Completed 10 Apr 2017 08:34 AM BST
Disseminated 10 Apr 2017 08:34 AM BST

J.P.Morgan

When value and carry collide

Implications of improving growth for FX risk premia

- Global economic momentum is showing broad-based improvement.
- **The combination of growth and valuations should be supportive of positive returns from FX carry** (table A).
- **However, FX value has become less attractive.** Valuation dispersion has declined…
- **…and returns are negatively correlated with growth** by virtue of being short several high carry currencies. Thus, strong growth could result in drawdowns.
- Notable conclusions for FX value *if global growth stays robust* are:
- (i) **Cheap currencies should outperform since they carry well adjusted for growth** (chart A).
- (ii) **Shorts in rich currencies should be limited to low-yielders** as high carry currencies have scope to strengthen further on decent growth.

Global FX Strategy
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Table A: Current valuations and growth are supportive of positive returns from FX carry

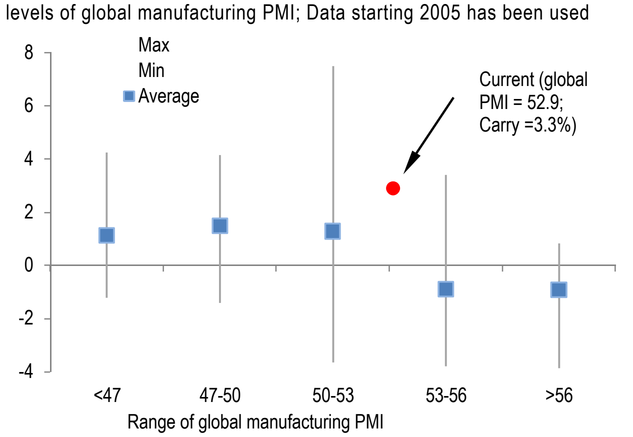
Monthly returns from FX global carry for a range of ex-ante mispricing in carry basket (1m lagged REER deviation from 15y average; %) and global GDP growth (concurrent q/q%); Current regime highlighted in blue

Avg monthly returns; %				
Ex-ante mispricing; %*	GDP growth (q/q; concurrent)			
	<0.65	**0.65-0.89**	**>0.89**	**All observations**
<4	1.4	0.7	0.6	**0.9**
4-8	0.7	0.5	0.6	**0.6**
>8	-0.2	-0.4	0.8	**0.0**
All observations	**0.6**	**0.1**	**0.7**	**0.5**
Months with positive returns; %				
Ex-ante mispricing; %*	GDP growth (q/q; concurrent)			
	<0.65	**0.65-0.89**	**>0.89**	**All observations**
<4	86%	71%	83%	**81%**
4-8	71%	80%	68%	**72%**
8-12	56%	43%	65%	**54%**
>12	**70%**	**61%**	**72%**	**68%**

* Ex-ante mispricing 1-month lagged. Data from 1998. Source: J.P. Morgan

Chart A: Carry on the cheap-only basket is high adjusted for growth

Carry on the dynamic cheap-only basket (% vs USD) averaged for different levels of global manufacturing PMI; Data starting 2005 has been used



Source: J.P. Morgan

See page 14 for analyst certification and important disclosures.

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Global economic momentum is accelerating

A notable development that began in 4Q16 but has extended and broadened in 1Q17 has been a firming in global growth data. Multiple metrics of global growth momentum have demonstrated an uptick over this period. Our global EASI (economic activity surprise index) has now been in positive territory for a record six consecutive months (chart 1), indicating that data has been beating consensus expectations for this period. For the global EASI to stay positive for such an extended period of time is highly unusual. **Only twice before in the decade history of the series has the global EASI stayed above zero for nearly six months**—in 2009 and in 2011. A granular inspection of the recent uptick shows that positive surprises have been relatively broad based, although notably more prevalent outside the US. Given this string of above-consensus data surprises, our economists growth forecasts have been also gradually revised up and the 3-month change in the global growth forecast as measured by J.P. Morgan FRIs (forecast revision indices) is now at its firmest in nearly five years (chart 2).

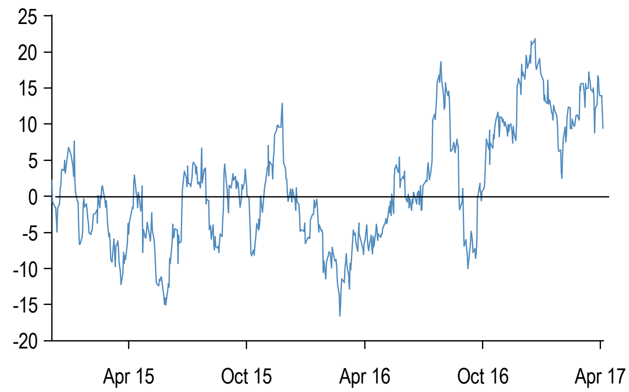
What does improving economic momentum mean for traditional FX risk premia? **This note focuses on the immediate implications for FX carry and value in particular, with focus on the interaction between the two in a strong growth environment.** In summary, implications from strong growth for FX carry are relatively more straightforward. **The combination of strong growth and valuations should be supportive of positive returns from FX carry**. Risks to the strategy come from modestly long investor positions (0.5 to 1 sigma above average), low yields on risk-adjusted carry baskets and the range of outcomes in US trade policies. Hence, the continued preference for a lower beta versions of earning carry, for instance being long select EM high yielders over G10 high beta currencies (such as NZD, AUD and CAD).

Implications are more nuanced for value given its interaction with carry. **Not only has FX value become less attractive as valuation dispersion has declined, it is also becoming increasingly counter cyclical** by virtue of becoming short several high carry currencies (as growth improves, high carry currencies start to screen rich; for instance, the latest high-carry entrant into the "rich" category is RUB)**. Thus there is scope for drawdowns from FX value as growth improves warranting a more nuanced approach.** Notable conclusions for FX value if global growth stays robust are:

(i) **the cheap-only basket has scope to outperform as carry on cheap currencies is high adjusted for growth and several have positive economic momentum** (chart 4).

Chart 1: Our global EASI has been positive for six consecutive months…

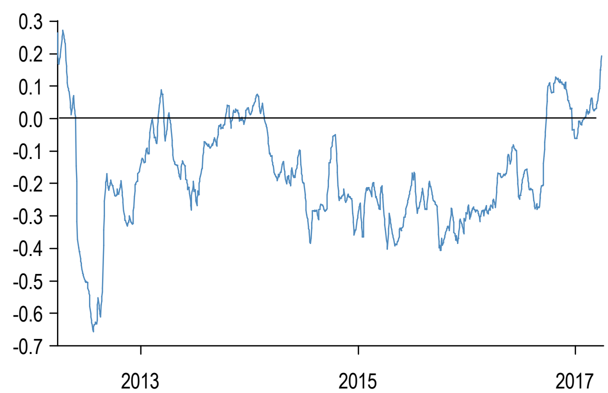
J.P. Morgan global economic activity surpise index



Source: J.P. Morgan

Chart 2: …prompting the largest upgrades to our economists' global growth forecasts in five years

3-month rolling change in the J.P. Morgan global growth FRI (forecast revision index)



Source: J.P. Morgan

High-yielders that are cheap on a REER basis includes TRY, MXN, MYR and PHP in EM (G10 candidates are low yielding GBP and JPY). Among these higher yielding currencies, our EM strategists still see more room for downside on TRY (*EMEA EM Local Markets Compass*, Siddiqui et al) but are tactically more constructive on MXN and MYR (*MXN: We tactically position for further near-term MXN gains and then for risks to resurface in 2H17*, Pereira and *EM Asia local markets strategy update*, Shridharan).

(ii) **Shorts in the rich-only basket should be limited to low-yielders** as high-carry "rich" currencies still have scope to strengthen further on decent growth. The high yielders in this basket currently include RUB and BRL in EM (chart 3). Our EM strategists are indeed still bullish on BRL and RUB

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(*Latin America Local Markets Compass*, Pereira). The low yielders include NZD in G10 on which our forecasts are still bearish (also note that G10 high yielders have poor economic momentum, rich valuations and low carry in the global context; charts 3 and 4).

