from EM currencies that currently comprise the carry basket (Brazil -3.75%, Russia -1.5%, India and China -25bp; basket based on risk-adjusted carry).

Chart 8: Pairing high-beta currencies can result in higher risk-adjusted carry by reducing exposure to overall risk sentiment
Carry divided by 3-month vol of daily changes in the price

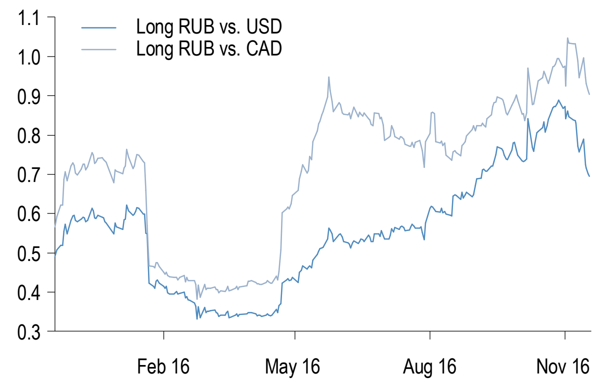
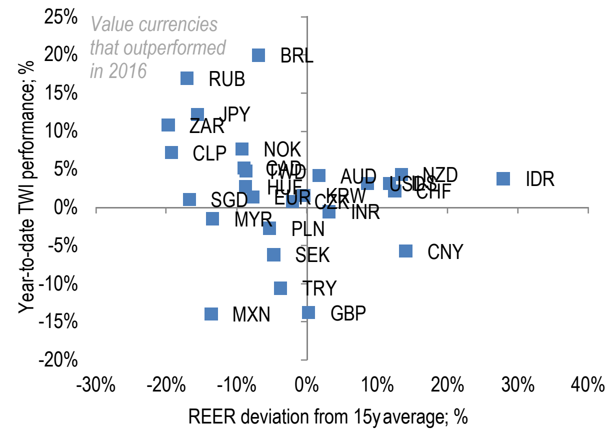
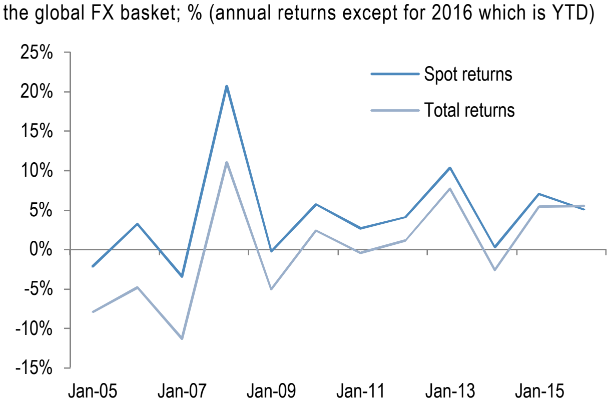


Chart 9: Most "value" currencies have outperformed this year
Year-to-date change in TWI (%; y-axis) vs. REER-PPI deviation from 15y average (%; x-axis)



Source: J.P. Morgan

Chart 10: The strategy of buying (selling) the cheapest (richest) quintile of currencies ranked on this signal have delivered positive returns for seven consecutive years
Spot and total returns from being long/ short the cheapest/ richest quintile of the global FX basket; % (annual returns except for 2016 which is YTD)