Implications for other risk premia such as momentum have been discussed elsewhere. **Implications for rate momentum** in relation to the dollar specifically were examined in an earlier research note (*When models fail: on why USD could keep undershooting rates*) in which we concluded that rate momentum would be meaningful/ bullish for the dollar only when economic momentum supported it; in the interim the dollar is likely to keep undershooting rate differentials. Implications are bullish for economic momentum itself as this factor works when the growth assessment is being revised (either upwards or downwards), although the analysis indicates that higher carry currencies with positive economic momentum are more likely to outperform (chart 4).

Carry: even stable growth is enough for positive returns

FX carry posted positive returns for the sixth consecutive quarter, making it among the most consistent single-factor outperformers over the past 15 months. This outperformance follows negative returns for four years between 2012 and 2015, and with this move, half of these losses have been recouped (chart 5). Overall returns on the global carry portfolio were relatively modest at 1% for the quarter, but on a sectoral level, **the outperformance has been led by EM** (1Q returns of +3.5%; chart 6) **rather than G10, which has been underperforming** (1Q returns of -2.4%). The outperformance of EM FX carry has occurred as part of a relatively broad-based rally in the sector as a whole which extended to many low-yielders as well—nearly 70% of EM currencies have strengthened in TWI terms in 1Q, following nearly 60% in 4Q16 and 100% in 3Q16—while G10 has experienced a more challenging environment with only 50% of the currencies strengthening on a TWI basis in Q1 (chart 7).

The implications of a stable-to-improving growth backdrop are relatively straightforward and well documented: **stability in the growth outlook is all we need for FX carry to deliver positive returns** (episodes highlighted in red in chart 5). Thus this section instead focuses on characterizing carry portfolios on three dimensions—valuations, positioning and the level of yield—and concludes that the current combination of growth and valuations is conducive of positive returns from FX carry. Risks stem from modestly long positions and low yields Our macro view has been more defensive on FX carry on

Chart 3: Carry vs. long-run valuations

This chart may be tracked in our *Daily FX Alpha chartpack*

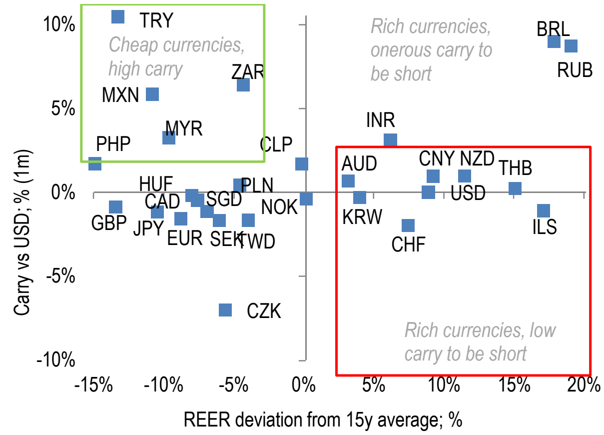
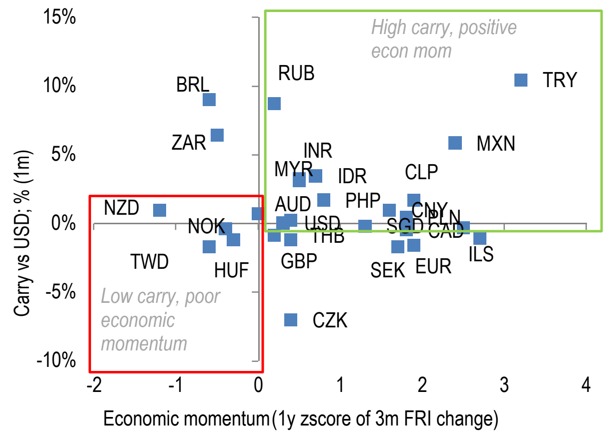


Chart 4: Carry vs. economic momentum

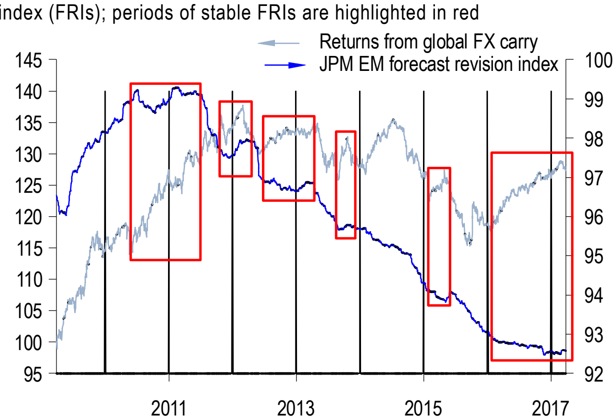
This chart may be tracked in our *Daily FX Alpha chartpack*



Source: J.P. Morgan

Chart 5: FX carry has delivered positive returns for 15 consecutive months…

Index of returns from FX carry vs. J.P. Morgan EM growth forecast revision index (FRIs); periods of stable FRIs are highlighted in red



Source: J.P. Morgan

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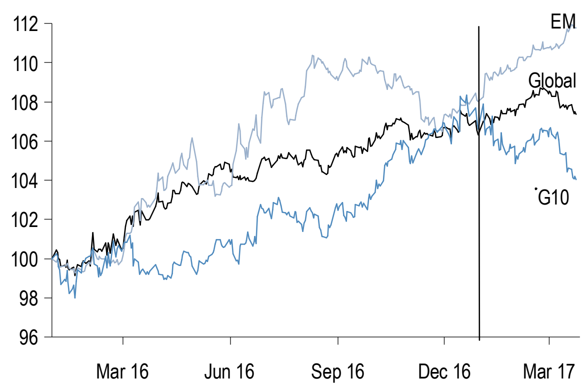
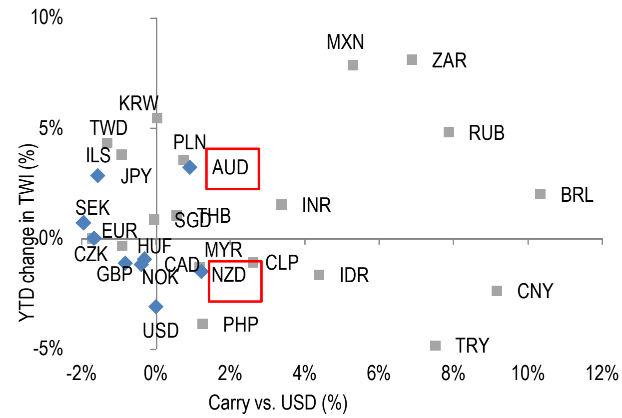
Chart 6: …with the EM basket outperforming G10
Index of returns from FX carry



Source: J.P. Morgan

Chart 7: G10 high yielders have lagged EM high yielders, which have outperformed amid a broader rally in the asset class
Year-to-date change in TWI (%) vs. ex-ante carry vs. USD at the begnning of 2017 (1-month tenor; %); G10 in blue, EM in grey.



Source: J.P. Morgan

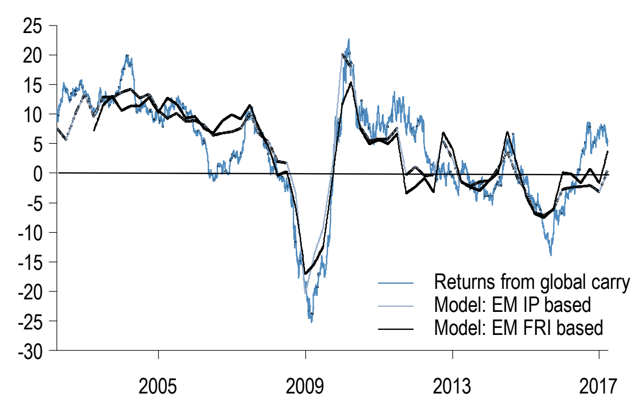
the possibility of a US-led trade conflict, preferring instead lower beta versions of the carry trade. Specifically, **it has been our long-standing view that G10 high yielders/ beta FX such as AUD, NZD and CAD should underperform EM high yielders** and allow investors to earn carry by virtue of record low yields in DM while at the same time reducing the beta to changes in risk sentiment (see *Diverging Fortunes: FX value to trump carry in 2017*, 23rd November, 2016, *FX carry outlook: No respite in 2016, but G10 high-yielders should underperform EM*, 29th February, 2016).

FX carry returns are overshooting modestly relative to concurrent drivers…

Valuations for the carry basket may be measured on two dimensions. First, one may consider carry returns over a particular horizon relative to their typical drivers. In the past, we have typically explained realized returns from FX carry as a function of the yield earned on the basket, EM growth (using IP as a proxy) and changes in FX volatility(basis: VXY index). Second, they may be measured on an absolute basis using metrics of long-term value such as deviation of REERs relative to long-run averages for the carry basket.

On the first metric, i.e. how FX carry returns stack up relative to their typical drivers such as the level of yields, EM growth and volatility, **we find that returns from FX carry are still overshooting these factors, albeit with a smaller magnitude than in November**. In detail, two out of the three underlying drivers have turned more favorable for carry since our last publication. The level of volatility has declined with our global VXY index 1.5pts lower since late-November to its lowest in two years and the EM growth backdrop has improved. EM IP which is an input

Chart 8: Actual returns from FX carry are still overshooting model returns, but by a smaller magnitude; model returns have increased amid lower vol and an improved EM growth outlook
Actual vs. model* returns on global FX carry strategies; %oya



* Model EM IP: Annual returns on global carry basket = -9.8 + 1.148*(average yield on basket over the past year in %) + 1.08 *(EM industrial production growth year-on-year in %) – 1.00 * 1y change in VXY global (%pt). R-sq = 0.75. Model EM FRI: -2.8 + 1.35*(average yield on basket over the past year in %) + 2.83 *(1y change in EM FRI; %pts) – 1.31 * 1y change in VXY global (%pt). R-sq = 0.74. Model estimated on monthly data over the past 15 years.
Source: J.P. Morgan

into our model for returns from FX carry has firmed by 1.6%pts on an oya basis since October, while **our EM growth forecast revision index (FRI) has been stable for nearly fifteen months**. As a result of these developments, **carry returns from this model have increased** with the EM IP based implying annual returns of +0.3% (actual 1-year returns were 3.7% on the global basket), a substantial upgrade relative to -3.9% implied in November 2016.

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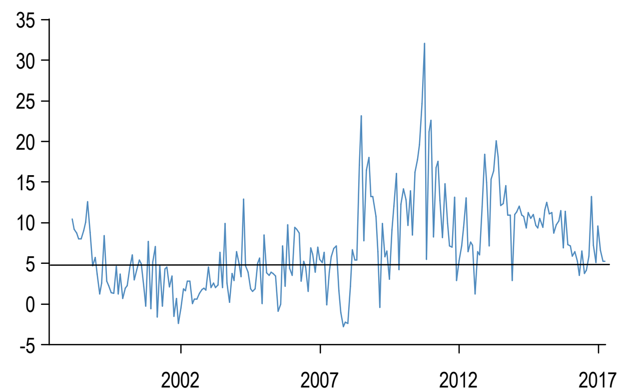
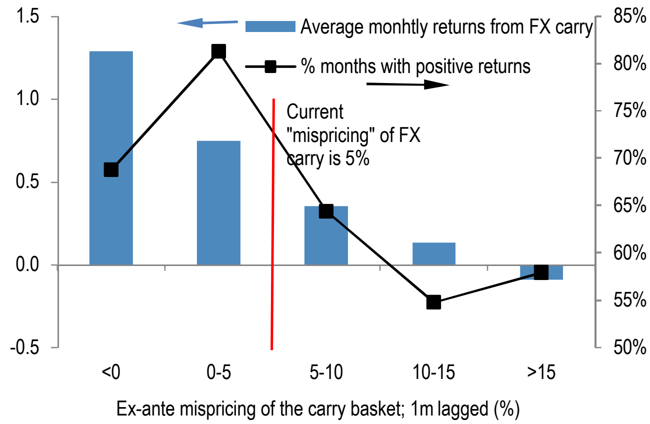
Chart 9: Absolute valuations of the FX carry basket are cheap…
Average deviation of REERs vs. 15y average of the dynamic carry basket; %



Source: J.P. Morgan

Chart 10: … which tends to lead returns from FX carry
Monthly returns from FX global carry vs. 1m lagged mispricing of carry basket (REER deviation from 15y average; %)



Source: J.P. Morgan

Using changes in the EM growth FRI instead of EM IP in the model, i.e. a forward-looking measure of growth sentiment rather than realized IP data, indicates an even higher model return of +3.8% (chart 8). These developments (lower vol, improving growth) have been contrary to our expectations in November which anticipated an underperformance in carry amid higher volatility and a weaker EM growth outlook in anticipation of a possible US policy driven trade conflict.

…but absolute valuations of FX carry are cheap

On the second metric, i.e. an absolute measure of value defined for the carry basket as the average percent deviation of REERs from 15-year averages, the global carry basket screens modestly cheap. Chart 9 shows that **REERs of currencies in the global carry basket are near the low end of their 9-year range**. This matters since this average mispricing has historically been a good leading indicator of carry returns. **A "mispricing" of current magnitude (i.e. deviation of the carry basket of 5% above 15y REERs) is consistent with average monthly returns of +0.7% with hit rates of near 70%** (chart 10). Aggregating carry returns across a range growth and valuation regimes shows that we are currently in a regime consistent with positive returns from FX carry (table 1).

Positioning is net long and yields are low

Not all is rosy for carry. **Positioning for high beta currencies on multiple metrics is at its longest in nearly four years, but is still modest in magnitude** (0.5 to 1 sigma relative to a 5y history; chart 11). This could admittedly pose a risk to FX carry in the event market risk sentiment worsens, it is worth noting that we have not found positioning in isolation to be a good leading indicator of currency returns. Moreover, average yields on the global FX carry portfolio are low (chart 12; note that index is based on currencies that have high risk-adjusted carry).

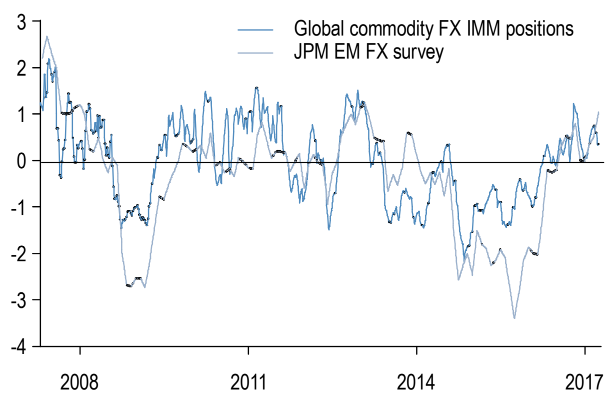
Table 1: Current valuations and growth are supportive of carry performance
Monthly returns from FX global carry averaged for a range of ex-ante mispricing of carry basket (1m lagged REER deviation from 15y average; %) and global GDP growth (concurrent q/q%); Current regime highlighted in blue

Avg monthly returns; %				
Ex-ante mispricing; %*	GDP growth (q/q; concurrent) <0.65	0.65-0.89	>0.89	All observations
<4	1.4	0.7	0.6	**0.9**
4-8	0.7	0.5	0.6	**0.6**
>8	-0.2	-0.4	0.8	**0.0**
All observations	**0.6**	**0.1**	**0.7**	**0.5**
Months with positive returns; %				
Ex-ante mispricing; %*	GDP growth (q/q; concurrent) <0.65	0.65-0.89	>0.89	All observations
<4	86%	71%	83%	**81%**
4-8	71%	80%	68%	**72%**
8-12	56%	43%	65%	**54%**
>12	**70%**	**61%**	**72%**	**68%**

* Ex-ante mispricing 1-month lagged; Range of row/ column intervals are chosen such that roughly an equal number of observations fall in each interval. Based on data from 1998.
Source: J.P. Morgan

In summary, a decent global growth backdrop would continue to be supportive of positive returns from FX carry, but the caveats are that yields have compressed and the wide range of outcomes around US trade policy continues to lend uncertainty over the medium term(*FX Markets Weekly : Most issues hanging over FX to stay unresolved in 2Q*). Hence, we continue to have a preference for a lower beta versions of earning carry, for instance being long select EM high yielders over G10 high beta currencies

Chart 11: Investor longs in high beta currencies are 0.5 to 1.0 sigma above average
Monthly returns from FX global carry vs. 1m lagged mispricing of carry basket (REER deviation from 15y average; %)



Source: J.P. Morgan EM strategy team, CFTC

(such as NZD, AUD and CAD). Relative valuations between EM and G10 carry baskets continue to be supportive of this view (chart 13). Moreover, DM high yielders have poor economic momentum vs. EM high yielders (chart 4).