Source: J.P. Morgan

Value: the gift that keeps giving

After delivering total returns of 5.5% in 2015, traditional metrics of FX value (in this case the percent deviation of PPI REERs from their 15-year average) have delivered returns of similar magnitude year-to-date. Returns primarily stemmed from "value" currencies that were cheap on this metric at the beginning of the year (chart 9) and were relatively broad-based with this category as it included not only high carry currencies (CLP, ZAR, RUB) but also negative yielders such as JPY. As highlighted in our prior publications (*Global FX Strategy 2014*, page 13), **simple mean reversion strategies such as this one have historically done a better job at foretelling *spot* rather than *total* returns**[10]. Indeed, the strategy of buying (selling) the cheapest (richest) quintile of the global FX basket ranked on this signal have delivered positive returns for seven consecutive years (2016 data based till October; monthly rebalancing; chart 10). In addition, it is also worth noting that **the signals from this strategy for G10 have historically been more meaningful when the ranking is viewed in a global context rather than in G10 alone** (Appendix A). This section thus highlights the potential G10 buy/sell candidates based on their ranking in the global portfolio and also highlights some characteristics of currencies suggested by this strategy.

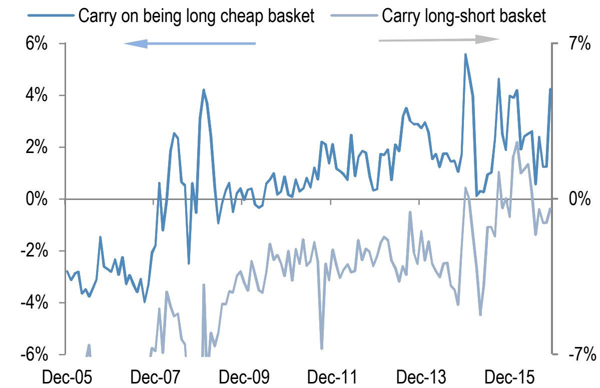
The "value" basket still carries well…

Heading into 2017, the backdrop for such strategies is only modestly less favorable than that at the beginning of 2016, with carry in the "value" basket still high but valuations average rather than cheap. The attractiveness of such mean reversion strategies may be evaluated on two dimensions: (1) what is the upfront carry cost in the currencies suggested by this rule (important since the strategy has been better at predicting spot rather than total returns, which suggests that the signals become more meaningful if the carry cost is small), and (2) what is the dispersion in valuations/ the magnitude of mispricing in the suggested currencies.

Between these two dimensions, carry is the more supportive factor for such mean reversion strategies currently because **the average carry on the "value" basket has recently increased to 4.2%, which is the high at the beginning of 2016** after which we saw positive returns from the strategy emerge (chart 11). It isn't just outright carry that is high, but the risk-adjusted carry as well at 0.40, which is the highest since September 2015. Beyond the "value" basket, what is important for the strategy is the net carry i.e. the net carry from being long the cheap basket and short the rich basket. Entering into 2016, the net carry on the suggested baskets was positive for the first time in 15 years. The positive carry has since eroded and is currently modestly negative (-0.4%), but still it is well above long-run averages for the metric (chart 11).

Chart 11: Carry on the "value" basket is high currently

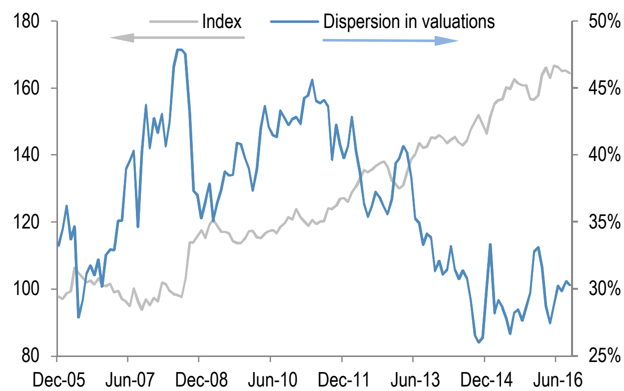
Carry on the basket identified as cheap by the strategy (lhs) and the net carry from the long-short baskets identified by the strategy*



* Strategy rebalances monthly to buy (sell) the cheapest (richest) six currencies ranked on their deviation from 15-year averages of REER PPIs. Source: J.P. Morgan

Chart 12: Dispersion in valuations is low, but that hasn't prevented the strategy from delivering positive returns in recent years