Long-term value: strong growth warrants a more granular approach

Summary: FX value has become less attractive as valuation dispersion has declined. **Notable conclusions for the factor *if global growth stays robust* are** (i) **FX value has scope to underperform as returns from the factor are negatively correlated with growth,** warranting a more granular/ nuanced approach; (ii) **the cheap-only basket in isolation has scope to outperform** as the carry on it is high adjusted for global growth, and (iii) **being short the rich-only basket is not advisable** since it is increasingly comprising high-carry currencies which still have scope to richen further if growth remains decent.

FX value posts worst quarterly returns in a decade

FX value[1] had a rocky end to 2016 and an equally tumultuous start to 2017. After eight consecutive years of delivering positive returns, FX value ended 2016 and 1Q17 in the red (chart 14). The factor delivered total returns of -1.2% in 2016 and followed by -0.5% in 1Q17. The intra-

Chart 12: Yield levels on the FX carry portfolio have compressed
Yield on the dynamic global FX carry portfolio (based on risk-adjusted carry; bp)

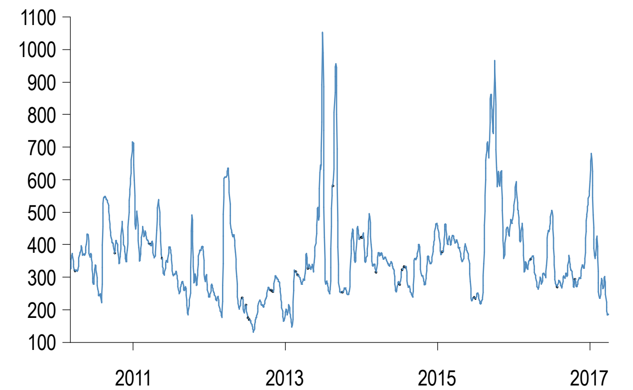


Chart 13: Relative valuations continue to be supportive of short G10 vs. EM carry
Average mispricing of G10 vs.EM carry baskets (% REER deviation from 15y average)

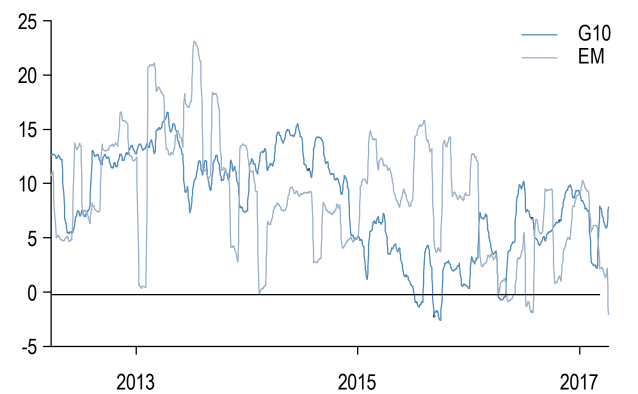
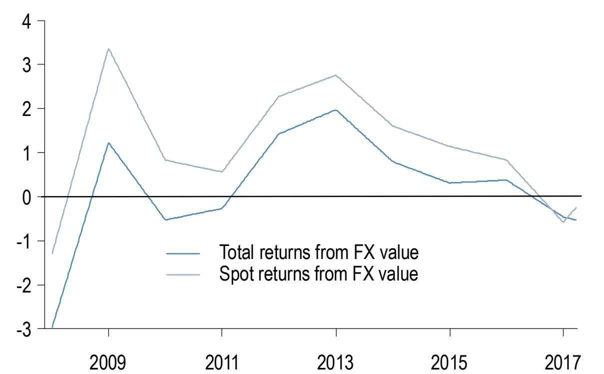


Chart 14: FX value ended 2016 and 1Q17 in the red after eight consecutive years of positive returns
Average quarterly returns by year* (%)



* Strategy assumes long/ short the cheapest/ richest quintile of the global FX basket when ranked on percent deviation of REER (PPI) from its 15-year average. Daily rebalancing.
Source: J.P. Morgan

[1] Strategy discussed in this section assumes long/ short the cheapest/ richest quintile of the global FX basket when ranked on percent deviation of REER (PPI) from its 15-year average. Daily rebalancing. Note that J.P. Morgan uses several other metrics of long-term fair value such as *Assessing EM FX Fair Value: Introducing our long-term BEER fair value models*, Cavenagh, Christovova, Pereira and Goulden.

quarter performance delivered even more volatility as the factor delivered its worst quarterly returns in a decade in mid-January (-6.8%), before posting an impressive recovery in subsequent weeks (chart 15). On a sectoral level, G10 managed to eke out positive returns in full year 2016 (+2.4%) as well as in 1Q17 (+2.2%), making EM the source of the drawdowns. Zooming into the currency-specific returns shows that it was the substantial weakening in TRY and MXN between November and January that resulted in drawdowns.

Given this underperformance, we had noted in late-January that this factor was attractive on two dimensions—the dispersion in valuations of valuations in the global portfolio had shot up to near its 3-year highs in late-January (chart 17) and the carry on the recommended currencies was still attractive relative to long-term history (chart 18; *How cheap is FX value? Wider dispersion in valuations and benign carry warrants closer inspection*, 30th January 2017). Dispersion matters since we have found it to be a leading indicator of returns from FX value, i.e. a higher level of dispersion (defined as the average mispricing of the rich basket minus that of the cheap basket) implies more room for mean reversion. In addition, the carry was relevant since it was higher than longer run averages.

The carry isn't bad, but FX value isn't cheap

How does the strategy stack up on these dimensions now? **While this strategy still recommends a portfolio that carries flat** (so still better than the long-run averages; chart 16), **dispersion in FX valuations has fallen once again making the factor relatively less attractive**.

A granular inspection shows that **the source of carry FX value portfolio is the cheap-only basket** (many cheap currencies carry well), which on average yields 3.3%, nearly 2%pts higher than its long-run average (chart 17). By contrast, the carry on the rich-only (short) basket has become more onerous as its composition has shifted to increasingly comprise high-carry currencies (RUB is a notable example of this; given the substantial outperformance over the past year, it now features in the rich-only basket when ranked on this metric). On the other hand, **the source of lower dispersion is the rich-only basket**. Chart 17 shows that the average mispricing of the rich-only basket is well below average, indicating that there is considerable room for strengthening if conditions so warrant.

Chart 15: The strategy delivered its worst quarterly returns in a decade in January…

Rolling quarterly returns from global FX long-term value strategy; %

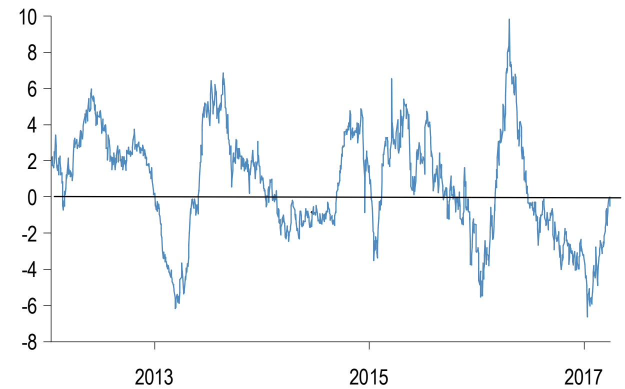
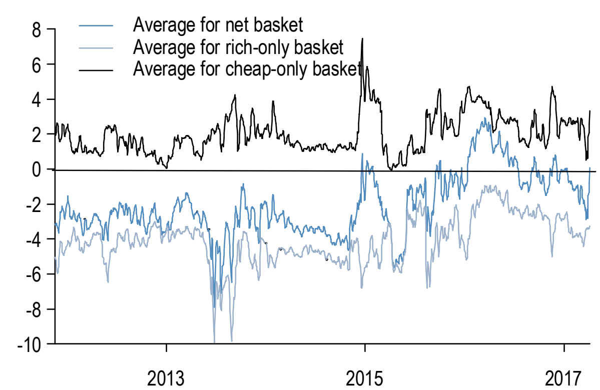


Chart 16: FX value still carries well thanks to the cheap-only basket…

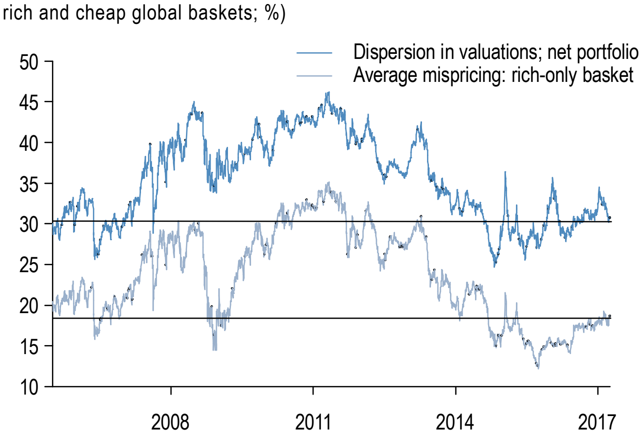
Carry on a dynamic FX value portfolio*; %



* Rich-only and cheap-only basket based on ranking of REER PPI deviation from 15y averages in percent. Positive (negative) number for cheap-only (rich-only) basket means Source: J.P. Morgan

Chart 17: …but isn't that cheap as net dispersion declined

Dispersion in valuations (difference between the average mispricing of the rich and cheap global baskets; %)



Source: J.P. Morgan

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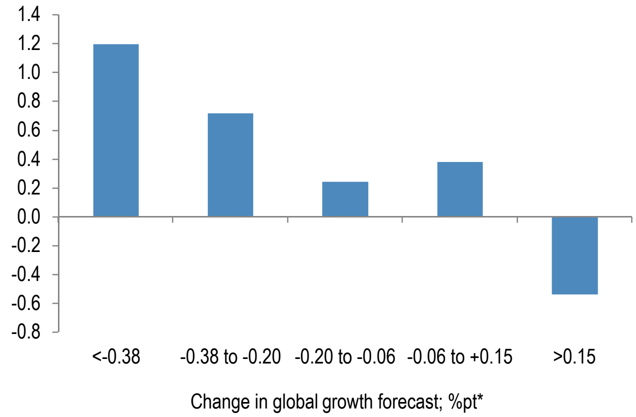
Chart 18: FX value is counter-cyclical: returns deteriorate as the global growth outlook improves

Average quarterly spot returns from FX value (%) vs. contemporaneous global growth forecast revisions (%pts)*; since 2H02



* Range of x-axis intervals chosen such that an equal number of observations fall in each interval (i.e. data is divided into quintiles). Uses CPI REERs due to longer history. Source: J.P. Morgan

Low dispersion + high growth = poor outlook for FX value

Returns from FX value are negatively correlated with global growth momentum, suggesting that if current improving macro backdrop persists, it is not likely to be conducive for the performance of this factor. Chart 18 shows that historically, FX value has delivered negative returns on average in quarters during which our economists' global growth forecasts were being revised higher. Admittedly, this data is based on limited history (data since 2002 was used since this is when the J.P. Morgan FRIs first became available). However, using slightly longer history (till 1995) and using realized quarterly global growth rather than our growth forecast revisions yields a similar result. **Table 2** summarizes the average returns on two dimensions for different levels of growth and dispersion and shows that (i) a higher (slower) concurrent growth environment typically reduces (increases) the average returns from the strategy and (ii) that higher (lower) dispersion eventually results in higher (lower) returns. **So the current environment—dispersion at 31% on the global portfolio, global growth forecast to be running at near 0.8% quarterly pace—is not conducive for FX value**.

High carry currencies are pushing their way into the rich basket

Why should FX value deliver weaker returns if growth continues to improve? An insight may be drawn from FX carry. Specifically, a stable/ strong growth environment results in positive returns from high carry currencies which should eventually make their way into the rich end of the spectrum. **Already, three out of the six currencies in the**

Table 2: FX value delivers positive returns when dispersion is high and growth is weak

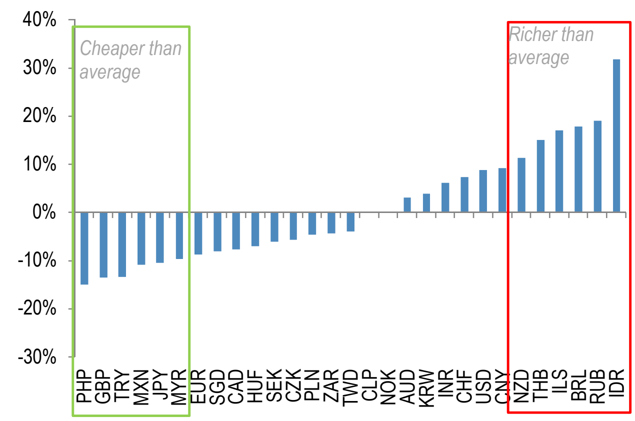
Average quarterly returns from FX value (%) for a range of contemporaneous global GDP (%q/q) and ex-ante (3m ago) dispersion levels; since 1995; Blue highlights current location

GDP growth (q/q; concurrent)	Ex-ante dispersion (3m) <32	32-38	>38	All observations
<0.65	0.9	1.5	3.2	2.0
0.65-0.89	-0.1	1.6	3.7	1.5
>0.89	0.4	-1.0	-0.3	-0.2
All obervations	0.3	0.8	2.3	1.1

* Range of row/ column intervals are chosen such that an equal number of observations fall in each interval. Uses CPI REERs due to longer history. Source: J.P. Morgan

Chart 19: Current ranking of currencies based on the long-term valuation metric

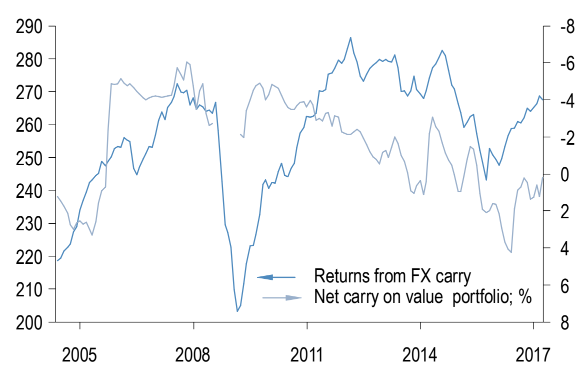
Deviation of REER PPI from 15-year average (%)



* Range of x-axis intervals chosen so an equal number of observations fall in each interval (i.e. data is divided into quintiles). Uses CPI REERs due to longer history. Source: J.P. Morgan

Chart 20: The net carry on the value portfolio becomes more onerous as carry outperforms/ high carry currencies make their way into the rich basket

Returns from FX carry (index level) vs. net carry on the dynamic value portfolio* (inverted; %)



* Excludes data for 2008 when funding markets were impacted by the US housing crisis. CPI REERs are used for longer history. Source: J.P. Morgan

rich basket are high yielders: NZD (the high yielder in G10) and BRL and RUB in EM (RUB has only moved into the rich basket in 1Q15; chart 19). **If global growth remains stable/ improves and carry continues to deliver, these high yielders will likely continue to deliver positive returns and moreover, other high-yielders will also eventually move into the 'rich' basket** (indeed, this is why the net carry on the value portfolio usually deteriorates when carry is doing well; chart 20). **Thus a value strategy that is short these currencies will lose returns on the short leg if the growth outlook remains stable**.