Index from the strategy* vs. the difference between average percent deviation from 15y average between long and short baskets (%)



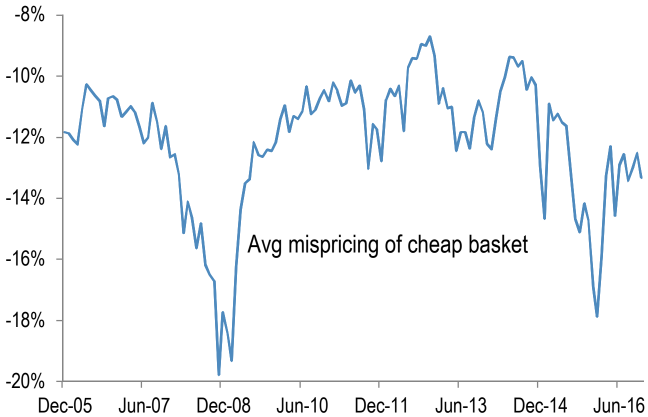
* Mispricing defined as deviation of PPI REERs from its 15-year average. Source: J.P. Morgan

…but it isn't cheap anymore

The second dimension—the magnitude of mispricing—is less constructive. The first point to note is that **the dispersion of valuations between the rich and cheap baskets is low, indicating that there is smaller room for reversion**. This dispersion measure, calculated as the difference between the average mispricing of the rich and cheap baskets, may be used as a proxy of the opportunities presented by this strategy (a larger dispersion in valuations indicates more room for reversion). High dispersion has historically resulted in larger subsequent returns from the

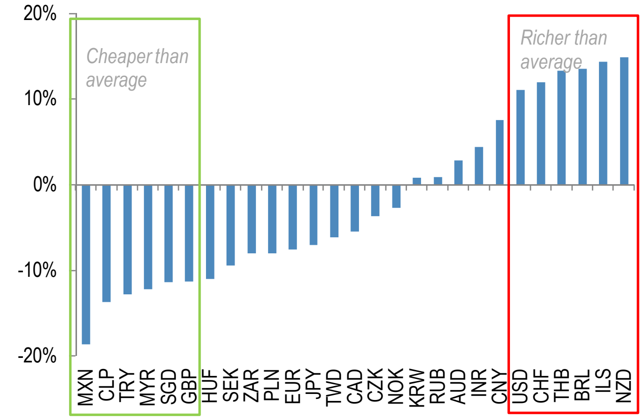
[10] For refreshed calculations and a discussion on the recent performance of these signals, see the Appendix A.

Chart 13: The "value" basket isn't that cheap
Average mispricing* of the six cheapest currencies identified by the strategy (%)



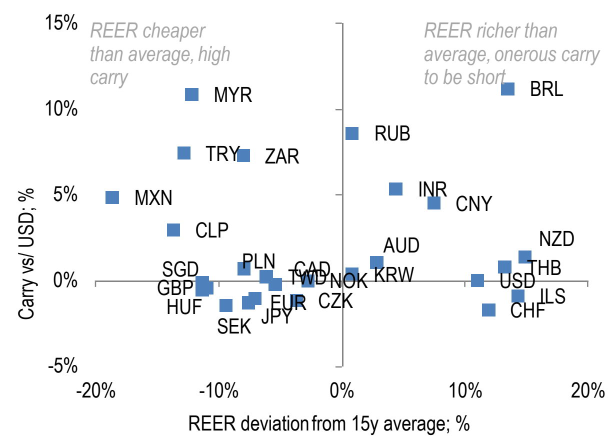
* Mispricing defined as the deviation of PPI REERs from its 15-year average. Strategy rebalances monthly to buy (sell) the cheapest (richest) six currencies ranked on their deviation from 15-year averages of REER PPIs. Source: J.P. Morgan

Chart 14: Current ranking based on the deviation from 15-year averages: G10 richer than EM
Based on PPI REERs



* For better viewability, this chart excludes IDR which is in the rich bucket. See appendix A for full list. Source: J.P. Morgan

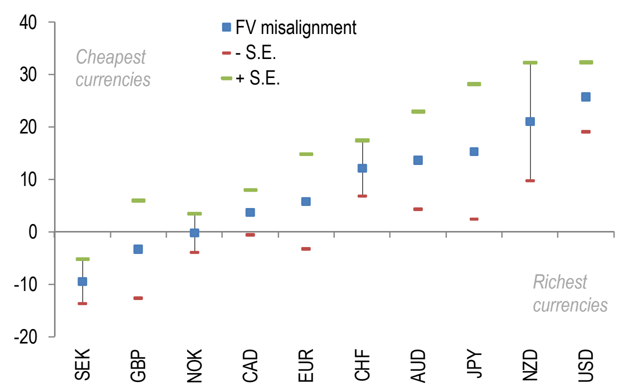
Chart 15: Carry vs. value: Several cheap currencies carry well, while most rich currencies ex BRL have less onerous carry
Carry (y-axis) vs. value metric (x-axis)



strategy, but **admittedly it is not a prerequisite for positive returns from the strategy**. Indeed, the strategy has delivered positive returns in recent years despite dispersion being low (chart 12). More interesting is **the mispricing of the "value" basket which indicates that the cheapness is not large but rather in line with longer run averages.** This stands in contrast with valuations at the beginning of 2016 which showed that basket was at its cheapest since the GFC (chart 13).

So how do currencies rank on this metric currently? Chart 14 shows this ranking for the global basket, while chart 15 shows the carry vs. deviations of REERs from long-run averages. **Within G10, NZD and CHF currently feature in the "rich" basket and only GBP features in the global "cheap" basket** when ranked on both PPI and CPI REERs[11]. Among the rich G10 currencies, **NZD could qualify as a short candidate** given our view on the RBNZ and the resulting bearish NZD/USD forecast profile (the macro outlook on CHF is more constructive). Also the carry in being short NZD is less onerous than EM high-yielders like BRL where our EM strategists spot forecasts are less bearish than that for NZD (see *Emerging Markets*). Among the cheap G10 currencies, GBP is flagged as a candidate on this metric but this is not consistent with our macro views on the currency since we are still looking for more Brexit-related weakening from GBP. Indeed, other long-term valuation metrics indicate that GBP is close to fairly valued at the moment (chart 16; also see Appendix B).

Chart 16: Mispricing on the long-term fair value model
Deviations from long-term real trade-weighted fair value (%); A positive value indicates over valuation. S.E. is the standard error.



Source: JP Morgan

[11] Using PPI REERs as signals have historically yielded higher risk-adjusted returns than using CPI REERs for most horizons tested. An exception is the past year. See Appendix A for a detailed discussion on the issue.

Appendix A: Backtesting simple mean reversion REER models – a refresh

In previous publications, we have noted that (a) econometric approaches to REER have historically ended to outperform simple mean reversion REER models in forecasting FX total returns (*A refresh of J.P. Morgan's long-term fair value model*), and (b) simple mean reversion REER models do offer value, but they perform better at leading *spot* rather than *total* returns. This section refreshes this backtesting exercise with the aim of clarifying which metric of REERs (PPI or CPI) have resulted in better performance for G10 currencies.

Signal: Percent deviation from 15-year average of REERs. Both PPI and CPI REERs are tested separately. A second version of the signal, 15-year z-scores were tested as well but results were significantly worse and thus not presented.

Currency coverage: G10 basket (AUD, CAD, EUR, JPY, NZD, NOK, SEK, CHF, GBP, USD) and **global basket** (G10, BRL, KRW, MXN, ZAR, CNY, CLP, CZK, PLN, TRY, RUB, ILS, HUF, INR, SGD, IDR, MYR).