Not all is lost for FX value: the cheap-only basket carries well adjusted for growth…

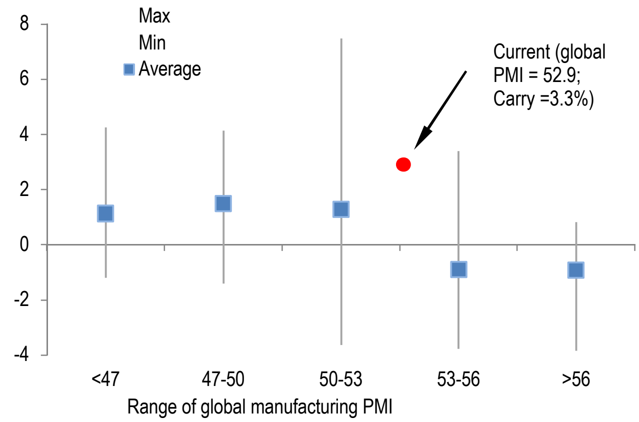
This suggests that a more granular approach to value that separates the rich-only and cheap-only baskets is warranted. Two observations are noteworthy in this regard. First, **the cheap-only basket carries well, especially for this stage in the growth cycle**. Chart 22 shows that the cheap-only basket yields on average 3.3%, which is higher than the average for the current level of global PMI (52.9).

Moreover, if the global PMI rises further, this carry would be higher than the upper end of the typical range of carry of the cheap basket. Chart 22 specifies which currencies fall in this bucket and have high carry. **The high yielders include EM candidates such as TRY, MXN, MYR and PHP, while the G10 candidates are the lower yielding GBP and JPY**. Among these higher yielding currencies, our EM strategists still see more room for downside on TRY (*EMEA EM Local Markets Compass*, Siddiqui et al) but are tactically more constructive on MXN and MYR over the near-term (*MXN: We tactically position for further near-term MXN gains and then for risks to resurface in 2H17*, Pereira and *EM Asia local markets strategy update*, Shridharan).

…and a more selective approach is warranted in the rich-only basket

Second, investors should consider **limiting shorts to only the low carry components of the rich-only basket as the high-carry currencies have more room to strengthen if global growth holds up well**. As discussed earlier, the source of low dispersion in the value portfolio is the rich-only basket where the overshoot is well below average (chart 23). In the event growth is stable or improves, high carry currencies would likely strengthen further and eventually make their way into the rich basket, which in turn could push up dispersion in the value portfolio. Indeed, we find that periods in which FX carry delivers positive returns (i.e. high carry currencies are outperforming) usually coincides with a richening in the rich-only value

Chart 21: Carry on the cheap-only basket is high adjusted for growth
Carry on the dynamic cheap-only basket (% vs USD) averaged for different levels of global manufacturing PMI; Data starting 2005 has been used



Source: J.P. Morgan

Chart 22: Carry vs. long-run valuations

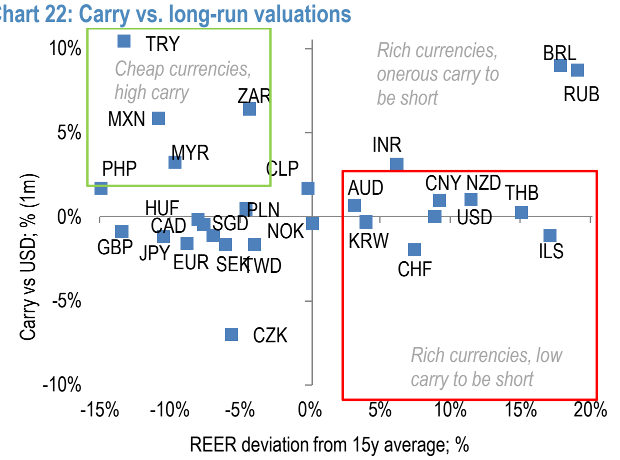
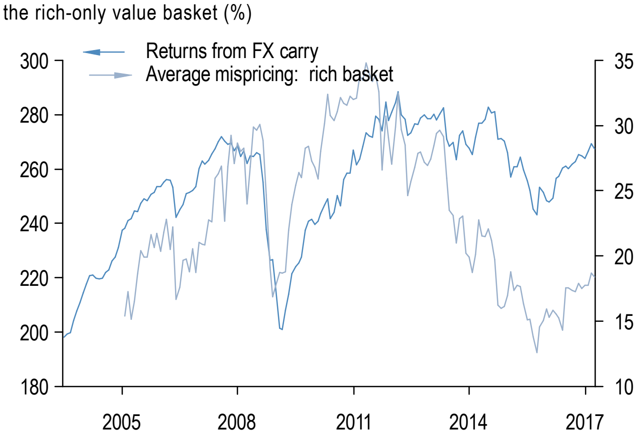


Chart 23: The rich-only basket has ample room to richen if carry currencies continue to strengthen amid stable-to-better growth
Total return index from a global carry basket vs. the average mispricing of the rich-only value basket (%)



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basket (chart 23), indicating that rich cross-sectional valuations currently shouldn't hinder further strengthening in the event growth holds. Indeed, our sector specialists are still long the two high yielders in the rich-only basket (RUB and BRL in EM; *Latin America Local Markets Compass*, Pereira). Among the global low-yielders, our Antipodean strategists are bearish on NZD (this is a high yielder in G10 but still a low yielder in the global context), THB and IDR but long ILS (*EM Asia local markets strategy update*, Shridharan and *EMEA EM Local Markets Compass*, Siddiqui et al).

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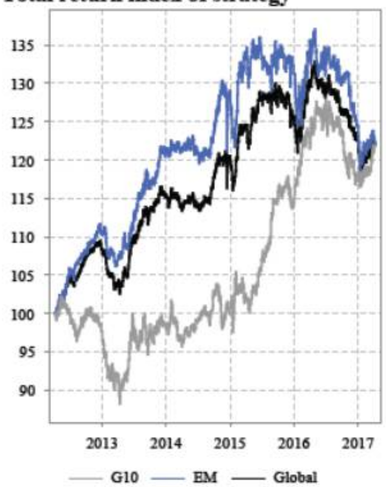
Tracking FX long-term value based on simple mean reversion in the REER (PPI): [Daily FX Alpha chartpack]

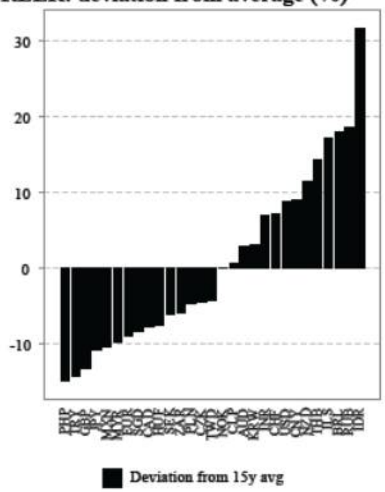
Global FX Strategy

Long-term value: mean reversion based on REER-PPI

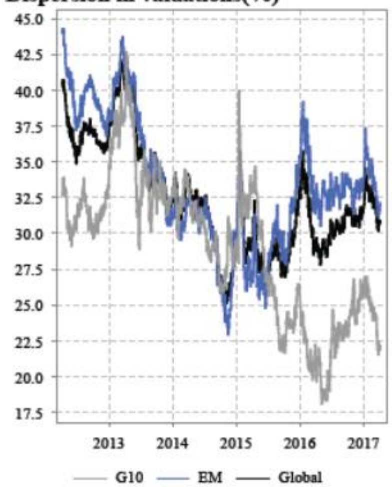
Total return index of strategy*



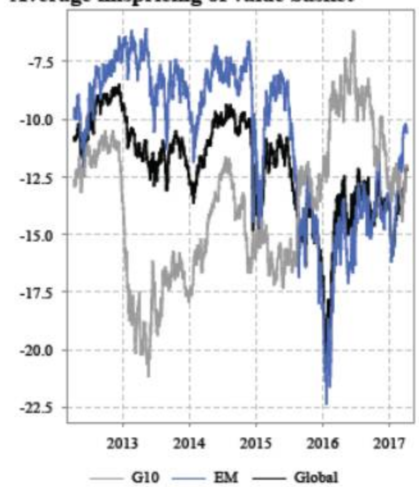
REER: deviation from average (%)