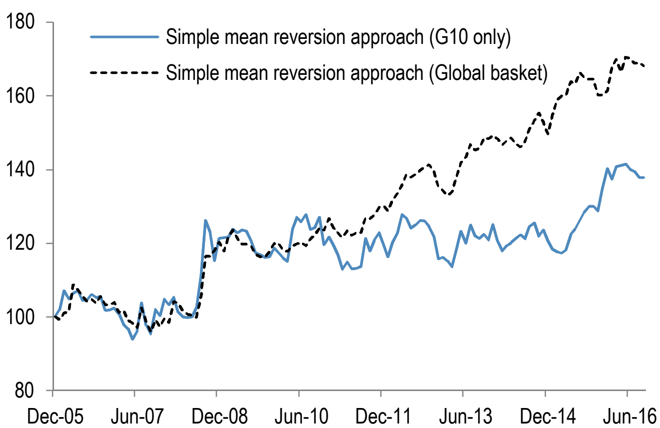
Rule: The deviations are calculated at the end of each month. The portfolio is rebalanced at that time such that the richest (cheapest) currencies are sold (bought) and held for a month. Two pairs are picked for G10 and six pairs for the global basket.

Horizon: CPI REERs have longer history and hence results of a 25-year backtest horizon is presented. Results for PPI REERs are presenting starting 1/1/2005 due to a shorter available history.

Results: Table A1 and chart A1 present the results of the backtest. The main take-aways are that:

1. While the signals have delivered positive returns for G10 over the past decade, **the returns from the strategy for the G10-only basket have been lumpy** and concentrated in select years (2008 and 2015-16; chart A1). By contrast, returns from the global basket have been more evenly distributed through the years. This suggests that **the REER mean reversion signals for G10 are more meaningful when these currencies also feature in the global rich/cheap baskets on this metric**.

Chart A1: Total return index using deviation of PPI REERs from 15y average as signals



Source: JP Morgan

2. **For the global basket, both signals (PPI and CPI) have higher IRs for *spot* returns than *total* returns**, and
3. **For spot returns, PPI REERs generally tend to yield higher IRs than CPI REERs** across multiple test horizons (ranging from 3- to 12-years). **The exception was over the past year** where a substantial reversal emerged and CPI REERs outperformed. This divergence bears watching in the coming months. Charts A1 and A2 show the current deviation from 15-year averages for both PPI and CPI REERs. **For G10, NZD and CHF feature in the "rich" basket in both cases** (note that macro narrative is bearish only for NZD) and **only GBP features in the "cheap" basket in both cases** (however, the macro backdrop is still bearish; see *GBP*).

Meera Chandan
(44-20) 7134-2924
meera.chandan@jpmorgan.com

Table A1: Simple mean reversion models have been better at predicting spot rather than total returns; PPI REERs have a better track record

Spot returns

	Horizon (years)							Horizon (years)						
	12	10	7	5	3	1		12	10	7	5	3	1	25
Annual returns	4.4%	5.0%	5.4%	5.9%	5.2%	2.5%	Annual returns	3.8%	4.0%	3.8%	3.3%	3.1%	8.8%	8.5%
Std dev	7.1%	6.9%	5.0%	5.2%	5.3%	6.1%	Std dev	6.8%	6.8%	5.2%	5.2%	5.8%	7.8%	10.2%
IR	0.61	0.72	1.08	1.13	0.98	0.41	IR	0.56	0.59	0.74	0.63	0.53	1.13	0.83
PPI-CPI	0.05	0.13	0.34	0.50	0.45	-0.71								

Total returns

	Horizon (years)							Horizon (years)					
	12	10	7	5	3	1		12	10	7	5	3	1
Annual returns	-0.1%	1.0%	3.0%	3.8%	3.7%	3.1%	Annual returns	1.7%	1.9%	2.6%	3.0%	3.6%	11.1%
Std dev	7.1%	6.9%	5.0%	5.2%	5.3%	6.3%	Std dev	6.8%	6.8%	5.3%	5.3%	5.9%	8.0%
IR	-0.01	0.15	0.60	0.73	0.70	0.49	IR	0.25	0.28	0.49	0.56	0.61	1.39
PPI-CPI	-0.26	-0.13	0.12	0.17	0.09	-0.90							

Chart A2: PPI REERs: current deviation from 15y average; %

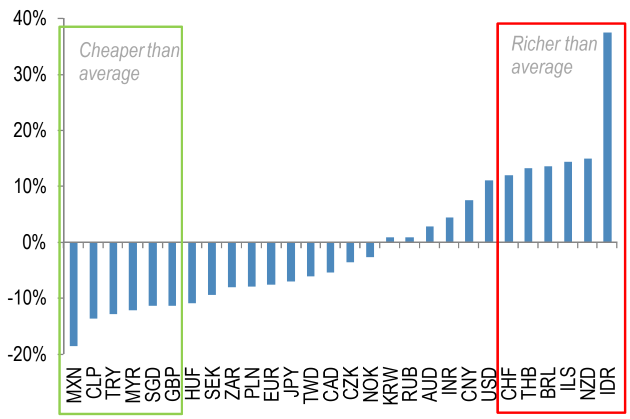
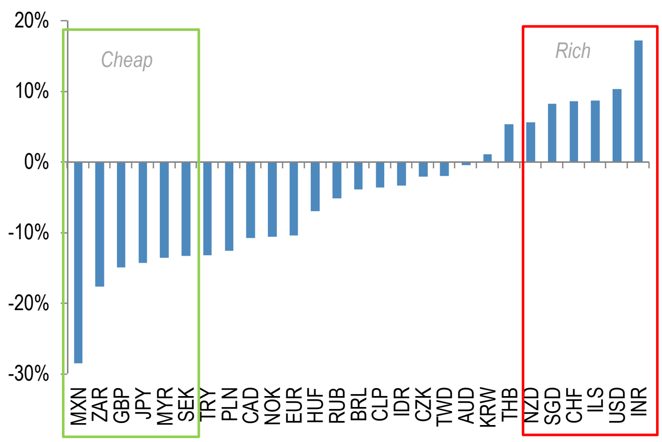


Chart A3: CPI REERs: current deviation from 15y average; %



Appendix B: Long-term fair value estimates for G10

We use several short-term and long-term frameworks to assess the relative richness/ cheapness of currencies which inform our trade recommendations. One such framework is J.P. Morgan's long-term fair value model which assumes that exchange rates are driven by structural macroeconomic fundamentals rather than relative prices alone. Specifically, J.P. Morgan's framework for REERs has been to model them as a function of four variables: terms of trade, productivity growth using GDP/capita growth as a proxy, net investment income (as % of GDP) and government debt (as % of GDP). The model is fit across 28 currencies and was first introduced in 2009 and subsequently re-estimated (*J.P. Morgan long-term fair value model update: Re-estimated and expanded to additional EM currencies*, Kariya and *A refresh of J.P. Morgan's long-term fair value model*). In the *Global FX Strategy Outlook 2016,* we refreshed the model coefficients and the results of the model for G10 currencies are presented monthly in our *Key Currency Views* publication.

The econometric approach lagged the simple mean reversion approach for the G10 basket in 2016. Backtests we have conducted in the past comparing results from this econometric approach to that of a simple mean reversion approach (i.e. REER deviations from long-term averages) have indicated that: (a) the econometric approach has historically offered higher risk-adjusted *total* returns when compared to simple mean-reversion strategies, but that (b) the econometric approach works better for the global basket rather the G10 basket. 2016 was no different for G10 in particular as the econometric approach delivered returns of -2% since our year-ahead outlook was published last year, while the simple mean reversion delivered outsized positive returns (+7%).