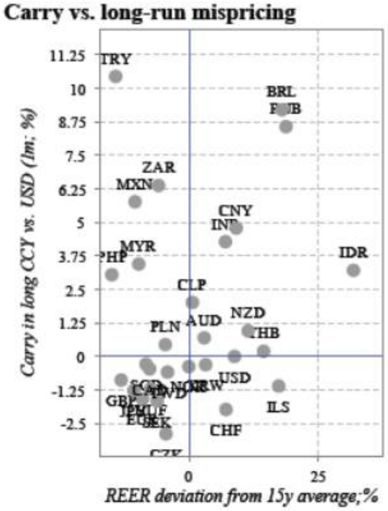
Dispersion in valuations(%)**



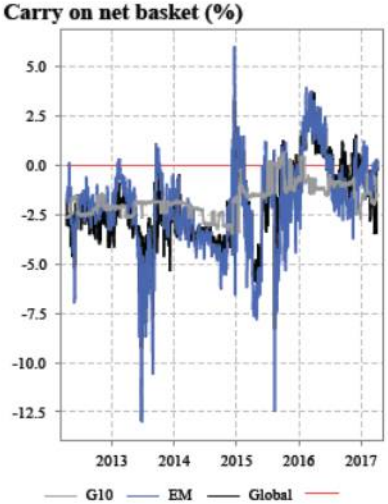
Average mispricing of value basket



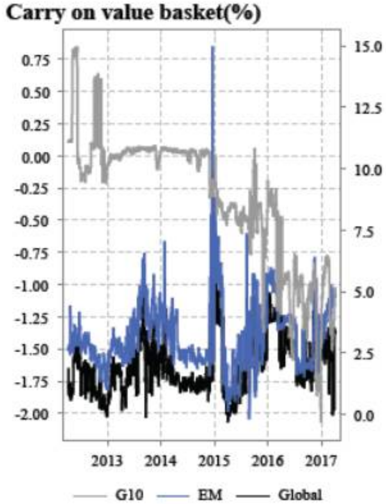
Carry vs. long-run mispricing



Carry on net basket (%)



Carry on value basket(%)



Current mispricing vs. 25Y History

'Buy' Basket	Current Mispricing	Percentile	Largest Historical Mispricing
PHP	-15%	4	-25%
TRY	-14%	2	-25%
GBP	-13%	25	-27%
JPY	-11%	50	-30%
MXN	-10%	18	-45%
MYR	-10%	16	-23%
'Sell' Basket			
IDR	32%	83	41%
RUB	19%	60	69%
BRL	18%	59	57%
ILS	17%	99	19%
THB	14%	63	33%
NZD	11%	64	26%

* Strategy involves buying (selling) the six cheapest (richest) currencies ranked on the percent deviation of their REER-PPI from its 15-year average. Risk is allocated to six pairs in the global basket, two in G10 and four in EM.
** Average mispricing of cheap basket minus rich basket.

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Tracking carry on jpmm.com: *Daily FX Alpha chartpack*

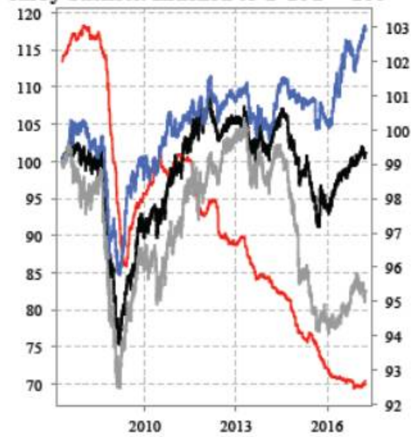
Global FX Strategy

Global FX Carry Report

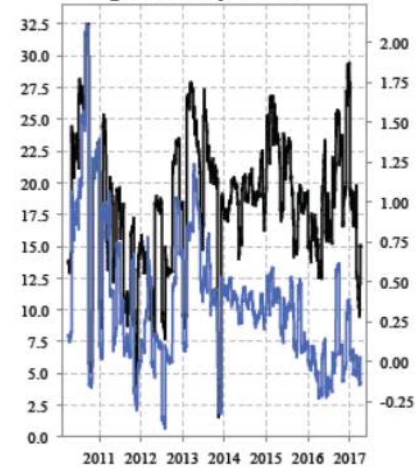
Table 1: Pair Selection

G-10 currencies				Emerging markets currencies			
Long vs Short	Carry, %	Vol, %	Carry-to-risk ratio	Long vs Short	Carry, %	Vol, %	Carry-to-risk ratio
USD vs. CHF	1.98	7.84	0.25	CNY vs. USD	4.79	2.58	1.85
USD vs. EUR	1.59	6.94	0.23	IDR vs. USD	3.21	2.55	1.26
USD vs. SEK	1.67	7.83	0.21	PEN vs. USD	3.88	3.31	1.17
NZD vs. USD	0.95	4.84	0.20	MYR vs. USD	3.44	3.15	1.09
USD vs. JPY	1.27	7.63	0.17	PHP vs. USD	3.05	3.04	1.00
NOK vs. EUR	1.21	7.52	0.16	CNH vs. USD	2.96	3.32	0.89
EUR vs. CHF	0.39	3.31	0.12	TRY vs. USD	10.44	12.03	0.87
USD vs. GBP	0.88	8.10	0.11	INR vs. USD	4.28	5.04	0.85
AUD vs. USD	0.69	7.31	0.09	RUB vs. USD	8.57	12.34	0.69
USD vs. CAD	0.46	5.56	0.08	BRL vs. USD	9.20	14.62	0.63
USD vs. NOK	0.38	7.03	0.05	COP vs. USD	5.36	8.95	0.60
GBP vs. EUR	0.71	13.86	0.05	MXN vs. USD	5.77	11.32	0.51
JPY vs. EUR	0.31	6.32	0.05	USD vs. CZK	2.89	8.51	0.34
EUR vs. SEK	0.08	3.38	0.02	CLP vs. USD	2.01	6.70	0.30

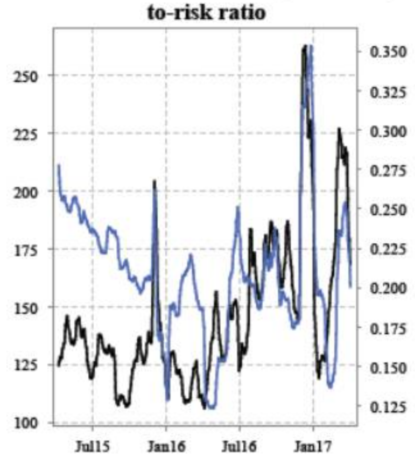
Performance of G-10, EM and global carry baskets. Indexed to T-10Y = 100



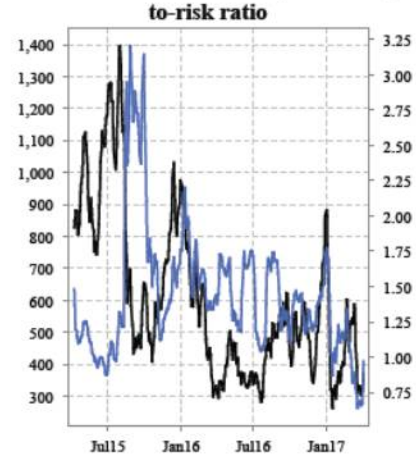
Long-term valuations (REER PPI) for global carry basket



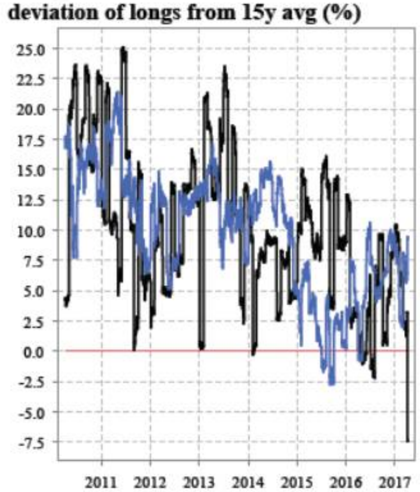
G10 basket mean 1-mo carry and carry-to-risk ratio