What was the reason for the divergence in performance? Charts B1 and B2 compares the performance of G10 currencies relative to the mispricing of currencies at the end of 2015 for both frameworks and highlights that the differentiation in performance came as (a**) the simple mean reversion identified JPY and the oil currencies (NOK and CAD) as cheap early-on which were also currencies that have outperformed YTD**; by contrast, **the econometric approach identified NOK and SEK as cheap between which NOK outperformed but SEK underperformed** substantially in G10, and (b) **while the econometric approach identified GBP as rich early-on, its allocation to the currency fell as GBP cheapened** and thus it couldn't benefit from the subsequent Brexit-driven weakening in the currency.

Chart B1: YTD currency performance vs. mispricing on econometric model at the end of 2015

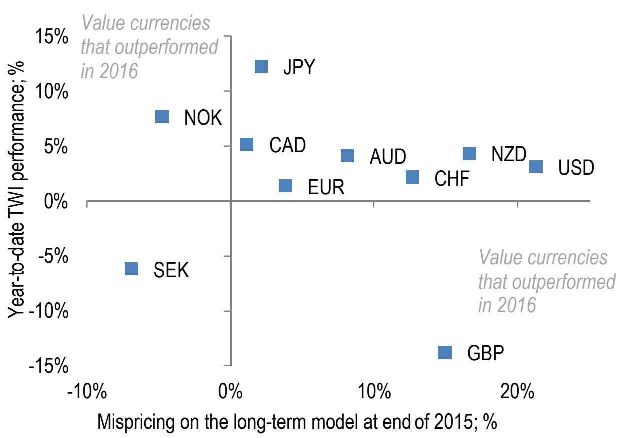
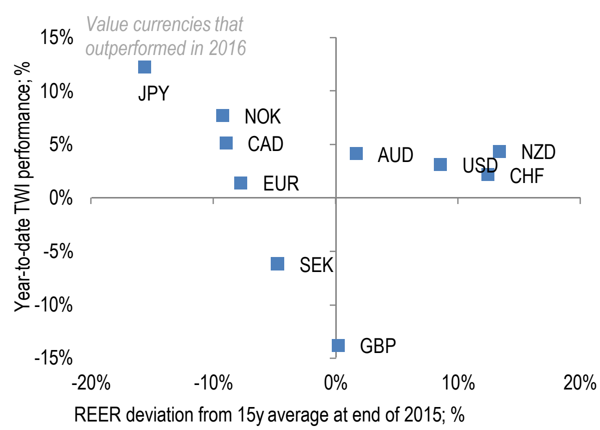


Chart B2: YTD currency performance vs. mispricing on simple mean reversion model at the end of 2015



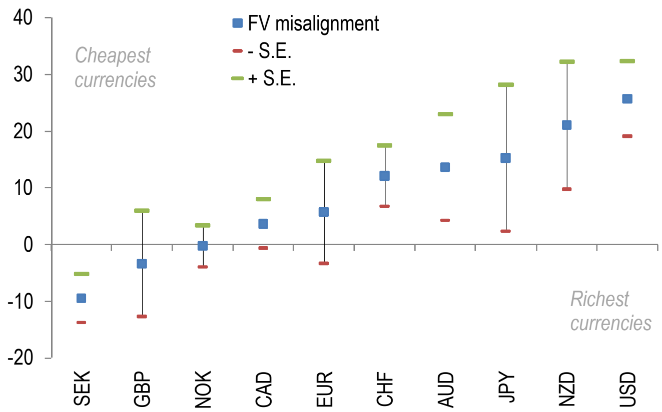
Source: JP Morgan

Looking ahead, **we will continue to track the mispricing of G10 currencies using the econometric approach, but with the caveat that the signals will likely be more meaningful if they also align with the simple mean reversion approach in the global basket**. Chart B3 shows a ranking of the currencies and shows that USD and NZD are the richest currencies when ranked on this metric, while SEK and GBP are the cheapest. **Among the rich currencies, only NZD features in the global "rich" basket with an underlying macro backdrop that is quite bearish for the currency** as well (NZD/USD forecast is 0.64 for year-end). **Among the cheap currencies, only GBP is in the "global" cheap basket, but the macro narrative is still bearish** for the currency (GBP/USD forecast is 1.19 for 1H17; EUR/GBP is 0.89). The macro outlook is more (reluctantly) bullish on SEK, but **SEK** doesn't yet feature in the "cheap" basket in the global context.