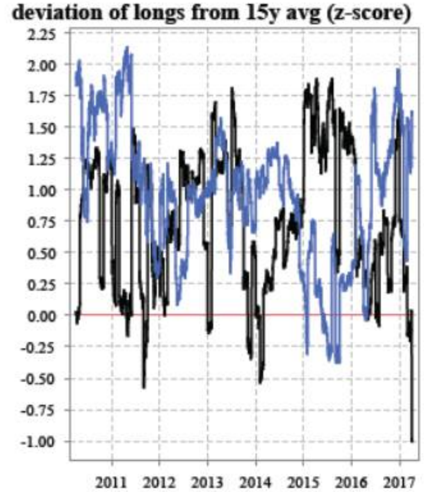
EM basket mean 1-mo carry and carry-to-risk ratio



Long-term valuations: REER-PPI deviation of longs from 15y avg (%)



Long-term valuations: REER-PPI deviation of longs from 15y avg (z-score)



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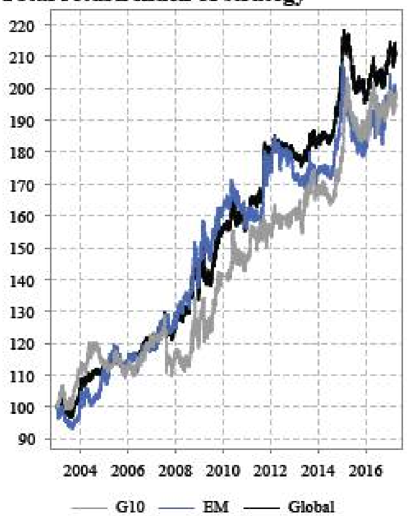
Tracking economic momentum on jpmm.com: *Daily FX Alpha chartpack*

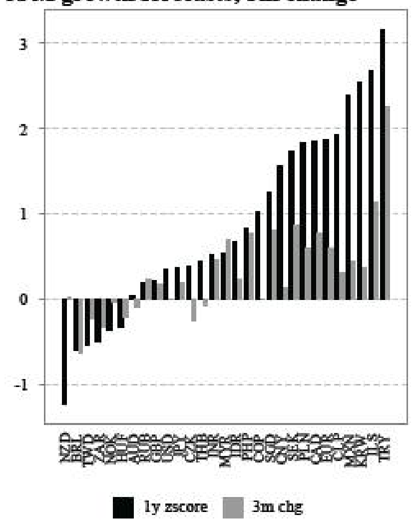
Global FX Strategy

Economic Momentum

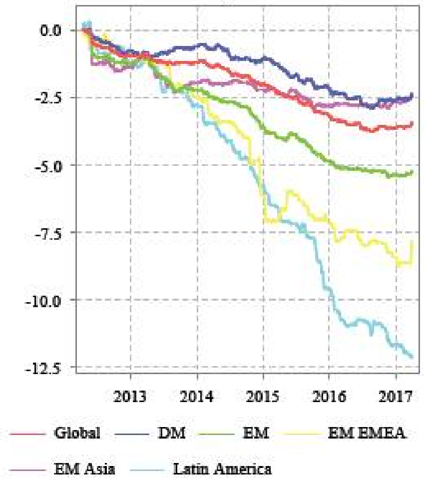
Total return index of strategy*



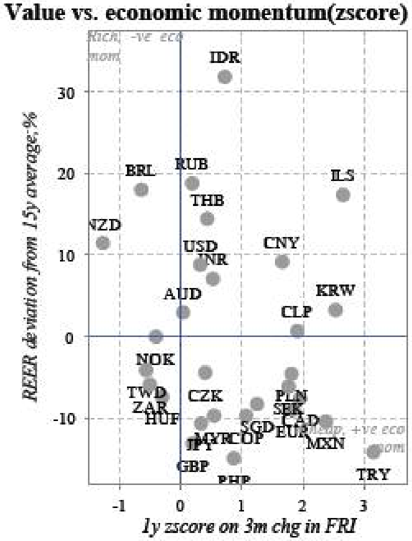
JPM growth forecasts; 3m change



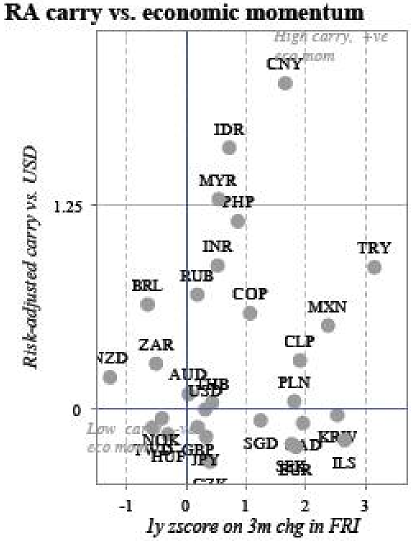
JPM growth forecast revision indices; cumulative chg since T-5Y



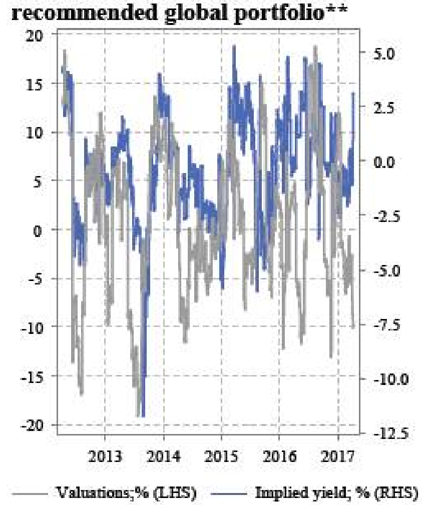
Value vs. economic momentum(zscore)



RA carry vs. economic momentum



Valuations and implied yield of recommended global portfolio**



	JPM FRI		JPM EASI		Manu PMI	
Currency	1Y zscore	3m chg(%pt)	6wk avg	Latest	3m chg	Level
USD	0.3	0.0	19.9	5.7	3.2	57.7
JPY	0.4	0.2	-0.8	0.0	0.0	52.4
EUR	1.9	0.6	14.1	13.6	1.4	56.2
GBP	0.2	0.2	3.9	0.0	-1.8	54.2
CHF			13.7	33.3	2.4	58.6
SEK	1.7	0.9	15.0	0.0	4.9	65.2
NOK	-0.4	0.0	39.3	50.0	2.7	54.7
AUD	0.0	-0.1	-2.0	-20.0	2.1	57.5
NZD	-1.2	0.0	-13.3	-50.0	0.8	55.2
CAD	1.8	0.8	33.4	63.6	0.8	53.8
BRL	-0.6	-0.6			4.4	49.6
MXN	2.4	0.4			1.3	51.5
CLP	1.9	0.3				
COP	1.0	0.0				
CNY	1.6	0.1	13.7	10.0	-0.7	51.2
IDR	0.7	0.2			1.5	50.5
INR	0.5	0.5			2.9	52.5
KRW	2.5	0.4			0.4	48.4
MYR	0.5	0.7			2.4	49.5
PHP	0.8	0.8			-2.5	53.8
SGD	1.3	0.8			1.0	51.2
THB	0.4	-0.1			2.1	50.2
TWD	-0.6	-0.2			0.0	56.2
CZK	0.4	-0.3			3.7	57.5
HUF	-0.3	-0.2			3.2	56.0
ILS	2.7	1.1			-4.6	62.6
PLN	1.8	0.6			-0.7	53.5
RUB	0.2	0.2			-1.3	52.4
TRY	3.2	2.2			4.5	52.3
ZAR	-0.5	-0.3			5.5	52.2

Suggested portfolio:

BUY	SELL
TRY	NZD
ILS	USD
KRW	USD
MXN	USD
CLP	USD

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