Meera Chandan
(44-20) 7134-2924
meera.chandan@jpmorgan.com

Chart B3: Mispricing on the long-term fair value model: GBP may be the cheapest G10 currency cross-sectionally…

Deviations from long-term real trade-weighted fair value (%); A positive value indicates over valuation. S.E. is the standard error.



Source: JP Morgan

Table B1: Summary long-term fair value (FV) results

(1) Dark (light) shaded misalignments represent overvalued (undervalued) currencies based on the real broad effective exchange rate. S.E. shows the standard error as a measure of confidence in the estimate. Remaining columns show how each factor contributed to the REER misalignment the past 2 years.
(2) Dark (light) shaded misalignments represent overvalued (undervalued) currencies versus the USD based on 3-year forward rates. S.E. shows the standard error as a measure of confidence in the estimate. **Bolded values are current nominal fair value estimates versus the USD.**
(3) As another measure of confidence in the fair value signal, results can be compared to current account (%GDP) and the change to current account (%GDP). Dark shaded cells represent a current account deficit or a deterioration in the current account the past two years.

	(1) Real broad effective exchange rate (REER)								(2) Nominal exchange rate (vs USD)				(3) Other metrics	
			Variable contribution past 2 yrs										CA	Chg to CA
	Misalignment	S.E.	REER	FV	ToT	Prod	Debt	NII		FV	3yr fwd	Misalignment	(%GDP)	past 2 yrs
G10														
USD	25.6%	6.6%	8.3%	-1.0%	0.8%	-1.5%	-0.2%	-0.2%					-2.7	-0.4
JPY	15.2%	12.9%	13.8%	4.6%	6.4%	-2.2%	0.1%	0.2%	USD/JPY	**101**	104	-2.3%	3.9	3.1
EUR	5.6%	9.1%	-4.4%	0.7%	2.4%	-1.2%	-0.4%	-0.1%	EUR/USD	**1.29**	1.13	-12.9%	3.3	0.9
GBP	-3.4%	9.3%	-6.9%	-0.2%	1.2%	-0.8%	-0.3%	-0.4%	GBP/USD	**1.63**	1.27	-21.9%	-5.7	-1.1
CHF	12.0%	5.4%	8.0%	0.6%	1.1%	-1.6%	0.0%	1.0%	USD/CHF	**0.90**	0.93	-3.9%	10.0	0.9
NOK	-0.3%	3.7%	-7.0%	-5.5%	-4.4%	-2.0%	0.0%	0.8%	USD/NOK	**6.57**	8.47	-22.4%	6.4	-4.6
SEK	-9.6%	4.3%	-4.7%	1.3%	0.9%	0.2%	0.1%	0.2%	USD/SEK	**6.57**	8.82	-25.5%	5.0	0.2
CAD	3.6%	4.3%	-4.4%	-5.5%	-2.4%	-2.2%	-1.1%	0.2%	USD/CAD	**1.20**	1.33	-9.5%	-3.4	-1.1
AUD	13.5%	9.3%	-2.7%	-2.4%	-0.1%	-1.7%	-0.6%	0.1%	AUD/USD	**0.81**	0.72	-10.6%	-3.8	-1.1
NZD	20.9%	11.3%	2.9%	-0.6%	0.2%	-1.1%	0.1%	0.2%	NZD/USD	**0.71**	0.68	-4.3%	-2.9	0.3

Source: J.P. Morgan and Bloomberg..

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